Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 11:22	Sample Name	LCVL-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	031LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.463	454	2.11	10	104.6	70	130	
9	Be	45	0.970	57	13.71	1	97.0	70	130	
11	B	45	22.559	644	2.99	20	112.8	70	130	
23	Na	45	102.326	113290	0.57	100	102.3	70	130	
24	Mg	45	98.504	39753	1.29	100	98.5	70	130	
27	Al	45	95.406	15875	0.76	100	95.4	70	130	
39	K	45	102.661	97657	1.50	100	102.7	70	130	
44	Ca	45	93.089	2957	5.50	100	93.1	70	130	
47	Ti	45	4.739	696	11.51	5	94.8	70	130	
51	V	45	0.861	8507	0.92	1	86.1	70	130	
52	Cr	45	5.065	29593	0.96	5	101.3	70	130	
55	Mn	45	4.839	15619	0.36	5	96.8	70	130	
56	Fe	45	98.224	480128	0.60	100	98.2	70	130	
59	Co	72	5.047	45754	0.45	5	100.9	70	130	
60	Ni	72	5.053	12977	1.53	5	101.1	70	130	
63	Cu	72	5.097	34877	1.64	5	101.9	70	130	
66	Zn	72	5.187	6266	2.89	5	103.7	70	130	
75	As	72	4.940	4977	0.92	5	98.8	70	130	
78	Se	72	4.978	381	7.35	5	99.6	70	130	
88	Sr	115	4.774	22733	1.35	5	95.5	70	130	
95	Mo	115	4.671	17652	0.52	5	93.4	70	130	
107	Ag	115	1.890	22183	1.34	2	94.5	70	130	
111	Cd	115	0.877	1557	3.32	1	87.7	70	130	
118	Sn	115	5.050	19637	2.67	5	101.0	70	130	
121	Sb	115	1.932	11526	1.31	2	96.6	70	130	
137	Ba	115	4.760	9034	1.40	5	95.2	70	130	
205	Tl	209	0.998	24095	0.66	1	99.8	70	130	
208	Pb	209	0.970	32076	1.46	1	97.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	939860	1.08	904202	103.94	70	120	
72	Ge	696437	0.55	677615	102.78	70	120	
115	In	6530312	2.75	6287303	103.87	70	120	
209	Bi	14025539	1.89	14081817	99.60	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/23/2016 11:30	Sample Name	ICB-160523
Data Batch	160523.b	Comment	ICB ICPMS_TW
Data File Name	033_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.142	20	20.5	2	5	
9	Be	45	0.095	8	43.3	0.4	0.3	
11	B	45	0.156	186	12.0	10	10	
23	Na	45	0.367	35489	1.7	50	100	
24	Mg	45	-1.823	1350	1.5	50	100	
27	Al	45	-0.267	2324	8.1	50	10	
39	K	45	3.549	58593	0.4	50	100	
44	Ca	45	-3.802	913	6.2	50	100	
47	Ti	45	0.023	6	91.6	4	3	
51	V	45	-0.106	3902	3.8	4	3	
52	Cr	45	-0.025	1038	4.5	2	2	
55	Mn	45	-0.011	184	26.8	2	3	
56	Fe	45	0.172	12736	2.1	50	50	
59	Co	72	-0.001	102	8.2	2	3	
60	Ni	72	-0.036	758	17.0	2	3	
63	Cu	72	-0.039	1369	4.9	2	2	
66	Zn	72	0.053	437	8.8	4	2	
75	As	72	-0.011	186	9.0	2	2	
78	Se	72	0.056	100	17.9	1	2	
88	Sr	115	0.014	1203	1.7	4	3	
95	Mo	115	0.000	39	32.4	2	2	
107	Ag	115	0.001	40	30.0	0.4	1	
111	Cd	115	0.002	7	50.0	0.4	0.3	
118	Sn	115	0.241	1442	6.2	4	3	
121	Sb	115	0.018	247	80.5	2	0.8	
137	Ba	115	0.002	98	29.0	2	3	
205	Tl	209	0.000	46	34.6	2	0.5	
208	Pb	209	-0.003	510	8.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	932628	0.61	904202	103.14	70	120	
72	Ge	697475	0.81	677615	102.93	70	120	
115	In	6523390	0.30	6287303	103.75	70	120	
209	Bi	14176412	0.50	14081817	100.67	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 15:32	Sample Name	CCV4-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	136_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	206.211	8130	1.55	200	103.1	90	110	
9	Be	45	200.287	10422	0.37	200	100.1	90	110	
11	B	45	196.074	3923	2.72	200	98.0	90	110	
23	Na	45	5013.929	3603866	0.91	5000	100.3	90	110	
24	Mg	45	5002.788	1794591	0.40	5000	100.1	90	110	
27	Al	45	4901.565	651487	0.59	5000	98.0	90	110	
39	K	45	5065.739	1901852	0.79	5000	101.3	90	110	
44	Ca	45	4848.345	96442	0.79	5000	97.0	90	110	
47	Ti	45	196.475	26931	0.76	200	98.2	90	110	
51	V	45	198.856	885443	0.36	200	99.4	90	110	
52	Cr	45	200.779	1055489	0.93	200	100.4	90	110	
55	Mn	45	197.918	589894	0.90	200	99.0	90	110	
56	Fe	45	5117.742	22851373	1.10	5000	102.4	90	110	
59	Co	72	196.663	1703424	0.80	200	98.3	90	110	
60	Ni	72	200.192	461256	0.48	200	100.1	90	110	
63	Cu	72	203.120	1270703	0.47	200	101.6	90	110	
66	Zn	72	199.232	217081	0.84	200	99.6	90	110	
75	As	72	195.657	181548	0.49	200	97.8	90	110	
78	Se	72	197.084	10901	0.81	200	98.5	90	110	
88	Sr	115	187.973	805573	0.82	200	94.0	90	110	
95	Mo	115	192.436	686850	0.99	200	96.2	90	110	
107	Ag	115	195.128	2165531	1.08	200	97.6	90	110	
111	Cd	115	191.368	320585	0.37	200	95.7	90	110	
118	Sn	115	192.898	691035	0.67	200	96.4	90	110	
121	Sb	115	195.344	1089773	0.15	200	97.7	90	110	
137	Ba	115	191.701	340951	0.52	200	95.9	90	110	
205	Tl	209	191.912	4608887	0.89	200	96.0	90	110	
208	Pb	209	189.118	6113017	0.40	200	94.6	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	880099	0.87	904202	97.33	70	120	
72	Ge	667027	0.33	677615	98.44	70	120	
115	In	6178968	1.30	6287303	98.28	70	120	
209	Bi	13969084	0.67	14081817	99.20	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 15:42	Sample Name	LCVL4-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	139LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.081	407	5.32	10	100.8	70	130	
9	Be	45	1.017	55	6.56	1	101.7	70	130	
11	B	45	18.482	521	11.27	20	92.4	70	130	
23	Na	45	96.215	100875	0.71	100	96.2	70	130	
24	Mg	45	98.412	36876	0.76	100	98.4	70	130	
27	Al	45	95.429	14741	0.66	100	95.4	70	130	
39	K	45	101.075	90095	0.45	100	101.1	70	130	
44	Ca	45	89.228	2670	3.27	100	89.2	70	130	
47	Ti	45	5.274	719	10.34	5	105.5	70	130	
51	V	45	0.821	7723	2.12	1	82.1	70	130	
52	Cr	45	5.156	27952	1.38	5	103.1	70	130	
55	Mn	45	5.008	14997	4.30	5	100.2	70	130	
56	Fe	45	99.341	450729	0.52	100	99.3	70	130	
59	Co	72	5.047	42731	0.74	5	100.9	70	130	
60	Ni	72	4.920	11821	3.13	5	98.4	70	130	
63	Cu	72	5.290	33746	1.14	5	105.8	70	130	
66	Zn	72	5.041	5698	1.12	5	100.8	70	130	
75	As	72	4.963	4669	0.07	5	99.3	70	130	
78	Se	72	5.356	376	9.07	5	107.1	70	130	
88	Sr	115	4.783	21404	0.48	5	95.7	70	130	
95	Mo	115	4.742	16839	2.39	5	94.8	70	130	
107	Ag	115	1.942	21434	0.19	2	97.1	70	130	
111	Cd	115	0.967	1611	5.38	1	96.7	70	130	
118	Sn	115	4.807	17588	1.20	5	96.1	70	130	
121	Sb	115	1.894	10625	1.82	2	94.7	70	130	
137	Ba	115	4.815	8589	0.84	5	96.3	70	130	
205	Tl	209	0.956	22620	1.28	1	95.6	70	130	
208	Pb	209	0.958	31050	0.67	1	95.8	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	872631	0.93	904202	96.51	70	120	
72	Ge	650398	0.32	677615	95.98	70	120	
115	In	6135820	1.32	6287303	97.59	70	120	
209	Bi	13738911	1.98	14081817	97.56	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 15:45	Sample Name	CCB4-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	140_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.093	17	15.6	2	5	
9	Be	45	0.041	5	24.7	0.4	0.3	
11	B	45	-0.574	159	21.2	10	10	
23	Na	45	-3.383	30413	0.3	50	100	
24	Mg	45	-3.103	804	3.9	50	100	
27	Al	45	-0.333	2155	5.0	50	10	
39	K	45	0.059	53309	0.4	50	100	
44	Ca	45	-4.778	831	3.2	50	100	
47	Ti	45	0.017	4	43.4	4	3	
51	V	45	-0.249	3008	3.2	4	3	
52	Cr	45	-0.041	884	6.8	2	2	
55	Mn	45	-0.021	142	5.4	2	3	
56	Fe	45	0.149	11761	2.1	50	50	
59	Co	72	0.000	106	26.9	2	3	
60	Ni	72	-0.232	269	21.1	2	3	
63	Cu	72	0.265	3137	18.4	2	2	
66	Zn	72	-0.056	292	22.3	4	2	
75	As	72	-0.023	163	10.1	2	2	
78	Se	72	-0.030	89	10.5	1	2	
88	Sr	115	0.014	1123	3.7	4	3	
95	Mo	115	-0.003	23	42.9	2	2	
107	Ag	115	0.020	254	21.3	0.4	1	
111	Cd	115	0.001	6	91.6	0.4	0.3	
118	Sn	115	-0.043	342	14.8	4	3	
121	Sb	115	0.034	313	38.1	2	0.8	
137	Ba	115	0.007	99	19.8	2	3	
205	Tl	209	0.001	71	40.4	2	0.5	
208	Pb	209	0.001	597	13.4	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	868509	0.24	904202	96.05	70	120	
72	Ge	651469	0.14	677615	96.14	70	120	
115	In	6087959	1.77	6287303	96.83	70	120	
209	Bi	13477598	2.29	14081817	95.71	70	120	

Method Blank Report

Date Acquired	5/23/16 3:47 PM	Sample Name	MB-75166
Data Batch	160523.b	Comment	MBLKICPMS_TSDOD1
Data File Name	141_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.163	20	43.30		
9	Be	45	0.002	3	114.56		
11	B	45	10.893	380	15.52		J
23	Na	45	6.950	38126	0.61		
24	Mg	45	4.890	3674	3.45		
27	Al	45	52.014	9106	1.88		FAIL
39	K	45	7.740	56752	1.89		
44	Ca	45	125.767	3411	9.49		FAIL
47	Ti	45	0.276	40	16.68		
51	V	45	-0.336	2657	6.82		
52	Cr	45	0.309	2730	1.76		
55	Mn	45	0.123	572	8.16		
56	Fe	45	6.677	40994	1.06		
59	Co	72	0.004	143	12.09		
60	Ni	72	0.335	1542	8.73		
63	Cu	72	0.357	3697	1.58		
66	Zn	72	4.293	4913	3.39		J
75	As	72	-0.032	155	2.19		
78	Se	72	0.050	93	27.02		
88	Sr	115	0.897	4933	2.73		
95	Mo	115	0.010	71	21.14		
107	Ag	115	0.019	248	6.77		
111	Cd	115	0.001	4	86.60		
118	Sn	115	3.945	14654	1.79		
121	Sb	115	0.030	299	11.00		
137	Ba	115	0.204	451	2.13		
205	Tl	209	0.003	104	45.29		
208	Pb	209	0.157	5751	0.81		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	878965	1.21	904202	97.21	70	120	
72	Ge	651509	0.79	677615	96.15	70	120	
115	In	6191927	1.98	6287303	98.48	70	120	
209	Bi	14143847	1.85	14081817	100.44	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/23/2016 15:49	Sample Name	LCS-75166
Data Batch	160523.b	Comment	LCS ICPMS_TSDOD1
Data File Name	142_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.948	8170	1.78	200	104.0	80	120	
9	Be	45	198.684	10304	1.79	200	99.3	80	120	
11	B	45	192.876	3848	0.55	200	96.4	80	120	
23	Na	45	5155.569	3691614	0.92	1000	515.6	80	120	Fail
24	Mg	45	5111.433	1827066	1.09	1000	511.1	80	120	Fail
27	Al	45	1002.572	134560	0.61	1000	100.3	80	120	
39	K	45	5183.099	1938014	0.56	1000	518.3	80	120	Fail
44	Ca	45	4943.867	97982	0.77	1000	494.4	80	120	Fail
47	Ti	45	201.209	27486	0.97	200	100.6	80	120	
51	V	45	203.634	903493	0.35	200	101.8	80	120	
52	Cr	45	204.347	1070602	0.72	200	102.2	80	120	
55	Mn	45	200.666	596028	0.29	200	100.3	80	120	
56	Fe	45	1017.427	4536062	0.11	1000	101.7	80	120	
59	Co	72	200.799	1720585	0.37	200	100.4	80	120	
60	Ni	72	203.573	464011	0.93	200	101.8	80	120	
63	Cu	72	205.503	1271804	0.59	200	102.8	80	120	
66	Zn	72	203.344	219177	0.62	200	101.7	80	120	
75	As	72	199.647	183258	0.67	200	99.8	80	120	
78	Se	72	200.329	10960	1.59	200	100.2	80	120	
88	Sr	115	192.278	820227	0.71	200	96.1	80	120	
95	Mo	115	196.170	696988	1.00	200	98.1	80	120	
107	Ag	115	197.789	2184878	1.25	200	98.9	80	120	
111	Cd	115	193.418	322517	0.44	200	96.7	80	120	
118	Sn	115	201.701	719190	0.37	200	100.9	80	120	
121	Sb	115	196.893	1093344	0.51	200	98.4	80	120	
137	Ba	115	192.616	340991	0.96	200	96.3	80	120	
205	Tl	209	197.060	4607380	0.67	200	98.5	80	120	
208	Pb	209	196.878	6195669	0.49	200	98.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	877087	0.97	904202	97.00	70	120	
72	Ge	659875	0.44	677615	97.38	70	120	
115	In	6149834	0.40	6287303	97.81	70	120	
209	Bi	13601586	1.61	14081817	96.59	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/23/2016 15:51	Sample Name	LCSD-75166
Data Batch	160523.b	Comment	LCSDICPMS_TSDOD1
Data File Name	143_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	204.335	8193	3.06	200	102.2	80	120	
9	Be	45	201.593	10668	0.65	200	100.8	80	120	
11	B	45	200.198	4069	1.23	200	100.1	80	120	
23	Na	45	5193.381	3794606	0.65	1000	519.3	80	120	Fail
24	Mg	45	5133.228	1872503	0.74	1000	513.3	80	120	Fail
27	Al	45	1016.812	139232	0.29	1000	101.7	80	120	
39	K	45	5227.181	1993943	0.15	1000	522.7	80	120	Fail
44	Ca	45	5003.936	101191	1.10	1000	500.4	80	120	Fail
47	Ti	45	199.178	27765	2.51	200	99.6	80	120	
51	V	45	204.723	926895	0.70	200	102.4	80	120	
52	Cr	45	203.940	1090293	0.08	200	102.0	80	120	
55	Mn	45	201.479	610672	0.45	200	100.7	80	120	
56	Fe	45	1025.796	4666666	0.59	1000	102.6	80	120	
59	Co	72	204.728	1764922	0.88	200	102.4	80	120	
60	Ni	72	206.091	472589	0.66	200	103.0	80	120	
63	Cu	72	208.065	1295444	0.24	200	104.0	80	120	
66	Zn	72	206.512	223936	0.26	200	103.3	80	120	
75	As	72	203.805	188205	0.37	200	101.9	80	120	
78	Se	72	205.283	11296	0.93	200	102.6	80	120	
88	Sr	115	193.396	838582	0.88	200	96.7	80	120	
95	Mo	115	198.635	717296	0.58	200	99.3	80	120	
107	Ag	115	200.953	2256282	0.67	200	100.5	80	120	
111	Cd	115	197.139	334083	0.18	200	98.6	80	120	
118	Sn	115	203.710	738324	1.32	200	101.9	80	120	
121	Sb	115	199.567	1126349	0.51	200	99.8	80	120	
137	Ba	115	194.023	349162	1.37	200	97.0	80	120	
205	Tl	209	198.989	4742396	1.01	200	99.5	80	120	
208	Pb	209	196.007	6287483	0.16	200	98.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	894965	0.48	904202	98.98	70	120	
72	Ge	663891	0.76	677615	97.97	70	120	
115	In	6254886	3.51	6287303	99.48	70	120	
209	Bi	13864773	1.57	14081817	98.46	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/23/2016 15:57	Sample Name	1605096-14A SD
Data Batch	160523.b	Comment	SD ICPMS_TSDOD1
Data File Name	146_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	11.528	497	7.25	52.7	109.3	110	90	Good
9	Be	45	0.577	35	11.66	2.2	130.5	110	90	
11	B	45	15.750	503	8.27	73.7	106.9	110	90	Good
23	Na	45	139.494	140955	1.18	704.0	99.1	110	90	Good
24	Mg	45	2654.984	1013647	1.57	12987.5	102.2	110	90	Good
27	Al	45	9896.037	1396139	0.73	48433.4	102.2	110	90	Good
39	K	45	3111.293	1264171	0.67	15746.6	98.8	110	90	Good
44	Ca	45	23643.837	496219	1.18	115495.2	102.4	110	90	Good
47	Ti	45	171.703	25024	2.55	834.8	102.8	110	90	Good
51	V	45	21.477	105621	0.86	108.8	98.7	110	90	Good
52	Cr	45	12.931	73387	1.23	62.4	103.7	110	90	Good
55	Mn	45	161.802	512817	1.09	789.6	102.5	110	90	Good
56	Fe	45	11960.609	56765791	1.52	58641.4	102.0	110	90	Good
59	Co	72	3.839	34227	1.98	18.4	104.5	110	90	Good
60	Ni	72	7.443	18396	1.62	35.6	104.5	110	90	Good
63	Cu	72	17.759	115451	0.98	82.5	107.6	110	90	Good
66	Zn	72	90.880	101806	0.96	434.2	104.7	110	90	Good
75	As	72	3.391	3418	1.59	16.7	101.5	110	90	Good
78	Se	72	1.081	156	5.99	4.2	127.6	110	90	
88	Sr	115	88.168	396213	1.23	436.1	101.1	110	90	Good
95	Mo	115	0.428	1637	0.20	2.2	98.5	110	90	Good
107	Ag	115	0.079	956	5.36	0.3	140.0	110	90	
111	Cd	115	0.242	428	10.92	1.2	103.2	110	90	Good
118	Sn	115	2.655	10474	2.37	8.4	158.6	110	90	
121	Sb	115	0.501	3066	1.38	2.2	112.3	110	90	
137	Ba	115	124.660	232139	1.22	617.0	101.0	110	90	Good
205	Tl	209	0.097	2505	4.58	0.5	100.2	110	90	Good
208	Pb	209	25.863	886272	0.47	132.5	97.6	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	935754	0.55	904202	103.49	70	120	
72	Ge	684430	0.15	677615	101.01	70	120	
115	In	6468753	1.66	6287303	102.89	70	120	
209	Bi	14800704	1.23	14081817	105.11	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/23/2016 16:17	Sample Name	1605096-14A PDS
Data Batch	160523.b	Comment	PDS ICPMS_TSDOD1
Data File Name	156_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	245.404	10228	1.48	52.7	200	96.3	75	125	
9	Be	45	199.517	10977	1.06	2.2	200	98.7	75	125	
11	B	45	270.341	5650	3.22	73.7	200	98.3	75	125	
23	Na	45	5623.265	4269100	0.70	704.0	5000	98.4	75	125	
24	Mg	45	18216.224	6903524	1.37	12987.5	5000	104.6	75	125	
27	Al	45	54404.618	7621995	1.60	48433.4	5000	119.4	75	125	
39	K	45	21486.144	8344396	2.58	15746.6	5000	114.8	75	125	
44	Ca	45	########	2541806	0.68	115495.2	5000	129.9	75	125	Fail
47	Ti	45	1045.654	151532	0.78	834.8	200	105.4	75	125	
51	V	45	309.960	1456838	0.43	108.8	200	100.6	75	125	
52	Cr	45	262.672	1459758	0.81	62.4	200	100.2	75	125	
55	Mn	45	978.589	3083076	0.85	789.6	200	94.5	75	125	
56	Fe	45	63561.735	299932584	0.73	58641.4	5000	98.4	75	125	
59	Co	72	218.049	1899596	0.24	18.4	200	99.8	75	125	
60	Ni	72	234.483	543250	0.41	35.6	200	99.4	75	125	
63	Cu	72	282.575	1777389	0.08	82.5	200	100.0	75	125	
66	Zn	72	642.086	702855	0.91	434.2	200	103.9	75	125	
75	As	72	218.691	204068	0.53	16.7	200	101.0	75	125	
78	Se	72	205.521	11428	1.15	4.2	200	100.6	75	125	
88	Sr	115	637.197	2782051	0.38	436.1	200	100.5	75	125	
95	Mo	115	194.420	707660	0.65	2.2	200	96.1	75	125	
107	Ag	115	188.010	2127744	0.55	0.3	200	93.9	75	125	
111	Cd	115	189.397	323541	0.81	1.2	200	94.1	75	125	
118	Sn	115	209.409	764897	0.42	8.4	200	100.5	75	125	
121	Sb	115	190.568	1084058	1.01	2.2	200	94.2	75	125	
137	Ba	115	823.706	1493582	0.90	617.0	200	103.4	75	125	
205	Tl	209	195.125	4635970	0.82	0.5	200	97.3	75	125	
208	Pb	209	329.933	10550697	0.69	132.5	200	98.7	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	930513	0.23	904202	102.91	70	120	
72	Ge	670917	0.79	677615	99.01	70	120	
115	In	6300237	0.53	6287303	100.21	70	120	
209	Bi	13822083	1.80	14081817	98.16	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/23/2016 16:19	Sample Name	1605096-14A MS
Data Batch	160523.b	Comment	MS ICPMS_TSDOD1
Data File Name	157_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	244.612	10207	0.86	52.7	200	95.9	80	120	
9	Be	45	197.225	10864	1.35	2.2	200	97.5	80	120	
11	B	45	277.450	5800	3.19	73.7	200	101.9	80	120	
23	Na	45	5627.974	4277525	0.16	704.0	1000	492.4	80	120	Fail
24	Mg	45	17714.552	6721221	0.55	12987.5	1000	472.7	80	120	Fail
27	Al	45	52185.867	7319600	1.58	48433.4	1000	375.2	80	120	Fail
39	K	45	20690.666	8046586	1.10	15746.6	1000	494.4	80	120	Fail
44	Ca	45	########	2457009	0.39	115495.2	1000	229.2	80	120	Fail
47	Ti	45	1035.933	150296	0.85	834.8	200	100.6	80	120	
51	V	45	304.698	1433825	0.62	108.8	200	98.0	80	120	
52	Cr	45	255.262	1420215	0.67	62.4	200	96.4	80	120	
55	Mn	45	955.520	3013815	0.32	789.6	200	83.0	80	120	
56	Fe	45	57857.319	273328300	0.76	58641.4	1000	-78.4	80	120	Fail
59	Co	72	217.759	1898829	0.36	18.4	200	99.7	80	120	
60	Ni	72	236.854	549273	0.69	35.6	200	100.6	80	120	
63	Cu	72	298.545	1879542	0.14	82.5	200	108.0	80	120	
66	Zn	72	624.296	684050	0.42	434.2	200	95.1	80	120	
75	As	72	215.625	201404	0.78	16.7	200	99.5	80	120	
78	Se	72	203.708	11339	1.92	4.2	200	99.7	80	120	
88	Sr	115	628.822	2738648	1.11	436.1	200	96.4	80	120	
95	Mo	115	185.280	672701	0.52	2.2	200	91.6	80	120	
107	Ag	115	194.941	2200533	0.80	0.3	200	97.3	80	120	
111	Cd	115	190.934	325338	0.84	1.2	200	94.9	80	120	
118	Sn	115	199.686	727562	0.32	8.4	200	95.7	80	120	
121	Sb	115	59.202	336028	0.36	2.2	200	28.5	80	120	Fail
137	Ba	115	827.551	1496760	0.31	617.0	200	105.3	80	120	
205	Tl	209	194.350	4658196	0.94	0.5	200	96.9	80	120	
208	Pb	209	315.725	10185025	0.58	132.5	200	91.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	931578	0.19	904202	103.03	70	120	
72	Ge	671538	0.51	677615	99.10	70	120	
115	In	6284207	0.40	6287303	99.95	70	120	
209	Bi	13942023	0.58	14081817	99.01	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/23/2016 16:21	Sample Name	1605096-14A MSD
Data Batch	160523.b	Comment	MSD ICPMS_TSDOD1
Data File Name	158_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	247.671	10039	2.56	52.7	200	97.5	80	120	
9	Be	45	197.835	10584	0.75	2.2	200	97.8	80	120	
11	B	45	269.082	5470	3.61	73.7	200	97.7	80	120	
23	Na	45	5697.707	4206117	1.20	704.0	1000	499.4	80	120	Fail
24	Mg	45	17828.561	6570853	1.39	12987.5	1000	484.1	80	120	Fail
27	Al	45	50819.117	6924180	1.86	48433.4	1000	238.6	80	120	Fail
39	K	45	20641.082	7798606	2.79	15746.6	1000	489.5	80	120	Fail
44	Ca	45	########	2361699	1.24	115495.2	1000	106.4	80	120	
47	Ti	45	1020.817	143851	0.32	834.8	200	93.0	80	120	
51	V	45	305.069	1394447	1.80	108.8	200	98.1	80	120	
52	Cr	45	256.723	1387337	0.67	62.4	200	97.2	80	120	
55	Mn	45	972.117	2978112	0.54	789.6	200	91.3	80	120	
56	Fe	45	57321.948	263008416	1.36	58641.4	1000	-131.9	80	120	Fail
59	Co	72	217.109	1862926	0.73	18.4	200	99.4	80	120	
60	Ni	72	232.439	530427	0.97	35.6	200	98.4	80	120	
63	Cu	72	304.967	1889278	0.52	82.5	200	111.2	80	120	
66	Zn	72	619.451	667900	0.54	434.2	200	92.6	80	120	
75	As	72	214.784	197415	0.42	16.7	200	99.0	80	120	
78	Se	72	200.099	10963	0.85	4.2	200	97.9	80	120	
88	Sr	115	609.818	2617789	0.79	436.1	200	86.8	80	120	
95	Mo	115	185.250	663008	1.33	2.2	200	91.5	80	120	
107	Ag	115	192.448	2141521	0.75	0.3	200	96.1	80	120	
111	Cd	115	190.245	319542	0.46	1.2	200	94.5	80	120	
118	Sn	115	199.877	717829	0.96	8.4	200	95.8	80	120	
121	Sb	115	60.891	340674	0.60	2.2	200	29.3	80	120	Fail
137	Ba	115	790.186	1408730	0.92	617.0	200	86.6	80	120	
205	Tl	209	193.716	4542508	0.26	0.5	200	96.6	80	120	
208	Pb	209	317.450	10019560	0.71	132.5	200	92.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	904917	1.27	904202	100.08	70	120	
72	Ge	660807	0.35	677615	97.52	70	120	
115	In	6195299	1.47	6287303	98.54	70	120	
209	Bi	13642424	1.60	14081817	96.88	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 16:23	Sample Name	CCV5-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	159_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	201.797	8150	2.37	200	100.9	90	110	
9	Be	45	196.877	10493	1.23	200	98.4	90	110	
11	B	45	198.177	4059	5.38	200	99.1	90	110	
23	Na	45	4976.757	3663521	0.74	5000	99.5	90	110	
24	Mg	45	4937.444	1813963	0.47	5000	98.7	90	110	
27	Al	45	4819.253	656082	0.90	5000	96.4	90	110	
39	K	45	5027.576	1933611	0.61	5000	100.6	90	110	
44	Ca	45	4805.025	97895	0.37	5000	96.1	90	110	
47	Ti	45	196.909	27644	1.72	200	98.5	90	110	
51	V	45	198.178	903790	1.09	200	99.1	90	110	
52	Cr	45	197.990	1066066	0.68	200	99.0	90	110	
55	Mn	45	195.106	595560	0.64	200	97.6	90	110	
56	Fe	45	5049.359	23088207	1.53	5000	101.0	90	110	
59	Co	72	200.915	1732093	0.53	200	100.5	90	110	
60	Ni	72	203.541	466763	0.17	200	101.8	90	110	
63	Cu	72	207.256	1290479	0.16	200	103.6	90	110	
66	Zn	72	202.683	219802	0.29	200	101.3	90	110	
75	As	72	200.409	185082	0.40	200	100.2	90	110	
78	Se	72	201.384	11084	1.35	200	100.7	90	110	
88	Sr	115	187.014	817186	0.60	200	93.5	90	110	
95	Mo	115	191.483	696865	0.86	200	95.7	90	110	
107	Ag	115	194.689	2202905	1.01	200	97.3	90	110	
111	Cd	115	190.082	324655	0.55	200	95.0	90	110	
118	Sn	115	190.638	696264	1.24	200	95.3	90	110	
121	Sb	115	191.417	1088725	1.11	200	95.7	90	110	
137	Ba	115	188.682	342151	0.42	200	94.3	90	110	
205	Tl	209	193.509	4585568	0.55	200	96.8	90	110	
208	Pb	209	190.469	6075123	0.18	200	95.2	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	901346	0.71	904202	99.68	70	120	
72	Ge	663913	0.54	677615	97.98	70	120	
115	In	6299760	0.93	6287303	100.20	70	120	
209	Bi	13784027	0.52	14081817	97.89	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 16:27	Sample Name	LCVL5-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	161LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.724	440	9.97	10	107.2	70	130	
9	Be	45	1.100	60	6.90	1	110.0	70	130	
11	B	45	24.629	649	6.42	20	123.1	70	130	
23	Na	45	102.503	107134	1.32	100	102.5	70	130	
24	Mg	45	97.436	37159	0.90	100	97.4	70	130	
27	Al	45	101.392	15793	1.13	100	101.4	70	130	
39	K	45	109.100	94597	1.57	100	109.1	70	130	
44	Ca	45	92.280	2778	0.81	100	92.3	70	130	
47	Ti	45	5.547	769	1.75	5	110.9	70	130	
51	V	45	0.660	7137	5.42	1	66.0	70	130	Fail
52	Cr	45	5.126	28276	2.20	5	102.5	70	130	
55	Mn	45	4.994	15216	0.46	5	99.9	70	130	
56	Fe	45	101.150	466646	0.69	100	101.1	70	130	
59	Co	72	4.978	43366	1.63	5	99.6	70	130	
60	Ni	72	4.836	11971	1.40	5	96.7	70	130	
63	Cu	72	5.568	36469	2.25	5	111.4	70	130	
66	Zn	72	5.085	5910	3.83	5	101.7	70	130	
75	As	72	4.947	4790	1.29	5	98.9	70	130	
78	Se	72	5.269	383	8.23	5	105.4	70	130	
88	Sr	115	4.825	21939	1.76	5	96.5	70	130	
95	Mo	115	4.719	17039	2.04	5	94.4	70	130	
107	Ag	115	1.962	22013	0.89	2	98.1	70	130	
111	Cd	115	0.947	1605	2.58	1	94.7	70	130	
118	Sn	115	4.865	18086	2.42	5	97.3	70	130	
121	Sb	115	1.992	11353	3.07	2	99.6	70	130	
137	Ba	115	4.821	8743	3.51	5	96.4	70	130	
205	Tl	209	0.988	23107	1.02	1	98.8	70	130	
208	Pb	209	1.036	33130	0.67	1	103.6	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	887680	0.82	904202	98.17	70	120	
72	Ge	669269	0.79	677615	98.77	70	120	
115	In	6237111	0.26	6287303	99.20	70	120	
209	Bi	13580613	0.47	14081817	96.44	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 16:29	Sample Name	CCB5-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	162_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.296	25	16.4	2	5	
9	Be	45	0.071	6	24.1	0.4	0.3	
11	B	45	2.737	226	12.3	10	10	
23	Na	45	-3.403	30948	1.8	50	100	
24	Mg	45	-2.653	981	5.1	50	100	
27	Al	45	-0.539	2165	9.0	50	10	
39	K	45	4.480	55885	0.7	50	100	
44	Ca	45	-4.459	852	6.1	50	100	
47	Ti	45	0.074	12	110.2	4	3	
51	V	45	-0.363	2555	2.8	4	3	
52	Cr	45	-0.049	857	8.8	2	2	
55	Mn	45	0.013	248	21.0	2	3	
56	Fe	45	1.109	16272	2.2	50	50	
59	Co	72	0.002	128	18.5	2	3	
60	Ni	72	-0.220	302	6.7	2	3	
63	Cu	72	0.415	4162	12.5	2	2	
66	Zn	72	0.024	388	22.3	4	2	
75	As	72	-0.015	175	18.1	2	2	
78	Se	72	0.223	105	14.7	1	2	
88	Sr	115	0.006	1129	8.5	4	3	
95	Mo	115	0.004	51	21.0	2	2	
107	Ag	115	0.050	603	0.6	0.4	1	
111	Cd	115	0.006	14	74.2	0.4	0.3	
118	Sn	115	0.009	544	12.3	4	3	
121	Sb	115	0.082	598	35.5	2	0.8	
137	Ba	115	0.016	120	7.3	2	3	
205	Tl	209	0.005	151	26.5	2	0.5	
208	Pb	209	0.039	1793	9.4	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	884168	0.99	904202	97.78	70	120	
72	Ge	669545	0.78	677615	98.81	70	120	
115	In	6304397	2.33	6287303	100.27	70	120	
209	Bi	13603427	0.19	14081817	96.60	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 16:51	Sample Name	CCV6-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	173_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	199.618	7993	0.77	200	99.8	90	110	
9	Be	45	197.514	10436	1.39	200	98.8	90	110	
11	B	45	193.491	3933	2.55	200	96.7	90	110	
23	Na	45	4985.344	3638590	0.29	5000	99.7	90	110	
24	Mg	45	4958.895	1806231	0.81	5000	99.2	90	110	
27	Al	45	4848.782	654436	0.18	5000	97.0	90	110	
39	K	45	5104.316	1945464	0.88	5000	102.1	90	110	
44	Ca	45	4864.857	98262	2.29	5000	97.3	90	110	
47	Ti	45	194.137	27021	0.38	200	97.1	90	110	
51	V	45	197.730	894015	1.00	200	98.9	90	110	
52	Cr	45	198.413	1059176	1.06	200	99.2	90	110	
55	Mn	45	195.173	590712	1.07	200	97.6	90	110	
56	Fe	45	5073.823	23004020	0.79	5000	101.5	90	110	
59	Co	72	198.650	1726060	0.37	200	99.3	90	110	
60	Ni	72	200.741	463981	0.69	200	100.4	90	110	
63	Cu	72	202.712	1272163	0.62	200	101.4	90	110	
66	Zn	72	199.720	218310	1.11	200	99.9	90	110	
75	As	72	199.230	185449	0.76	200	99.6	90	110	
78	Se	72	196.458	10901	1.67	200	98.2	90	110	
88	Sr	115	184.255	808441	0.40	200	92.1	90	110	
95	Mo	115	187.875	686533	0.29	200	93.9	90	110	
107	Ag	115	189.563	2153672	0.11	200	94.8	90	110	
111	Cd	115	186.691	320170	0.58	200	93.3	90	110	
118	Sn	115	188.825	692457	0.30	200	94.4	90	110	
121	Sb	115	189.705	1083421	0.25	200	94.9	90	110	
137	Ba	115	186.481	339530	0.28	200	93.2	90	110	
205	Tl	209	191.435	4485355	0.03	200	95.7	90	110	
208	Pb	209	189.668	5981566	0.61	200	94.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	893658	0.59	904202	98.83	70	120	
72	Ge	669154	0.61	677615	98.75	70	120	
115	In	6325246	1.02	6287303	100.60	70	120	
209	Bi	13630363	1.35	14081817	96.79	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 16:55	Sample Name	LCVL6-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	175LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.353	443	2.69	10	103.5	70	130	
9	Be	45	1.125	64	3.24	1	112.5	70	130	
11	B	45	22.576	636	3.97	20	112.9	70	130	
23	Na	45	98.461	108796	1.06	100	98.5	70	130	
24	Mg	45	96.118	38295	1.83	100	96.1	70	130	
27	Al	45	101.637	16516	1.57	100	101.6	70	130	
39	K	45	112.886	100213	1.19	100	112.9	70	130	
44	Ca	45	95.738	2970	4.49	100	95.7	70	130	
47	Ti	45	4.885	708	15.22	5	97.7	70	130	
51	V	45	0.622	7275	0.42	1	62.2	70	130	Fail
52	Cr	45	5.015	28896	1.97	5	100.3	70	130	
55	Mn	45	4.916	15640	0.90	5	98.3	70	130	
56	Fe	45	100.410	483601	0.30	100	100.4	70	130	
59	Co	72	5.001	45120	0.51	5	100.0	70	130	
60	Ni	72	4.910	12574	1.48	5	98.2	70	130	
63	Cu	72	5.625	38133	1.70	5	112.5	70	130	
66	Zn	72	5.045	6075	5.41	5	100.9	70	130	
75	As	72	4.934	4947	2.73	5	98.7	70	130	
78	Se	72	5.423	405	1.05	5	108.5	70	130	
88	Sr	115	4.820	22620	0.65	5	96.4	70	130	
95	Mo	115	4.763	17748	1.11	5	95.3	70	130	
107	Ag	115	1.957	22651	0.55	2	97.8	70	130	
111	Cd	115	0.960	1678	5.45	1	96.0	70	130	
118	Sn	115	4.829	18535	1.95	5	96.6	70	130	
121	Sb	115	1.950	11471	2.14	2	97.5	70	130	
137	Ba	115	4.887	9143	1.50	5	97.7	70	130	
205	Tl	209	0.944	23160	4.14	1	94.4	70	130	
208	Pb	209	0.979	32848	1.58	1	97.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	926678	1.52	904202	102.49	70	120	
72	Ge	693134	1.02	677615	102.29	70	120	
115	In	6437034	1.57	6287303	102.38	70	120	
209	Bi	14239865	0.96	14081817	101.12	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 16:57	Sample Name	CCB6-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	176_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.114	19	11.9	2	5	
9	Be	45	0.040	5	40.0	0.4	0.3	
11	B	45	2.945	244	13.5	10	10	
23	Na	45	-4.919	31823	1.2	50	100	
24	Mg	45	-2.947	932	11.6	50	100	
27	Al	45	-0.446	2321	5.3	50	10	
39	K	45	6.363	60295	1.3	50	100	
44	Ca	45	-8.640	820	3.1	50	100	
47	Ti	45	0.052	10	100.0	4	3	
51	V	45	-0.367	2705	0.6	4	3	
52	Cr	45	-0.052	899	12.1	2	2	
55	Mn	45	-0.003	213	14.1	2	3	
56	Fe	45	1.484	19135	1.3	50	50	
59	Co	72	-0.001	107	25.6	2	3	
60	Ni	72	-0.247	251	32.0	2	3	
63	Cu	72	0.460	4655	4.3	2	2	
66	Zn	72	-0.021	354	9.7	4	2	
75	As	72	-0.038	160	11.9	2	2	
78	Se	72	-0.002	97	19.7	1	2	
88	Sr	115	0.028	1266	4.1	4	3	
95	Mo	115	0.005	57	21.2	2	2	
107	Ag	115	0.032	407	10.7	0.4	1	
111	Cd	115	0.006	13	86.6	0.4	0.3	
118	Sn	115	-0.010	490	11.8	4	3	
121	Sb	115	0.051	441	21.6	2	0.8	
137	Ba	115	0.008	108	38.7	2	3	
205	Tl	209	0.004	136	24.8	2	0.5	
208	Pb	209	0.020	1290	8.2	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	942195	0.40	904202	104.20	70	120	
72	Ge	701694	0.97	677615	103.55	70	120	
115	In	6516517	0.53	6287303	103.65	70	120	
209	Bi	14506116	2.14	14081817	103.01	70	120	

Method Blank Report

Date Acquired	5/23/16 5:00 PM	Sample Name	MB-75237
Data Batch	160523.b	Comment	MBLKICPMS_TSDOD1
Data File Name	177_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.070	18	27.92		
9	Be	45	0.021	4	25.00		
11	B	45	2.060	229	13.84		
23	Na	45	0.292	36162	0.92		
24	Mg	45	-0.644	1835	3.95		
27	Al	45	-5.658	1599	5.30		
39	K	45	11.858	63080	0.22		
44	Ca	45	1.972	1055	9.35		
47	Ti	45	0.194	31	43.29		
51	V	45	-0.372	2708	2.10		
52	Cr	45	0.148	2040	4.27		
55	Mn	45	0.112	587	10.97		
56	Fe	45	4.785	35266	0.82		
59	Co	72	-0.001	107	17.40		
60	Ni	72	-0.093	624	6.14		
63	Cu	72	0.461	4662	4.09		
66	Zn	72	2.353	3067	1.07		
75	As	72	-0.038	161	5.82		
78	Se	72	0.274	113	13.16		
88	Sr	115	-0.091	762	7.34		
95	Mo	115	0.015	98	41.24		
107	Ag	115	0.029	390	8.15		
111	Cd	115	0.005	13	25.01		
118	Sn	115	3.668	14964	1.84		
121	Sb	115	0.033	349	3.86		
137	Ba	115	0.046	187	7.79		
205	Tl	209	0.001	81	23.37		
208	Pb	209	0.037	1908	3.04		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	951924	0.92	904202	105.28	70	120	
72	Ge	700783	0.55	677615	103.42	70	120	
115	In	6783979	1.00	6287303	107.90	70	120	
209	Bi	14743945	2.17	14081817	104.70	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/23/2016 17:02	Sample Name	LCS-75237
Data Batch	160523.b	Comment	LCS ICPMS_TSDOD1
Data File Name	178_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	197.684	8380	0.28	200	98.8	80	120	
9	Be	45	195.117	10915	1.23	200	97.6	80	120	
11	B	45	189.083	4074	2.13	200	94.5	80	120	
23	Na	45	4898.684	3786115	0.77	1000	489.9	80	120	Fail
24	Mg	45	4838.884	1866165	0.57	1000	483.9	80	120	Fail
27	Al	45	994.213	143975	1.02	1000	99.4	80	120	
39	K	45	4995.467	2017164	0.77	1000	499.5	80	120	Fail
44	Ca	45	4728.056	101137	1.34	1000	472.8	80	120	Fail
47	Ti	45	193.443	28508	1.42	200	96.7	80	120	
51	V	45	197.900	947354	0.57	200	98.9	80	120	
52	Cr	45	198.575	1122300	1.18	200	99.3	80	120	
55	Mn	45	195.132	625267	0.12	200	97.6	80	120	
56	Fe	45	980.027	4713976	0.43	1000	98.0	80	120	
59	Co	72	199.184	1797980	0.41	200	99.6	80	120	
60	Ni	72	201.772	484496	0.55	200	100.9	80	120	
63	Cu	72	203.903	1329384	0.21	200	102.0	80	120	
66	Zn	72	200.566	227744	0.87	200	100.3	80	120	
75	As	72	200.551	193929	0.50	200	100.3	80	120	
78	Se	72	197.561	11387	0.80	200	98.8	80	120	
88	Sr	115	186.175	849592	0.14	200	93.1	80	120	
95	Mo	115	189.371	719742	0.33	200	94.7	80	120	
107	Ag	115	189.068	2234183	1.18	200	94.5	80	120	
111	Cd	115	188.859	336866	0.34	200	94.4	80	120	
118	Sn	115	194.139	740501	0.90	200	97.1	80	120	
121	Sb	115	187.458	1113518	0.62	200	93.7	80	120	
137	Ba	115	188.577	357118	0.68	200	94.3	80	120	
205	Tl	209	192.347	4693739	0.92	200	96.2	80	120	
208	Pb	209	190.658	6262261	0.98	200	95.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	946195	0.89	904202	104.64	70	120	
72	Ge	695166	0.52	677615	102.59	70	120	
115	In	6578455	0.11	6287303	104.63	70	120	
209	Bi	14195010	1.46	14081817	100.80	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/23/2016 17:04	Sample Name	LCSD-75237
Data Batch	160523.b	Comment	LCSDICPMS_TSDOD1
Data File Name	179_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	205.014	8412	1.22	200	102.5	80	120	
9	Be	45	202.502	10965	1.43	200	101.3	80	120	
11	B	45	198.287	4126	1.36	200	99.1	80	120	
23	Na	45	5058.340	3783184	1.14	1000	505.8	80	120	Fail
24	Mg	45	4983.481	1860322	0.69	1000	498.3	80	120	Fail
27	Al	45	981.514	137618	1.34	1000	98.2	80	120	
39	K	45	5116.770	1998598	1.02	1000	511.7	80	120	Fail
44	Ca	45	4882.345	101055	0.84	1000	488.2	80	120	Fail
47	Ti	45	198.487	28310	2.31	200	99.2	80	120	
51	V	45	204.500	947497	1.34	200	102.3	80	120	
52	Cr	45	205.194	1122588	0.66	200	102.6	80	120	
55	Mn	45	200.904	623135	0.49	200	100.5	80	120	
56	Fe	45	1011.560	4709606	1.08	1000	101.2	80	120	
59	Co	72	203.289	1810452	1.32	200	101.6	80	120	
60	Ni	72	206.823	489940	1.05	200	103.4	80	120	
63	Cu	72	206.229	1326514	0.27	200	103.1	80	120	
66	Zn	72	203.247	227697	1.08	200	101.6	80	120	
75	As	72	202.174	192880	0.96	200	101.1	80	120	
78	Se	72	198.954	11314	2.14	200	99.5	80	120	
88	Sr	115	191.734	847928	0.12	200	95.9	80	120	
95	Mo	115	194.941	718074	0.81	200	97.5	80	120	
107	Ag	115	194.527	2227737	0.22	200	97.3	80	120	
111	Cd	115	193.868	335118	0.49	200	96.9	80	120	
118	Sn	115	198.437	733478	1.37	200	99.2	80	120	
121	Sb	115	190.688	1097713	0.55	200	95.3	80	120	
137	Ba	115	194.250	356496	0.51	200	97.1	80	120	
205	Tl	209	195.393	4734724	0.06	200	97.7	80	120	
208	Pb	209	193.075	6297376	0.62	200	96.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	915836	0.53	904202	101.29	70	120	
72	Ge	685841	0.26	677615	101.21	70	120	
115	In	6375805	0.96	6287303	101.41	70	120	
209	Bi	14095896	1.05	14081817	100.10	70	120	

Sample Report

Date Acquired	5/23/16 5:08 PM	Sample Name	1605121-01A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	181_ARF.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	64.908	2641	2.85	2000	>RL
9	Be	45	2.905	158	6.96	2000	>RL
11	B	45	82.680	1802	9.05	2000	>RL
23	Na	45	1676.579	1261611	0.12	25000	>RL
24	Mg	45	15300.152	5638545	0.81	25000	>RL
27	Al	45	73421.381	10001009	1.28	10000	OUTCAL
39	K	45	17631.410	6668003	1.74	25000	>RL
44	Ca	45	62353.646	1263745	0.47	25000	OUTCAL
47	Ti	45	222.192	31310	1.35	2000	>RL
51	V	45	110.184	506311	0.32	2000	>RL
52	Cr	45	74.589	403880	0.96	2000	>RL
55	Mn	45	611.058	1872022	0.57	2000	>RL
56	Fe	45	71064.651	326079605	1.61	10000	OUTCAL
59	Co	72	24.296	205697	0.35	2000	>RL
60	Ni	72	41.050	93036	0.39	2000	>RL
63	Cu	72	29.508	181646	0.42	2000	>RL
66	Zn	72	269.049	286292	0.24	2000	>RL
75	As	72	28.490	25985	0.70	2000	>RL
78	Se	72	5.388	379	4.67	2000	>RL
88	Sr	115	362.963	1562114	0.83	2000	>RL
95	Mo	115	1.683	6072	2.05	2000	
107	Ag	115	0.220	2487	3.17	500	
111	Cd	115	0.747	1260	6.52	2000	>RL
118	Sn	115	6.904	25338	1.82	2000	>RL
121	Sb	115	5.658	31845	1.13	500	>RL
137	Ba	115	443.227	791970	0.83	2000	>RL
205	Tl	209	0.718	16741	2.26	2000	
208	Pb	209	574.422	17965228	0.13	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	904800	0.55	904202	100.07	70	120	
72	Ge	651743	1.13	677615	96.18	70	120	
115	In	6208235	0.59	6287303	98.74	70	120	
209	Bi	13522034	2.53	14081817	96.02	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/23/2016 17:10	Sample Name	1605121-01A SD
Data Batch	160523.b	Comment	SD ICPMS_TSDOD1
Data File Name	182_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	14.407	593	1.70	64.9	111.0	110	90	
9	Be	45	0.583	34	29.30	2.9	100.4	110	90	Good
11	B	45	18.065	529	6.12	82.7	109.2	110	90	Good
23	Na	45	349.949	288598	0.54	1676.6	104.4	110	90	Good
24	Mg	45	3177.964	1165601	0.87	15300.2	103.9	110	90	Good
27	Al	45	14912.538	2020705	0.69	73421.4	101.6	110	90	Good
39	K	45	3592.306	1394193	0.37	17631.4	101.9	110	90	Good
44	Ca	45	13015.089	262931	0.26	62353.6	104.4	110	90	Good
47	Ti	45	45.969	6440	6.54	222.2	103.4	110	90	Good
51	V	45	22.554	106380	0.97	110.2	102.3	110	90	Good
52	Cr	45	15.761	85718	0.51	74.6	105.7	110	90	Good
55	Mn	45	128.072	390134	0.24	611.1	104.8	110	90	Good
56	Fe	45	15053.979	68657837	1.52	71064.7	105.9	110	90	Good
59	Co	72	5.027	43357	1.40	24.3	103.4	110	90	Good
60	Ni	72	8.470	20154	2.17	41.0	103.2	110	90	Good
63	Cu	72	6.325	40803	1.58	29.5	107.2	110	90	Good
66	Zn	72	56.072	60949	1.27	269.0	104.2	110	90	Good
75	As	72	5.713	5447	1.50	28.5	100.3	110	90	Good
78	Se	72	0.879	140	13.04	5.4	81.6	110	90	
88	Sr	115	72.980	322123	0.21	363.0	100.5	110	90	Good
95	Mo	115	0.340	1285	4.64	1.7	101.0	110	90	Good
107	Ag	115	0.067	793	1.11	0.2	151.6	110	90	
111	Cd	115	0.157	273	25.70	0.7	105.2	110	90	Good
118	Sn	115	1.324	5387	3.10	6.9	95.9	110	90	Good
121	Sb	115	1.182	6912	1.39	5.7	104.4	110	90	Good
137	Ba	115	89.683	163972	1.31	443.2	101.2	110	90	Good
205	Tl	209	0.148	3567	2.40	0.7	102.8	110	90	Good
208	Pb	209	112.661	3621068	0.40	574.4	98.1	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	899286	0.33	904202	99.46	70	120	
72	Ge	662611	0.64	677615	97.79	70	120	
115	In	6350181	1.13	6287303	101.00	70	120	
209	Bi	13892011	1.72	14081817	98.65	70	120	

Sample Report

Date Acquired	5/23/16 5:18 PM	Sample Name	1605121-02A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	186SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	74.187	3127	2.36	2000	>RL
9	Be	45	2.739	155	4.16	2000	>RL
11	B	45	108.617	2398	7.93	2000	>RL
23	Na	45	5980.902	4575243	1.43	25000	>RL
24	Mg	45	14311.572	5468533	0.69	25000	>RL
27	Al	45	64938.177	9172105	1.12	10000	OUTCAL
39	K	45	14259.670	5602215	1.11	25000	>RL
44	Ca	45	106658.816	2240658	0.73	25000	OUTCAL
47	Ti	45	195.110	28509	1.33	2000	>RL
51	V	45	117.187	558044	0.77	2000	>RL
52	Cr	45	67.369	378328	0.49	2000	>RL
55	Mn	45	357.635	1136100	0.31	2000	>RL
56	Fe	45	86820.289	413055361	1.10	10000	OUTCAL
59	Co	72	22.609	196856	0.60	2000	>RL
60	Ni	72	39.014	90971	1.34	2000	>RL
63	Cu	72	15.870	101192	0.84	2000	>RL
66	Zn	72	197.916	216683	1.67	2000	>RL
75	As	72	22.898	21514	0.76	2000	>RL
78	Se	72	4.983	367	8.17	2000	>RL
88	Sr	115	509.283	2216234	0.35	2000	>RL
95	Mo	115	1.663	6071	2.71	2000	
107	Ag	115	0.092	1070	3.67	500	
111	Cd	115	0.311	533	7.83	2000	
118	Sn	115	5.085	19008	0.53	2000	>RL
121	Sb	115	0.636	3742	0.99	500	
137	Ba	115	1135.545	2051947	0.48	2000	>RL
205	Tl	209	0.430	10254	2.20	2000	
208	Pb	209	40.588	1297418	0.84	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	938168	0.71	904202	103.76	70	120	
72	Ge	670201	0.39	677615	98.91	70	120	
115	In	6279063	0.93	6287303	99.87	70	120	
209	Bi	13809457	1.13	14081817	98.07	70	120	

Sample Report

Date Acquired	5/23/16 5:20 PM	Sample Name	1605121-03A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	187SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	87.682	3713	3.13	2000	>RL
9	Be	45	2.637	150	6.56	2000	>RL
11	B	45	104.305	2322	2.36	2000	>RL
23	Na	45	3574.853	2763187	0.37	25000	>RL
24	Mg	45	10677.615	4101338	0.41	25000	>RL
27	Al	45	46773.846	6640712	1.88	10000	OUTCAL
39	K	45	12039.649	4763533	0.54	25000	>RL
44	Ca	45	63337.287	1337819	0.85	25000	OUTCAL
47	Ti	45	148.568	21818	1.06	2000	>RL
51	V	45	83.675	401776	0.16	2000	>RL
52	Cr	45	55.711	314678	1.17	2000	>RL
55	Mn	45	174.863	558456	0.65	2000	>RL
56	Fe	45	82523.599	394626518	1.88	10000	OUTCAL
59	Co	72	13.759	122849	0.77	2000	>RL
60	Ni	72	23.774	57155	1.33	2000	>RL
63	Cu	72	7.803	51823	1.57	2000	>RL
66	Zn	72	152.471	171212	1.37	2000	>RL
75	As	72	19.100	18428	0.38	2000	>RL
78	Se	72	3.756	307	8.97	2000	>RL
88	Sr	115	316.953	1386055	0.38	2000	>RL
95	Mo	115	2.631	9623	1.18	2000	>RL
107	Ag	115	0.054	643	6.28	500	
111	Cd	115	0.086	151	6.74	2000	
118	Sn	115	4.864	18291	1.80	2000	>RL
121	Sb	115	0.128	864	8.83	500	
137	Ba	115	294.233	534207	0.46	2000	>RL
205	Tl	209	0.262	6257	2.89	2000	
208	Pb	209	14.495	463852	0.65	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	942978	0.98	904202	104.29	70	120	
72	Ge	687073	1.06	677615	101.40	70	120	
115	In	6307994	0.84	6287303	100.33	70	120	
209	Bi	13813149	0.70	14081817	98.09	70	120	

Sample Report

Date Acquired	5/23/16 5:22 PM	Sample Name	1605121-04A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	188SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	91.887	3867	1.96	2000	>RL
9	Be	45	2.862	161	11.47	2000	>RL
11	B	45	102.241	2267	3.02	2000	>RL
23	Na	45	2556.889	1975081	0.48	25000	>RL
24	Mg	45	9916.814	3787523	0.94	25000	>RL
27	Al	45	43487.091	6139126	2.30	10000	OUTCAL
39	K	45	11971.384	4709551	0.42	25000	>RL
44	Ca	45	113516.635	2383063	0.43	25000	OUTCAL
47	Ti	45	141.094	20602	1.74	2000	>RL
51	V	45	75.312	359992	0.85	2000	>RL
52	Cr	45	49.698	279233	0.74	2000	>RL
55	Mn	45	556.195	1765609	0.47	2000	>RL
56	Fe	45	72630.473	345296582	1.13	10000	OUTCAL
59	Co	72	40.556	359633	1.10	2000	>RL
60	Ni	72	39.436	93661	0.93	2000	>RL
63	Cu	72	6.072	40423	2.16	2000	>RL
66	Zn	72	202.597	225930	0.45	2000	>RL
75	As	72	17.507	16802	0.58	2000	>RL
78	Se	72	4.896	369	1.88	2000	>RL
88	Sr	115	1196.893	5314061	2.85	2000	>RL
95	Mo	115	2.221	8258	3.72	2000	>RL
107	Ag	115	0.043	524	9.93	500	
111	Cd	115	0.056	101	45.00	2000	
118	Sn	115	4.794	18317	0.72	2000	>RL
121	Sb	115	0.086	634	12.92	500	
137	Ba	115	343.764	633983	0.50	2000	>RL
205	Tl	209	0.223	5418	4.90	2000	
208	Pb	209	20.392	662548	0.64	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	937533	0.35	904202	103.69	70	120	
72	Ge	682715	0.59	677615	100.75	70	120	
115	In	6407257	0.52	6287303	101.91	70	120	
209	Bi	14032046	1.77	14081817	99.65	70	120	

Sample Report

Date Acquired	5/23/16 5:24 PM	Sample Name	1605121-05A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	189SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	49.623	2110	4.39	2000	>RL
9	Be	45	2.166	124	18.48	2000	>RL
11	B	45	117.152	2589	4.99	2000	>RL
23	Na	45	3567.093	2761340	1.06	25000	>RL
24	Mg	45	8891.978	3421022	1.83	25000	>RL
27	Al	45	40890.849	5814568	2.82	10000	OUTCAL
39	K	45	11840.591	4692616	0.39	25000	>RL
44	Ca	45	87740.044	1855577	0.63	25000	OUTCAL
47	Ti	45	112.281	16515	0.86	2000	>RL
51	V	45	75.371	362883	0.82	2000	>RL
52	Cr	45	48.667	275443	0.42	2000	>RL
55	Mn	45	86.112	275531	0.26	2000	>RL
56	Fe	45	84090.876	402700517	1.56	10000	OUTCAL
59	Co	72	7.850	70362	1.55	2000	>RL
60	Ni	72	12.697	31005	1.10	2000	>RL
63	Cu	72	6.809	45561	0.94	2000	>RL
66	Zn	72	105.119	118511	0.62	2000	>RL
75	As	72	22.069	21328	0.44	2000	>RL
78	Se	72	4.495	350	7.68	2000	>RL
88	Sr	115	778.375	3449092	0.70	2000	>RL
95	Mo	115	2.770	10271	0.95	2000	>RL
107	Ag	115	0.035	438	6.91	500	
111	Cd	115	0.050	90	16.97	2000	
118	Sn	115	4.880	18599	0.35	2000	>RL
121	Sb	115	0.100	713	10.41	500	
137	Ba	115	358.834	660433	0.92	2000	>RL
205	Tl	209	0.243	5967	1.86	2000	
208	Pb	209	30.857	1014354	1.07	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	944340	0.21	904202	104.44	70	120	
72	Ge	689148	0.39	677615	101.70	70	120	
115	In	6394353	0.30	6287303	101.70	70	120	
209	Bi	14200397	1.17	14081817	100.84	70	120	

Sample Report

Date Acquired	5/23/16 5:26 PM	Sample Name	1605121-06A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	190SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	62.322	2663	2.25	2000	>RL
9	Be	45	2.638	151	9.89	2000	>RL
11	B	45	73.491	1703	5.46	2000	>RL
23	Na	45	1229.665	981154	1.33	25000	>RL
24	Mg	45	12986.622	5025304	1.30	25000	>RL
27	Al	45	70257.136	10047603	1.24	10000	OUTCAL
39	K	45	16915.102	6718640	0.50	25000	>RL
44	Ca	45	52876.048	1125322	0.23	25000	OUTCAL
47	Ti	45	183.499	27153	2.08	2000	>RL
51	V	45	105.624	509787	0.34	2000	>RL
52	Cr	45	69.740	396556	0.25	2000	>RL
55	Mn	45	556.637	1790551	1.25	2000	>RL
56	Fe	45	70035.148	337380742	0.39	10000	OUTCAL
59	Co	72	25.843	228092	0.17	2000	>RL
60	Ni	72	42.300	99920	0.26	2000	>RL
63	Cu	72	27.532	176800	0.81	2000	>RL
66	Zn	72	256.236	284261	1.32	2000	>RL
75	As	72	26.436	25151	1.89	2000	>RL
78	Se	72	4.565	349	1.97	2000	>RL
88	Sr	115	271.594	1197696	0.19	2000	>RL
95	Mo	115	1.639	6060	0.72	2000	
107	Ag	115	0.184	2139	1.17	500	
111	Cd	115	0.566	980	2.91	2000	>RL
118	Sn	115	5.185	19622	1.18	2000	>RL
121	Sb	115	5.848	33719	1.27	500	>RL
137	Ba	115	466.408	853780	0.22	2000	>RL
205	Tl	209	0.588	14000	2.01	2000	
208	Pb	209	621.645	19864052	0.25	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	950009	0.76	904202	105.07	70	120	
72	Ge	679413	0.55	677615	100.27	70	120	
115	In	6359897	0.36	6287303	101.15	70	120	
209	Bi	13810911	0.98	14081817	98.08	70	120	

Sample Report

Date Acquired	5/23/16 5:28 PM	Sample Name	1605121-07A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	191SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	69.598	2834	1.96	2000	>RL
9	Be	45	2.783	152	6.60	2000	>RL
11	B	45	103.861	2222	3.87	2000	>RL
23	Na	45	3894.377	2888763	0.68	25000	>RL
24	Mg	45	13906.545	5131212	0.32	25000	>RL
27	Al	45	66786.920	9108648	1.07	10000	OUTCAL
39	K	45	14298.472	5424658	0.61	25000	>RL
44	Ca	45	142509.720	2890646	0.73	25000	OUTCAL
47	Ti	45	210.628	29718	0.17	2000	>RL
51	V	45	118.311	543994	0.25	2000	>RL
52	Cr	45	63.751	345787	0.95	2000	>RL
55	Mn	45	440.453	1351065	0.63	2000	>RL
56	Fe	45	74226.668	340957898	1.12	10000	OUTCAL
59	Co	72	21.319	180520	0.86	2000	>RL
60	Ni	72	38.362	87005	1.42	2000	>RL
63	Cu	72	17.620	109078	1.09	2000	>RL
66	Zn	72	176.279	187712	1.02	2000	>RL
75	As	72	22.165	20258	0.45	2000	>RL
78	Se	72	4.015	305	2.43	2000	>RL
88	Sr	115	589.404	2500328	0.56	2000	>RL
95	Mo	115	1.493	5313	1.41	2000	
107	Ag	115	0.088	996	1.96	500	
111	Cd	115	0.409	682	0.28	2000	>RL
118	Sn	115	4.778	17440	1.42	2000	>RL
121	Sb	115	0.410	2401	7.99	500	
137	Ba	115	1311.727	2310839	0.08	2000	>RL
205	Tl	209	0.509	11577	2.67	2000	
208	Pb	209	56.458	1721921	0.07	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	905947	1.02	904202	100.19	70	120	
72	Ge	651776	1.43	677615	96.19	70	120	
115	In	6121731	1.35	6287303	97.37	70	120	
209	Bi	13178814	1.36	14081817	93.59	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/23/2016 17:30	Sample Name	1605121-01A PDS
Data Batch	160523.b	Comment	PDS ICPMS_TSDOD1
Data File Name	192_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	250.371	10252	1.14	64.9	200	92.7	75	125	
9	Be	45	190.876	10319	1.31	2.9	200	94.0	75	125	
11	B	45	263.434	5414	5.34	82.7	200	90.4	75	125	
23	Na	45	6690.865	4984575	0.85	1676.6	5000	100.3	75	125	
24	Mg	45	20301.429	7559486	0.73	15300.2	5000	100.0	75	125	
27	Al	45	78467.483	10801189	2.81	73421.4	5000	100.9	75	125	
39	K	45	22897.094	8733587	2.07	17631.4	5000	105.3	75	125	
44	Ca	45	67589.368	1384181	0.83	62353.6	5000	104.7	75	125	
47	Ti	45	419.378	59717	0.27	222.2	200	98.6	75	125	
51	V	45	307.883	1421904	0.64	110.2	200	98.8	75	125	
52	Cr	45	272.853	1489870	0.96	74.6	200	99.1	75	125	
55	Mn	45	812.264	2514543	0.95	611.1	200	100.6	75	125	
56	Fe	45	77555.459	359588519	0.66	71064.7	5000	129.8	75	125	Fail
59	Co	72	223.719	1915694	0.30	24.3	200	99.7	75	125	
60	Ni	72	238.617	543382	0.45	41.0	200	98.8	75	125	
63	Cu	72	226.603	1401309	0.65	29.5	200	98.5	75	125	
66	Zn	72	464.259	499622	0.43	269.0	200	97.6	75	125	
75	As	72	229.520	210517	0.79	28.5	200	100.5	75	125	
78	Se	72	203.733	11139	2.79	5.4	200	99.2	75	125	
88	Sr	115	572.141	2422056	1.08	363.0	200	104.6	75	125	
95	Mo	115	193.122	681497	0.32	1.7	200	95.7	75	125	
107	Ag	115	187.544	2057554	0.81	0.2	200	93.7	75	125	
111	Cd	115	187.427	310402	0.26	0.7	200	93.3	75	125	
118	Sn	115	205.702	728493	0.85	6.9	200	99.4	75	125	
121	Sb	115	198.740	1096030	0.33	5.7	200	96.5	75	125	
137	Ba	115	647.894	1138984	0.69	443.2	200	102.3	75	125	
205	Tl	209	191.531	4425936	0.17	0.7	200	95.4	75	125	
208	Pb	209	775.727	24126992	0.44	574.4	200	100.7	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	914310	0.55	904202	101.12	70	120	
72	Ge	659473	1.00	677615	97.32	70	120	
115	In	6108533	1.35	6287303	97.16	70	120	
209	Bi	13443224	1.36	14081817	95.47	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/23/2016 17:32	Sample Name	1605121-01A MS
Data Batch	160523.b	Comment	MS ICPMS_TSDOD1
Data File Name	193_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	245.530	9988	1.31	64.9	200	90.3	80	120	
9	Be	45	185.181	9945	1.37	2.9	200	91.1	80	120	
11	B	45	257.388	5259	1.39	82.7	200	87.4	80	120	
23	Na	45	6482.759	4798482	0.43	1676.6	1000	480.6	80	120	Fail
24	Mg	45	19023.362	7036639	0.27	15300.2	1000	372.3	80	120	Fail
27	Al	45	79055.187	10807806	1.86	73421.4	1000	563.4	80	120	Fail
39	K	45	22680.578	8593487	0.93	17631.4	1000	504.9	80	120	Fail
44	Ca	45	62134.861	1264065	0.14	62353.6	1000	-21.9	80	120	Fail
47	Ti	45	378.230	53499	1.80	222.2	200	78.0	80	120	Fail
51	V	45	301.620	1383750	0.79	110.2	200	95.7	80	120	
52	Cr	45	258.709	1403268	0.32	74.6	200	92.1	80	120	
55	Mn	45	774.372	2381227	0.11	611.1	200	81.7	80	120	
56	Fe	45	70964.356	326817898	1.08	71064.7	1000	-10.0	80	120	Fail
59	Co	72	212.809	1797239	0.16	24.3	200	94.3	80	120	
60	Ni	72	231.594	520173	1.00	41.0	200	95.3	80	120	
63	Cu	72	221.182	1349016	0.16	29.5	200	95.8	80	120	
66	Zn	72	447.674	475165	0.23	269.0	200	89.3	80	120	
75	As	72	217.761	196994	0.73	28.5	200	94.6	80	120	
78	Se	72	196.151	10578	0.71	5.4	200	95.4	80	120	
88	Sr	115	466.713	1983091	0.19	363.0	200	51.9	80	120	Fail
95	Mo	115	168.270	595976	0.56	1.7	200	83.3	80	120	
107	Ag	115	179.220	1973573	0.36	0.2	200	89.5	80	120	
111	Cd	115	182.277	302970	0.89	0.7	200	90.8	80	120	
118	Sn	115	185.000	657588	0.41	6.9	200	89.0	80	120	
121	Sb	115	58.004	321165	0.45	5.7	200	26.2	80	120	Fail
137	Ba	115	663.711	1171062	0.16	443.2	200	110.2	80	120	
205	Tl	209	187.566	4228379	1.37	0.7	200	93.4	80	120	
208	Pb	209	714.657	21681898	1.44	574.4	200	70.1	80	120	Fail

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	908248	0.82	904202	100.45	70	120	
72	Ge	650378	0.29	677615	95.98	70	120	
115	In	6130376	0.44	6287303	97.50	70	120	
209	Bi	13114022	1.89	14081817	93.13	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/23/2016 17:34	Sample Name	1605121-01A MSD
Data Batch	160523.b	Comment	MSD ICPMS_TSDOD1
Data File Name	194_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	248.965	10187	1.60	64.9	200	92.0	80	120	
9	Be	45	192.275	10386	0.20	2.9	200	94.7	80	120	
11	B	45	263.398	5409	0.32	82.7	200	90.4	80	120	
23	Na	45	6335.594	4717629	0.72	1676.6	1000	465.9	80	120	Fail
24	Mg	45	18991.621	7065638	1.89	15300.2	1000	369.1	80	120	Fail
27	Al	45	78375.432	10778392	1.29	73421.4	1000	495.4	80	120	Fail
39	K	45	22694.129	8648579	2.69	17631.4	1000	506.3	80	120	Fail
44	Ca	45	54906.410	1123640	0.80	62353.6	1000	-744.7	80	120	Fail
47	Ti	45	391.795	55742	1.41	222.2	200	84.8	80	120	
51	V	45	314.599	1451600	0.34	110.2	200	102.2	80	120	
52	Cr	45	267.344	1458572	0.26	74.6	200	96.4	80	120	
55	Mn	45	756.133	2338810	0.43	611.1	200	72.5	80	120	Fail
56	Fe	45	76832.812	355941781	0.61	71064.7	1000	576.8	80	120	Fail
59	Co	72	216.293	1878326	0.88	24.3	200	96.0	80	120	
60	Ni	72	236.085	545229	0.64	41.0	200	97.5	80	120	
63	Cu	72	222.469	1395224	0.69	29.5	200	96.5	80	120	
66	Zn	72	457.646	499490	0.93	269.0	200	94.3	80	120	
75	As	72	224.464	208795	0.70	28.5	200	98.0	80	120	
78	Se	72	200.319	11107	1.16	5.4	200	97.5	80	120	
88	Sr	115	468.931	2002292	1.03	363.0	200	53.0	80	120	Fail
95	Mo	115	174.044	619481	0.97	1.7	200	86.2	80	120	
107	Ag	115	182.406	2018592	0.92	0.2	200	91.1	80	120	
111	Cd	115	184.628	308393	0.26	0.7	200	91.9	80	120	
118	Sn	115	193.811	692284	0.47	6.9	200	93.5	80	120	
121	Sb	115	60.606	337219	0.51	5.7	200	27.5	80	120	Fail
137	Ba	115	626.528	1110816	0.90	443.2	200	91.7	80	120	
205	Tl	209	186.907	4318880	0.76	0.7	200	93.1	80	120	
208	Pb	209	825.870	25686421	0.90	574.4	200	125.7	80	120	Fail

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	913547	0.49	904202	101.03	70	120	
72	Ge	668777	0.36	677615	98.70	70	120	
115	In	6160793	1.09	6287303	97.99	70	120	
209	Bi	13442388	1.27	14081817	95.46	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 17:36	Sample Name	CCV7-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	195_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	200.533	8135	1.35	200	100.3	90	110	
9	Be	45	199.108	10659	1.12	200	99.6	90	110	
11	B	45	192.351	3963	3.77	200	96.2	90	110	
23	Na	45	4958.754	3666930	0.50	5000	99.2	90	110	
24	Mg	45	4934.561	1820986	0.59	5000	98.7	90	110	
27	Al	45	4863.340	665013	0.33	5000	97.3	90	110	
39	K	45	5142.346	1985331	0.49	5000	102.8	90	110	
44	Ca	45	4913.583	100530	0.82	5000	98.3	90	110	
47	Ti	45	195.543	27573	0.57	200	97.8	90	110	
51	V	45	199.689	914689	0.68	200	99.8	90	110	
52	Cr	45	200.365	1083632	0.63	200	100.2	90	110	
55	Mn	45	198.858	609734	0.38	200	99.4	90	110	
56	Fe	45	5118.348	23508307	1.35	5000	102.4	90	110	
59	Co	72	202.096	1755454	0.70	200	101.0	90	110	
60	Ni	72	204.444	472386	0.94	200	102.2	90	110	
63	Cu	72	205.299	1287968	0.19	200	102.6	90	110	
66	Zn	72	202.160	220888	0.44	200	101.1	90	110	
75	As	72	203.496	189349	0.18	200	101.7	90	110	
78	Se	72	200.924	11143	1.52	200	100.5	90	110	
88	Sr	115	189.873	824480	0.82	200	94.9	90	110	
95	Mo	115	191.571	692828	0.63	200	95.8	90	110	
107	Ag	115	195.139	2194474	1.17	200	97.6	90	110	
111	Cd	115	191.169	324505	0.75	200	95.6	90	110	
118	Sn	115	192.695	699498	1.20	200	96.3	90	110	
121	Sb	115	193.824	1095679	0.81	200	96.9	90	110	
137	Ba	115	190.723	343738	1.29	200	95.4	90	110	
205	Tl	209	192.429	4475739	0.68	200	96.2	90	110	
208	Pb	209	191.233	5986998	0.57	200	95.6	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	905381	0.68	904202	100.13	70	120	
72	Ge	668932	0.50	677615	98.72	70	120	
115	In	6260889	1.44	6287303	99.58	70	120	
209	Bi	13530454	1.12	14081817	96.08	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 17:40	Sample Name	LCVL7-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	197LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	9.525	411	5.20	10	95.2	70	130	
9	Be	45	1.010	58	13.09	1	101.0	70	130	
11	B	45	27.411	737	8.16	20	137.1	70	130	Fail
23	Na	45	99.279	109948	0.33	100	99.3	70	130	
24	Mg	45	96.405	38586	1.21	100	96.4	70	130	
27	Al	45	100.886	16494	2.98	100	100.9	70	130	
39	K	45	105.178	97717	0.48	100	105.2	70	130	
44	Ca	45	95.785	2987	2.87	100	95.8	70	130	
47	Ti	45	5.210	758	14.74	5	104.2	70	130	
51	V	45	0.651	7444	1.74	1	65.1	70	130	Fail
52	Cr	45	5.049	29231	1.28	5	101.0	70	130	
55	Mn	45	4.912	15702	2.04	5	98.2	70	130	
56	Fe	45	101.021	488863	0.45	100	101.0	70	130	
59	Co	72	5.041	45273	1.81	5	100.8	70	130	
60	Ni	72	4.925	12553	1.42	5	98.5	70	130	
63	Cu	72	5.413	36589	1.06	5	108.3	70	130	
66	Zn	72	5.143	6159	0.88	5	102.9	70	130	
75	As	72	5.110	5093	0.83	5	102.2	70	130	
78	Se	72	5.069	383	4.84	5	101.4	70	130	
88	Sr	115	4.846	22738	1.54	5	96.9	70	130	
95	Mo	115	4.746	17687	1.19	5	94.9	70	130	
107	Ag	115	1.945	22524	1.18	2	97.3	70	130	
111	Cd	115	1.013	1771	6.23	1	101.3	70	130	
118	Sn	115	4.858	18643	1.67	5	97.2	70	130	
121	Sb	115	1.971	11596	2.29	2	98.5	70	130	
137	Ba	115	4.770	8927	1.02	5	95.4	70	130	
205	Tl	209	0.953	22996	1.20	1	95.3	70	130	
208	Pb	209	1.044	34436	1.03	1	104.4	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	931071	0.15	904202	102.97	70	120	
72	Ge	689966	0.89	677615	101.82	70	120	
115	In	6438717	1.94	6287303	102.41	70	120	
209	Bi	14003625	0.05	14081817	99.44	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 17:42	Sample Name	CCB7-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	198_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.257	25	16.0	2	5	
9	Be	45	0.041	5	72.1	0.4	0.3	
11	B	45	7.204	331	13.4	10	10	
23	Na	45	-5.112	31610	0.3	50	100	
24	Mg	45	-2.846	969	6.7	50	100	
27	Al	45	-0.042	2374	2.0	50	10	
39	K	45	0.039	57708	0.8	50	100	
44	Ca	45	-6.991	853	9.3	50	100	
47	Ti	45	0.060	11	96.4	4	3	
51	V	45	-0.359	2737	2.5	4	3	
52	Cr	45	-0.056	871	6.7	2	2	
55	Mn	45	0.008	247	16.6	2	3	
56	Fe	45	1.690	20079	1.3	50	50	
59	Co	72	0.002	130	11.8	2	3	
60	Ni	72	-0.225	303	23.8	2	3	
63	Cu	72	0.258	3305	6.6	2	2	
66	Zn	72	-0.015	358	10.3	4	2	
75	As	72	-0.043	154	2.0	2	2	
78	Se	72	0.246	110	9.8	1	2	
88	Sr	115	-0.006	1116	8.7	4	3	
95	Mo	115	0.003	48	14.5	2	2	
107	Ag	115	0.036	457	11.5	0.4	1	
111	Cd	115	0.005	12	56.8	0.4	0.3	
118	Sn	115	-0.003	520	20.3	4	3	
121	Sb	115	0.045	403	15.8	2	0.8	
137	Ba	115	0.019	129	27.2	2	3	
205	Tl	209	0.006	187	6.2	2	0.5	
208	Pb	209	0.048	2167	7.2	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	940303	0.90	904202	103.99	70	120	
72	Ge	696256	0.65	677615	102.75	70	120	
115	In	6527895	0.17	6287303	103.83	70	120	
209	Bi	14114328	1.27	14081817	100.23	70	120	

Sample Report

Date Acquired	5/23/16 5:44 PM	Sample Name	1605121-08A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	199SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	82.807	3589	1.55	2000	>RL
9	Be	45	2.497	145	10.67	2000	>RL
11	B	45	108.149	2457	8.40	2000	>RL
23	Na	45	3802.274	3005425	0.64	25000	>RL
24	Mg	45	11298.548	4441502	0.19	25000	>RL
27	Al	45	49289.573	7161496	1.11	10000	OUTCAL
39	K	45	12005.495	4861309	0.16	25000	>RL
44	Ca	45	68322.306	1476782	0.71	25000	OUTCAL
47	Ti	45	135.505	20366	1.78	2000	>RL
51	V	45	91.700	450180	0.30	2000	>RL
52	Cr	45	57.027	329620	0.52	2000	>RL
55	Mn	45	189.880	620580	0.24	2000	>RL
56	Fe	45	83389.683	408079290	0.30	10000	OUTCAL
59	Co	72	14.388	130617	0.74	2000	>RL
60	Ni	72	27.033	65960	0.49	2000	>RL
63	Cu	72	8.972	60335	1.06	2000	>RL
66	Zn	72	152.775	174419	1.35	2000	>RL
75	As	72	21.441	21010	1.13	2000	>RL
78	Se	72	3.938	323	5.51	2000	>RL
88	Sr	115	369.493	1659720	1.13	2000	>RL
95	Mo	115	1.903	7162	2.32	2000	
107	Ag	115	0.065	783	7.67	500	
111	Cd	115	0.119	212	28.50	2000	
118	Sn	115	4.842	18701	1.19	2000	>RL
121	Sb	115	0.120	840	11.11	500	
137	Ba	115	357.112	666028	0.56	2000	>RL
205	Tl	209	0.294	7175	1.16	2000	
208	Pb	209	16.096	525583	1.18	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	965017	0.33	904202	106.73	70	120	
72	Ge	698540	0.49	677615	103.09	70	120	
115	In	6480718	1.77	6287303	103.08	70	120	
209	Bi	14098271	1.42	14081817	100.12	70	120	

Sample Report

Date Acquired	5/23/16 5:46 PM	Sample Name	1605121-09A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	200SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	80.026	3284	1.23	2000	>RL
9	Be	45	2.518	139	1.50	2000	>RL
11	B	45	94.599	2057	1.22	2000	>RL
23	Na	45	2254.249	1700716	0.85	25000	>RL
24	Mg	45	9234.350	3436586	0.73	25000	>RL
27	Al	45	42707.601	5874302	1.30	10000	OUTCAL
39	K	45	11393.180	4369911	0.04	25000	>RL
44	Ca	45	111537.382	2281521	0.16	25000	OUTCAL
47	Ti	45	111.640	15885	1.83	2000	>RL
51	V	45	70.077	326677	0.53	2000	>RL
52	Cr	45	45.923	251487	0.95	2000	>RL
55	Mn	45	249.986	773337	1.04	2000	>RL
56	Fe	45	67104.962	310867659	2.44	10000	OUTCAL
59	Co	72	13.005	112122	0.53	2000	>RL
60	Ni	72	21.555	50104	0.60	2000	>RL
63	Cu	72	6.029	39006	1.60	2000	>RL
66	Zn	72	128.225	139062	0.20	2000	>RL
75	As	72	15.841	14788	0.83	2000	>RL
78	Se	72	4.232	323	6.60	2000	>RL
88	Sr	115	574.980	2509590	0.70	2000	>RL
95	Mo	115	1.602	5865	1.10	2000	
107	Ag	115	0.049	581	16.84	500	
111	Cd	115	0.042	76	28.71	2000	
118	Sn	115	4.337	16337	1.50	2000	>RL
121	Sb	115	0.080	588	11.46	500	
137	Ba	115	166.419	301715	0.19	2000	>RL
205	Tl	209	0.201	4858	3.70	2000	
208	Pb	209	22.164	714085	0.07	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	913491	0.25	904202	101.03	70	120	
72	Ge	663312	0.20	677615	97.89	70	120	
115	In	6297722	0.37	6287303	100.17	70	120	
209	Bi	13916677	2.00	14081817	98.83	70	120	

Sample Report

Date Acquired	5/23/16 5:48 PM	Sample Name	1605121-10A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	201SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	61.979	2543	4.13	2000	>RL
9	Be	45	2.329	128	11.19	2000	>RL
11	B	45	123.921	2635	3.05	2000	>RL
23	Na	45	3693.552	2760064	0.28	25000	>RL
24	Mg	45	9988.280	3710839	0.62	25000	>RL
27	Al	45	45526.418	6251344	1.16	10000	OUTCAL
39	K	45	12294.241	4703429	0.57	25000	>RL
44	Ca	45	110233.607	2251167	0.36	25000	OUTCAL
47	Ti	45	110.366	15677	1.10	2000	>RL
51	V	45	81.547	378815	0.78	2000	>RL
52	Cr	45	51.326	280479	0.81	2000	>RL
55	Mn	45	136.412	421401	0.90	2000	>RL
56	Fe	45	92987.657	430093050	1.89	10000	OUTCAL
59	Co	72	10.687	92867	0.74	2000	>RL
60	Ni	72	16.727	39361	0.59	2000	>RL
63	Cu	72	7.817	50504	1.49	2000	>RL
66	Zn	72	119.297	130410	1.80	2000	>RL
75	As	72	23.074	21621	0.95	2000	>RL
78	Se	72	4.773	355	4.91	2000	>RL
88	Sr	115	896.161	3878610	0.77	2000	>RL
95	Mo	115	2.938	10637	2.65	2000	>RL
107	Ag	115	0.046	553	11.85	500	
111	Cd	115	0.044	78	25.11	2000	
118	Sn	115	4.937	18373	2.65	2000	>RL
121	Sb	115	0.122	820	6.02	500	
137	Ba	115	362.919	652479	0.74	2000	>RL
205	Tl	209	0.266	6384	0.71	2000	
208	Pb	209	28.771	923763	0.43	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	912046	0.93	904202	100.87	70	120	
72	Ge	668466	1.47	677615	98.65	70	120	
115	In	6246770	1.27	6287303	99.36	70	120	
209	Bi	13871069	1.99	14081817	98.50	70	120	

Sample Report

Date Acquired	5/23/16 5:50 PM	Sample Name	1605121-11A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	202SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	63.856	2686	0.56	2000	>RL
9	Be	45	2.820	159	9.44	2000	>RL
11	B	45	84.250	1896	5.62	2000	>RL
23	Na	45	1283.268	1006707	0.57	25000	>RL
24	Mg	45	13255.809	5051179	0.69	25000	>RL
27	Al	45	79027.334	11130337	1.59	10000	OUTCAL
39	K	45	17884.794	6992258	0.95	25000	>RL
44	Ca	45	46824.992	981478	0.06	25000	OUTCAL
47	Ti	45	192.526	28050	2.00	2000	>RL
51	V	45	114.778	545138	0.93	2000	>RL
52	Cr	45	72.943	408395	0.41	2000	>RL
55	Mn	45	567.436	1797428	0.62	2000	>RL
56	Fe	45	74578.240	353803586	0.74	10000	OUTCAL
59	Co	72	25.690	226147	1.55	2000	>RL
60	Ni	72	43.719	102974	1.47	2000	>RL
63	Cu	72	32.219	206086	0.75	2000	>RL
66	Zn	72	319.513	353441	0.79	2000	>RL
75	As	72	25.935	24611	0.90	2000	>RL
78	Se	72	4.945	369	4.41	2000	>RL
88	Sr	115	280.826	1229284	1.01	2000	>RL
95	Mo	115	1.677	6153	0.92	2000	
107	Ag	115	0.172	1980	5.45	500	
111	Cd	115	0.545	937	7.95	2000	>RL
118	Sn	115	5.103	19181	2.22	2000	>RL
121	Sb	115	2.555	14696	1.82	500	>RL
137	Ba	115	400.506	727854	0.77	2000	>RL
205	Tl	209	0.602	14013	1.44	2000	
208	Pb	209	292.835	9150039	0.14	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	935520	0.46	904202	103.46	70	120	
72	Ge	677612	0.38	677615	100.00	70	120	
115	In	6314022	1.03	6287303	100.42	70	120	
209	Bi	13504376	0.80	14081817	95.90	70	120	

Sample Report

Date Acquired	5/23/16 5:52 PM	Sample Name	1605121-12A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	203SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	73.185	2961	1.82	2000	>RL
9	Be	45	2.630	143	14.02	2000	>RL
11	B	45	109.384	2317	3.82	2000	>RL
23	Na	45	4011.686	2956647	0.40	25000	>RL
24	Mg	45	14010.629	5138380	1.86	25000	>RL
27	Al	45	65670.154	8901385	1.47	10000	OUTCAL
39	K	45	13305.970	5020930	0.57	25000	>RL
44	Ca	45	127769.405	2575863	0.28	25000	OUTCAL
47	Ti	45	163.348	22907	0.72	2000	>RL
51	V	45	115.312	527083	0.20	2000	>RL
52	Cr	45	63.279	341124	0.65	2000	>RL
55	Mn	45	385.254	1174540	0.35	2000	>RL
56	Fe	45	79410.798	362575666	1.41	10000	OUTCAL
59	Co	72	17.843	151824	0.64	2000	>RL
60	Ni	72	34.336	78329	2.07	2000	>RL
63	Cu	72	16.753	104296	0.76	2000	>RL
66	Zn	72	170.239	182157	0.10	2000	>RL
75	As	72	23.466	21538	1.20	2000	>RL
78	Se	72	4.234	319	5.41	2000	>RL
88	Sr	115	559.829	2370866	0.84	2000	>RL
95	Mo	115	1.734	6159	1.61	2000	
107	Ag	115	0.107	1201	10.44	500	
111	Cd	115	0.352	587	16.59	2000	
118	Sn	115	4.744	17291	0.31	2000	>RL
121	Sb	115	0.223	1362	3.92	500	
137	Ba	115	701.975	1234608	0.34	2000	>RL
205	Tl	209	0.456	10591	2.17	2000	
208	Pb	209	32.670	1017206	0.71	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	900371	0.33	904202	99.58	70	120	
72	Ge	654865	0.55	677615	96.64	70	120	
115	In	6111531	1.60	6287303	97.20	70	120	
209	Bi	13449312	0.77	14081817	95.51	70	120	

Sample Report

Date Acquired	5/23/16 5:54 PM	Sample Name	1605121-13A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	204SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	100.083	4175	1.12	2000	>RL
9	Be	45	2.560	144	18.45	2000	>RL
11	B	45	104.730	2299	7.32	2000	>RL
23	Na	45	2156.189	1656478	1.05	25000	>RL
24	Mg	45	10799.422	4088309	0.38	25000	>RL
27	Al	45	48105.902	6732572	2.40	10000	OUTCAL
39	K	45	12203.990	4758215	0.49	25000	>RL
44	Ca	45	55678.697	1159290	1.01	25000	OUTCAL
47	Ti	45	150.536	21784	2.06	2000	>RL
51	V	45	85.204	403129	0.43	2000	>RL
52	Cr	45	54.547	303688	1.17	2000	>RL
55	Mn	45	146.034	459736	1.29	2000	>RL
56	Fe	45	81734.558	385297274	2.36	10000	OUTCAL
59	Co	72	13.366	118066	0.16	2000	>RL
60	Ni	72	22.574	53725	1.12	2000	>RL
63	Cu	72	7.124	46940	0.47	2000	>RL
66	Zn	72	151.639	168435	0.53	2000	>RL
75	As	72	18.117	17301	1.32	2000	>RL
78	Se	72	3.599	295	7.53	2000	>RL
88	Sr	115	354.790	1542632	0.59	2000	>RL
95	Mo	115	1.739	6336	2.93	2000	
107	Ag	115	0.058	680	8.99	500	
111	Cd	115	0.061	108	12.50	2000	
118	Sn	115	4.828	18059	1.84	2000	>RL
121	Sb	115	0.091	648	19.01	500	
137	Ba	115	140.407	253552	0.14	2000	>RL
205	Tl	209	0.224	5311	3.28	2000	
208	Pb	209	12.173	385785	0.33	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	929533	1.87	904202	102.80	70	120	
72	Ge	679632	0.36	677615	100.30	70	120	
115	In	6274305	2.07	6287303	99.79	70	120	
209	Bi	13678743	1.44	14081817	97.14	70	120	

Sample Report

Date Acquired	5/23/16 5:56 PM	Sample Name	1605121-14A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	205SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	86.491	3586	1.66	2000	>RL
9	Be	45	2.777	154	12.27	2000	>RL
11	B	45	99.731	2182	4.31	2000	>RL
23	Na	45	1796.517	1377282	0.84	25000	>RL
24	Mg	45	9785.118	3681157	0.49	25000	>RL
27	Al	45	43268.152	6016108	1.29	10000	OUTCAL
39	K	45	13003.881	5033824	2.17	25000	>RL
44	Ca	45	77514.047	1603196	1.58	25000	OUTCAL
47	Ti	45	152.311	21908	2.92	2000	>RL
51	V	45	74.557	351067	0.56	2000	>RL
52	Cr	45	50.978	282082	0.56	2000	>RL
55	Mn	45	229.962	719156	0.71	2000	>RL
56	Fe	45	71831.137	336375551	1.63	10000	OUTCAL
59	Co	72	13.809	121280	1.57	2000	>RL
60	Ni	72	22.489	53221	0.96	2000	>RL
63	Cu	72	5.456	36108	0.73	2000	>RL
66	Zn	72	136.638	150939	0.49	2000	>RL
75	As	72	14.718	14011	1.37	2000	>RL
78	Se	72	3.898	310	9.35	2000	>RL
88	Sr	115	7405.781	32112602	0.69	2000	OUTCAL
95	Mo	115	2.117	7690	3.22	2000	>RL
107	Ag	115	0.035	422	6.57	500	
111	Cd	115	0.045	80	28.87	2000	
118	Sn	115	4.833	18033	1.00	2000	>RL
121	Sb	115	0.067	513	15.87	500	
137	Ba	115	354.371	638412	0.14	2000	>RL
205	Tl	209	0.201	4694	4.53	2000	
208	Pb	209	18.263	570009	0.74	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	923456	0.41	904202	102.13	70	120	
72	Ge	675746	0.24	677615	99.72	70	120	
115	In	6259283	1.03	6287303	99.55	70	120	
209	Bi	13475987	0.70	14081817	95.70	70	120	

Sample Report

Date Acquired	5/23/16 5:58 PM	Sample Name	1605121-15A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	206SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	64.798	2645	2.57	2000	>RL
9	Be	45	2.304	126	10.75	2000	>RL
11	B	45	121.599	2577	7.46	2000	>RL
23	Na	45	4047.919	3007941	0.87	25000	>RL
24	Mg	45	10413.301	3851284	0.22	25000	>RL
27	Al	45	46902.134	6411342	1.39	10000	OUTCAL
39	K	45	12957.246	4931588	1.70	25000	>RL
44	Ca	45	155106.399	3152854	0.49	25000	OUTCAL
47	Ti	45	115.700	16361	1.71	2000	>RL
51	V	45	84.782	391896	0.32	2000	>RL
52	Cr	45	53.804	292640	0.28	2000	>RL
55	Mn	45	99.234	305219	0.47	2000	>RL
56	Fe	45	98963.967	455618933	1.16	10000	OUTCAL
59	Co	72	8.532	73295	0.87	2000	>RL
60	Ni	72	14.575	33998	1.72	2000	>RL
63	Cu	72	8.351	53214	0.74	2000	>RL
66	Zn	72	117.648	127098	0.73	2000	>RL
75	As	72	23.465	21726	0.70	2000	>RL
78	Se	72	4.901	358	3.54	2000	>RL
88	Sr	115	9080.699	39343077	0.31	2000	OUTCAL
95	Mo	115	3.366	12198	1.56	2000	>RL
107	Ag	115	0.052	616	5.20	500	
111	Cd	115	0.066	116	18.54	2000	
118	Sn	115	4.857	18108	1.31	2000	>RL
121	Sb	115	0.114	778	1.93	500	
137	Ba	115	366.146	659098	0.37	2000	>RL
205	Tl	209	0.276	6428	0.27	2000	
208	Pb	209	29.892	931923	0.50	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	907871	0.12	904202	100.41	70	120	
72	Ge	660608	0.85	677615	97.49	70	120	
115	In	6254423	0.99	6287303	99.48	70	120	
209	Bi	13466938	1.21	14081817	95.63	70	120	

Sample Report

Date Acquired	5/23/16 6:00 PM	Sample Name	1605121-16A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	207SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	56.680	2443	0.45	2000	>RL
9	Be	45	2.424	140	5.39	2000	>RL
11	B	45	61.359	1465	1.37	2000	>RL
23	Na	45	5043.929	3944816	1.14	25000	>RL
24	Mg	45	12737.612	4968933	1.66	25000	>RL
27	Al	45	68701.657	9905259	0.42	10000	OUTCAL
39	K	45	16038.328	6425866	3.01	25000	>RL
44	Ca	45	37124.989	796843	1.20	25000	OUTCAL
47	Ti	45	200.707	29940	2.75	2000	>RL
51	V	45	100.032	486959	1.04	2000	>RL
52	Cr	45	66.737	382617	0.95	2000	>RL
55	Mn	45	546.467	1772048	0.78	2000	>RL
56	Fe	45	63924.468	310472165	2.14	10000	OUTCAL
59	Co	72	23.864	211848	1.32	2000	>RL
60	Ni	72	39.457	93792	1.49	2000	>RL
63	Cu	72	29.940	193231	2.10	2000	>RL
66	Zn	72	302.475	337440	1.53	2000	>RL
75	As	72	33.463	31969	1.56	2000	>RL
78	Se	72	4.849	367	2.83	2000	>RL
88	Sr	115	292.881	1285850	0.69	2000	>RL
95	Mo	115	1.759	6471	0.18	2000	
107	Ag	115	0.200	2308	4.09	500	
111	Cd	115	0.752	1295	4.86	2000	>RL
118	Sn	115	4.844	18293	4.06	2000	>RL
121	Sb	115	13.560	77645	0.83	500	>RL
137	Ba	115	566.400	1032257	0.82	2000	>RL
205	Tl	209	0.670	16007	1.28	2000	
208	Pb	209	942.257	30223296	1.18	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	957696	0.65	904202	105.92	70	120	
72	Ge	683316	1.20	677615	100.84	70	120	
115	In	6333472	1.96	6287303	100.73	70	120	
209	Bi	13863726	1.85	14081817	98.45	70	120	

Sample Report

Date Acquired	5/23/16 6:02 PM	Sample Name	1605121-17A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	208SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	66.155	2828	3.20	2000	>RL
9	Be	45	2.590	148	10.98	2000	>RL
11	B	45	96.239	2175	4.37	2000	>RL
23	Na	45	12739.069	9840197	1.06	25000	>RL
24	Mg	45	14023.250	5432261	1.58	25000	>RL
27	Al	45	71688.204	10264428	0.18	10000	OUTCAL
39	K	45	13694.633	5457683	2.39	25000	>RL
44	Ca	45	65756.964	1400835	0.31	25000	OUTCAL
47	Ti	45	278.217	41214	1.02	2000	>RL
51	V	45	111.081	536509	1.08	2000	>RL
52	Cr	45	61.764	351733	0.30	2000	>RL
55	Mn	45	603.102	1941999	0.88	2000	>RL
56	Fe	45	63217.664	304865863	1.96	10000	OUTCAL
59	Co	72	20.947	188459	0.25	2000	>RL
60	Ni	72	38.260	92194	0.46	2000	>RL
63	Cu	72	20.439	134197	0.82	2000	>RL
66	Zn	72	181.463	205302	0.67	2000	>RL
75	As	72	18.704	18194	0.09	2000	>RL
78	Se	72	4.195	335	1.22	2000	>RL
88	Sr	115	413.889	1848556	0.26	2000	>RL
95	Mo	115	1.211	4544	4.42	2000	
107	Ag	115	0.111	1315	9.65	500	
111	Cd	115	0.388	681	12.74	2000	
118	Sn	115	4.913	18865	1.21	2000	>RL
121	Sb	115	1.284	7606	2.59	500	
137	Ba	115	712.067	1320520	0.13	2000	>RL
205	Tl	209	0.595	14241	0.89	2000	
208	Pb	209	114.825	3688435	0.42	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	951178	1.32	904202	105.20	70	120	
72	Ge	692488	0.59	677615	102.20	70	120	
115	In	6443354	0.35	6287303	102.48	70	120	
209	Bi	13880923	0.56	14081817	98.57	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 18:04	Sample Name	CCV8-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	209_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	196.619	8200	0.94	200	98.3	90	110	
9	Be	45	193.954	10675	1.64	200	97.0	90	110	
11	B	45	196.426	4156	3.40	200	98.2	90	110	
23	Na	45	4985.373	3790081	0.53	5000	99.7	90	110	
24	Mg	45	4916.215	1865289	0.93	5000	98.3	90	110	
27	Al	45	4827.593	678709	0.77	5000	96.6	90	110	
39	K	45	5069.741	2013087	0.89	5000	101.4	90	110	
44	Ca	45	4846.466	101968	1.34	5000	96.9	90	110	
47	Ti	45	199.300	28891	2.25	200	99.6	90	110	
51	V	45	199.575	939912	1.16	200	99.8	90	110	
52	Cr	45	199.990	1112036	0.30	200	100.0	90	110	
55	Mn	45	195.659	616808	0.64	200	97.8	90	110	
56	Fe	45	5053.496	23866316	1.64	5000	101.1	90	110	
59	Co	72	197.553	1785638	0.40	200	98.8	90	110	
60	Ni	72	200.086	481096	0.56	200	100.0	90	110	
63	Cu	72	202.910	1324622	0.68	200	101.5	90	110	
66	Zn	72	200.717	228207	1.16	200	100.4	90	110	
75	As	72	199.459	193135	0.53	200	99.7	90	110	
78	Se	72	198.996	11484	0.95	200	99.5	90	110	
88	Sr	115	186.014	850451	0.83	200	93.0	90	110	
95	Mo	115	187.659	714575	0.94	200	93.8	90	110	
107	Ag	115	189.198	2239947	0.41	200	94.6	90	110	
111	Cd	115	185.175	330921	1.15	200	92.6	90	110	
118	Sn	115	186.781	713795	0.70	200	93.4	90	110	
121	Sb	115	188.452	1121524	0.30	200	94.2	90	110	
137	Ba	115	185.372	351712	1.15	200	92.7	90	110	
205	Tl	209	191.939	4622311	0.91	200	96.0	90	110	
208	Pb	209	188.598	6113177	0.71	200	94.3	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	930836	0.72	904202	102.95	70	120	
72	Ge	696094	0.72	677615	102.73	70	120	
115	In	6590841	0.27	6287303	104.83	70	120	
209	Bi	14009158	1.50	14081817	99.48	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 18:08	Sample Name	LCVL8-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	211LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	9.583	408	7.15	10	95.8	70	130	
9	Be	45	0.921	53	17.02	1	92.1	70	130	
11	B	45	21.415	607	3.96	20	107.1	70	130	
23	Na	45	98.054	107458	1.32	100	98.1	70	130	
24	Mg	45	94.890	37461	0.56	100	94.9	70	130	
27	Al	45	98.169	15882	1.72	100	98.2	70	130	
39	K	45	100.572	94560	1.49	100	100.6	70	130	
44	Ca	45	91.518	2857	5.47	100	91.5	70	130	
47	Ti	45	4.973	713	6.92	5	99.5	70	130	
51	V	45	0.656	7362	4.25	1	65.6	70	130	Fail
52	Cr	45	5.129	29239	1.91	5	102.6	70	130	
55	Mn	45	4.870	15344	0.41	5	97.4	70	130	
56	Fe	45	100.305	478474	1.18	100	100.3	70	130	
59	Co	72	5.048	44915	1.46	5	101.0	70	130	
60	Ni	72	4.891	12358	1.78	5	97.8	70	130	
63	Cu	72	5.328	35708	2.45	5	106.6	70	130	
66	Zn	72	5.094	6049	2.68	5	101.9	70	130	
75	As	72	5.087	5024	0.98	5	101.7	70	130	
78	Se	72	5.264	390	8.34	5	105.3	70	130	
88	Sr	115	4.902	22558	1.91	5	98.0	70	130	
95	Mo	115	4.704	17201	2.52	5	94.1	70	130	
107	Ag	115	1.882	21392	0.85	2	94.1	70	130	
111	Cd	115	0.973	1670	5.55	1	97.3	70	130	
118	Sn	115	4.799	18079	1.92	5	96.0	70	130	
121	Sb	115	1.887	10895	1.81	2	94.3	70	130	
137	Ba	115	4.856	8917	1.18	5	97.1	70	130	
205	Tl	209	0.969	22819	0.66	1	96.9	70	130	
208	Pb	209	0.997	32122	2.52	1	99.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	917677	1.29	904202	101.49	70	120	
72	Ge	683624	1.30	677615	100.89	70	120	
115	In	6317245	0.69	6287303	100.48	70	120	
209	Bi	13676535	2.17	14081817	97.12	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 18:10	Sample Name	CCB8-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	212_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.180	21	14.3	2	5	
9	Be	45	0.024	4	109.0	0.4	0.3	
11	B	45	0.402	186	6.8	10	10	
23	Na	45	-4.289	31138	1.8	50	100	
24	Mg	45	-2.680	998	2.8	50	100	
27	Al	45	0.297	2339	2.5	50	10	
39	K	45	-3.035	54589	1.2	50	100	
44	Ca	45	-8.889	785	12.5	50	100	
47	Ti	45	0.047	9	78.1	4	3	
51	V	45	-0.339	2737	1.7	4	3	
52	Cr	45	-0.046	897	2.8	2	2	
55	Mn	45	0.000	216	7.9	2	3	
56	Fe	45	1.769	19760	1.7	50	50	
59	Co	72	-0.002	94	23.5	2	3	
60	Ni	72	-0.248	238	8.2	2	3	
63	Cu	72	0.121	2314	4.0	2	2	
66	Zn	72	-0.044	312	8.2	4	2	
75	As	72	-0.055	138	7.7	2	2	
78	Se	72	0.343	111	10.9	1	2	
88	Sr	115	0.023	1171	6.7	4	3	
95	Mo	115	0.006	56	6.9	2	2	
107	Ag	115	0.029	348	16.3	0.4	1	
111	Cd	115	0.005	12	83.3	0.4	0.3	
118	Sn	115	-0.030	393	8.9	4	3	
121	Sb	115	0.021	247	9.7	2	0.8	
137	Ba	115	0.004	94	32.8	2	3	
205	Tl	209	0.003	110	12.1	2	0.5	
208	Pb	209	0.031	1541	1.4	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	908326	0.83	904202	100.46	70	120	
72	Ge	668682	0.52	677615	98.68	70	120	
115	In	6133652	1.89	6287303	97.56	70	120	
209	Bi	13536040	1.75	14081817	96.12	70	120	

Method Blank Report

Date Acquired	5/23/16 6:12 PM	Sample Name	MB-75236
Data Batch	160523.b	Comment	MBLKICPMS_TSDOD1
Data File Name	213_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.214	23	35.39		
9	Be	45	0.081	7	14.29		
11	B	45	-0.539	167	21.07		
23	Na	45	3.805	37004	0.31		
24	Mg	45	-0.910	1648	7.95		
27	Al	45	-6.729	1376	7.79		
39	K	45	6.463	58027	0.59		
44	Ca	45	0.214	968	5.97		
47	Ti	45	0.118	19	44.42		
51	V	45	-0.343	2711	2.17		
52	Cr	45	0.288	2701	2.25		
55	Mn	45	0.133	622	1.64		
56	Fe	45	8.538	50818	0.86		
59	Co	72	0.000	111	16.52		
60	Ni	72	0.030	880	11.41		
63	Cu	72	0.184	2708	2.32		
66	Zn	72	2.382	2959	5.40		
75	As	72	-0.055	138	2.29		
78	Se	72	0.165	102	14.96		
88	Sr	115	-0.089	726	8.35		
95	Mo	115	0.011	79	20.84		
107	Ag	115	0.022	283	1.18		
111	Cd	115	0.003	8	24.71		
118	Sn	115	3.706	14241	0.56		
121	Sb	115	0.011	203	8.67		
137	Ba	115	0.049	181	28.59		
205	Tl	209	0.002	89	24.40		
208	Pb	209	0.040	1916	3.13		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	906237	0.83	904202	100.23	70	120	
72	Ge	668810	0.36	677615	98.70	70	120	
115	In	6391144	1.20	6287303	101.65	70	120	
209	Bi	14064996	1.01	14081817	99.88	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/23/2016 18:14	Sample Name	LCS-75236
Data Batch	160523.b	Comment	LCS ICPMS_TSDOD1
Data File Name	214_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	199.993	8046	1.41	200	100.0	80	120	
9	Be	45	196.590	10439	0.39	200	98.3	80	120	
11	B	45	187.313	3832	0.40	200	93.7	80	120	
23	Na	45	4997.556	3665264	1.02	1000	499.8	80	120	Fail
24	Mg	45	4923.568	1802185	1.18	1000	492.4	80	120	Fail
27	Al	45	961.895	132289	0.84	1000	96.2	80	120	
39	K	45	5123.700	1962355	1.14	1000	512.4	80	120	Fail
44	Ca	45	4884.870	99152	1.66	1000	488.5	80	120	Fail
47	Ti	45	201.060	28119	1.21	200	100.5	80	120	
51	V	45	203.952	926469	1.46	200	102.0	80	120	
52	Cr	45	204.635	1097736	0.23	200	102.3	80	120	
55	Mn	45	201.638	613254	0.53	200	100.8	80	120	
56	Fe	45	994.986	4542240	0.68	1000	99.5	80	120	
59	Co	72	201.209	1760874	0.68	200	100.6	80	120	
60	Ni	72	203.383	473436	0.86	200	101.7	80	120	
63	Cu	72	204.951	1295364	1.42	200	102.5	80	120	
66	Zn	72	199.207	219310	0.30	200	99.6	80	120	
75	As	72	203.193	190494	0.90	200	101.6	80	120	
78	Se	72	200.945	11228	0.61	200	100.5	80	120	
88	Sr	115	195.216	837690	1.22	200	97.6	80	120	
95	Mo	115	195.703	699397	0.44	200	97.9	80	120	
107	Ag	115	193.531	2150362	0.33	200	96.8	80	120	
111	Cd	115	191.689	321493	1.12	200	95.8	80	120	
118	Sn	115	197.753	709228	1.22	200	98.9	80	120	
121	Sb	115	190.110	1061881	0.96	200	95.1	80	120	
137	Ba	115	191.294	340654	0.88	200	95.6	80	120	
205	Tl	209	193.455	4413244	0.65	200	96.7	80	120	
208	Pb	209	192.995	5925849	0.65	200	96.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898078	1.21	904202	99.32	70	120	
72	Ge	673988	0.96	677615	99.46	70	120	
115	In	6187091	2.05	6287303	98.41	70	120	
209	Bi	13270135	0.83	14081817	94.24	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/23/2016 18:16	Sample Name	LCSD-75236
Data Batch	160523.b	Comment	LCSDICPMS_TSDOD1
Data File Name	215_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	197.198	8044	0.39	200	98.6	80	120	
9	Be	45	198.610	10691	1.23	200	99.3	80	120	
11	B	45	194.183	4021	0.79	200	97.1	80	120	
23	Na	45	4955.449	3684851	0.75	1000	495.5	80	120	Fail
24	Mg	45	4900.564	1818479	0.16	1000	490.1	80	120	Fail
27	Al	45	970.236	135244	0.78	1000	97.0	80	120	
39	K	45	5110.019	1984051	0.50	1000	511.0	80	120	Fail
44	Ca	45	4811.949	99017	0.94	1000	481.2	80	120	Fail
47	Ti	45	194.872	27631	0.49	200	97.4	80	120	
51	V	45	201.599	928548	0.48	200	100.8	80	120	
52	Cr	45	201.602	1096423	0.83	200	100.8	80	120	
55	Mn	45	197.532	609048	0.71	200	98.8	80	120	
56	Fe	45	989.604	4580126	0.68	1000	99.0	80	120	
59	Co	72	200.717	1763001	0.71	200	100.4	80	120	
60	Ni	72	201.506	470806	0.47	200	100.8	80	120	
63	Cu	72	203.012	1287911	0.57	200	101.5	80	120	
66	Zn	72	199.012	219898	1.01	200	99.5	80	120	
75	As	72	201.107	189220	0.15	200	100.6	80	120	
78	Se	72	196.361	11013	1.64	200	98.2	80	120	
88	Sr	115	188.578	821737	0.33	200	94.3	80	120	
95	Mo	115	192.374	698205	0.60	200	96.2	80	120	
107	Ag	115	190.324	2147665	0.27	200	95.2	80	120	
111	Cd	115	188.779	321560	1.03	200	94.4	80	120	
118	Sn	115	196.604	716125	1.30	200	98.3	80	120	
121	Sb	115	188.725	1070530	0.54	200	94.4	80	120	
137	Ba	115	189.469	342636	0.39	200	94.7	80	120	
205	Tl	209	188.696	4460744	0.82	200	94.3	80	120	
208	Pb	209	188.369	5993965	0.46	200	94.2	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	910406	0.73	904202	100.69	70	120	
72	Ge	676429	0.84	677615	99.82	70	120	
115	In	6282139	0.82	6287303	99.92	70	120	
209	Bi	13753054	1.39	14081817	97.67	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/23/2016 18:22	Sample Name	1605098-17A SD
Data Batch	160523.b	Comment	SD ICPMS_TSDOD1
Data File Name	218_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	13.799	587	3.96	63.5	108.6	110	90	Good
9	Be	45	0.534	32	29.81	2.6	102.9	110	90	Good
11	B	45	17.888	542	11.21	80.3	111.4	110	90	
23	Na	45	468.486	386785	0.86	2293.2	102.1	110	90	Good
24	Mg	45	3509.127	1327791	0.66	17067.5	102.8	110	90	Good
27	Al	45	13601.105	1901870	0.47	67547.0	100.7	110	90	Good
39	K	45	2367.075	967294	0.96	11553.0	102.4	110	90	Good
44	Ca	45	100598.663	2090276	0.65	492896.9	102.0	110	90	Good
47	Ti	45	47.319	6840	1.35	226.8	104.3	110	90	Good
51	V	45	25.459	123341	0.22	123.4	103.1	110	90	Good
52	Cr	45	12.326	69426	1.86	58.7	105.1	110	90	Good
55	Mn	45	166.060	521886	0.49	796.8	104.2	110	90	Good
56	Fe	45	12048.287	56703320	0.98	57824.0	104.2	110	90	Good
59	Co	72	5.339	46836	2.00	25.8	103.5	110	90	Good
60	Ni	72	8.908	21519	0.90	43.6	102.1	110	90	Good
63	Cu	72	4.077	27313	0.59	18.7	108.8	110	90	Good
66	Zn	72	33.164	36813	1.07	156.8	105.7	110	90	Good
75	As	72	4.222	4144	1.22	20.6	102.5	110	90	Good
78	Se	72	1.014	149	12.57	4.7	107.0	110	90	Good
88	Sr	115	194.750	860285	0.99	967.8	100.6	110	90	Good
95	Mo	115	0.528	1980	4.37	2.7	99.3	110	90	Good
107	Ag	115	0.050	608	12.87	0.1	222.8	110	90	
111	Cd	115	0.118	208	14.91	0.6	103.9	110	90	Good
118	Sn	115	0.925	3932	4.75	4.8	96.8	110	90	Good
121	Sb	115	0.095	680	3.43	0.4	121.3	110	90	
137	Ba	115	631.673	1157856	0.50	3233.6	97.7	110	90	Good
205	Tl	209	0.114	2763	4.53	0.6	95.5	110	90	Good
208	Pb	209	6.331	204413	0.51	31.9	99.2	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	927907	0.49	904202	102.62	70	120	
72	Ge	673997	0.80	677615	99.47	70	120	
115	In	6370468	1.89	6287303	101.32	70	120	
209	Bi	13917043	2.07	14081817	98.83	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/23/2016 18:42	Sample Name	1605098-17A PDS
Data Batch	160523.b	Comment	PDS ICPMS_TSDOD1
Data File Name	228_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	250.441	10268	2.04	63.5	200	93.4	75	125	
9	Be	45	182.610	9884	0.53	2.6	200	90.0	75	125	
11	B	45	268.982	5531	0.99	80.3	200	94.3	75	125	
23	Na	45	7166.016	5342618	1.09	2293.2	5000	97.5	75	125	
24	Mg	45	22857.111	8521128	0.48	17067.5	5000	115.8	75	125	
27	Al	45	76528.603	10546018	1.02	67547.0	5000	179.6	75	125	Fail
39	K	45	17337.150	6634412	1.52	11553.0	5000	115.7	75	125	
44	Ca	45	########	11043170	1.00	492896.9	5000	921.0	75	125	Fail
47	Ti	45	437.511	62375	0.76	226.8	200	105.3	75	125	
51	V	45	321.051	1484296	1.28	123.4	200	98.8	75	125	
52	Cr	45	250.408	1369018	0.62	58.7	200	95.9	75	125	
55	Mn	45	1032.391	3199760	0.91	796.8	200	117.8	75	125	
56	Fe	45	67599.882	313814459	1.71	57824.0	5000	195.5	75	125	Fail
59	Co	72	214.622	1809809	0.37	25.8	200	94.4	75	125	
60	Ni	72	229.424	514534	0.32	43.6	200	92.9	75	125	
63	Cu	72	200.341	1220203	1.20	18.7	200	90.8	75	125	
66	Zn	72	349.434	370427	0.88	156.8	200	96.3	75	125	
75	As	72	213.534	192884	0.46	20.6	200	96.5	75	125	
78	Se	72	194.954	10499	0.61	4.7	200	95.1	75	125	
88	Sr	115	1217.099	5151980	0.24	967.8	200	124.7	75	125	
95	Mo	115	184.056	649627	0.30	2.7	200	90.7	75	125	
107	Ag	115	182.338	2000952	0.08	0.1	200	91.1	75	125	
111	Cd	115	172.319	285436	0.56	0.6	200	85.9	75	125	
118	Sn	115	190.959	676485	1.12	4.8	200	93.1	75	125	
121	Sb	115	182.331	1005730	0.76	0.4	200	91.0	75	125	
137	Ba	115	3716.544	6533778	1.63	3233.6	200	241.5	75	125	Fail
205	Tl	209	183.543	4071754	0.36	0.6	200	91.5	75	125	
208	Pb	209	216.432	6462462	0.34	31.9	200	92.3	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	915406	0.48	904202	101.24	70	120	
72	Ge	649421	0.69	677615	95.84	70	120	
115	In	6109967	1.43	6287303	97.18	70	120	
209	Bi	12903975	0.27	14081817	91.64	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/23/2016 18:44	Sample Name	1605098-17A MS
Data Batch	160523.b	Comment	MS ICPMS_TSDOD1
Data File Name	229_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	245.407	9912	1.20	63.5	200	90.9	80	120	
9	Be	45	183.756	9797	1.20	2.6	200	90.6	80	120	
11	B	45	264.437	5359	0.41	80.3	200	92.1	80	120	
23	Na	45	7174.420	5268271	1.31	2293.2	1000	488.1	80	120	Fail
24	Mg	45	21578.602	7924281	0.41	17067.5	1000	451.1	80	120	Fail
27	Al	45	73449.687	9971022	1.76	67547.0	1000	590.3	80	120	Fail
39	K	45	17030.683	6420161	0.54	11553.0	1000	547.8	80	120	Fail
44	Ca	45	########	10435537	0.94	492896.9	1000	2415.9	80	120	Fail
47	Ti	45	431.662	60619	0.40	226.8	200	102.4	80	120	
51	V	45	315.470	1436698	0.39	123.4	200	96.0	80	120	
52	Cr	45	240.485	1295166	0.59	58.7	200	90.9	80	120	
55	Mn	45	1028.607	3140090	0.53	796.8	200	115.9	80	120	
56	Fe	45	60916.868	278499953	2.48	57824.0	1000	309.3	80	120	Fail
59	Co	72	211.904	1752673	1.13	25.8	200	93.1	80	120	
60	Ni	72	231.766	509802	0.68	43.6	200	94.1	80	120	
63	Cu	72	202.245	1208133	0.14	18.7	200	91.8	80	120	
66	Zn	72	341.537	355100	0.31	156.8	200	92.3	80	120	
75	As	72	209.593	185692	0.35	20.6	200	94.5	80	120	
78	Se	72	190.555	10068	1.19	4.7	200	92.9	80	120	
88	Sr	115	1235.954	5090343	1.00	967.8	200	134.1	80	120	Fail
95	Mo	115	173.963	597384	0.32	2.7	200	85.7	80	120	
107	Ag	115	177.364	1893683	0.21	0.1	200	88.6	80	120	
111	Cd	115	177.668	286370	1.66	0.6	200	88.5	80	120	
118	Sn	115	182.219	628035	0.57	4.8	200	88.7	80	120	
121	Sb	115	52.580	282292	0.62	0.4	200	26.1	80	120	Fail
137	Ba	115	3769.018	6447260	0.13	3233.6	200	267.7	80	120	Fail
205	Tl	209	185.688	4124882	0.68	0.6	200	92.5	80	120	
208	Pb	209	213.139	6373391	1.01	31.9	200	90.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	901730	0.98	904202	99.73	70	120	
72	Ge	637011	1.51	677615	94.01	70	120	
115	In	5944419	1.29	6287303	94.55	70	120	
209	Bi	12923306	1.48	14081817	91.77	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/23/2016 18:46	Sample Name	1605098-17A MSD
Data Batch	160523.b	Comment	MSD ICPMS_TSDOD1
Data File Name	230_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	235.748	9426	2.47	63.5	200	86.1	80	120	
9	Be	45	174.162	9192	1.49	2.6	200	85.8	80	120	
11	B	45	244.769	4923	5.95	80.3	200	82.2	80	120	
23	Na	45	6707.970	4878545	0.76	2293.2	1000	441.5	80	120	Fail
24	Mg	45	20630.659	7499758	0.80	17067.5	1000	356.3	80	120	Fail
27	Al	45	70563.328	9482179	1.71	67547.0	1000	301.6	80	120	Fail
39	K	45	15891.240	5933911	1.58	11553.0	1000	433.8	80	120	Fail
44	Ca	45	########	9887554	2.83	492896.9	1000	193.9	80	120	Fail
47	Ti	45	398.373	55379	0.41	226.8	200	85.8	80	120	
51	V	45	296.494	1336933	0.95	123.4	200	86.5	80	120	
52	Cr	45	230.456	1228633	0.32	58.7	200	85.9	80	120	
55	Mn	45	1019.155	3079935	0.39	796.8	200	111.2	80	120	
56	Fe	45	56798.007	257094141	1.24	57824.0	1000	-102.6	80	120	Fail
59	Co	72	198.711	1634483	0.29	25.8	200	86.5	80	120	
60	Ni	72	216.566	473791	0.81	43.6	200	86.5	80	120	
63	Cu	72	190.934	1134410	0.57	18.7	200	86.1	80	120	
66	Zn	72	334.563	345946	1.04	156.8	200	88.9	80	120	
75	As	72	197.923	174402	0.44	20.6	200	88.7	80	120	
78	Se	72	183.109	9624	2.82	4.7	200	89.2	80	120	
88	Sr	115	1105.940	4568420	1.02	967.8	200	69.1	80	120	Fail
95	Mo	115	163.600	563463	0.92	2.7	200	80.5	80	120	
107	Ag	115	170.266	1823298	0.48	0.1	200	85.1	80	120	
111	Cd	115	169.122	273383	0.46	0.6	200	84.3	80	120	
118	Sn	115	170.607	589774	0.27	4.8	200	82.9	80	120	
121	Sb	115	49.246	265188	0.24	0.4	200	24.4	80	120	Fail
137	Ba	115	3957.514	6790299	1.34	3233.6	200	361.9	80	120	Fail
205	Tl	209	178.932	3967516	0.57	0.6	200	89.2	80	120	
208	Pb	209	204.691	6108886	0.78	31.9	200	86.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	892585	0.27	904202	98.72	70	120	
72	Ge	633444	0.22	677615	93.48	70	120	
115	In	5962190	1.18	6287303	94.83	70	120	
209	Bi	12897887	0.43	14081817	91.59	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 18:48	Sample Name	CCV9-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	231_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	206.272	8358	0.43	200	103.1	90	110	
9	Be	45	198.307	10605	0.16	200	99.2	90	110	
11	B	45	192.878	3968	5.51	200	96.4	90	110	
23	Na	45	4984.259	3681924	0.64	5000	99.7	90	110	
24	Mg	45	4908.017	1809435	0.34	5000	98.2	90	110	
27	Al	45	4806.497	656618	0.89	5000	96.1	90	110	
39	K	45	5015.976	1935975	0.61	5000	100.3	90	110	
44	Ca	45	4895.834	100076	1.60	5000	97.9	90	110	
47	Ti	45	195.276	27509	1.87	200	97.6	90	110	
51	V	45	199.314	912072	1.39	200	99.7	90	110	
52	Cr	45	199.264	1076615	1.29	200	99.6	90	110	
55	Mn	45	195.545	598977	0.93	200	97.8	90	110	
56	Fe	45	5118.266	23485994	0.67	5000	102.4	90	110	
59	Co	72	199.345	1724754	0.73	200	99.7	90	110	
60	Ni	72	203.818	469075	0.41	200	101.9	90	110	
63	Cu	72	206.283	1289041	0.26	200	103.1	90	110	
66	Zn	72	200.744	218483	0.18	200	100.4	90	110	
75	As	72	198.593	184066	0.43	200	99.3	90	110	
78	Se	72	197.927	10935	0.41	200	99.0	90	110	
88	Sr	115	186.819	808325	0.82	200	93.4	90	110	
95	Mo	115	192.036	691990	0.79	200	96.0	90	110	
107	Ag	115	196.012	2195933	0.93	200	98.0	90	110	
111	Cd	115	189.344	320198	0.48	200	94.7	90	110	
118	Sn	115	189.573	685580	0.37	200	94.8	90	110	
121	Sb	115	190.345	1071956	0.41	200	95.2	90	110	
137	Ba	115	188.102	337728	0.62	200	94.1	90	110	
205	Tl	209	189.098	4483132	0.40	200	94.5	90	110	
208	Pb	209	188.063	6001421	0.85	200	94.0	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	904470	0.34	904202	100.03	70	120	
72	Ge	666291	0.31	677615	98.33	70	120	
115	In	6237747	1.35	6287303	99.21	70	120	
209	Bi	13791172	1.22	14081817	97.94	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 18:52	Sample Name	LCVL9-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	233LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.970	442	7.31	10	109.7	70	130	
9	Be	45	1.227	66	5.46	1	122.7	70	130	
11	B	45	22.186	592	12.10	20	110.9	70	130	
23	Na	45	101.676	104966	0.52	100	101.7	70	130	
24	Mg	45	98.160	36865	1.45	100	98.2	70	130	
27	Al	45	98.791	15216	0.97	100	98.8	70	130	
39	K	45	115.035	95354	0.17	100	115.0	70	130	
44	Ca	45	105.226	2991	6.87	100	105.2	70	130	
47	Ti	45	5.132	701	1.80	5	102.6	70	130	
51	V	45	0.595	6748	3.21	1	59.5	70	130	Fail
52	Cr	45	5.155	28004	0.71	5	103.1	70	130	
55	Mn	45	5.017	15062	3.22	5	100.3	70	130	
56	Fe	45	101.292	460378	0.57	100	101.3	70	130	
59	Co	72	5.098	43360	1.41	5	102.0	70	130	
60	Ni	72	4.862	11744	2.90	5	97.2	70	130	
63	Cu	72	5.449	34873	0.92	5	109.0	70	130	
66	Zn	72	5.049	5732	4.30	5	101.0	70	130	
75	As	72	4.979	4705	1.87	5	99.6	70	130	
78	Se	72	5.709	397	7.31	5	114.2	70	130	
88	Sr	115	4.657	21123	1.41	5	93.1	70	130	
95	Mo	115	4.645	16700	2.77	5	92.9	70	130	
107	Ag	115	1.917	21417	2.53	2	95.8	70	130	
111	Cd	115	0.940	1586	5.05	1	94.0	70	130	
118	Sn	115	4.713	17461	1.58	5	94.3	70	130	
121	Sb	115	1.983	11253	3.46	2	99.2	70	130	
137	Ba	115	4.915	8873	2.07	5	98.3	70	130	
205	Tl	209	0.954	22334	0.61	1	95.4	70	130	
208	Pb	209	0.969	31072	1.47	1	96.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	874574	0.97	904202	96.72	70	120	
72	Ge	653380	0.25	677615	96.42	70	120	
115	In	6210096	0.60	6287303	98.77	70	120	
209	Bi	13595194	1.09	14081817	96.54	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 18:54	Sample Name	CCB9-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	234_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.398	29	24.1	2	5	
9	Be	45	0.137	10	74.8	0.4	0.3	
11	B	45	3.282	233	7.1	10	10	
23	Na	45	-1.675	31821	0.9	50	100	
24	Mg	45	-2.805	916	9.0	50	100	
27	Al	45	-0.549	2140	1.8	50	10	
39	K	45	12.717	58243	0.6	50	100	
44	Ca	45	-0.597	918	1.6	50	100	
47	Ti	45	0.050	9	57.3	4	3	
51	V	45	-0.444	2171	7.1	4	3	
52	Cr	45	-0.035	922	12.6	2	2	
55	Mn	45	0.004	219	26.1	2	3	
56	Fe	45	1.857	19415	5.5	50	50	
59	Co	72	0.011	202	20.5	2	3	
60	Ni	72	-0.243	242	5.6	2	3	
63	Cu	72	0.191	2674	8.2	2	2	
66	Zn	72	-0.005	344	6.8	4	2	
75	As	72	-0.051	137	5.6	2	2	
78	Se	72	0.467	115	9.6	1	2	
88	Sr	115	0.032	1209	4.9	4	3	
95	Mo	115	0.005	52	44.8	2	2	
107	Ag	115	0.034	408	5.7	0.4	1	
111	Cd	115	0.012	23	37.8	0.4	0.3	
118	Sn	115	0.008	527	2.9	4	3	
121	Sb	115	0.032	311	25.3	2	0.8	
137	Ba	115	0.057	188	6.7	2	3	
205	Tl	209	0.006	178	10.7	2	0.5	
208	Pb	209	0.024	1327	8.8	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	874232	0.82	904202	96.69	70	120	
72	Ge	649042	0.16	677615	95.78	70	120	
115	In	6131473	0.40	6287303	97.52	70	120	
209	Bi	13488906	1.01	14081817	95.79	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/23/2016 19:16	Sample Name	CCV10-160523
Data Batch	160523.b	Comment	CCV ICPMS_TW
Data File Name	245_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	199.337	7747	1.28	200	99.7	90	110	
9	Be	45	199.238	10219	0.46	200	99.6	90	110	
11	B	45	195.461	3855	0.92	200	97.7	90	110	
23	Na	45	4945.789	3504126	1.27	5000	98.9	90	110	
24	Mg	45	4916.061	1738188	0.86	5000	98.3	90	110	
27	Al	45	4788.192	627355	0.77	5000	95.8	90	110	
39	K	45	5057.076	1871568	0.46	5000	101.1	90	110	
44	Ca	45	4840.284	94900	0.93	5000	96.8	90	110	
47	Ti	45	195.231	26376	0.70	200	97.6	90	110	
51	V	45	199.312	874761	0.26	200	99.7	90	110	
52	Cr	45	199.590	1034256	0.93	200	99.8	90	110	
55	Mn	45	194.933	572673	0.89	200	97.5	90	110	
56	Fe	45	5120.463	22534128	1.01	5000	102.4	90	110	
59	Co	72	197.828	1657028	1.10	200	98.9	90	110	
60	Ni	72	203.309	453007	1.31	200	101.7	90	110	
63	Cu	72	204.165	1235230	0.28	200	102.1	90	110	
66	Zn	72	198.348	209015	0.47	200	99.2	90	110	
75	As	72	199.585	179099	0.27	200	99.8	90	110	
78	Se	72	195.020	10433	1.72	200	97.5	90	110	
88	Sr	115	188.208	785343	0.72	200	94.1	90	110	
95	Mo	115	190.716	662813	0.37	200	95.4	90	110	
107	Ag	115	193.487	2090714	0.12	200	96.7	90	110	
111	Cd	115	187.318	305519	0.54	200	93.7	90	110	
118	Sn	115	189.434	660717	0.41	200	94.7	90	110	
121	Sb	115	190.865	1036709	0.49	200	95.4	90	110	
137	Ba	115	187.444	324589	0.57	200	93.7	90	110	
205	Tl	209	189.891	4291810	0.41	200	94.9	90	110	
208	Pb	209	188.368	5730060	0.63	200	94.2	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	867483	0.62	904202	95.94	70	120	
72	Ge	645124	1.02	677615	95.21	70	120	
115	In	6015369	0.06	6287303	95.67	70	120	
209	Bi	13148061	1.32	14081817	93.37	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/23/2016 19:20	Sample Name	LCVL10-160523
Data Batch	160523.b	Comment	LCVLICPMS_TW
Data File Name	247LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.304	403	6.35	10	103.0	70	130	
9	Be	45	1.091	57	10.67	1	109.1	70	130	
11	B	45	21.776	566	10.38	20	108.9	70	130	
23	Na	45	99.894	100221	0.40	100	99.9	70	130	
24	Mg	45	96.772	35149	0.56	100	96.8	70	130	
27	Al	45	99.559	14801	2.40	100	99.6	70	130	
39	K	45	115.922	92466	0.74	100	115.9	70	130	
44	Ca	45	94.122	2681	8.72	100	94.1	70	130	
47	Ti	45	5.082	671	5.07	5	101.6	70	130	
51	V	45	0.539	6280	1.43	1	53.9	70	130	Fail
52	Cr	45	5.025	26408	1.46	5	100.5	70	130	
55	Mn	45	4.868	14130	0.86	5	97.4	70	130	
56	Fe	45	101.373	445253	0.46	100	101.4	70	130	
59	Co	72	5.045	41452	1.85	5	100.9	70	130	
60	Ni	72	5.567	12880	1.45	5	111.3	70	130	
63	Cu	72	5.331	32983	1.93	5	106.6	70	130	
66	Zn	72	5.200	5693	4.43	5	104.0	70	130	
75	As	72	4.980	4544	2.14	5	99.6	70	130	
78	Se	72	5.749	386	1.03	5	115.0	70	130	
88	Sr	115	4.851	20522	1.18	5	97.0	70	130	
95	Mo	115	4.845	16281	0.27	5	96.9	70	130	
107	Ag	115	1.931	20161	0.62	2	96.5	70	130	
111	Cd	115	0.957	1509	3.13	1	95.7	70	130	
118	Sn	115	4.915	17004	1.32	5	98.3	70	130	
121	Sb	115	1.962	10410	3.32	2	98.1	70	130	
137	Ba	115	4.951	8355	0.46	5	99.0	70	130	
205	Tl	209	0.951	21277	2.46	1	95.1	70	130	
208	Pb	209	0.960	29397	2.03	1	96.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	845188	0.99	904202	93.47	70	120	
72	Ge	631145	0.98	677615	93.14	70	120	
115	In	5807235	2.47	6287303	92.36	70	120	
209	Bi	12987126	1.24	14081817	92.23	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/23/2016 19:22	Sample Name	CCB10-160523
Data Batch	160523.b	Comment	CCB ICPMS_TW
Data File Name	248_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.289	24	52.0	2	5	
9	Be	45	0.043	5	65.5	0.4	0.3	
11	B	45	2.949	220	12.4	10	10	
23	Na	45	-2.949	29962	1.5	50	100	
24	Mg	45	-3.049	803	2.2	50	100	
27	Al	45	0.085	2155	3.9	50	10	
39	K	45	13.099	56581	1.1	50	100	
44	Ca	45	-3.492	835	8.4	50	100	
47	Ti	45	0.043	8	24.7	4	3	
51	V	45	-0.465	2015	6.5	4	3	
52	Cr	45	-0.061	761	4.6	2	2	
55	Mn	45	0.010	228	10.0	2	3	
56	Fe	45	1.816	18633	2.7	50	50	
59	Co	72	0.002	122	22.9	2	3	
60	Ni	72	-0.239	247	16.2	2	3	
63	Cu	72	0.067	1881	4.9	2	2	
66	Zn	72	-0.046	296	4.7	4	2	
75	As	72	-0.065	122	4.6	2	2	
78	Se	72	0.153	96	8.9	1	2	
88	Sr	115	0.049	1191	2.7	4	3	
95	Mo	115	0.004	48	42.6	2	2	
107	Ag	115	0.032	352	11.8	0.4	1	
111	Cd	115	0.004	10	120.2	0.4	0.3	
118	Sn	115	-0.024	384	12.9	4	3	
121	Sb	115	0.026	254	16.6	2	0.8	
137	Ba	115	0.040	147	11.8	2	3	
205	Tl	209	0.004	123	23.1	2	0.5	
208	Pb	209	0.013	950	10.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	847188	0.63	904202	93.69	70	120	
72	Ge	636476	0.11	677615	93.93	70	120	
115	In	5694698	2.98	6287303	90.57	70	120	
209	Bi	13081229	0.74	14081817	92.89	70	120	

ICP-MS4_160524B
For

DHL Work Order
1605121

DNR; For verification of MS, MSD only per JD

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:48 PM, 6/1/2016

Lab Data Review Check List

EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS4_160524B SOP: MET-ICPMS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%			X	
Lab Control Sample Dup (LCSD)	Every Batch	80-120%			X	
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)			X	
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%			X	
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)			X	
Dilution Test (SD) - RPD	Every Batch	10			X	
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)			X	

Lab Data Review Check List

EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality			X	
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag Data/ Case Narative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data: See Run Log

REVIEWED/APPROVED
By Sherri Herschmann at 4:59:44 PM, 6/1/2016

Analyst: Date of Completion: 05/25/2016

Second-Level Review: Date Stamp:

DHL Analytical, Inc.

Run ID: **ICP-MS4_160524B** **Run No.:** 85987

Analytical Run Date: 5/24/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:21:00 AM		
L2-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:23:00 AM		
L-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:25:00 AM		
10X-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:27:00 AM		
5X-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:29:00 AM		
2X-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:31:00 AM		
H-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:33:00 AM		
H2-160524	1	ICPMS_TWDOD	CAL	R85987	5/24/2016 11:35:00 AM		
ICSA-160524	1	ICPMS_TWDOD	ICSA	R85987	5/24/2016 11:43:00 AM		
ICSAB-160524	1	ICPMS_TWDOD	ICSB	R85987	5/24/2016 11:45:00 AM		
ICV-160524	1	ICPMS_TWDOD	ICV	R85987	5/24/2016 11:55:00 AM		
LCVL-160524	1	ICPMS_TWDOD	LCVL	R85987	5/24/2016 12:08:00 PM		
ICB-160524	1	ICPMS_TWDOD	ICB	R85987	5/24/2016 12:21:00 PM		
1605121-01A	5	ICPMS_TSDOD1	SAMP	75237	5/24/2016 12:33:00 PM		DNR; For verification of MS, MSD only per JD
1605121-01A MS	5	ICPMS_TSDOD1	MS	75237	5/24/2016 12:35:00 PM		DNR; For verification of MS, MSD only per JD
1605121-01A MSD	5	ICPMS_TSDOD1	MSD	75237	5/24/2016 12:37:00 PM		DNR; For verification of MS, MSD only per JD
CCV1-160524	1	ICPMS_TWDOD	CCV	R85987	5/24/2016 12:47:00 PM		
LCVL1-160524	1	ICPMS_TWDOD	LCVL	R85987	5/24/2016 12:51:00 PM		
CCB1-160524	1	ICPMS_TWDOD	CCB	R85987	5/24/2016 12:54:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160524.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160524	CAL ICPMS_TW	2102	
14	CalStd	L-160524	CAL ICPMS_TW	2103	
15	CalStd	10X-160524	CAL ICPMS_TW	2104	
16	CalStd	5X-160524	CAL ICPMS_TW	2105	
17	CalStd	2X-160524	CAL ICPMS_TW	2106	
18	CalStd	H-160524	CAL ICPMS_TW	2107	
19	CalStd	H2-160524	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	1		
13	2		
14	3		
15	4		
16	5		
17	6		
18	7		
19	8		

Sample List

20

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	ICB	BLANK	CCB ICPMS_TW	1102	
22	ICB	BLANK	CCB ICPMS_TW	1103	
23	ICSA	ICSA-160524	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160524	ICSBICPMS_TW	2110	
25	ICB	BLANK	CCB ICPMS_TW	1101	
26	ICB	BLANK	CCB ICPMS_TW	1102	
27	ICB	BLANK	CCB ICPMS_TW	1103	
28	ICV	ICV-160524	ICV ICPMS_TW	2111	
29	ICB	ICB-160524	ICB ICPMS_TW	1101	
30	ICB	ICB-160524	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160524	LCVLICPMS_TW	2112	
32	ICB	ICB-160524	ICB ICPMS_TW	1102	
33	ICB	ICB-160524	ICB ICPMS_TW	1103	
34	AllRef	1605172-04C	SAMPICPMS_TW	2201	
35	SD	1605172-04C SD	SD ICPMS_TW	2202	
36	SAMP_W	1605169-01C	SAMPICPMS_TW	2203	
37	SAMP_W	1605173-01E	SAMPICPMS_TW	2204	
38	PDS	1605172-04C PDS	PDS ICPMS_TW	2205	
39	AllRef	1605121-01A	SAMPICPMS_TSDOD1	2206	
40	MS_S	1605121-01A MS	MS ICPMS_TSDOD1	2207	

#	Level	Dilution	Skip
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34		50	
35		250	
36		10	
37		5	
38		50	
39		5	
40		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	MS_S	1605121-01A MSD	MSD ICPMS_TSDOD1	2208	
42	CCB	RINSE	CCB ICPMS_TW	1101	
43	CCB	RINSE	CCB ICPMS_TW	1103	
44	Sample	1605187-09A	SAMPICPMS_TS	2209	
45	Sample	1605187-10A	SAMPICPMS_TS	2210	

Sample List

46	CCV	CCV1-160524	CCV ICPMS_TW	1207
47	CCB	CCB1-160524	CCB ICPMS_TW	1102
48	LLCCV	LCVL1-160524	LCVLICPMS_TW	2112
49	CCB	CCB1-160524	CCB ICPMS_TW	1103
50	AllRef	1605185-01A	SAMPICPMS_TS	2301
51	SD	1605185-01A SD	SD ICPMS_TS	2302
52	Sample	1605186-04A	SAMP6020A_S	2303
53	Sample	1605187-01A	SAMPICPMS_TS	2304
54	Sample	1605187-02A	SAMPICPMS_TS	2305
55	Sample	1605187-03A	SAMPICPMS_TS	2306
56	Sample	1605187-04A	SAMPICPMS_TS	2307
57	Sample	1605187-05A	SAMPICPMS_TS	2308
58	Sample	1605187-06A	SAMPICPMS_TS	2309
59	Sample	1605187-07A	SAMPICPMS_TS	2310
60	Sample	1605187-08A	SAMPICPMS_TS	2311

#	Level	Dilution	Skip
41		5	
42			
43			
44		50	
45		50	
46			
47			
48			
49			
50		50	
51		250	
52		50	
53		50	
54		50	
55		50	
56		50	
57		50	
58		50	
59		50	
60		50	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	PDS	1605185-01A PDS	PDS ICPMS_TS	2312	
62	CCV	CCV2-160524	CCV ICPMS_TW	1207	
63	CCB	CCB2-160524	CCB ICPMS_TW	1102	
64	LLCCV	LCVL2-160524	LCVLICPMS_TW	2112	
65	CCB	CCB2-160524	CCB ICPMS_TW	1103	
66	PB_W	MB-75288	MBLKICPMS_TW	3101	
67	LCS_W	LCS-75288	LCS ICPMS_TW	3102	
68	LCS_W	LCSD-75288	LCSDICPMS_TW	3103	
69	CCB	RINSE	CCB ICPMS_TW	1101	
70	AllRef	1605194-03B	SAMPICPMS_TW	3104	
71	SD	1605194-03B SD	SD ICPMS_TW	3105	
72	SAMP_W	1605194-01B	SAMPICPMS_TW	3106	
73	SAMP_W	1605194-02B	SAMPICPMS_TW	3107	

Sample List

74	SAMP_W	1605194-04B	SAMPICPMS_TW	3108
75	SAMP_W	1605194-05B	SAMPICPMS_TW	3109
76	SAMP_W	1605194-06B	SAMPICPMS_TW	3110
77	SAMP_W	1605194-07B	SAMPICPMS_TW	3111
78	SAMP_W	1605194-08B	SAMPICPMS_TW	3112
79	SAMP_W	1605194-09B	SAMPICPMS_TW	3201
80	SAMP_W	1605194-10B	SAMPICPMS_TW	3202

#	Level	Dilution	Skip
61		50	
62			
63			
64			
65			
66		1	
67		1	
68		1	
69			
70		1	
71		5	
72		1	
73		1	
74		1	
75		1	
76		1	
77		1	
78		1	
79		1	
80		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	PDS	1605194-03B PDS	PDS ICPMS_TW	3203	
82	MS_W	1605194-03B MS	MS ICPMS_TW	3204	
83	MS_W	1605194-03B MSD	MSD ICPMS_TW	3205	
84	CCV	CCV3-160524	CCV ICPMS_TW	1207	
85	CCB	CCB3-160524	CCB ICPMS_TW	1102	
86	LLCCV	LCVL3-160524	LCVLICPMS_TW	2512	
87	CCB	CCB3-160524	CCB ICPMS_TW	1103	
88	SAMP_W	1605194-11B	SAMPICPMS_TW	3206	
89	SAMP_W	1605192-01A	SAMPICPMS_TW	3207	
90	SAMP_W	1605192-02A	SAMPICPMS_TW	3208	
91	SAMP_W	1605192-03A	SAMPICPMS_TW	3209	
92	SAMP_W	1605192-04A	SAMPICPMS_TW	3210	
93	SAMP_W	1605192-05A	SAMPICPMS_TW	3211	
94	SAMP_W	1605193-01A	SAMPICPMS_TW	3212	
95	SAMP_W	1605200-01E	SAMPICPMS_TW	3301	
96	SAMP_W	1605200-02E	SAMPICPMS_TW	3302	
97	SAMP_W	1605200-03E	SAMPICPMS_TW	3303	
98	CCV	CCV4-160524	CCV ICPMS_TW	1207	
99	CCB	CCB4-160524	CCB ICPMS_TW	1102	
100	CCB	CCB4-160524	CCB ICPMS_TW	1102	

Sample List

#	Level	Dilution	Skip
81		1	
82		1	
83		1	
84			
85			
86			
87			
88		1	
89		1	
90		1	
91		1	
92		1	
93		1	
94		1	
95		1	
96		1	
97		1	
98			
99			
100			

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	CCB	CCB4-160524	CCB ICPMS_TW	1103	
102	CCB	CCB4-160524	CCB ICPMS_TW	1103	
103	LLCCV	LCVL4-160524	LCVLICPMS_TW	2512	
104	CCB	CCB4-160524	CCB ICPMS_TW	1102	
105	CCB	CCB4-160524	CCB ICPMS_TW	1102	
106	CCB	CCB4-160524	CCB ICPMS_TW	1103	
107	CCB	CCB4-160524	CCB ICPMS_TW	1103	
108	LLCCV	LCVL4-160524	LCVLICPMS_TW	2512	
109	CCB	CCB4-160524	CCB ICPMS_TW	1102	
110	CCB	CCB4-160524	CCB ICPMS_TW	1102	
111	CCB	CCB4-160524	CCB ICPMS_TW	1103	
112	CCB	CCB4-160524	CCB ICPMS_TW	1103	
113	LLCCV	LCVL4-160524	LCVLICPMS_TW	2512	
114	CCB	CCB4-160524	CCB ICPMS_TW	1103	
115	PB_W	MB-75289	MBLK200.8	2401	
116	LCS_200	LCS-75289	LCS 200.8	2402	
117	LCS_200	LCSD-75289	LCSD200.8	2403	
118	CCB	RINSE	CCB ICPMS_TW	1101	
119	AllRef	1605174-06A	SAMP200.8	2404	
120	SD	1605174-06A SD	SD 200.8	2405	

#	Level	Dilution	Skip
101			
102			
103			
104			
105			
106			
107			

Sample List

108						
109						
110						
111						
112						
113						
114						
115		1				
116		1				
117		1				
118						
119		1				
120		5				

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	SAMP_W	1605177-01C	SAMP200.8	2406	
122	SAMP_W	1605176-01A	SAMP200.8	2407	
123	SAMP_W	1605176-02A	SAMP200.8	2408	
124	SAMP_W	1605204-01A	SAMP200.8	2409	
125	SAMP_W	1605204-02A	SAMP200.8	2410	
126	PDS	1605174-06A PDS	PDS 200.8	2411	
127	MS_W	1605174-06A MS	MS 200.8	2412	
128	MS_W	1605174-06A MSD	MSD 200.8	2501	
129	CCV	CCV5-160524	CCV ICPMS_TW	1207	
130	CCB	CCB5-160524	CCB ICPMS_TW	1102	
131	CCB	CCB5-160524	CCB ICPMS_TW	1103	
132	CCV	CCV5-160524	CCV ICPMS_TW	1207	
133	CCB	CCB5-160524	CCB ICPMS_TW	1103	
134	LLCCV	LCVL5-160524	LCVLICPMS_TW	2511	
135	CCB	CCB5-160524	CCB ICPMS_TW	1103	
136	PB	MB-75258	MBLKICPMS_TSDOD1	3311	
137	LCS_S	LCS-75258	LCS ICPMS_TSDOD1	3312	
138	LCS_S	LCSD-75258	LCSDICPMS_TSDOD1	3401	

#	Level	Dilution	Skip
121		1	
122		1	
123		1	
124		1	
125		1	
126		1	
127		1	
128		1	
129			
130			
131			
132			
133			
134			
135			
136		5	
137		5	

Sample List

138 5

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 10:13:48 AM**
Digestion:
Prep End Date:

Prep Batch **75237** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-30A	Soil		1.08	50	50.000	1 of 1	
1605098-35A	Soil		1.04	50	50.000	1 of 1	
1605098-38A	Soil		1.06	50	50.000	1 of 1	
1605121-01A	Soil		1.10	50	50.000	1 of 1	
1605121-01AMS	Soil		1.08	50	50.000	of	
1605121-01AMSD	Soil		1.01	50	50.000	of	
1605121-02A	Soil		1.20	50	50.000	1 of 1	
1605121-03A	Soil		1.07	50	50.000	1 of 1	
1605121-04A	Soil		1.12	50	50.000	1 of 1	
1605121-05A	Soil		1.06	50	50.000	1 of 1	
1605121-06A	Soil		1.08	50	50.000	1 of 1	
1605121-07A	Soil		1.08	50	50.000	1 of 1	
1605121-08A	Soil		1.12	50	50.000	1 of 1	
1605121-09A	Soil		1.11	50	50.000	1 of 1	
1605121-10A	Soil		1.15	50	50.000	1 of 1	
1605121-11A	Soil		1.16	50	50.000	1 of 1	
1605121-12A	Soil		1.06	50	50.000	1 of 1	
1605121-13A	Soil		1.06	50	50.000	1 of 1	
1605121-14A	Soil		1.18	50	50.000	1 of 1	
1605121-15A	Soil		1.18	50	50.000	1 of 1	
1605121-16A	Soil		1.15	50	50.000	1 of 1	
1605121-17A	Soil		1.10	50	50.000	1 of 1	
LCS-75237	Soil		1	50	50.000	of	
LCSD-75237	Soil		1	50	50.000	of	
MB-75237	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

12:28-12:43
12:44-14:44
15:15-17:15
17:33-17:48

REVIEWED/APPROVED
By Sherri Herschmann at 12:03:11 PM, 5/24/2016

05-20-16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 5:00:00 PM**
Digestion: **Start: 5/12/2015 5:15:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date: **5/16/2016 3:30:00 PM**

Prep Batch **75144** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-11A	Soil		0	0	#Num!	1 of 1	
1605098-12A	Soil		0	0	#Num!	1 of 1	
1605098-13A	Soil		0	0	#Num!	1 of 1	
1605098-14A	Soil		0	0	#Num!	1 of 1	
1605098-15A	Soil		0	0	#Num!	1 of 1	
1605098-16A	Soil		0	0	#Num!	1 of 1	
1605098-17A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling - hard clay enough for MS/MSD							
1605098-18A	Soil		0	0	#Num!	1 of 1	
1605098-19A	Soil		0	0	#Num!	1 of 1	
1605098-20A	Soil		0	0	#Num!	1 of 1	
1605098-21A	Soil		0	0	#Num!	1 of 1	
1605098-22A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling- hard copy							
1605098-23A	Soil		0	0	#Num!	1 of 1	
1605098-24A	Soil		0	0	#Num!	1 of 1	
1605098-25A	Soil		0	0	#Num!	1 of 1	
1605098-26A	Soil		0	0	#Num!	1 of 1	
1605098-27A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605098-28A	Soil		0	0	#Num!	1 of 1	
1605098-29A	Soil		0	0	#Num!	1 of 1	
1605098-30A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 1:00:00 PM**
Digestion: **Start: 5/13/2016 2:00:00 PM / Stop: 5/17/2016 9:00:00 AM**
Prep End Date: **5/17/2016 12:00:00 PM**

Prep Batch **75155** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-01A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling - MS/MSD							
1605121-02A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-03A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-04A	Soil		0	0	#Num!	1 of 1	
1605121-05A	Soil		0	0	#Num!	1 of 1	
1605121-06A	Soil		0	0	#Num!	1 of 1	
1605121-07A	Soil		0	0	#Num!	1 of 1	
1605121-08A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-09A	Soil		0	0	#Num!	1 of 1	
1605121-10A	Soil		0	0	#Num!	1 of 1	
1605121-11A	Soil		0	0	#Num!	1 of 1	
1605121-12A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-13A	Soil		0	0	#Num!	1 of 1	
1605121-14A	Soil		0	0	#Num!	1 of 1	
1605121-15A	Soil		0	0	#Num!	1 of 1	
1605121-16A	Soil		0	0	#Num!	1 of 1	
1605121-17A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-18A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-19A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 1:00:00 PM**
Digestion: **Start: 5/13/2016 2:00:00 PM / Stop: 5/17/2016 9:00:00 AM**
Prep End Date: **5/17/2016 12:00:00 PM**

Prep Batch **75155** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-20A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/19/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	4.9999	4.9899	99.80	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9998	4.9898	99.80		
3		4.9952	4.9852	99.70		
AVERAGE (MEAN)		**4.998**	**4.988**	**99.77**		**0.054**
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2007	0.2003	100.15	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2025	0.2021	101.05		
3		0.2027	0.2023	101.15		
AVERAGE (MEAN)		**0.202**	**0.202**	**100.78**		**0.545**
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/19/16

Analyst / Date

05/24/2016

Review and Approved / Date

X:\LOGS\Syringe and Pipetter Cal Logbook\MET-HG PREP\Pipetter Accuracy Check-CVD-05.19.16

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	RO	BALANCE #:	30	
TEST DATE:	05/23/2016	Water is at Room Temperatue (70-73°F) / (21-23°C)		
PIPETTER LAB ID:	See Below	WATER TEMP (°C):	21-23°C	
TEST VOLUME:	See Below	WATER DENSITY:	0.998	(0.9980-0.9976)

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

PIPETTE ID: P-31	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	4.00	4.0171	4.0091	100.23	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		3.9879	3.9799	99.50		
3		3.9865	3.9785	99.46		
AVERAGE (MEAN)		3.997	3.989	99.73		0.432
						PASS

PIPETTE ID: P-21	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	1.00	0.9989	0.9969	99.69	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.9957	0.9937	99.37		
3		0.9956	0.9936	99.36		
AVERAGE (MEAN)		0.997	0.995	99.47		0.188
						PASS

PIPETTE ID: P-39	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.500	0.5002	0.4992	99.84	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.5022	0.5012	100.24		
3		0.4996	0.4986	99.72		
AVERAGE (MEAN)		0.501	0.500	99.93		0.272
						PASS

5/23/2016
Analyst / Date

05/24/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 10:13:48 AM**
Digestion: **Start: 5/19/2016 12:28:00 PM / Stop: 5/19/2016 5:48:00 PM**
Prep End Date: **5/20/2016 8:43:16 AM**

Prep Batch **75237** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-30A	Soil		1.08	50	46.296	1 of 1	
1605098-35A	Soil		1.04	50	48.077	1 of 1	
1605098-38A	Soil		1.06	50	47.170	1 of 1	
1605121-01A	Soil		1.1	50	45.455	1 of 1	
1605121-01A MS	Soil		1.08	50	46.296	of	
1605121-01A MSD	Soil		1.01	50	49.505	of	
1605121-01A PDS	Soil		1.1	50	45.455	of	
1605121-01A SD	Soil		1.1	50	45.455	of	
1605121-02A	Soil		1.2	50	41.667	1 of 1	
1605121-03A	Soil		1.07	50	46.729	1 of 1	
1605121-04A	Soil		1.12	50	44.643	1 of 1	
1605121-05A	Soil		1.06	50	47.170	1 of 1	
1605121-06A	Soil		1.08	50	46.296	1 of 1	
1605121-07A	Soil		1.08	50	46.296	1 of 1	
1605121-08A	Soil		1.12	50	44.643	1 of 1	
1605121-09A	Soil		1.11	50	45.045	1 of 1	
1605121-10A	Soil		1.15	50	43.478	1 of 1	
1605121-11A	Soil		1.16	50	43.103	1 of 1	
1605121-12A	Soil		1.06	50	47.170	1 of 1	
1605121-13A	Soil		1.06	50	47.170	1 of 1	
1605121-14A	Soil		1.18	50	42.373	1 of 1	
1605121-15A	Soil		1.18	50	42.373	1 of 1	
1605121-16A	Soil		1.15	50	43.478	1 of 1	
1605121-17A	Soil		1.1	50	45.455	1 of 1	
LCS-75237	Soil		1	50	50.000	of	
LCSD-75237	Soil		1	50	50.000	of	
MB-75237	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

REVIEWED/APPROVED

By Sherri Herschmann at 12:06:33 PM, 5/24/2016

Calibration Summary Report

Date Acquired 5/24/2016 11:21
Data Batch 160524.b

Level	Calibration File Name
1	012CALB.d
2	013CALS.d
3	014CALS.d
4	015CALS.d
5	016CALS.d
6	017CALS.d
7	018CALS.d
8	019CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0014 * x + 1.6303E-004
Be	1.0000	y = 6.7894E-005 * x + 1.5577E-005
B	1.0000	y = 2.3972E-005 * x + 1.1378E-004
Na	1.0000	y = 8.2744E-004 * x + 0.0299
Mg	0.9999	y = 4.0044E-004 * x + 0.0021
Al	1.0000	y = 1.4170E-004 * x + 0.0025
K	0.9999	y = 3.8821E-004 * x + 0.0587
Ca	0.9999	y = 2.2298E-005 * x + 9.2937E-004
Ti	1.0000	y = 1.5478E-004 * x + 7.9414E-006
V	1.0000	y = 0.0054 * x + 0.0023
Cr	1.0000	y = 0.0063 * x + 9.8307E-004
Mn	1.0000	y = 0.0034 * x + 1.8878E-004
Fe	1.0000	y = 0.0053 * x + 0.0144
Co	0.9999	y = 0.0134 * x + 3.2302E-004
Ni	0.9999	y = 0.0036 * x + 0.0024
Cu	0.9999	y = 0.0099 * x + 0.0190
Zn	1.0000	y = 0.0017 * x + 4.6666E-004
Se	1.0000	y = 7.9796E-005 * x + 8.0399E-005
Sr	1.0000	y = 6.4657E-004 * x + 1.7033E-004
Mo	1.0000	y = 6.1240E-004 * x + 5.5929E-006
Ag	1.0000	y = 0.0020 * x + 5.5964E-006
Cd	1.0000	y = 2.8258E-004 * x + 7.2041E-007
Sn	1.0000	y = 5.9143E-004 * x + 4.9167E-005
Sb	1.0000	y = 9.2548E-004 * x + 1.0445E-005
Tl	1.0000	y = 0.0017 * x + 4.2575E-006
Ba	1.0000	y = 2.8817E-004 * x + 1.2604E-005
Pb	1.0000	y = 0.0023 * x + 5.3895E-005
Li	1.0000	y = 4.9068E-005 * x + 1.7022E-005

REVIEWED BY
By Janice Whitt at 3:47:19 PM, 5/25/2016

Calibration Summary Report

Level 7 Cal

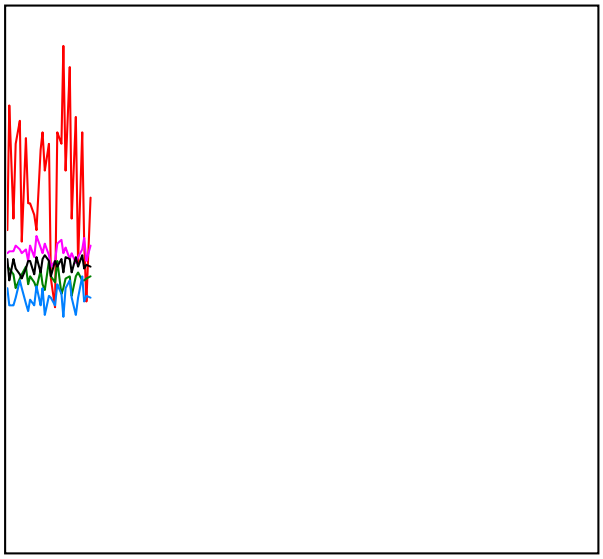
Ele	Conc	Calc	%Rec
As	500	505.26	101
Be	500	506.47	101
B	500	505.25	101
Na	10000	10038.31	100
Mg	10000	10204.79	102
Al	10000	9997.91	100
K	10000	10210.58	102
Ca	10000	9661.77	97
Ti	500	502.43	100
V	500	500.67	100
Cr	500	508.96	102
Mn	500	501.08	100
Fe	10000	9992.81	100
Co	500	514.62	103
Ni	500	519.95	104
Cu	500	519.11	104
Zn	500	510.42	102
Se	500	506.92	101
Sr	500	499.62	100
Mo	500	499.24	100
Ag	500	501.93	100
Cd	500	506.16	101
Sn	500	499.89	100
Sb	500	501.07	100
Tl	500	507.75	102
Ba	500	507.92	102
Pb	500	496.84	99

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1998.81	100
Be	2000	1998.25	100
B	2000	1998.00	100
Na	25000	24964.46	100
Mg	25000	24883.21	100
K	25000	24889.36	100
Ca	25000	25167.88	99
Ti	2000	1999.19	100
V	2000	1999.83	100
Cr	2000	1997.08	100
Mn	2000	1999.76	100
Co	2000	1995.72	100
Ni	2000	1994.13	100
Cu	2000	1994.20	100
Zn	2000	1996.76	100
Se	2000	1998.14	100
Sr	2000	2000.29	100
Mo	2000	2000.69	100
Cd	2000	1998.19	100
Sn	2000	2000.24	100
Tl	2000	1997.57	100
Ba	2000	1997.78	100
Pb	2000	2001.12	100
Li	2000	1996.17	100

REVIEWED BY
By Janice Whitt at 3:47:26 PM, 5/25/2016

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
51	100	65	68.0	17.94
59	2000	1012	1004.0	3.28
89	2000	934	934.2	4.27
140	5000	2812	2754.3	2.54
205	5000	2616	2626.6	2.65
156/140	1	0.498 %	0.472 %	34.70
75	20	2	3.6	78.05
78	20	4	5.6	43.98
56	10000	5457	5582.8	1.79
31	100	34	46.6	18.17

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.65
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	7.3
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-85	Cell Exit	-60
Deflect	2.2		

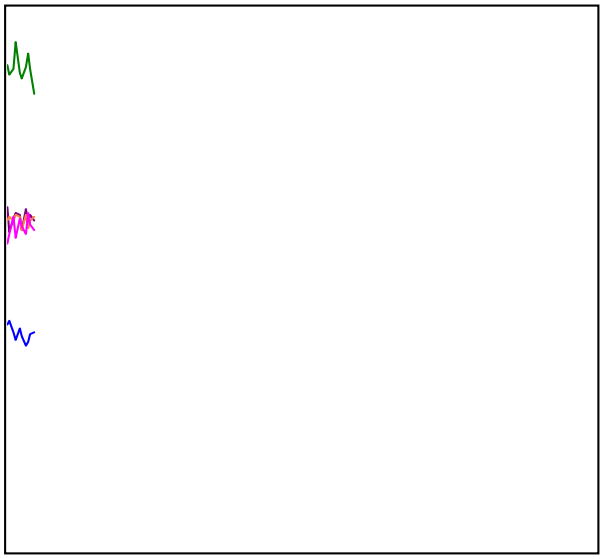
Cell Parameters

Use Gas	true	3rd Gas Flow	0
He Flow	4.8	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.21E+2	Pa	Carrier Gas(BP)	3.55E+2	kPa
Analyzer Press	1.99E-4	Pa	Reflected Power	0	W
Forward Power	1548	W			

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1217	1223.5	2.54
59	2000	1680	1775.4	2.88
89	5000	3080	3046.7	1.59
140	5000	2944	2972.4	3.08
205	5000	2010	2023.0	1.72
156/140	2	1.155 %	1.340 %	18.15
78	2000	1863	1913.5	2.08
63	5000	2020	2002.7	3.42
75	5000	3370	3416.5	1.36

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.65
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	7.3
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-85	Cell Exit	-60
Deflect	7.0		

Cell Parameters

Use Gas	false	3rd Gas Flow	0
He Flow	4.2	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.20E+2	Pa	Carrier Gas(BP)	3.56E+2	kPa
Analyzer Press	1.14E-4	Pa	Reflected Power	0	W
Forward Power	1550	W			

US EPA Tune Check Sample Report

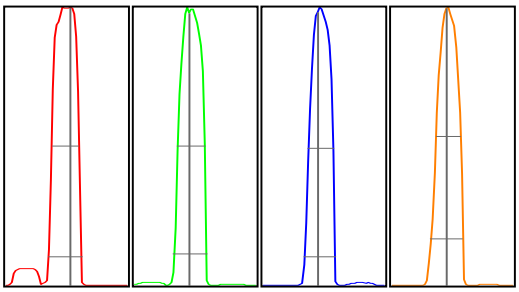
Batch Folder C:\Agilent\ICPMH\1\DATA\DHL TEMPLATE Li.b
Report Comment
Instrument Name ICPMS4 JP12361998

[No gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	725200	0.32	5.00	
59	986081	0.36	5.00	
115	1450216	0.55	5.00	
205	1255794	0.40	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	727658	727826	723250	723311	723954
59	989340	986480	989423	981181	983983
115	1462530	1449159	1448739	1440106	1450546
205	1256915	1263326	1256422	1250712	1251597

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	111623	7.10	6.9 - 7.1		0.796	0.850	
59	158596	58.90	58.9 - 59.1		0.770	0.850	
115	255798	114.90	114.9 - 115.1	[F]	0.731	0.850	
205	218903	204.90	204.9 - 205.1		0.770	0.850	

At limit. jw 5/25/2016

X% = 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Nebulizer Pump	0.10	rps
RF Matching	1.90	V	S/C Temp	2	℃
Smpl Depth	8.0	mm	Gas Switch	Dilution Gas	
Carrier Gas	0.65	L/min	Makeup/Dilution Gas	0.40	L/min
Option Gas	0.0	%			

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Cell Entrance	-40	V
Extract 2	-200.0	V	Cell Exit	-60	V
Omega Bias	-85	V	Deflect	7.0	V
Omega Lens	7.3	V	Plate Bias	-60	V

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		OctP Bias	-18.0	V
He Flow	0.0	mL/min	OctP RF	200	V
H2 Flow	0.0	mL/min	Energy Discrimination	3.0	V
3rd Gas Flow	0	%			

REVIEWED BY
By Janice Whitt at 3:47:31 PM, 5/25/2016

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: BLANK STD 1
Data File: 012CALB.d
Acquired: 05/24/2016 11:21:19

========= Detector Parameters and P/A Factors =========
Discriminator: 5.1 mV
AnalogHV: 1731 V
PulseHV: 1235 V

Acquired: 05/24/2016 10:41:52

Mass[u]	Element	P/A Factor
6	Li	0.102518
9	Be	0.114804
23	Na	0.122734
24	Mg	0.126038
27	Al	0.129292
39	K	0.130428
45	Sc	0.132005
48		0.132871
51	V	0.132995
52	Cr	0.136101
55	Mn	0.137369
59	Co	0.138608
60	Ni	0.140306
63	Cu	0.140884
66	Zn	0.140556
72		0.140443
74	Ge	0.140838
75	As	0.140099
88	Sr	0.141584
89		0.141255
95		0.141273
97	Mo	0.142004
98	Mo	0.141935
99	[Mo]	0.142760
101		0.142414
105		0.143860
111	Cd	0.144027
114	Cd	0.144248
115	In	0.144593
118	Sn	0.144180
121		0.144911
123	Sb	0.143842
135	Ba	0.147613
138		0.144976
175		0.145959
193		0.146412
205	Tl	0.146602
206	[Pb]	0.147484
207	[Pb]	0.147924
208	Pb	0.146485
209	Bi	0.147705
232		0.147298
238	U	0.147266
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

REVIEWED BY
By Janice Whitt at 3:47:49 PM, 5/25/2016

Calibration Blank Report

Date Acquired	5/24/2016 11:21	Sample Name	BLANK STD 1
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	012CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	14	22.43
9	Be	45	13	65.72
11	B	45	96	10.07
23	Na	45	25099	0.81
24	Mg	45	1761	2.40
27	Al	45	2059	5.34
39	K	45	49304	1.06
44	Ca	45	780	7.45
47	Ti	45	7	50.03
51	V	45	1915	8.19
52	Cr	45	826	4.12
55	Mn	45	159	17.09
56	Fe	45	12097	2.36
59	Co	72	213	21.71
60	Ni	72	1596	2.21
63	Cu	72	12541	1.96
66	Zn	72	308	3.31
75	As	72	108	2.11
78	Se	72	53	16.45
88	Sr	115	1051	9.55
95	Mo	115	34	34.00
107	Ag	115	34	43.64
111	Cd	115	4	43.40
118	Sn	115	303	2.20
121	Sb	115	64	28.49
137	Ba	115	78	12.37
205	Tl	209	66	15.54
208	Pb	209	831	4.65

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	840297	1.60
72	Ge	659533	1.39
115	In	6171400	1.71
209	Bi	15418181	1.42

Calibration Standard Report

Date Acquired	5/24/2016 11:23	Sample Name	L2-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	013CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	49	16.38
9	Be	45	63	15.98
11	B	45	122	27.45
23	Na	45	40193	1.16
24	Mg	45	8818	2.13
27	Al	45	4546	5.70
39	K	45	55751	0.58
44	Ca	45	1166	8.28
47	Ti	45	110	16.87
51	V	45	6384	1.52
52	Cr	45	6429	3.32
55	Mn	45	3019	3.27
56	Fe	45	101554	0.59
59	Co	72	9467	1.38
60	Ni	72	3948	1.28
63	Cu	72	19033	1.92
66	Zn	72	1448	6.13
75	As	72	1044	1.27
78	Se	72	108	9.83
88	Sr	115	5086	1.52
95	Mo	115	3576	4.72
107	Ag	115	12192	2.64
111	Cd	115	1752	0.22
118	Sn	115	4026	3.26
121	Sb	115	5800	0.71
137	Ba	115	1877	5.54
205	Tl	209	25633	0.75
208	Pb	209	35575	1.22

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	826101	0.67	840297	98.31	70	120	
72	Ge	648976	0.29	659533	98.40	70	120	
115	In	6050824	0.59	6171400	98.05	70	120	
209	Bi	15216130	1.20	15418181	98.69	70	120	

Calibration Standard Report

Date Acquired	5/24/2016 11:25	Sample Name	L-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	014CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	426	11.90
9	Be	45	599	4.77
11	B	45	352	12.92
23	Na	45	167079	0.55
24	Mg	45	70771	0.54
27	Al	45	25843	1.59
39	K	45	115712	0.81
44	Ca	45	4252	6.48
47	Ti	45	1231	6.56
51	V	45	46567	0.95
52	Cr	45	54790	0.40
55	Mn	45	28556	1.31
56	Fe	45	908649	0.92
59	Co	72	90397	1.60
60	Ni	72	26301	1.29
63	Cu	72	79726	1.06
66	Zn	72	11692	0.37
75	As	72	9461	1.24
78	Se	72	584	3.97
88	Sr	115	39905	0.80
95	Mo	115	36588	2.11
107	Ag	115	119212	1.23
111	Cd	115	16993	0.62
118	Sn	115	36080	0.31
121	Sb	115	55229	1.59
137	Ba	115	17603	1.02
205	Tl	209	254088	0.43
208	Pb	209	341876	0.23

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	825284	0.56	840297	98.21	70	120	
72	Ge	649444	0.71	659533	98.47	70	120	
115	In	6077495	0.35	6171400	98.48	70	120	
209	Bi	15247079	0.31	15418181	98.89	70	120	

Calibration Standard Report

Date Acquired	5/24/2016 11:27	Sample Name	10X-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	015CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2080	1.40
9	Be	45	2799	4.02
11	B	45	1081	4.74
23	Na	45	727589	0.51
24	Mg	45	346696	0.58
27	Al	45	120743	0.75
39	K	45	382555	0.46
44	Ca	45	18646	1.04
47	Ti	45	6431	1.18
51	V	45	227101	0.51
52	Cr	45	272393	0.88
55	Mn	45	143057	0.42
56	Fe	45	4474359	0.20
59	Co	72	450271	0.32
60	Ni	72	125218	0.89
63	Cu	72	346954	0.55
66	Zn	72	56946	1.23
75	As	72	46586	1.30
78	Se	72	2686	1.52
88	Sr	115	194629	0.94
95	Mo	115	181405	0.45
107	Ag	115	590156	0.74
111	Cd	115	85476	1.32
118	Sn	115	177930	0.50
121	Sb	115	277736	0.42
137	Ba	115	87628	0.76
205	Tl	209	1263881	0.82
208	Pb	209	1700548	0.09

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	831353	0.59	840297	98.94	70	120	
72	Ge	646910	0.63	659533	98.09	70	120	
115	In	6052047	0.99	6171400	98.07	70	120	
209	Bi	15117187	0.58	15418181	98.05	70	120	

Calibration Standard Report

Date Acquired	5/24/2016 11:29	Sample Name	5X-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	016CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4135	3.19
9	Be	45	5647	1.44
11	B	45	2153	2.68
23	Na	45	1415594	0.42
24	Mg	45	678963	0.21
27	Al	45	237252	0.22
39	K	45	708115	0.19
44	Ca	45	36281	1.36
47	Ti	45	12777	1.67
51	V	45	446526	0.11
52	Cr	45	535382	0.55
55	Mn	45	282282	0.52
56	Fe	45	9010053	0.41
59	Co	72	886363	0.56
60	Ni	72	242812	0.42
63	Cu	72	677599	0.39
66	Zn	72	111716	1.12
75	As	72	92982	1.00
78	Se	72	5273	2.79
88	Sr	115	385277	0.62
95	Mo	115	359909	0.68
107	Ag	115	1169584	0.41
111	Cd	115	170623	1.00
118	Sn	115	351675	1.31
121	Sb	115	549528	0.78
137	Ba	115	172978	0.12
205	Tl	209	2512921	0.76
208	Pb	209	3364520	0.31

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	822996	1.39	840297	97.94	70	120	
72	Ge	736038	17.87	659533	111.60	70	120	
115	In	6041515	0.77	6171400	97.90	70	120	
209	Bi	14836487	0.42	15418181	96.23	70	120	

Calibration Standard Report

Date Acquired	5/24/2016 11:31	Sample Name	2X-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	017CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	10269	0.90
9	Be	45	13978	1.05
11	B	45	5082	1.20
23	Na	45	3471341	0.23
24	Mg	45	1691288	0.78
27	Al	45	582532	1.08
39	K	45	1671440	0.37
44	Ca	45	89831	0.79
47	Ti	45	31941	0.49
51	V	45	1108324	0.55
52	Cr	45	1316669	0.76
55	Mn	45	692708	0.57
56	Fe	45	21871542	0.42
59	Co	72	2187792	0.23
60	Ni	72	599283	0.22
63	Cu	72	1644426	0.47
66	Zn	72	275403	1.37
75	As	72	230051	1.03
78	Se	72	12914	1.39
88	Sr	115	953958	0.51
95	Mo	115	895756	0.38
107	Ag	115	2895438	0.32
111	Cd	115	421515	0.46
118	Sn	115	871473	0.66
121	Sb	115	1361016	0.56
137	Ba	115	429819	0.91
205	Tl	209	6365242	0.93
208	Pb	209	8358962	0.05

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	820129	0.23	840297	97.60	70	120	
72	Ge	633291	0.33	659533	96.02	70	120	
115	In	5914812	1.23	6171400	95.84	70	120	
209	Bi	14745058	1.07	15418181	95.63	70	120	

Calibration Standard Report

Date Acquired	5/24/2016 11:33	Sample Name	H-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	018CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	20334	0.23
9	Be	45	27801	1.19
11	B	45	9881	2.71
23	Na	45	6736893	1.07
24	Mg	45	3304133	0.25
27	Al	45	1146866	0.65
39	K	45	3250842	0.20
44	Ca	45	174856	0.55
47	Ti	45	62853	0.55
51	V	45	2185927	0.35
52	Cr	45	2599738	0.40
55	Mn	45	1372495	0.60
56	Fe	45	43116294	0.73
59	Co	72	4308272	0.46
60	Ni	72	1182363	0.72
63	Cu	72	3222104	0.63
66	Zn	72	537493	0.34
75	As	72	453112	0.44
78	Se	72	25336	1.06
88	Sr	115	1878606	0.31
95	Mo	115	1777077	0.08
107	Ag	115	5778036	0.98
111	Cd	115	831396	0.58
118	Sn	115	1718747	0.57
121	Sb	115	2695499	0.25
137	Ba	115	850822	0.27
205	Tl	209	12464961	1.43
208	Pb	209	16425414	0.18

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	808158	0.53	840297	96.18	70	120	
72	Ge	625093	0.37	659533	94.78	70	120	
115	In	5812550	0.65	6171400	94.19	70	120	
209	Bi	14454157	0.28	15418181	93.75	70	120	

Calibration Standard Report

Date Acquired	5/24/2016 11:35	Sample Name	H2-160524
Data Batch	160524.b	Comment	CAL ICPMS_TW
Data File Name	019CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	79240	0.53
9	Be	45	109748	0.64
11	B	45	38833	0.78
23	Na	45	16732059	0.29
24	Mg	45	8061562	1.03
27	Al	45	1178	22.95
39	K	45	7863010	0.94
44	Ca	45	454660	0.28
47	Ti	45	250293	0.26
51	V	45	8733412	0.40
52	Cr	45	10207349	0.29
55	Mn	45	5481787	0.34
56	Fe	45	36599	19.70
59	Co	72	16891901	0.70
60	Ni	72	4580542	0.35
63	Cu	72	12481094	1.00
66	Zn	72	2125229	0.78
75	As	72	1812125	0.18
78	Se	72	100822	0.41
88	Sr	115	7494634	2.08
95	Mo	115	7098899	1.48
107	Ag	115	2611	20.13
111	Cd	115	3271592	0.34
118	Sn	115	6854595	0.55
121	Sb	115	4275	5.30
137	Ba	115	3335611	0.54
205	Tl	209	48551716	0.49
208	Pb	209	65494647	0.13

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	808877	1.00	840297	96.26	70	120	
72	Ge	632048	0.71	659533	95.83	70	120	
115	In	5793972	0.22	6171400	93.88	70	120	
209	Bi	14310577	0.68	15418181	92.82	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/24/2016 11:43	Sample Name	ICSA-160524
Data Batch	160524.b	Comment	ICSAICPMS_TW
Data File Name	023ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	-0.014	12	39.6	1.2	0.8	
11	B	11.088	302	10.5	30	30	
51	V	0.047	2017	5.1	10	10	
52	Cr	0.432	2957	5.4	8	5	
55	Mn	1.493	4179	2.9	8	10	
59	Co	0.578	4993	2.3	8	10	
60	Ni	0.178	1899	5.4	8	10	
63	Cu	0.399	14219	6.3	8	10	
66	Zn	1.502	1855	5.4	10	5	
75	As	0.726	746	1.5	4	5	
78	Se	0.342	67	9.0	2	5	
88	Sr	1.464	6105	2.7	10	10	
107	Ag	0.234	2568	12.3	0.8	2	
111	Cd	0.650	1008	5.0	1.2	1	
118	Sn	0.573	2120	7.2	10	10	
121	Sb	0.424	2201	5.7	4	2.5	
137	Ba	0.424	737	9.0	8	10	
205	Tl	0.055	1331	3.0	4	1.5	
208	Pb	0.141	5164	4.4	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	796130	0.17	840297	94.74	70	120	
72	Ge	619175	0.05	659533	93.88	70	120	
115	In	5464974	0.09	6171400	88.55	70	120	
209	Bi	13735531	0.45	15418181	89.09	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/24/2016 11:45	Sample Name	ICSAB-160524
Data Batch	160524.b	Comment	ICSBICPMS_TW
Data File Name	024ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	40.341	174794	0.78	40	100.9	80	120	
52	Cr	45	21.490	108649	0.70	20	107.5	80	120	
55	Mn	45	19.911	53752	0.39	20	99.6	80	120	
59	Co	72	40.498	337509	0.87	40	101.2	80	120	
60	Ni	72	38.351	88165	0.55	40	95.9	80	120	
63	Cu	72	20.788	139729	0.79	20	103.9	80	120	
66	Zn	72	20.685	21951	2.35	20	103.4	80	120	
75	As	72	20.290	18201	0.72	20	101.4	80	120	
78	Se	72	19.796	1032	4.23	20	99.0	80	120	
107	Ag	115	19.177	209021	0.40	20	95.9	80	120	
111	Cd	115	10.519	16361	2.33	10	105.2	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	794395	0.66	840297	94.54	70	120	
72	Ge	621946	0.38	659533	94.30	70	120	
115	In	5502991	0.41	6171400	89.17	70	120	
209	Bi	13716900	0.46	15418181	88.97	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/24/2016 11:55	Sample Name	ICV-160524
Data Batch	160524.b	Comment	ICV ICPMS_TW
Data File Name	028_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	103.151	4291	2.67	100	103.2	90	110	
9	Be	45	99.344	5712	1.80	100	99.3	90	110	
11	B	45	97.517	2071	3.16	100	97.5	90	110	
23	Na	45	2574.627	1825154	0.57	2500	103.0	90	110	
24	Mg	45	2574.905	872934	0.41	2500	103.0	90	110	
27	Al	45	2460.130	296598	0.77	2500	98.4	90	110	
39	K	45	2577.832	895096	0.69	2500	103.1	90	110	
44	Ca	45	2333.896	44755	2.08	2500	93.4	90	110	
47	Ti	45	102.432	13402	1.05	100	102.4	90	110	
51	V	45	101.842	466398	0.71	100	101.8	90	110	
52	Cr	45	106.027	566861	0.58	100	106.0	90	110	
55	Mn	45	99.808	285947	1.11	100	99.8	90	110	
56	Fe	45	2513.249	11346345	1.39	2500	100.5	90	110	
59	Co	72	106.139	926632	0.74	100	106.1	90	110	
60	Ni	72	105.289	250884	0.46	100	105.3	90	110	
63	Cu	72	103.684	680906	0.63	100	103.7	90	110	
66	Zn	72	102.987	113315	0.32	100	103.0	90	110	
75	As	72	101.839	95309	0.52	100	101.8	90	110	
78	Se	72	103.646	5442	1.22	100	103.6	90	110	
88	Sr	115	100.335	397416	0.44	100	100.3	90	110	
95	Mo	115	97.704	365630	0.67	100	97.7	90	110	
107	Ag	115	95.617	1157085	0.44	100	95.6	90	110	
111	Cd	115	99.029	170990	0.73	100	99.0	90	110	
118	Sn	115	101.845	368340	0.45	100	101.8	90	110	
121	Sb	115	97.915	553742	0.51	100	97.9	90	110	
137	Ba	115	99.626	175490	1.40	100	99.6	90	110	
205	Tl	209	99.116	2520906	1.00	100	99.1	90	110	
208	Pb	209	99.763	3417541	1.29	100	99.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	844889	0.31	840297	100.55	70	120	
72	Ge	651743	0.52	659533	98.82	70	120	
115	In	6110191	0.61	6171400	99.01	70	120	
209	Bi	14975617	1.82	15418181	97.13	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/24/2016 12:08	Sample Name	LCVL-160524
Data Batch	160524.b	Comment	LCVLICPMS_TW
Data File Name	031LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.800	458	7.84	10	108.0	70	130	
9	Be	45	0.942	67	7.55	1	94.2	70	130	
11	B	45	21.242	522	5.16	20	106.2	70	130	
23	Na	45	106.297	98763	0.50	100	106.3	70	130	
24	Mg	45	104.261	36752	2.64	100	104.3	70	130	
27	Al	45	99.777	13904	2.49	100	99.8	70	130	
39	K	45	108.522	84507	1.92	100	108.5	70	130	
44	Ca	45	91.398	2487	4.56	100	91.4	70	130	
47	Ti	45	4.958	650	6.90	5	99.2	70	130	
51	V	45	1.073	6765	3.23	1	107.3	70	130	
52	Cr	45	5.377	29303	1.17	5	107.5	70	130	
55	Mn	45	5.046	14493	1.88	5	100.9	70	130	
56	Fe	45	101.633	466750	0.83	100	101.6	70	130	
59	Co	72	5.291	46797	1.79	5	105.8	70	130	
60	Ni	72	5.127	13837	3.63	5	102.5	70	130	
63	Cu	72	4.345	40764	0.51	5	86.9	70	130	
66	Zn	72	5.224	6089	2.12	5	104.5	70	130	
75	As	72	5.094	4911	0.81	5	101.9	70	130	
78	Se	72	5.347	333	8.34	5	106.9	70	130	
88	Sr	115	5.102	21300	0.64	5	102.0	70	130	
95	Mo	115	4.862	18317	1.02	5	97.2	70	130	
107	Ag	115	1.919	23374	1.75	2	96.0	70	130	
111	Cd	115	1.016	1767	1.54	1	101.6	70	130	
118	Sn	115	5.119	18893	3.77	5	102.4	70	130	
121	Sb	115	1.946	11117	4.34	2	97.3	70	130	
137	Ba	115	5.050	9012	2.28	5	101.0	70	130	
205	Tl	209	0.993	25451	1.85	1	99.3	70	130	
208	Pb	209	0.990	34874	1.18	1	99.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	838224	0.82	840297	99.75	70	120	
72	Ge	657401	0.29	659533	99.68	70	120	
115	In	6140025	1.32	6171400	99.49	70	120	
209	Bi	15050463	0.46	15418181	97.62	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/24/2016 12:21	Sample Name	ICB-160524
Data Batch	160524.b	Comment	ICB ICPMS_TW
Data File Name	033_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.049	12	16.9	2	5	
9	Be	45	-0.072	9	22.2	0.4	0.3	
11	B	45	1.028	117	5.7	10	10	
23	Na	45	2.509	26921	1.3	50	100	
24	Mg	45	-1.488	1265	8.6	50	100	
27	Al	45	-0.925	1956	1.1	50	10	
39	K	45	6.571	51593	1.8	50	100	
44	Ca	45	-5.732	676	12.6	50	100	
47	Ti	45	-0.009	6	91.6	4	3	
51	V	45	0.086	2312	4.4	4	3	
52	Cr	45	-0.002	820	4.9	2	2	
55	Mn	45	-0.005	146	14.9	2	3	
56	Fe	45	-0.334	10633	0.8	50	50	
59	Co	72	-0.010	121	26.4	2	3	
60	Ni	72	-0.279	926	3.3	2	3	
63	Cu	72	-0.984	6116	3.8	2	2	
66	Zn	72	-0.012	294	8.0	4	2	
75	As	72	0.016	122	4.9	2	2	
78	Se	72	0.068	57	10.0	1	2	
88	Sr	115	0.008	1072	4.5	4	3	
95	Mo	115	0.002	42	35.6	2	2	
107	Ag	115	0.003	70	29.7	0.4	1	
111	Cd	115	0.003	9	43.3	0.4	0.3	
118	Sn	115	0.021	377	3.5	4	3	
121	Sb	115	0.000	62	29.5	2	0.8	
137	Ba	115	0.020	112	25.6	2	3	
205	Tl	209	-0.001	37	39.6	2	0.5	
208	Pb	209	-0.009	508	6.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	842635	0.81	840297	100.28	70	120	
72	Ge	658945	0.09	659533	99.91	70	120	
115	In	6110061	0.29	6171400	99.01	70	120	
209	Bi	14893659	0.89	15418181	96.60	70	120	

Sample Report

Date Acquired	5/24/16 12:33 PM	Sample Name	1605121-01A
Data Batch	160524.b	Comment	SAMPICPMS_TSDOD1
Data File Name	039_ARF.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	67.062	2772	2.09	2000	>RL
9	Be	45	3.091	189	10.54	2000	>RL
11	B	45	81.582	1735	3.02	2000	>RL
23	Na	45	1753.308	1241002	0.20	25000	>RL
24	Mg	45	15783.863	5299316	0.84	25000	>RL
27	Al	45	74382.751	8836087	0.96	10000	OUTCAL
39	K	45	17659.614	5795458	1.89	25000	>RL
44	Ca	45	62392.090	1166858	0.36	25000	OUTCAL
47	Ti	45	255.622	33169	0.85	2000	>RL
51	V	45	114.641	520586	0.66	2000	>RL
52	Cr	45	78.838	418342	0.52	2000	>RL
55	Mn	45	637.513	1811005	0.55	2000	>RL
56	Fe	45	73144.763	327239427	0.55	10000	OUTCAL
59	Co	72	25.750	219294	0.94	2000	>RL
60	Ni	72	43.257	101383	1.60	2000	>RL
63	Cu	72	29.262	195993	0.19	2000	>RL
66	Zn	72	275.159	294631	1.14	2000	>RL
75	As	72	29.109	26629	0.46	2000	>RL
78	Se	72	5.401	325	4.92	2000	>RL
88	Sr	115	392.181	1508704	0.38	2000	>RL
95	Mo	115	1.835	6713	4.56	2000	
107	Ag	115	0.267	3177	5.65	500	
111	Cd	115	0.783	1319	9.93	2000	>RL
118	Sn	115	7.748	27535	1.24	2000	>RL
121	Sb	115	8.385	46223	5.31	500	>RL
137	Ba	115	476.517	816506	0.33	2000	>RL
205	Tl	209	0.796	19853	5.50	2000	
208	Pb	209	591.643	19815617	0.16	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	838156	0.23	840297	99.75	70	120	
72	Ge	635302	0.42	659533	96.33	70	120	
115	In	5946430	1.33	6171400	96.35	70	120	
209	Bi	14643633	0.30	15418181	94.98	70	120	

DNR; For verification of MS, MSD Only

Matrix Spike Sample (MS) Report

Date Acquired	5/24/2016 12:35	Sample Name	1605121-01A MS
Data Batch	160524.b	Comment	MS ICPMS_TSDOD1
Data File Name	040_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	255.708	10625	0.73	67.1	200	94.3	80	120	
9	Be	45	193.900	11148	1.98	3.1	200	95.4	80	120	
11	B	45	268.147	5533	2.30	81.6	200	93.3	80	120	
23	Na	45	6523.772	4590664	0.51	1753.3	1000	477.0	80	120	Fail
24	Mg	45	19260.160	6524472	0.43	15783.9	1000	347.6	80	120	Fail
27	Al	45	78320.408	9387274	0.72	74382.8	1000	393.8	80	120	Fail
39	K	45	22600.936	7470410	0.87	17659.6	1000	494.1	80	120	Fail
44	Ca	45	62084.538	1171632	0.81	62392.1	1000	-30.8	80	120	Fail
47	Ti	45	409.969	53674	0.34	255.6	200	77.2	80	120	Fail
51	V	45	308.639	1410925	0.91	114.6	200	97.0	80	120	
52	Cr	45	270.546	1446563	0.71	78.8	200	95.9	80	120	
55	Mn	45	798.793	2289621	0.08	637.5	200	80.6	80	120	
56	Fe	45	71977.013	324919872	0.28	73144.8	1000	-116.8	80	120	Fail
59	Co	72	223.456	1900948	0.22	25.8	200	98.9	80	120	
60	Ni	72	241.079	557871	0.63	43.3	200	98.9	80	120	
63	Cu	72	227.515	1441673	0.06	29.3	200	99.1	80	120	
66	Zn	72	465.308	497894	0.74	275.2	200	95.1	80	120	
75	As	72	223.934	204114	0.25	29.1	200	97.4	80	120	
78	Se	72	199.547	10165	0.42	5.4	200	97.1	80	120	
88	Sr	115	504.147	1916018	0.57	392.2	200	56.0	80	120	Fail
95	Mo	115	177.033	636925	0.29	1.8	200	87.6	80	120	
107	Ag	115	184.863	2150888	0.38	0.3	200	92.3	80	120	
111	Cd	115	196.718	326584	0.39	0.8	200	98.0	80	120	
118	Sn	115	195.982	681205	0.26	7.7	200	94.1	80	120	
121	Sb	115	61.021	331827	0.66	8.4	200	26.3	80	120	Fail
137	Ba	115	717.994	1215547	0.17	476.5	200	120.7	80	120	Fail
205	Tl	209	194.126	4753206	0.59	0.8	200	96.7	80	120	
208	Pb	209	737.766	24325935	1.14	591.6	200	73.1	80	120	Fail

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	845775	0.99	840297	100.65	70	120	
72	Ge	635160	0.44	659533	96.30	70	120	
115	In	5875387	1.38	6171400	95.20	70	120	
209	Bi	14415931	0.71	15418181	93.50	70	120	

DNR; For verification of MS, MSD Only

Matrix Spike Sample (MS) Report

Date Acquired	5/24/2016 12:37	Sample Name	1605121-01A MSD
Data Batch	160524.b	Comment	MSD ICPMS_TSDOD1
Data File Name	041_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	254.390	10658	1.52	67.1	200	93.7	80	120	
9	Be	45	193.883	11238	0.55	3.1	200	95.4	80	120	
11	B	45	263.099	5474	3.30	81.6	200	90.8	80	120	
23	Na	45	6412.007	4549349	1.04	1753.3	1000	465.9	80	120	Fail
24	Mg	45	19113.237	6528038	0.79	15783.9	1000	332.9	80	120	Fail
27	Al	45	75885.775	9170452	0.70	74382.8	1000	150.3	80	120	Fail
39	K	45	21960.426	7319169	1.15	17659.6	1000	430.1	80	120	Fail
44	Ca	45	53600.598	1019902	0.36	62392.1	1000	-879.1	80	120	Fail
47	Ti	45	398.744	52634	1.29	255.6	200	71.6	80	120	Fail
51	V	45	314.632	1450160	1.34	114.6	200	100.0	80	120	
52	Cr	45	272.855	1470940	0.95	78.8	200	97.0	80	120	
55	Mn	45	763.111	2205346	0.67	637.5	200	62.8	80	120	Fail
56	Fe	45	74484.684	339009880	0.34	73144.8	1000	134.0	80	120	Fail
59	Co	72	227.852	1945514	1.18	25.8	200	101.1	80	120	
60	Ni	72	246.348	572135	1.08	43.3	200	101.5	80	120	
63	Cu	72	228.862	1455513	0.88	29.3	200	99.8	80	120	
66	Zn	72	473.705	508759	0.52	275.2	200	99.3	80	120	
75	As	72	229.663	210108	0.59	29.1	200	100.3	80	120	
78	Se	72	202.981	10377	0.43	5.4	200	98.8	80	120	
88	Sr	115	493.359	1874258	0.87	392.2	200	50.6	80	120	Fail
95	Mo	115	182.060	654775	0.52	1.8	200	90.1	80	120	
107	Ag	115	185.199	2153912	0.96	0.3	200	92.5	80	120	
111	Cd	115	197.253	327337	0.19	0.8	200	98.2	80	120	
118	Sn	115	203.310	706415	0.45	7.7	200	97.8	80	120	
121	Sb	115	63.588	345655	0.61	8.4	200	27.6	80	120	Fail
137	Ba	115	663.731	1123271	0.40	476.5	200	93.6	80	120	
205	Tl	209	195.253	4781269	1.11	0.8	200	97.2	80	120	
208	Pb	209	849.906	28024270	0.87	591.6	200	129.1	80	120	Fail

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	852683	0.58	840297	101.47	70	120	
72	Ge	637503	0.16	659533	96.66	70	120	
115	In	5872496	0.33	6171400	95.16	70	120	
209	Bi	14420815	2.08	15418181	93.53	70	120	

DNR; For verification of MS, MSD Only

Continuing Calibration Verification (CCV) Report

Date Acquired	5/24/2016 12:47	Sample Name	CCV1-160524
Data Batch	160524.b	Comment	CCV ICPMS_TW
Data File Name	046_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	202.853	8588	1.01	200	101.4	90	110	
9	Be	45	200.393	11732	1.67	200	100.2	90	110	
11	B	45	199.019	4207	4.16	200	99.5	90	110	
23	Na	45	5108.439	3666465	0.21	5000	102.2	90	110	
24	Mg	45	5132.714	1772108	0.15	5000	102.7	90	110	
27	Al	45	4946.656	605833	0.37	5000	98.9	90	110	
39	K	45	5172.629	1780153	0.60	5000	103.5	90	110	
44	Ca	45	4820.434	93381	0.81	5000	96.4	90	110	
47	Ti	45	201.473	26867	1.55	200	100.7	90	110	
51	V	45	202.156	941868	0.54	200	101.1	90	110	
52	Cr	45	207.475	1129998	0.47	200	103.7	90	110	
55	Mn	45	202.649	591696	0.31	200	101.3	90	110	
56	Fe	45	5049.897	23228697	0.69	5000	101.0	90	110	
59	Co	72	207.059	1868178	0.16	200	103.5	90	110	
60	Ni	72	206.935	508090	0.24	200	103.5	90	110	
63	Cu	72	208.018	1399081	0.11	200	104.0	90	110	
66	Zn	72	204.632	232410	0.85	200	102.3	90	110	
75	As	72	203.480	196717	0.33	200	101.7	90	110	
78	Se	72	204.006	11020	0.91	200	102.0	90	110	
88	Sr	115	203.005	805063	0.27	200	101.5	90	110	
95	Mo	115	200.925	753762	0.53	200	100.5	90	110	
107	Ag	115	199.675	2422371	0.34	200	99.8	90	110	
111	Cd	115	203.644	352520	0.48	200	101.8	90	110	
118	Sn	115	200.775	727706	0.42	200	100.4	90	110	
121	Sb	115	199.914	1133398	0.45	200	100.0	90	110	
137	Ba	115	202.249	357092	0.22	200	101.1	90	110	
205	Tl	209	199.960	5092709	0.12	200	100.0	90	110	
208	Pb	209	199.846	6854236	0.51	200	99.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861315	0.14	840297	102.50	70	120	
72	Ge	673635	0.32	659533	102.14	70	120	
115	In	6125976	0.92	6171400	99.26	70	120	
209	Bi	14996078	1.19	15418181	97.26	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/24/2016 12:51	Sample Name	LCVL1-160524
Data Batch	160524.b	Comment	LCVLICPMS_TW
Data File Name	048LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.472	455	0.79	10	104.7	70	130	
9	Be	45	0.848	63	14.39	1	84.8	70	130	
11	B	45	28.783	689	9.74	20	143.9	70	130	Fail
23	Na	45	104.898	99996	0.73	100	104.9	70	130	
24	Mg	45	101.135	36507	2.17	100	101.1	70	130	
27	Al	45	99.179	14146	1.66	100	99.2	70	130	
39	K	45	103.632	84780	0.68	100	103.6	70	130	
44	Ca	45	89.116	2500	3.05	100	89.1	70	130	
47	Ti	45	5.107	684	9.27	5	102.1	70	130	
51	V	45	1.065	6882	1.72	1	106.5	70	130	
52	Cr	45	5.289	29487	1.86	5	105.8	70	130	
55	Mn	45	5.097	14969	3.04	5	101.9	70	130	
56	Fe	45	100.397	471646	0.44	100	100.4	70	130	
59	Co	72	5.221	47217	1.23	5	104.4	70	130	
60	Ni	72	5.051	13963	0.47	5	101.0	70	130	
63	Cu	72	4.009	39446	1.79	5	80.2	70	130	
66	Zn	72	5.017	5992	1.14	5	100.3	70	130	
75	As	72	5.036	4966	1.99	5	100.7	70	130	
78	Se	72	5.018	323	4.71	5	100.4	70	130	
88	Sr	115	5.101	21495	0.92	5	102.0	70	130	
95	Mo	115	4.890	18594	1.32	5	97.8	70	130	
107	Ag	115	1.940	23841	0.84	2	97.0	70	130	
111	Cd	115	1.020	1791	3.87	1	102.0	70	130	
118	Sn	115	5.137	19132	1.18	5	102.7	70	130	
121	Sb	115	2.022	11662	1.60	2	101.1	70	130	
137	Ba	115	4.991	8991	2.88	5	99.8	70	130	
205	Tl	209	1.008	25979	0.73	1	100.8	70	130	
208	Pb	209	1.013	35888	0.25	1	101.3	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	857112	0.39	840297	102.00	70	120	
72	Ge	672214	0.29	659533	101.92	70	120	
115	In	6197171	0.19	6171400	100.42	70	120	
209	Bi	15137482	0.15	15418181	98.18	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/24/2016 12:54	Sample Name	CCB1-160524
Data Batch	160524.b	Comment	CCB ICPMS_TW
Data File Name	049_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.156	21	23.8	2	5	
9	Be	45	-0.108	7	24.7	0.4	0.3	
11	B	45	4.844	196	19.8	10	10	
23	Na	45	2.132	26909	2.3	50	100	
24	Mg	45	-2.276	1008	12.0	50	100	
27	Al	45	-0.811	1988	2.5	50	10	
39	K	45	-0.324	49809	0.5	50	100	
44	Ca	45	-5.288	690	6.9	50	100	
47	Ti	45	0.016	9	57.3	4	3	
51	V	45	0.046	2148	1.6	4	3	
52	Cr	45	-0.013	767	4.6	2	2	
55	Mn	45	-0.002	154	20.1	2	3	
56	Fe	45	0.024	12360	1.4	50	50	
59	Co	72	-0.011	121	8.4	2	3	
60	Ni	72	-0.361	736	2.6	2	3	
63	Cu	72	-1.262	4344	4.8	2	2	
66	Zn	72	0.036	350	3.8	4	2	
75	As	72	-0.005	103	9.7	2	2	
78	Se	72	0.003	54	11.6	1	2	
88	Sr	115	0.009	1083	5.8	4	3	
95	Mo	115	-0.002	28	45.4	2	2	
107	Ag	115	0.014	207	18.6	0.4	1	
111	Cd	115	0.003	10	100.0	0.4	0.3	
118	Sn	115	0.028	403	20.5	4	3	
121	Sb	115	0.040	294	42.1	2	0.8	
137	Ba	115	0.028	128	9.2	2	3	
205	Tl	209	0.001	91	14.8	2	0.5	
208	Pb	209	0.006	1014	3.5	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	850577	0.05	840297	101.22	70	120	
72	Ge	664655	0.27	659533	100.78	70	120	
115	In	6154676	0.68	6171400	99.73	70	120	
209	Bi	15080693	0.62	15418181	97.81	70	120	

ICP-MS4_160525D
For

DHL Work Order
1605121

Lab Data Review Check List

EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS4_160525D SOP: MET-ICPMS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			x
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			x
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%	X	~~X~~		
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)	X			

Lab Data Review Check List

EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality	X			x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?		X			

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag Data/ Case Narative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data: See Run Log

Analyst: [signature] Date of Completion: 05/26/2016

Second-Level Review: Janice Whitt Date Stamp: 5/31/2016

REVIEWED BY
By Janice Whitt at 11:12:33 AM, 5/31/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160525D** **Run No.:** 86016

Analytical Run Date: 5/25/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 1:51:00 PM		
L2-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 1:53:00 PM		
L-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 1:55:00 PM		
10X-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 1:57:00 PM		
5X-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 1:59:00 PM		
2X-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 2:01:00 PM		
H-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 2:03:00 PM		
H2-160525	1	ICPMS_TWDOD	CAL	R86016	5/25/2016 2:05:00 PM		
ICSA-160525	1	ICPMS_TWDOD	ICSA	R86016	5/25/2016 2:13:00 PM		
ICSAB-160525	1	ICPMS_TWDOD	ICSB	R86016	5/25/2016 2:15:00 PM		
ICV-160525	1	ICPMS_TWDOD	ICV	R86016	5/25/2016 2:34:00 PM		
LCVL-160525	1	ICPMS_TWDOD	LCVL	R86016	5/25/2016 2:40:00 PM		
ICB-160525	1	ICPMS_TWDOD	ICB	R86016	5/25/2016 2:54:00 PM		
CCV5-160525	1	ICPMS_TWDOD	CCV	R86016	5/25/2016 5:17:00 PM		
LCVL5-160525	1	ICPMS_TWDOD	LCVL	R86016	5/25/2016 5:21:00 PM		
CCB5-160525	1	ICPMS_TWDOD	CCB	R86016	5/25/2016 5:23:00 PM		
MB-75238	5	ICPMS_TSDOD1	MBLK	75238	5/25/2016 5:25:00 PM		
LCS-75238	5	ICPMS_TSDOD1	LCS	75238	5/25/2016 5:27:00 PM		
LCSD-75238	5	ICPMS_TSDOD1	LCSD	75238	5/25/2016 5:29:00 PM		
1605121-22A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:33:00 PM		
1605121-22A SD	25	ICPMS_TSDOD1	SD	75238	5/25/2016 5:35:00 PM		
1605121-18A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:37:00 PM		
1605121-19A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:39:00 PM		
1605121-20A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:41:00 PM		
1605121-21A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:43:00 PM		
1605121-23A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:45:00 PM		
1605121-24A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:47:00 PM		
1605121-25A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:49:00 PM		
1605121-26A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:51:00 PM		
1605121-27A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 5:53:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160525D** **Run No.:** 86016

1605121-22A PDS	5	ICPMS_TSDOD1	PDS	75238	5/25/2016 5:55:00 PM		
1605121-22A MS	5	ICPMS_TSDOD1	MS	75238	5/25/2016 5:57:00 PM		
1605121-22A MSD	5	ICPMS_TSDOD1	MSD	75238	5/25/2016 5:59:00 PM		~~S-flag Pb- High~~ jw 5/31/2016
CCV6-160525	1	ICPMS_TWDOD	CCV	R86016	5/25/2016 6:01:00 PM		
LCVL6-160525	1	ICPMS_TWDOD	LCVL	R86016	5/25/2016 6:05:00 PM		
CCB6-160525	1	ICPMS_TWDOD	CCB	R86016	5/25/2016 6:07:00 PM		
1605121-28A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:09:00 PM		
1605121-29A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:11:00 PM		
1605121-30A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:13:00 PM		
1605121-31A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:15:00 PM		
1605121-32A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:17:00 PM		
1605121-33A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:19:00 PM		
1605121-34A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:21:00 PM		
1605121-35A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:23:00 PM		
1605121-36A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:25:00 PM		
1605121-37A	5	ICPMS_TSDOD1	SAMP	75238	5/25/2016 6:27:00 PM		
CCV7-160525	1	ICPMS_TWDOD	CCV	R86016	5/25/2016 6:29:00 PM		
LCVL7-160525	1	ICPMS_TWDOD	LCVL	R86016	5/25/2016 6:33:00 PM		
CCB7-160525	1	ICPMS_TWDOD	CCB	R86016	5/25/2016 6:45:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160525.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160525	CAL ICPMS_TW	2102	
14	CalStd	L-160525	CAL ICPMS_TW	2103	
15	CalStd	10X-160525	CAL ICPMS_TW	2104	
16	CalStd	5X-160525	CAL ICPMS_TW	2105	
17	CalStd	2X-160525	CAL ICPMS_TW	2106	
18	CalStd	H-160525	CAL ICPMS_TW	2107	
19	CalStd	H2-160525	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	1		
13	2		
14	3		
15	4		
16	5		
17	6		
18	7		
19	8		

Sample List

20

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	ICB	BLANK	CCB ICPMS_TW	1102	
22	ICB	BLANK	CCB ICPMS_TW	1103	
23	ICSA	ICSA-160525	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160525	ICSBICPMS_TW	2110	
25	ICB	BLANK	CCB ICPMS_TW	1101	
26	ICB	BLANK	CCB ICPMS_TW	1102	
27	ICB	BLANK	CCB ICPMS_TW	1103	
28	ICV	ICV-160525	ICV ICPMS_TW	2111	
29	ICB	ICB-160525	ICB ICPMS_TW	1101	
30	ICB	ICB-160525	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160525	LCVLICPMS_TW	2112	
32	ICB	ICB-160525	ICB ICPMS_TW	1102	
33	ICB	ICB-160525	ICB ICPMS_TW	1103	
34	PB_W	MB-75311	MBLK200.8	2201	
35	LCS_200	LCS-75311	LCS 200.8	2202	
36	LCS_200	LCSD-75311	LCSD200.8	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605215-09A	SAMP200.8	2204	
39	SD	1605215-09A SD	SD 200.8	2205	
40	SAMP_W	1605215-01A	SAMP200.8	2206	

#	Level	Dilution	Skip
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34		1	
35		1	
36		1	
37			
38		1	
39		5	
40		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	SAMP_W	1605215-03A	SAMP200.8	2207	
42	SAMP_W	1605215-07A	SAMP200.8	2208	
43	PDS	1605215-09A PDS	PDS 200.8	2209	
44	MS_W	1605215-09A MS	MS 200.8	2210	
45	MS_W	1605215-09A MSD	MSD 200.8	2211	

Sample List

46	CCB	RINSE	CCB ICPMS_TW	1102
47	CCB	RINSE	CCB ICPMS_TW	1103
48	PB_W	MB-75321	MBLK200.8DISS	2301
49	PB_W	FB-75321	MBLK200.8DISS	2302
50	LCS_200	LCS-75321	LCS 200.8DISS	2303
51	LCS_200	LCSD-75321	LCSD200.8DISS	2304
52	CCB	RINSE	CCB ICPMS_TW	1101
53	AllRef	1605215-08B	SAMP200.8DISS	2305
54	SD	1605215-08B SD	SD 200.8DISS	2306
55	SAMP_W	1605215-02B	SAMP200.8DISS	2307
56	SAMP_W	1605215-04B	SAMP200.8DISS	2308
57	SAMP_W	1605215-10B	SAMP200.8DISS	2309
58	PDS	1605215-08B PDS	PDS 200.8DISS	2310
59	MS_W	1605215-08B MS	MS 200.8DISS	2311
60	MS_W	1605215-08B MSD	MSD 200.8DISS	2312

#	Level	Dilution	Skip
41		1	
42		1	
43		1	
44		1	
45		1	
46			
47			
48		1	
49		1	
50		1	
51		1	
52			
53		1	
54		5	
55		1	
56		1	
57		1	
58		1	
59		1	
60		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	CCB	RINSE	CCB ICPMS_TW	1102	
62	CCB	RINSE	CCB ICPMS_TW	1102	
63	CCB	RINSE	CCB ICPMS_TW	1103	
64	CCB	RINSE	CCB ICPMS_TW	1103	
65	AllRef	1605215-09A	SAMP200.8	2501	
66	SD	1605215-09A SD	SD 200.8	2502	
67	PDS	1605215-09A PDS	PDS 200.8	2503	
68	CCV	CCV1-160525	CCV ICPMS_TW	1207	
69	CCB	CCB1-160525	CCB ICPMS_TW	1102	
70	CCB	CCB1-160525	CCB ICPMS_TW	1103	
71	LLCCV	LCVL1-160525	LCVLICPMS_TW	2112	
72	CCB	CCB1-160525	CCB ICPMS_TW	1103	
73	PB_W	MB-75285	MBLK200.8	2401	

Sample List

74	LCS_200	LCS-75285	LCS 200.8	2402
75	LCS_200	LCSD-75285	LCSD200.8	2403
76	CCB	RINSE	CCB ICPMS_TW	1101
77	AllRef	1605174-06A	SAMP200.8	2404
78	SD	1605174-06A SD	SD 200.8	2405
79	SAMP_W	1605176-01A	SAMP200.8	2406
80	SAMP_W	1605176-02A	SAMP200.8	2407

#	Level	Dilution	Skip
61			
62			
63			
64			
65		10	
66		50	
67		10	
68			
69			
70			
71			
72			
73		1	
74		1	
75		1	
76			
77		1	
78		5	
79		1	
80		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605204-01A	SAMP200.8	2408	
82	SAMP_W	1605204-02A	SAMP200.8	2409	
83	PDS	1605174-06A PDS	PDS 200.8	2410	
84	MS_W	1605174-06A MS	MS 200.8	2411	
85	MS_W	1605174-06A MSD	MSD 200.8	2412	
86	CCV	CCV2-160525	CCV ICPMS_TW	1207	
87	CCB	CCB2-160525	CCB ICPMS_TW	1102	
88	LLCCV	LCVL2-160525	LCVLICPMS_TW	2112	
89	CCB	CCB2-160525	CCB ICPMS_TW	1103	
90	PB	MB-62591	MBLKICPMS_TSDOD	3101	
91	LCS_S	LCS-62591	LCS ICPMS_TSDOD	3103	
92	LCS_S	LCSD-62591	LCSDICPMS_TSDOD	3104	
93	CCB	RINSE	CCB ICPMS_TW	1101	
94	AllRef	1403262-06A	SAMPICPMS_TSDOD	3105	
95	SD	1403262-06A SD	SD ICPMS_TSDOD	3106	
96	Sample	1403262-02A	SAMPICPMS_TSDOD	3107	
97	Sample	1403262-03A	SAMPICPMS_TSDOD	3108	
98	Sample	1403262-04A	SAMPICPMS_TSDOD	3109	
99	Sample	1403262-05A	SAMPICPMS_TSDOD	3110	
100	Sample	1403262-07A	SAMPICPMS_TSDOD	3111	

Sample List

#	Level	Dilution	Skip
81		1	
82		1	
83		1	
84		1	
85		1	
86			
87			
88			
89			
90		5	Skip
91		5	Skip
92		5	Skip
93			Skip
94		5	Skip
95		25	Skip
96		5	Skip
97		5	Skip
98		5	Skip
99		5	Skip
100		5	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	Sample	1403262-08A	SAMPICPMS_TSDOD	3112	
102	Sample	1403262-09A	SAMPICPMS_TSDOD	3201	
103	Sample	1403262-10A	SAMPICPMS_TSDOD	3202	
104	Sample	1403262-11A	SAMPICPMS_TSDOD	3203	
105	PDS	1403262-06A PDS	PDS ICPMS_TSDOD	3204	
106	MS_S	1403262-06A MS	MS ICPMS_TSDOD	3205	
107	MS_S	1403262-06A MSD	MSD ICPMS_TSDOD	3206	
108	CCV	CCV3-140402	CCV ICPMS_TW	1207	
109	CCB	CCB3-140402	CCB ICPMS_TW	1102	
110	LLCCV	LCVL3-140402	LCVLICPMS_TW	2512	
111	CCB	CCB3-140402	CCB ICPMS_TW	1103	
112	Sample	1403262-12A	SAMPICPMS_TSDOD	3207	
113	Sample	1403262-13A	SAMPICPMS_TSDOD	3208	
114	Sample	1403262-14A	SAMPICPMS_TSDOD	3209	
115	Sample	1403263-01A	SAMPICPMS_TSDOD	3210	
116	Sample	1403263-02A	SAMPICPMS_TSDOD	3211	
117	Sample	1403263-03A	SAMPICPMS_TSDOD	3212	
118	Sample	1403263-04A	SAMPICPMS_TSDOD	3301	
119	Sample	1403263-05A	SAMPICPMS_TSDOD	3302	
120	Sample	1403263-06A	SAMPICPMS_TSDOD	3303	

#	Level	Dilution	Skip
101		5	Skip
102		5	Skip
103		5	Skip
104		5	Skip
105		5	Skip
106		5	Skip
107		5	Skip

Sample List

108			Skip
109			Skip
110			Skip
111			Skip
112		5	Skip
113		5	Skip
114		5	Skip
115		5	Skip
116		5	Skip
117		5	Skip
118		5	Skip
119		5	Skip
120		5	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	Sample	1403263-07A	SAMPICPMS_TSDOD	3304	
122	CCV	CCV4-140402	CCV ICPMS_TW	1207	
123	CCB	CCB4-140402	CCB ICPMS_TW	1102	
124	LLCCV	LCVL4-140402	LCVLICPMS_TW	2512	
125	CCB	CCB4-140402	CCB ICPMS_TW	1103	
126	PB	MB-62609	MBLKICPMS_TSDOD	3401	
127	Sample	PAINT CHIPS AW-13	SAMPICPMS_TSDOD	3402	
128	LCS_S	LCS-62609	LCS ICPMS_TSDOD	3403	
129	LCS_S	LCSD-62609	LCSDICPMS_TSDOD	3404	
130	CCB	RINSE	CCB ICPMS_TW	1101	
131	AllRef	1403264-10A	SAMPICPMS_TSDOD	3405	
132	SD	1403264-10A SD	SD ICPMS_TSDOD	3406	
133	Sample	1403263-08A	SAMPICPMS_TSDOD	3407	
134	Sample	1403263-09A	SAMPICPMS_TSDOD	3408	
135	Sample	1403264-01A	SAMPICPMS_TSDOD	3409	
136	Sample	1403264-02A	SAMPICPMS_TSDOD	3410	
137	Sample	1403264-03A	SAMPICPMS_TSDOD	3411	
138	Sample	1403264-04A	SAMPICPMS_TSDOD	3412	
139	Sample	1403264-05A	SAMPICPMS_TSDOD	3501	
140	Sample	1403264-06A	SAMPICPMS_TSDOD	3502	

#	Level	Dilution	Skip
121		5	Skip
122			Skip
123			Skip
124			Skip
125			Skip
126		5	Skip
127		50	Skip
128		5	Skip
129		5	Skip
130			Skip
131		5	Skip
132		25	Skip
133		5	Skip
134		5	Skip
135		5	Skip

Sample List

136	5	Skip
137	5	Skip
138	5	Skip
139	5	Skip
140	5	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	Sample	1403264-07A	SAMPICPMS_TSDOD	3503	
142	PDS	1403264-10A PDS	PDS ICPMS_TSDOD	3504	
143	MS_S	1403264-10A MS	MS ICPMS_TSDOD	3505	
144	MS_S	1403264-10A MSD	MSD ICPMS_TSDOD	3506	
145	CCV	CCV5-140402	CCV ICPMS_TW	1207	
146	CCB	CCB5-140402	CCB ICPMS_TW	1102	
147	LLCCV	LCVL5-140402	LCVLICPMS_TW	2511	
148	CCB	CCB5-140402	CCB ICPMS_TW	1103	
149	Sample	1403264-08A	SAMPICPMS_TSDOD	3507	
150	Sample	1403264-09A	SAMPICPMS_TSDOD	3508	
151	Sample	1403264-11A	SAMPICPMS_TSDOD	3509	
152	Sample	1403264-12A	SAMPICPMS_TSDOD	3510	
153	Sample	1403264-13A	SAMPICPMS_TSDOD	3511	
154	Sample	1403264-14A	SAMPICPMS_TSDOD	3512	
155	Sample	1403264-15A	SAMPICPMS_TSDOD	3310	
156	Sample	1403264-16A	SAMPICPMS_TSDOD	3311	
157	Sample	1403264-17A	SAMPICPMS_TSDOD	3312	
158	Sample	1403264-12A	SAMPICPMS_TSDOD	3510	
159	CCV	CCV6-140402	CCV ICPMS_TW	1207	
160	CCB	CCB6-140402	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
141		5	Skip
142		5	Skip
143		5	Skip
144		5	Skip
145			Skip
146			Skip
147			Skip
148			Skip
149		5	Skip
150		5	Skip
151		5	Skip
152		5	Skip
153		5	Skip
154		5	Skip
155		5	Skip
156		5	Skip
157		5	Skip
158		5	Skip
159			Skip
160			Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
161	LLCCV	LCVL6-140402	LCVLICPMS_TW	2511	

Sample List

162	CCB	CCB6-140402	CCB ICPMS_TW	1103
163	CCB	CCB6-140402	CCB ICPMS_TW	1102
164	CCB	CCB6-140402	CCB ICPMS_TW	1102

#	Level	Dilution	Skip
161			Skip
162			Skip
163			Skip
164			Skip

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160525.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160525	CAL ICPMS_TW	2102	
14	CalStd	L-160525	CAL ICPMS_TW	2103	
15	CalStd	10X-160525	CAL ICPMS_TW	2104	
16	CalStd	5X-160525	CAL ICPMS_TW	2105	
17	CalStd	2X-160525	CAL ICPMS_TW	2106	
18	CalStd	H-160525	CAL ICPMS_TW	2107	
19	CalStd	H2-160525	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			Skip
2			Skip
3			Skip
4			Skip
5			Skip
6			Skip
7			Skip
8			Skip
9			Skip
10			Skip
11			Skip
12	1		Skip
13	2		Skip
14	3		Skip
15	4		Skip
16	5		Skip
17	6		Skip
18	7		Skip
19	8		Skip

Sample List

20			Skip		

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	ICB	BLANK	CCB ICPMS_TW	1102	
22	ICB	BLANK	CCB ICPMS_TW	1103	
23	ICSA	ICSA-160525	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160525	ICSBICPMS_TW	2110	
25	ICB	BLANK	CCB ICPMS_TW	1101	
26	ICB	BLANK	CCB ICPMS_TW	1102	
27	ICB	BLANK	CCB ICPMS_TW	1103	
28	ICV	ICV-160525	ICV ICPMS_TW	2111	
29	ICB	ICB-160525	ICB ICPMS_TW	1101	
30	ICB	ICB-160525	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160525	LCVLICPMS_TW	2112	
32	ICB	ICB-160525	ICB ICPMS_TW	1102	
33	ICB	ICB-160525	ICB ICPMS_TW	1103	
34	PB_W	MB-75311	MBLK200.8	2201	
35	LCS_200	LCS-75311	LCS 200.8	2202	
36	LCS_200	LCSD-75311	LCSD200.8	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605215-09A	SAMP200.8	2204	
39	SD	1605215-09A SD	SD 200.8	2205	
40	SAMP_W	1605215-01A	SAMP200.8	2206	

#	Level	Dilution	Skip
21			Skip
22			Skip
23			Skip
24			Skip
25			Skip
26			Skip
27			Skip
28			Skip
29			Skip
30			Skip
31			Skip
32			Skip
33			Skip
34		1	Skip
35		1	Skip
36		1	Skip
37			Skip
38		1	Skip
39		5	Skip
40		1	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	SAMP_W	1605215-03A	SAMP200.8	2207	
42	SAMP_W	1605215-07A	SAMP200.8	2208	
43	PDS	1605215-09A PDS	PDS 200.8	2209	
44	MS_W	1605215-09A MS	MS 200.8	2210	
45	MS_W	1605215-09A MSD	MSD 200.8	2211	

Sample List

46	CCB	RINSE	CCB ICPMS_TW	1102
47	CCB	RINSE	CCB ICPMS_TW	1103
48	PB_W	MB-75321	MBLK200.8DISS	2301
49	PB_W	FB-75321	MBLK200.8DISS	2302
50	LCS_200	LCS-75321	LCS 200.8DISS	2303
51	LCS_200	LCSD-75321	LCSD200.8DISS	2304
52	CCB	RINSE	CCB ICPMS_TW	1101
53	AllRef	1605215-08B	SAMP200.8DISS	2305
54	SD	1605215-08B SD	SD 200.8DISS	2306
55	SAMP_W	1605215-02B	SAMP200.8DISS	2307
56	SAMP_W	1605215-04B	SAMP200.8DISS	2308
57	SAMP_W	1605215-10B	SAMP200.8DISS	2309
58	PDS	1605215-08B PDS	PDS 200.8DISS	2310
59	MS_W	1605215-08B MS	MS 200.8DISS	2311
60	MS_W	1605215-08B MSD	MSD 200.8DISS	2312

#	Level	Dilution	Skip
41		1	Skip
42		1	Skip
43		1	Skip
44		1	Skip
45		1	Skip
46			Skip
47			Skip
48		1	Skip
49		1	Skip
50		1	Skip
51		1	Skip
52			Skip
53		1	Skip
54		5	Skip
55		1	Skip
56		1	Skip
57		1	Skip
58		1	Skip
59		1	Skip
60		1	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	CCB	RINSE	CCB ICPMS_TW	1102	
62	CCB	RINSE	CCB ICPMS_TW	1102	
63	CCB	RINSE	CCB ICPMS_TW	1103	
64	CCB	RINSE	CCB ICPMS_TW	1103	
65	AllRef	1605215-09A	SAMP200.8	2501	
66	SD	1605215-09A SD	SD 200.8	2502	
67	PDS	1605215-09A PDS	PDS 200.8	2503	
68	CCV	CCV1-160525	CCV ICPMS_TW	1207	
69	CCB	CCB1-160525	CCB ICPMS_TW	1102	
70	CCB	CCB1-160525	CCB ICPMS_TW	1103	
71	LLCCV	LCVL1-160525	LCVLICPMS_TW	2112	
72	CCB	CCB1-160525	CCB ICPMS_TW	1103	
73	PB_W	MB-75285	MBLK200.8	2401	

Sample List

74	LCS_200	LCS-75285	LCS 200.8	2402
75	LCS_200	LCSD-75285	LCSD200.8	2403
76	CCB	RINSE	CCB ICPMS_TW	1101
77	AllRef	1605174-06A	SAMP200.8	2404
78	SD	1605174-06A SD	SD 200.8	2405
79	SAMP_W	1605176-01A	SAMP200.8	2406
80	SAMP_W	1605176-02A	SAMP200.8	2407

#	Level	Dilution	Skip
61			Skip
62			Skip
63			Skip
64			Skip
65		10	Skip
66		50	Skip
67		10	Skip
68			Skip
69			Skip
70			Skip
71			Skip
72			Skip
73		1	Skip
74		1	Skip
75		1	Skip
76			Skip
77		1	Skip
78		5	Skip
79		1	Skip
80		1	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605204-01A	SAMP200.8	2408	
82	SAMP_W	1605204-02A	SAMP200.8	2409	
83	PDS	1605174-06A PDS	PDS 200.8	2410	
84	MS_W	1605174-06A MS	MS 200.8	2411	
85	MS_W	1605174-06A MSD	MSD 200.8	2412	
86	CCV	CCV2-160525	CCV ICPMS_TW	1207	
87	CCB	CCB2-160525	CCB ICPMS_TW	1102	
88	LLCCV	LCVL2-160525	LCVLICPMS_TW	2112	
89	CCB	CCB2-160525	CCB ICPMS_TW	1103	
90	CCB		CAL ICPMS_TW	1101	
91	CCB		CAL ICPMS_TW	1101	
92	CCB		CAL ICPMS_TW	1101	
93	CCB		CAL ICPMS_TW	1102	
94	CCB		CAL ICPMS_TW	1102	
95	CCB		CAL ICPMS_TW	1102	
96	CCB		CAL ICPMS_TW	1102	
97	CCB		CAL ICPMS_TW	1103	
98	CCB		CAL ICPMS_TW	1103	
99	CCB		CAL ICPMS_TW	1103	
100	CCB		CAL ICPMS_TW	1103	

Sample List

#	Level	Dilution	Skip
81		1	Skip
82		1	Skip
83		1	Skip
84		1	Skip
85		1	Skip
86			Skip
87			Skip
88			Skip
89			Skip
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
102	CalStd	L2-160525	CAL ICPMS_TW	2102	
103	CalStd	L-160525	CAL ICPMS_TW	2103	
104	CalStd	10X-160525	CAL ICPMS_TW	2104	
105	CalStd	5X-160525	CAL ICPMS_TW	2105	
106	CalStd	2X-160525	CAL ICPMS_TW	2106	
107	CalStd	H-160525	CAL ICPMS_TW	2107	
108	CalStd	H2-160525	CAL ICPMS_TW	2108	
109	ICB	BLANK	CCB ICPMS_TW	1101	
110	ICB	BLANK	CCB ICPMS_TW	1102	
111	ICB	BLANK	CCB ICPMS_TW	1103	
112	ICSA	ICSA-160525	ICSAICPMS_TW	2109	
113	ICSB	ICSAB-160525	ICSBICPMS_TW	2110	
114	ICB	BLANK	CCB ICPMS_TW	1101	
115	ICB	BLANK	CCB ICPMS_TW	1102	
116	ICB	BLANK	CCB ICPMS_TW	1103	
117	ICV	ICV-160525	ICV ICPMS_TW	2111	
118	ICV	ICV-160525	ICV ICPMS_TW	2111	
119	ICB	ICB-160525	ICB ICPMS_TW	1101	
120	ICB	ICB-160525	ICB ICPMS_TW	1103	

#	Level	Dilution	Skip
101	1		
102	2		
103	3		
104	4		
105	5		
106	6		
107	7		

Sample List

108	8
109	
110	
111	
112	
113	
114	
115	
116	
117	
118	
119	
120	

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	LLICV	LCVL-160525	LCVLICPMS_TW	2512	
122	ICB	ICB-160525	ICB ICPMS_TW	1102	
123	ICB	ICB-160525	ICB ICPMS_TW	1103	
124	PB_W	MB-75318	MBLKICPMS_DW	3101	
125	LCS_W	LCS-75318	LCS ICPMS_DW	3102	
126	LCS_W	LCSD-75318	LCSDICPMS_DW	3103	
127	CCB	RINSE	CCB ICPMS_TW	1101	
128	AllRef	1605209-12A	SAMPICPMS_DW	3104	
129	SD	1605209-12A SD	SD ICPMS_DW	3105	
130	SAMP_W	1605209-05A	SAMPICPMS_DW	3106	
131	SAMP_W	1605209-08A	SAMPICPMS_DW	3107	
132	SAMP_W	1605209-09A	SAMPICPMS_DW	3108	
133	SAMP_W	1605209-10A	SAMPICPMS_DW	3109	
134	SAMP_W	1605209-11A	SAMPICPMS_DW	3110	
135	PDS	1605209-12A PDS	PDS ICPMS_DW	3111	
136	MS_W	1605209-12A MS	MS ICPMS_DW	3112	
137	MS_W	1605209-12A MSD	MSD ICPMS_DW	3504	
138	CCV	CCV3-160525	CCV ICPMS_TW	1207	
139	MS_W	1605209-12A MSD	MSD ICPMS_DW	2504	
140	CCB	CCB3-160525	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
121			
122			
123			
124		1	
125		1	
126		1	
127			
128		1	
129		5	
130		1	
131		1	
132		1	
133		1	
134		1	
135		1	

Sample List

136		1			
137		1			
138					
139		1			
140					

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	CCB	CCB3-160525	CCB ICPMS_TW	1102	
142	CCB	CCB3-160525	CCB ICPMS_TW	1103	
143	CCB	CCB3-160525	CCB ICPMS_TW	1103	
144	CCV	CCV3-160525	CCV ICPMS_TW	1207	
145	CCB	CCB3-160525	CCB ICPMS_TW	1102	
146	CCB	CCB3-160525	CCB ICPMS_TW	1102	
147	CCB	CCB3-160525	CCB ICPMS_TW	1103	
148	CCB	CCB3-160525	CCB ICPMS_TW	1103	
149	LLCCV	LCVL3-160525	LCVLICPMS_TW	2512	
150	CCB	CCB3-160525	CCB ICPMS_TW	1103	
151	PB_W	MB-75301	MBLKICPMS_TW	3201	
152	LCS_W	LCS-75301	LCS ICPMS_TW	3202	
153	LCS_W	LCSD-75301	LCSDICPMS_TW	3203	
154	CCB	RINSE	CCB ICPMS_TW	1101	
155	AllRef	1605200-06E	SAMPICPMS_TW	3204	
156	SD	1605200-06E SD	SD ICPMS_TW	3205	
157	SAMP_W	1605208-01C	SAMP6020A_W	3206	
158	SAMP_W	1605203-01C	SAMPICPMS_TW	3207	
159	SAMP_W	1605203-02C	SAMPICPMS_TW	3208	
160	SAMP_W	1605203-03C	SAMPICPMS_TW	3209	

#	Level	Dilution	Skip
141			
142			
143			
144			
145			
146			
147			
148			
149			
150			
151		1	
152		1	
153		1	
154			
155		1	
156		5	
157		1	
158		1	
159		1	
160		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
161	SAMP_W	1605209-01A	SAMPICPMS_TW	3210	

Sample List

162	SAMP_W	1605209-02A	SAMPICPMS_TW	3211
163	SAMP_W	1605209-03A	SAMPICPMS_TW	3212
164	SAMP_W	1605209-04A	SAMPICPMS_TW	3301
165	SAMP_W	1605209-06A	SAMPICPMS_TW	3302
166	PDS	1605200-06E PDS	PDS ICPMS_TW	3303
167	MS_W	1605200-06E MS	MS ICPMS_TW	3304
168	MS_W	1605200-06E MSD	MSD ICPMS_TW	3305
169	CCV	CCV4-160525	CCV ICPMS_TW	1207
170	CCB	CCB4-160525	CCB ICPMS_TW	1102
171	LLCCV	LCVL4-160525	LCVLICPMS_TW	2512
172	CCB	CCB4-160525	CCB ICPMS_TW	1103
173	SAMP_W	1605209-07A	SAMP6020A_W	3306
174	SAMP_W	1605200-04E	SAMPICPMS_TW	3307
175	SAMP_W	1605200-05E	SAMPICPMS_TW	3308
176	SAMP_W	1605200-07E	SAMPICPMS_TW	3309
177	SAMP_W	1605200-08E	SAMPICPMS_TW	3310
178	SAMP_W	1605200-09E	SAMPICPMS_TW	3311
179	SAMP_W	1605200-10E	SAMPICPMS_TW	3312
180	SAMP_W	1605200-11E	SAMPICPMS_TW	3401

#	Level	Dilution	Skip
161		1	
162		1	
163		1	
164		1	
165		1	
166		1	
167		1	
168		1	
169			
170			
171			
172			
173		1	
174		1	
175		1	
176		1	
177		1	
178		1	
179		1	
180		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
181	SAMP_W	1605200-12E	SAMPICPMS_TW	3402	
182	SAMP_W	1605200-13E	SAMPICPMS_TW	3403	
183	CCV	CCV5-160525	CCV ICPMS_TW	1207	
184	CCB	CCB5-160525	CCB ICPMS_TW	1102	
185	LLCCV	LCVL5-160525	LCVLICPMS_TW	2511	
186	CCB	CCB5-160525	CCB ICPMS_TW	1103	
187	PB	MB-75238	MBLKICPMS_TSDOD1	4101	
188	LCS_S	LCS-75238	LCS ICPMS_TSDOD1	4102	
189	LCS_S	LCSD-75238	LCSDICPMS_TSDOD1	4103	

Sample List

190	CCB	RINSE	CCB ICPMS_TW	1101
191	AllRef	1605121-22A	SAMPICPMS_TSDOD1	4104
192	SD	1605121-22A SD	SD ICPMS_TSDOD1	4105
193	Sample	1605121-18A	SAMPICPMS_TSDOD1	4106
194	Sample	1605121-19A	SAMPICPMS_TSDOD1	4107
195	Sample	1605121-20A	SAMPICPMS_TSDOD1	4108
196	Sample	1605121-21A	SAMPICPMS_TSDOD1	4109
197	Sample	1605121-23A	SAMPICPMS_TSDOD1	4110
198	Sample	1605121-24A	SAMPICPMS_TSDOD1	4111
199	Sample	1605121-25A	SAMPICPMS_TSDOD1	4112
200	Sample	1605121-26A	SAMPICPMS_TSDOD1	4201

#	Level	Dilution	Skip
181		1	
182		1	
183			
184			
185			
186			
187		5	
188		5	
189		5	
190			
191		2	
192		25	
193		5	
194		5	
195		5	
196		5	
197		5	
198		5	
199		5	
200		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
201	Sample	1605121-27A	SAMPICPMS_TSDOD1	4202	
202	PDS	1605121-22A PDS	PDS ICPMS_TSDOD1	4203	
203	MS_S	1605121-22A MS	MS ICPMS_TSDOD1	4204	
204	MS_S	1605121-22A MSD	MSD ICPMS_TSDOD1	4205	
205	CCV	CCV6-160525	CCV ICPMS_TW	1207	
206	CCB	CCB6-160525	CCB ICPMS_TW	1102	
207	LLCCV	LCVL6-160525	LCVLICPMS_TW	2511	
208	CCB	CCB6-160525	CCB ICPMS_TW	1103	
209	Sample	1605121-28A	SAMPICPMS_TSDOD1	4206	
210	Sample	1605121-29A	SAMPICPMS_TSDOD1	4207	
211	Sample	1605121-30A	SAMPICPMS_TSDOD1	4208	
212	Sample	1605121-31A	SAMPICPMS_TSDOD1	4209	
213	Sample	1605121-32A	SAMPICPMS_TSDOD1	4210	
214	Sample	1605121-33A	SAMPICPMS_TSDOD1	4211	
215	Sample	1605121-34A	SAMPICPMS_TSDOD1	4212	
216	Sample	1605121-35A	SAMPICPMS_TSDOD1	4301	
217	Sample	1605121-36A	SAMPICPMS_TSDOD1	4302	

Sample List

218	Sample	1605121-37A	SAMPICPMS_TSDOD1	4303
219	CCV	CCV7-160525	CCV ICPMS_TW	1207
220	CCB	CCB7-160525	CCB ICPMS_TW	1102

#	Level	Dilution	Skip
201		5	
202		5	
203		5	
204		5	
205			
206			
207			
208			
209		5	
210		5	
211		5	
212		5	
213		5	
214		5	
215		5	
216		5	
217		5	
218		5	
219			
220			

#	Sample Type	Sample Name	Comment	Vial#	File Name
221	LLCCV	LCVL7-160525	LCVLICPMS_TW	2511	
222	CCB	CCB7-160525	CCB ICPMS_TW	1102	
223	CCB	CCB7-160525	CCB ICPMS_TW	1102	
224	CCB	CCB7-160525	CCB ICPMS_TW	1102	
225	CCB	CCB7-160525	CCB ICPMS_TW	1103	
226	CCB	CCB7-160525	CCB ICPMS_TW	1103	
227	CCB	CCB7-160525	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
221			
222			
223			
224			
225			
226			
227			

Unknown Samples:

Blank Samples:

Periodic Block

Sample List

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 10:36:09 AM**
Digestion:
Prep End Date:

Prep Batch **75238** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke** Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-18A	Soil		1.03	50	50.000	1 of 1	
1605121-19A	Soil		1.06	50	50.000	1 of 1	
1605121-20A	Soil		1.04	50	50.000	1 of 1	
1605121-21A	Soil		1.04	50	50.000	1 of 1	
1605121-22A	Soil		1.10	50	50.000	1 of 1	
1605121-22A MS	Soil		1.06	50	50.000	of	
1605121-22A MSD	Soil		1.07	50	50.000	of	
1605121-23A	Soil		1.02	50	50.000	1 of 1	
1605121-24A	Soil		1.02	50	50.000	1 of 1	
1605121-25A	Soil		1.03	50	50.000	1 of 1	
1605121-26A	Soil		1.06	50	50.000	1 of 1	
1605121-27A	Soil		1.01	50	50.000	1 of 1	
1605121-28A	Soil		1.01	50	50.000	1 of 1	
1605121-29A	Soil		1.09	50	50.000	1 of 1	
1605121-30A	Soil		1.03	50	50.000	1 of 1	
1605121-31A	Soil		1.05	50	50.000	1 of 1	
1605121-32A	Soil		1.03	50	50.000	1 of 1	
1605121-33A	Soil		1.03	50	50.000	1 of 1	
1605121-34A	Soil		1.03	50	50.000	1 of 1	
1605121-35A	Soil		1.04	50	50.000	1 of 1	
1605121-36A	Soil		1.06	50	50.000	1 of 1	
1605121-37A	Soil		1.08	50	50.000	1 of 1	
LCS-75238	Soil		1	50	50.000	of	
LCSD-75238	Soil		1	50	50.000	of	
MB-75238	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

11:58 - 12:13
12:14 - 14:14
14:41 - 16:41
17:00 - 17:15

REVIEWED BY
By Janice Whitt at 10:58:39 AM, 5/31/2016

5/19/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 3:00:00 PM**
Digestion: **Start: 5/13/2016 4:00:00 PM / Stop: 5/17/2016 1:30:00 PM**
Prep End Date: **5/18/2016 9:30:00 AM**

Prep Batch **75159** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-21A	Soil		0	0	#Num!	1 of 1	
1605121-22A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay MS/MSD						
1605121-23A	Soil		0	0	#Num!	1 of 1	
1605121-24A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-25A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-26A	Soil		0	0	#Num!	1 of 1	
1605121-27A	Soil		0	0	#Num!	1 of 1	
1605121-28A	Soil		0	0	#Num!	1 of 1	
1605121-29A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-30A	Soil		0	0	#Num!	1 of 1	
1605121-31A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-32A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-33A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-34A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-35A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-36A	Soil		0	0	#Num!	1 of 1	
1605121-37A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 10:55:57 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 3:00:00 PM**
Digestion: **Start: 5/13/2016 4:00:00 PM / Stop: 5/17/2016 1:30:00 PM**
Prep End Date: **5/18/2016 9:30:00 AM**

Prep Batch **75159** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-38A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						
1605121-39A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						
1605121-40A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						

REVIEWED BY
By Janice Whitt at 10:55:59 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 1:00:00 PM**
Digestion: **Start: 5/13/2016 2:00:00 PM / Stop: 5/17/2016 9:00:00 AM**
Prep End Date: **5/17/2016 12:00:00 PM**

Prep Batch **75155** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-01A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling - MS/MSD							
1605121-02A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-03A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-04A	Soil		0	0	#Num!	1 of 1	
1605121-05A	Soil		0	0	#Num!	1 of 1	
1605121-06A	Soil		0	0	#Num!	1 of 1	
1605121-07A	Soil		0	0	#Num!	1 of 1	
1605121-08A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-09A	Soil		0	0	#Num!	1 of 1	
1605121-10A	Soil		0	0	#Num!	1 of 1	
1605121-11A	Soil		0	0	#Num!	1 of 1	
1605121-12A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-13A	Soil		0	0	#Num!	1 of 1	
1605121-14A	Soil		0	0	#Num!	1 of 1	
1605121-15A	Soil		0	0	#Num!	1 of 1	
1605121-16A	Soil		0	0	#Num!	1 of 1	
1605121-17A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-18A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-19A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							

REVIEWED BY
By Janice Whitt at 10:56:01 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 1:00:00 PM**
Digestion: **Start: 5/13/2016 2:00:00 PM / Stop: 5/17/2016 9:00:00 AM**
Prep End Date: **5/17/2016 12:00:00 PM**

Prep Batch **75155** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-20A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						

REVIEWED BY
By Janice Whitt at 10:56:04 AM, 5/31/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/19/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	4.9999	4.9899	99.80	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9998	4.9898	99.80		
3		4.9952	4.9852	99.70		
AVERAGE (MEAN)		**4.998**	**4.988**	**99.77**		**0.054**
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2007	0.2003	100.15	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2025	0.2021	101.05		
3		0.2027	0.2023	101.15		
AVERAGE (MEAN)		**0.202**	**0.202**	**100.78**		**0.545**
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

C. Vu 5/19/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 10:56:12 AM, 5/31/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 10:36:09 AM**
Digestion: **Start: 5/19/2016 11:58:00 AM / Stop: 5/19/2016 5:15:00 PM**
Prep End Date: **5/19/2016 5:30:10 PM**

Prep Batch **75238** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-18A	Soil		1.03	50	48.544	1 of 1	
1605121-19A	Soil		1.06	50	47.170	1 of 1	
1605121-20A	Soil		1.04	50	48.077	1 of 1	
1605121-21A	Soil		1.04	50	48.077	1 of 1	
1605121-22A	Soil		1.1	50	45.455	1 of 1	
1605121-22A MS	Soil		1.06	50	47.170	of	
1605121-22A MSD	Soil		1.07	50	46.729	of	
1605121-22A PDS	Soil		1.1	50	45.455	of	
1605121-22A SD	Soil		1.1	50	45.455	of	
1605121-23A	Soil		1.02	50	49.020	1 of 1	
1605121-24A	Soil		1.02	50	49.020	1 of 1	
1605121-25A	Soil		1.03	50	48.544	1 of 1	
1605121-26A	Soil		1.06	50	47.170	1 of 1	
1605121-27A	Soil		1.01	50	49.505	1 of 1	
1605121-28A	Soil		1.01	50	49.505	1 of 1	
1605121-29A	Soil		1.09	50	45.872	1 of 1	
1605121-30A	Soil		1.03	50	48.544	1 of 1	
1605121-31A	Soil		1.05	50	47.619	1 of 1	
1605121-32A	Soil		1.03	50	48.544	1 of 1	
1605121-33A	Soil		1.03	50	48.544	1 of 1	
1605121-34A	Soil		1.03	50	48.544	1 of 1	
1605121-35A	Soil		1.04	50	48.077	1 of 1	
1605121-36A	Soil		1.06	50	47.170	1 of 1	
1605121-37A	Soil		1.08	50	46.296	1 of 1	
LCS-75238	Soil		1	50	50.000	of	
LCSD-75238	Soil		1	50	50.000	of	
MB-75238	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	11/30/2017

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

REVIEWED BY
By Janice Whitt at 10:58:45 AM, 5/31/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	KL	BALANCE #:	26	
TEST DATE:	05/25/2016	Water is at Room Temperatue (70-73°F) / (21-23°C)		
PIPETTER LAB ID:	See Below	WATER TEMP (°C):	21-23°C	
TEST VOLUME:	See Below	WATER DENSITY:	0.998	(0.9980-0.9976)

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

PIPETTE ID: P-31	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	4.00	3.9822	3.9742	99.36	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		3.9723	3.9644	99.11		
3		3.9751	3.9671	99.18		
AVERAGE (MEAN)		3.977	3.969	99.21		0.128
						PASS

PIPETTE ID: P-21	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.50	0.5007	0.4997	99.94	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.4996	0.4986	99.72		
3		0.4975	0.4965	99.30		
AVERAGE (MEAN)		0.499	0.498	99.65		0.326
						PASS

PIPETTE ID: P-39	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.200	0.2009	0.2005	100.25	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.1995	0.1991	99.55		
3		0.1995	0.1991	99.55		
AVERAGE (MEAN)		0.200	0.200	99.78		0.404
						PASS

Karyn Lane 5/25/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 10:56:18 AM, 5/31/2016
Review and Approved / Date

Calibration Summary Report

Date Acquired 5/25/2016 10:19
Data Batch 160525.b

Level	Calibration File Name
1	012CALB.d
2	013CALS.d
3	014CALS.d
4	015CALS.d
5	016CALS.d
6	017CALS.d
7	018CALS.d
8	019CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0013 * x + 1.9641E-004
Be	0.9999	y = 5.4669E-005 * x + 3.1087E-007
B	0.9999	y = 2.0132E-005 * x + 3.6307E-005
Na	0.9998	y = 8.0564E-004 * x + 0.0105
Mg	0.9999	y = 4.0227E-004 * x + 7.2730E-004
Al	1.0000	y = 1.4845E-004 * x + 8.9534E-004
K	0.9998	y = 4.0294E-004 * x + 0.0570
Ca	0.9999	y = 2.4376E-005 * x + 9.1857E-004
Ti	1.0000	y = 1.5470E-004 * x + 5.1896E-006
V	1.0000	y = 0.0047 * x + 0.0036
Cr	1.0000	y = 0.0058 * x + 0.0011
Mn	1.0000	y = 0.0033 * x + 2.1888E-004
Fe	1.0000	y = 0.0052 * x + 0.0079
Co	0.9999	y = 0.0134 * x + 1.1760E-004
Ni	0.9999	y = 0.0037 * x + 5.2160E-004
Cu	0.9999	y = 0.0103 * x + 0.0030
Zn	0.9999	y = 0.0017 * x + 7.7929E-004
Se	1.0000	y = 8.1571E-005 * x + 8.1561E-005
Sr	1.0000	y = 6.7448E-004 * x + 5.8809E-005
Mo	1.0000	y = 5.8400E-004 * x + 4.2846E-006
Ag	1.0000	y = 0.0018 * x + 9.1073E-006
Cd	1.0000	y = 2.5975E-004 * x + 9.5626E-007
Sn	1.0000	y = 5.2705E-004 * x + 6.8139E-005
Sb	1.0000	y = 8.0488E-004 * x + 4.9342E-005
Tl	1.0000	y = 0.0016 * x + 4.0745E-006
Ba	1.0000	y = 2.6466E-004 * x + 5.7237E-006
Pb	1.0000	y = 0.0022 * x + 1.0519E-004
Li	0.9999	y = 3.8129E-005 * x + 7.7836E-006

REVIEWED BY
By Janice Whitt at 2:52:52 PM, 5/25/2016

Calibration Summary Report

Level 7 Cal

Ele	Conc	Calc	%Rec
As	500	510.33	102
Be	500	520.24	104
B	500	521.73	104
Na	10000	10383.67	104
Mg	10000	10263.49	103
Al	10000	9987.24	100
K	10000	10406.74	104
Ca	10000	9653.96	97
Ti	500	510.47	102
V	500	514.09	103
Cr	500	515.29	103
Mn	500	503.93	101
Fe	10000	9965.98	100
Co	500	523.47	105
Ni	500	524.67	105
Cu	500	527.97	106
Zn	500	520.56	104
Se	500	515.90	103
Sr	500	501.40	100
Mo	500	506.74	101
Ag	500	500.06	100
Cd	500	513.82	103
Sn	500	514.46	103
Sb	500	501.80	100
Tl	500	515.26	103
Ba	500	509.17	102
Pb	500	516.90	103

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1996.27	100
Be	2000	1993.26	100
B	2000	1992.67	100
Na	25000	24777.82	101
Mg	25000	24852.96	101
K	25000	24787.73	101
Ca	25000	25181.64	99
Ti	2000	1996.97	100
V	2000	1995.09	100
Cr	2000	1994.72	100
Mn	2000	1998.31	100
Co	2000	1992.00	100
Ni	2000	1991.58	100
Cu	2000	1990.62	100
Zn	2000	1992.94	100
Se	2000	1994.32	100
Sr	2000	1999.90	100
Mo	2000	1998.24	100
Cd	2000	1995.61	100
Sn	2000	1995.78	100
Tl	2000	1994.67	100
Ba	2000	1997.65	100
Pb	2000	1994.42	100
Li	2000	1991.82	100

REVIEWED BY
By Janice Whitt at 2:52:59 PM, 5/25/2016

Calibration Summary Report

Date Acquired 5/25/2016 13:51
Data Batch 160525.b

Level	Calibration File Name
1	101CALB.d
2	102CALS.d
3	103CALS.d
4	104CALS.d
5	105CALS.d
6	106CALS.d
7	107CALS.d
8	108CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0013 * x + 2.8457E-004
Be	1.0000	y = 5.1656E-005 * x + 1.0159E-006
B	1.0000	y = 1.9089E-005 * x + 8.4735E-005
Na	0.9999	y = 8.2969E-004 * x + 0.0226
Mg	0.9999	y = 4.0607E-004 * x + 6.7278E-004
Al	1.0000	y = 1.5108E-004 * x + 8.9229E-004
K	1.0000	y = 4.2458E-004 * x + 0.0606
Ca	0.9999	y = 2.4388E-005 * x + 8.1847E-004
Ti	1.0000	y = 1.5607E-004 * x + 4.2521E-006
V	1.0000	y = 0.0047 * x + 0.0056
Cr	1.0000	y = 0.0058 * x + 0.0011
Mn	1.0000	y = 0.0033 * x + 1.9400E-004
Fe	1.0000	y = 0.0051 * x + 0.0088
Co	1.0000	y = 0.0133 * x + 7.0845E-005
Ni	1.0000	y = 0.0037 * x + 4.3030E-004
Cu	1.0000	y = 0.0101 * x + 0.0025
Zn	1.0000	y = 0.0016 * x + 5.9131E-004
Se	1.0000	y = 8.1782E-005 * x + 1.1822E-004
Sr	1.0000	y = 7.0271E-004 * x + 5.9764E-005
Mo	1.0000	y = 5.8002E-004 * x + 4.8756E-006
Ag	1.0000	y = 0.0018 * x + 1.6575E-005
Cd	1.0000	y = 2.5187E-004 * x + 9.7277E-007
Sn	1.0000	y = 5.3515E-004 * x + 5.4598E-005
Sb	1.0000	y = 7.9236E-004 * x + 2.3757E-004
Tl	0.9999	y = 0.0017 * x + 2.1316E-006
Ba	1.0000	y = 2.5858E-004 * x + 4.5921E-006
Pb	1.0000	y = 0.0023 * x + 5.0537E-005
Li	1.0000	y = 3.7096E-005 * x + 1.1950E-005

REVIEWED BY
By Janice Whitt at 11:50:43 AM, 5/27/2016

Calibration Summary Report

Level 7 Cal

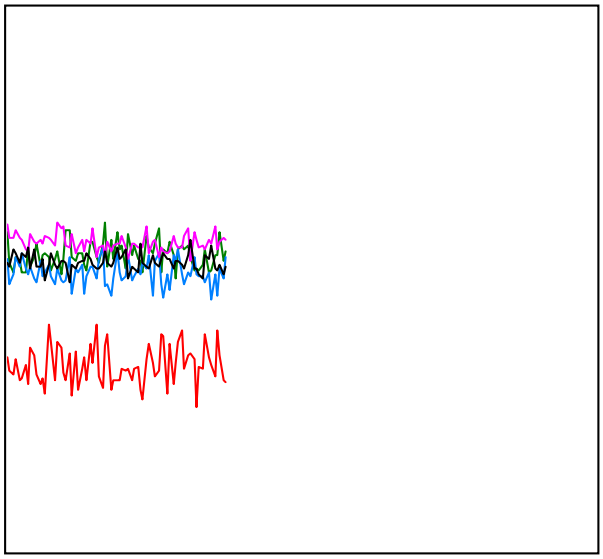
Ele	Conc	Calc	%Rec
As	500	507.19	101
Be	500	517.39	103
B	500	506.16	101
Na	10000	10270.55	103
Mg	10000	10219.25	102
Al	10000	9987.58	100
K	10000	10153.36	102
Ca	10000	9647.00	96
Ti	500	505.07	101
V	500	504.91	101
Cr	500	509.76	102
Mn	500	500.08	100
Fe	10000	9991.00	100
Co	500	513.02	103
Ni	500	510.22	102
Cu	500	514.15	103
Zn	500	513.28	103
Se	500	509.85	102
Sr	500	493.88	99
Mo	500	498.64	100
Ag	500	500.13	100
Cd	500	513.20	103
Sn	500	494.99	99
Sb	500	498.83	100
Tl	500	524.31	105
Ba	500	506.91	101
Pb	500	505.04	101

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1997.07	100
Be	2000	1994.52	100
B	2000	1998.16	100
Na	25000	24852.46	101
Mg	25000	24873.71	101
K	25000	24907.80	100
Ca	25000	25176.75	99
Ti	2000	1998.24	100
V	2000	1998.43	100
Cr	2000	1997.09	100
Mn	2000	2000.00	100
Co	2000	1995.09	100
Ni	2000	1996.00	100
Cu	2000	1994.74	100
Zn	2000	1994.71	100
Se	2000	1995.67	100
Sr	2000	2001.32	100
Mo	2000	1999.85	100
Cd	2000	1995.07	100
Sn	2000	2001.29	100
Tl	2000	1994.26	100
Ba	2000	1997.69	100
Pb	2000	1999.27	100
Li	2000	1994.67	100

REVIEWED BY
By Janice Whitt at 11:50:48 AM, 5/27/2016

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
51	500	156	170.9	10.26
59	2000	1100	1090.3	4.36
89	2000	1082	1023.9	4.44
140	5000	2857	2836.2	2.75
205	5000	2606	2655.8	2.96
156/140	1	0.280 %	0.297 %	40.43
75	20	4	4.5	64.90
78	20	2	4.8	55.09
56	10000	8411	8162.6	2.65
31	100	60	62.7	17.16

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.65
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	8.7
Extract 2	-190.0	Cell Entrance	-40
Omega Bias	-100	Cell Exit	-60
Deflect	1.6		

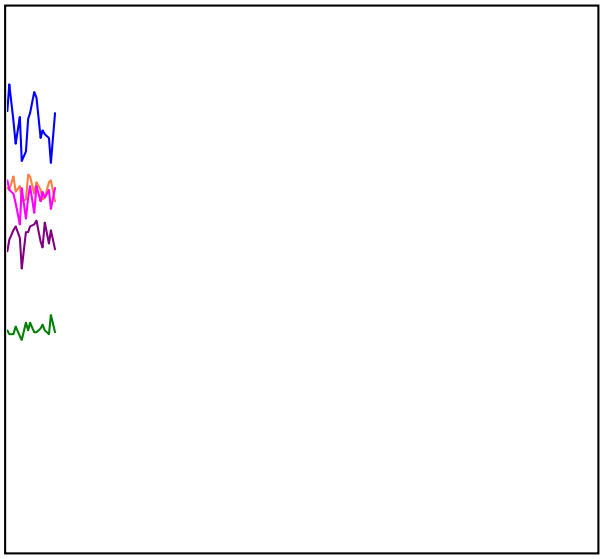
Cell Parameters

Use Gas	true	3rd Gas Flow	0
He Flow	4.7	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.24E+2	Pa	Carrier Gas(BP)	1.35E+2	kPa
Analyzer Press	1.99E-4	Pa	Reflected Power	1	W
Forward Power	1550	W			

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1110	1156.2	4.02
59	5000	2008	2038.2	2.67
89	5000	3222	3331.3	2.54
140	5000	3348	3253.6	3.54
205	5000	1977	2116.7	3.97
156/140	2	1.225 %	1.142 %	16.58
78	2000	1255	1255.7	4.50
63	500	402	391.5	5.35
75	5000	3091	3155.5	3.20

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.65
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	8.7
Extract 2	-190.0	Cell Entrance	-40
Omega Bias	-100	Cell Exit	-60
Deflect	7.0		

Cell Parameters

Use Gas	false	3rd Gas Flow	0
He Flow	4.2	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.23E+2	Pa	Carrier Gas(BP)	1.35E+2	kPa
Analyzer Press	1.12E-4	Pa	Reflected Power	1	W
Forward Power	1549	W			

US EPA Tune Check Sample Report

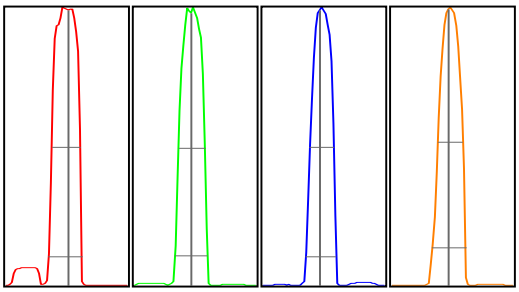
Batch Folder C:\Agilent\ICPMH\1\DATA\DHL TEMPLATE Li.b
Report Comment
Instrument Name ICPMS4 JP12361998

[No gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	772833	0.59	5.00	
59	1197615	0.27	5.00	
115	1588857	0.26	5.00	
205	1368135	1.35	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	769460	769515	771448	780523	773218
59	1195978	1194869	1202353	1199596	1195279
115	1595113	1589201	1588947	1587491	1583534
205	1399270	1366127	1366897	1354270	1354114

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	114557	7.05	6.9 - 7.1		0.797	0.850	
59	195844	58.95	58.9 - 59.1		0.789	0.850	
115	290439	114.95	114.9 - 115.1		0.739	0.850	
205	233432	204.95	204.9 - 205.1		0.796	0.850	

X% = 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Nebulizer Pump	0.10	rps
RF Matching	1.90	V	S/C Temp	2	℃
Smpl Depth	8.0	mm	Gas Switch	Dilution Gas	
Carrier Gas	0.65	L/min	Makeup/Dilution Gas	0.40	L/min
Option Gas	0.0	%			

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Cell Entrance	-40	V
Extract 2	-190.0	V	Cell Exit	-60	V
Omega Bias	-100	V	Deflect	7.0	V
Omega Lens	8.7	V	Plate Bias	-60	V

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		OctP Bias	-18.0	V
He Flow	0.0	mL/min	OctP RF	200	V
H2 Flow	0.0	mL/min	Energy Discrimination	3.0	V
3rd Gas Flow	0	%			

REVIEWED BY
By Janice Whitt at 2:53:07 PM, 5/25/2016

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: BLANK STD 1
Data File: 012CALB.d
Acquired: 05/25/2016 10:19:09

========= Detector Parameters and P/A Factors =========
Discriminator: 4.5 mV
AnalogHV: 1731 V
PulseHV: 1235 V

Acquired: 05/25/2016 09:44:12

Mass[u]	Element	P/A Factor
6	Li	0.108648
9	Be	0.122189
23	Na	0.131813
24	Mg	0.136817
27	Al	0.140968
39	K	0.142084
44	Ca	0.122656
45	Sc	0.144235
48		0.145252
51	V	0.146210
52	Cr	0.149890
55	Mn	0.151356
59	Co	0.154812
60	Ni	0.157341
63	Cu	0.157891
66	Zn	0.157167
72		0.157156
74	Ge	0.157234
75	As	0.156416
88	Sr	0.157636
89		0.157046
95		0.157560
97	Mo	0.157419
98	Mo	0.157518
99	[Mo]	0.158788
101		0.159813
105		0.161822
111	Cd	0.164224
114	Cd	0.163778
115	In	0.163720
118	Sn	0.163883
121		0.163475
123	Sb	0.163436
135	Ba	0.162747
138		0.164896
175		0.168723
193		0.169669
205	Tl	0.169352
206	[Pb]	0.170991
207	[Pb]	0.171278
208	Pb	0.171532
209	Bi	0.171159
232		0.171358
238	U	0.171523
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

REVIEWED BY
By Janice Whitt at 2:53:11 PM, 5/25/2016

Calibration Blank Report

Date Acquired	5/25/2016 13:51	Sample Name	BLANK STD 1
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	101CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	16	9.75
9	Be	45	1	114.56
11	B	45	111	9.64
23	Na	45	29590	0.82
24	Mg	45	882	4.25
27	Al	45	1170	2.26
39	K	45	79421	0.67
44	Ca	45	1073	6.30
47	Ti	45	6	173.21
51	V	45	7306	1.15
52	Cr	45	1393	3.62
55	Mn	45	254	12.17
56	Fe	45	11559	1.32
59	Co	72	61	12.59
60	Ni	72	371	6.31
63	Cu	72	2118	4.24
66	Zn	72	510	3.64
75	As	72	245	2.94
78	Se	72	102	4.40
88	Sr	115	477	14.55
95	Mo	115	39	13.09
107	Ag	115	132	15.20
111	Cd	115	8	107.84
118	Sn	115	436	7.55
121	Sb	115	1896	6.01
137	Ba	115	37	32.79
205	Tl	209	33	30.00
208	Pb	209	789	4.63

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	1311317	0.35
72	Ge	862495	0.22
115	In	7979360	0.49
209	Bi	15611692	0.81

Calibration Standard Report

Date Acquired	5/25/2016 13:53	Sample Name	L2-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	102CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	66	14.63
9	Be	45	66	15.69
11	B	45	132	5.82
23	Na	45	52354	0.45
24	Mg	45	12128	1.77
27	Al	45	5170	1.27
39	K	45	91352	0.72
44	Ca	45	1695	12.44
47	Ti	45	230	5.02
51	V	45	13659	2.13
52	Cr	45	9209	4.31
55	Mn	45	4581	1.79
56	Fe	45	143206	1.16
59	Co	72	11950	1.24
60	Ni	72	3923	1.51
63	Cu	72	11317	2.31
66	Zn	72	2085	6.56
75	As	72	1362	5.04
78	Se	72	149	7.98
88	Sr	115	5955	0.73
95	Mo	115	4652	1.10
107	Ag	115	14380	2.02
111	Cd	115	2099	8.89
118	Sn	115	4606	2.45
121	Sb	115	8133	0.78
137	Ba	115	2171	7.35
205	Tl	209	25175	1.37
208	Pb	209	34365	2.72

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1307820	0.57	1311317	99.73	70	120	
72	Ge	857997	0.61	862495	99.48	70	120	
115	In	7857490	1.80	7979360	98.47	70	120	
209	Bi	15301985	2.78	15611692	98.02	70	120	

Calibration Standard Report

Date Acquired	5/25/2016 13:55	Sample Name	L-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	103CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	494	2.90
9	Be	45	711	3.99
11	B	45	316	9.82
23	Na	45	252245	0.79
24	Mg	45	110698	0.93
27	Al	45	41430	0.65
39	K	45	193807	0.42
44	Ca	45	7755	1.46
47	Ti	45	2085	3.28
51	V	45	70089	0.70
52	Cr	45	78951	2.11
55	Mn	45	43942	1.72
56	Fe	45	1343015	0.21
59	Co	72	120473	0.33
60	Ni	72	33509	1.52
63	Cu	72	94905	1.10
66	Zn	72	16402	1.84
75	As	72	11601	0.95
78	Se	72	790	2.02
88	Sr	115	55625	0.59
95	Mo	115	46168	2.80
107	Ag	115	141339	1.35
111	Cd	115	20512	1.62
118	Sn	115	43324	1.51
121	Sb	115	65234	0.69
137	Ba	115	20316	0.70
205	Tl	209	251191	0.54
208	Pb	209	342328	0.86

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1323984	0.48	1311317	100.97	70	120	
72	Ge	853153	0.97	862495	98.92	70	120	
115	In	7910169	0.49	7979360	99.13	70	120	
209	Bi	15680040	0.76	15611692	100.44	70	120	

Calibration Standard Report

Date Acquired	5/25/2016 13:57	Sample Name	10X-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	104CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2526	5.58
9	Be	45	3503	1.69
11	B	45	1337	1.09
23	Na	45	1143444	0.25
24	Mg	45	549442	0.40
27	Al	45	200725	0.58
39	K	45	647295	1.05
44	Ca	45	32164	1.87
47	Ti	45	10312	1.47
51	V	45	314463	0.72
52	Cr	45	384386	0.99
55	Mn	45	216386	0.79
56	Fe	45	6773781	1.11
59	Co	72	600167	0.66
60	Ni	72	166839	0.78
63	Cu	72	459857	0.49
66	Zn	72	74311	1.51
75	As	72	57008	0.24
78	Se	72	3792	0.99
88	Sr	115	271980	1.18
95	Mo	115	227769	1.03
107	Ag	115	709409	0.98
111	Cd	115	102731	0.12
118	Sn	115	209101	1.01
121	Sb	115	312206	0.46
137	Ba	115	102332	0.42
205	Tl	209	1273243	0.57
208	Pb	209	1703684	0.74

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1316187	0.72	1311317	100.37	70	120	
72	Ge	868939	0.54	862495	100.75	70	120	
115	In	7823501	1.01	7979360	98.05	70	120	
209	Bi	15312619	1.93	15611692	98.08	70	120	

Calibration Standard Report

Date Acquired	5/25/2016 13:59	Sample Name	5X-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	105CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4909	2.52
9	Be	45	6816	0.65
11	B	45	2635	3.40
23	Na	45	2236904	0.59
24	Mg	45	1088661	0.58
27	Al	45	397880	0.77
39	K	45	1215901	0.63
44	Ca	45	62137	1.38
47	Ti	45	20482	2.31
51	V	45	624737	0.73
52	Cr	45	764315	0.28
55	Mn	45	430915	0.29
56	Fe	45	13148062	0.50
59	Co	72	1184034	0.64
60	Ni	72	330218	0.72
63	Cu	72	918373	1.63
66	Zn	72	148821	1.60
75	As	72	113889	0.69
78	Se	72	7434	2.22
88	Sr	115	545598	1.04
95	Mo	115	455350	1.09
107	Ag	115	1414297	0.50
111	Cd	115	205225	0.29
118	Sn	115	418897	0.22
121	Sb	115	619991	0.52
137	Ba	115	204274	0.72
205	Tl	209	2518672	1.60
208	Pb	209	3406866	0.89

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1289497	0.29	1311317	98.34	70	120	
72	Ge	855556	1.27	862495	99.20	70	120	
115	In	7918475	1.26	7979360	99.24	70	120	
209	Bi	15388341	1.07	15611692	98.57	70	120	

Calibration Standard Report

Date Acquired	5/25/2016 14:01	Sample Name	2X-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	106CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	12435	1.34
9	Be	45	17278	2.33
11	B	45	6342	4.90
23	Na	45	5591012	1.22
24	Mg	45	2717344	1.52
27	Al	45	983007	1.16
39	K	45	2898414	1.01
44	Ca	45	154547	0.24
47	Ti	45	51278	0.94
51	V	45	1549550	0.43
52	Cr	45	1896992	1.00
55	Mn	45	1068173	0.03
56	Fe	45	33096155	0.45
59	Co	72	2953776	0.63
60	Ni	72	812869	1.00
63	Cu	72	2244182	0.77
66	Zn	72	366103	0.85
75	As	72	282341	0.09
78	Se	72	18375	2.09
88	Sr	115	1372944	0.99
95	Mo	115	1140132	0.70
107	Ag	115	3498605	0.23
111	Cd	115	509146	0.63
118	Sn	115	1035753	0.74
121	Sb	115	1551231	0.89
137	Ba	115	509063	0.91
205	Tl	209	6402267	0.60
208	Pb	209	8577982	0.48

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1297311	0.76	1311317	98.93	70	120	
72	Ge	850772	0.29	862495	98.64	70	120	
115	In	7732096	1.18	7979360	96.90	70	120	
209	Bi	15368109	0.50	15611692	98.44	70	120	

Calibration Standard Report

Date Acquired	5/25/2016 14:03	Sample Name	H-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	107CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	24731	0.82
9	Be	45	34464	0.63
11	B	45	12566	2.43
23	Na	45	11017187	0.73
24	Mg	45	5352208	0.19
27	Al	45	1946976	0.88
39	K	45	5637629	0.91
44	Ca	45	304462	0.91
47	Ti	45	101662	0.80
51	V	45	3077147	0.88
52	Cr	45	3801492	0.91
55	Mn	45	2128694	1.34
56	Fe	45	65541353	1.56
59	Co	72	5860879	0.90
60	Ni	72	1615989	0.54
63	Cu	72	4465986	1.17
66	Zn	72	721709	0.33
75	As	72	561445	0.27
78	Se	72	35942	0.29
88	Sr	115	2719369	0.63
95	Mo	115	2265680	0.95
107	Ag	115	7085088	2.03
111	Cd	115	1012595	0.89
118	Sn	115	2075628	0.21
121	Sb	115	3098239	0.24
137	Ba	115	1026876	0.68
205	Tl	209	13207137	1.41
208	Pb	209	17150702	0.88

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1289747	1.47	1311317	98.36	70	120	
72	Ge	859565	0.72	862495	99.66	70	120	
115	In	7834250	0.70	7979360	98.18	70	120	
209	Bi	15018820	1.59	15611692	96.20	70	120	

Calibration Standard Report

Date Acquired	5/25/2016 14:05	Sample Name	H2-160525
Data Batch	160525.b	Comment	CAL ICPMS_TW
Data File Name	108CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	94660	0.75
9	Be	45	131786	0.28
11	B	45	48894	1.89
23	Na	45	26403377	1.35
24	Mg	45	12919935	1.86
27	Al	45	3971	12.19
39	K	45	13604153	2.12
44	Ca	45	786451	1.08
47	Ti	45	398905	0.45
51	V	45	12058212	1.42
52	Cr	45	14767981	1.79
55	Mn	45	8442512	1.45
56	Fe	45	97705	17.77
59	Co	72	22858702	2.06
60	Ni	72	6339299	2.37
63	Cu	72	17371097	0.63
66	Zn	72	2811225	0.48
75	As	72	2216276	0.22
78	Se	72	140790	0.50
88	Sr	115	10944058	1.16
95	Mo	115	9026351	1.15
107	Ag	115	7808	19.48
111	Cd	115	3910460	1.08
118	Sn	115	8334921	1.19
121	Sb	115	9763	2.84
137	Ba	115	4019879	0.17
205	Tl	209	50352754	1.83
208	Pb	209	68059642	0.14

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1279117	0.44	1311317	97.54	70	120	
72	Ge	862007	0.31	862495	99.94	70	120	
115	In	7782220	0.72	7979360	97.53	70	120	
209	Bi	15054912	0.77	15611692	96.43	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/25/2016 14:13	Sample Name	ICSA-160525
Data Batch	160525.b	Comment	ICSAICPMS_TW
Data File Name	112ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	-0.015	0	173.2	1.2	0.8	
11	B	9.289	339	10.6	30	30	
51	V	-0.539	3922	3.0	10	10	
52	Cr	0.463	4834	6.3	8	5	
55	Mn	1.429	6356	2.1	8	10	
59	Co	0.585	6589	2.7	8	10	
60	Ni	0.565	2110	14.4	8	10	
63	Cu	0.919	9856	6.4	8	10	
66	Zn	1.586	2672	3.5	10	5	
75	As	0.695	990	1.7	4	5	
78	Se	0.455	130	11.2	2	5	
88	Sr	1.445	8147	2.2	10	10	
107	Ag	0.179	2578	6.1	0.8	2	
111	Cd	0.604	1161	0.4	1.2	1	
118	Sn	0.827	3767	7.0	10	10	
121	Sb	0.427	4365	3.8	4	2.5	
137	Ba	0.377	774	6.0	8	10	
205	Tl	0.059	1406	17.0	4	1.5	
208	Pb	0.179	6339	13.8	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1295149	1.93	1311317	98.77	70	120	
72	Ge	839530	1.12	862495	97.34	70	120	
115	In	7581369	1.34	7979360	95.01	70	120	
209	Bi	13909540	1.21	15611692	89.10	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/25/2016 14:15	Sample Name	ICSAB-160525
Data Batch	160525.b	Comment	ICSBICPMS_TW
Data File Name	113ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	39.084	254248	0.92	40	97.7	80	120	
52	Cr	45	20.580	160760	1.34	20	102.9	80	120	
55	Mn	45	19.363	85835	0.52	20	96.8	80	120	
59	Co	72	40.443	465735	0.49	40	101.1	80	120	
60	Ni	72	37.919	121392	1.02	40	94.8	80	120	
63	Cu	72	20.430	180905	0.50	20	102.2	80	120	
66	Zn	72	20.933	30156	0.64	20	104.7	80	120	
75	As	72	20.567	23183	0.82	20	102.8	80	120	
78	Se	72	20.905	1583	5.45	20	104.5	80	120	
107	Ag	115	17.984	246556	0.39	20	89.9	80	120	
111	Cd	115	10.242	19554	0.44	10	102.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1339386	1.24	1311317	102.14	70	120	
72	Ge	866307	0.49	862495	100.44	70	120	
115	In	7578483	1.73	7979360	94.98	70	120	
209	Bi	13615489	1.98	15611692	87.21	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/25/2016 14:34	Sample Name	ICV-160525
Data Batch	160525.b	Comment	ICV ICPMS_TW
Data File Name	118_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	106.151	5335	3.27	100	106.2	90	110	
9	Be	45	106.636	7441	0.91	100	106.6	90	110	
11	B	45	99.679	2685	4.51	100	99.7	90	110	
23	Na	45	2595.956	2939557	0.33	2500	103.8	90	110	
24	Mg	45	2566.850	1408707	0.27	2500	102.7	90	110	
27	Al	45	2474.224	506086	0.61	2500	99.0	90	110	
39	K	45	2578.394	1560379	0.91	2500	103.1	90	110	
44	Ca	45	2266.936	75778	0.79	2500	90.7	90	110	
47	Ti	45	101.330	21364	1.51	100	101.3	90	110	
51	V	45	101.961	656775	0.87	100	102.0	90	110	
52	Cr	45	102.887	804744	1.21	100	102.9	90	110	
55	Mn	45	97.271	433817	1.85	100	97.3	90	110	
56	Fe	45	2432.512	16721422	1.81	2500	97.3	90	110	
59	Co	72	104.999	1244118	0.94	100	105.0	90	110	
60	Ni	72	102.883	338246	0.17	100	102.9	90	110	
63	Cu	72	102.160	922076	1.83	100	102.2	90	110	
66	Zn	72	103.182	150881	1.48	100	103.2	90	110	
75	As	72	100.632	115728	0.66	100	100.6	90	110	
78	Se	72	101.543	7508	0.79	100	101.5	90	110	
88	Sr	115	102.085	555688	1.59	100	102.1	90	110	
95	Mo	115	101.466	455520	1.03	100	101.5	90	110	
107	Ag	115	97.304	1361929	1.44	100	97.3	90	110	
111	Cd	115	102.309	199471	1.00	100	102.3	90	110	
118	Sn	115	103.415	428773	0.62	100	103.4	90	110	
121	Sb	115	99.931	614658	0.61	100	99.9	90	110	
137	Ba	115	101.308	202791	0.36	100	101.3	90	110	
205	Tl	209	98.025	2442296	0.30	100	98.0	90	110	
208	Pb	209	97.717	3282929	0.24	100	97.7	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1350699	0.60	1311317	103.00	70	120	
72	Ge	891399	0.31	862495	103.35	70	120	
115	In	7741266	1.62	7979360	97.02	70	120	
209	Bi	14856927	1.82	15611692	95.17	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/25/2016 14:40	Sample Name	LCVL-160525
Data Batch	160525.b	Comment	LCVLICPMS_TW
Data File Name	121LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.120	525	4.52	10	101.2	70	130	
9	Be	45	1.047	75	5.58	1	104.7	70	130	
11	B	45	21.603	673	2.16	20	108.0	70	130	
23	Na	45	102.248	145482	0.88	100	102.2	70	130	
24	Mg	45	99.280	55518	0.13	100	99.3	70	130	
27	Al	45	96.820	21023	1.37	100	96.8	70	130	
39	K	45	101.696	140528	0.52	100	101.7	70	130	
44	Ca	45	94.489	4230	0.99	100	94.5	70	130	
47	Ti	45	5.124	1089	4.40	5	102.5	70	130	
51	V	45	1.008	13986	1.33	1	100.8	70	130	
52	Cr	45	5.091	41303	1.98	5	101.8	70	130	
55	Mn	45	4.829	21852	1.56	5	96.6	70	130	
56	Fe	45	95.471	669631	0.99	100	95.5	70	130	
59	Co	72	5.122	60401	2.07	5	102.4	70	130	
60	Ni	72	5.069	16937	1.86	5	101.4	70	130	
63	Cu	72	5.162	48392	0.66	5	103.2	70	130	
66	Zn	72	5.036	7821	2.32	5	100.7	70	130	
75	As	72	5.041	6005	1.70	5	100.8	70	130	
78	Se	72	4.795	453	9.54	5	95.9	70	130	
88	Sr	115	4.961	28491	1.71	5	99.2	70	130	
95	Mo	115	4.787	22346	1.82	5	95.7	70	130	
107	Ag	115	1.884	27507	2.36	2	94.2	70	130	
111	Cd	115	0.967	1965	6.19	1	96.7	70	130	
118	Sn	115	5.156	22609	1.10	5	103.1	70	130	
121	Sb	115	1.884	13902	0.45	2	94.2	70	130	
137	Ba	115	4.800	10010	1.54	5	96.0	70	130	
205	Tl	209	0.971	24569	2.18	1	97.1	70	130	
208	Pb	209	0.969	33791	2.55	1	96.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1354572	0.61	1311317	103.30	70	120	
72	Ge	886487	1.24	862495	102.78	70	120	
115	In	8035128	0.77	7979360	100.70	70	120	
209	Bi	15070259	1.42	15611692	96.53	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/25/2016 14:54	Sample Name	ICB-160525
Data Batch	160525.b	Comment	ICB ICPMS_TW
Data File Name	123_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.077	20	36.1	2	5	
9	Be	45	-0.005	1	100.0	0.4	0.3	
11	B	45	-0.293	107	16.2	10	10	
23	Na	45	0.667	31182	0.3	50	100	
24	Mg	45	-0.823	457	12.1	50	100	
27	Al	45	-0.443	1113	2.7	50	10	
39	K	45	3.202	83522	0.3	50	100	
44	Ca	45	-4.137	968	3.1	50	100	
47	Ti	45	0.010	8	49.5	4	3	
51	V	45	0.092	8103	4.6	4	3	
52	Cr	45	0.033	1691	6.3	2	2	
55	Mn	45	0.003	273	5.6	2	3	
56	Fe	45	0.011	11962	1.6	50	50	
59	Co	72	0.000	64	23.9	2	3	
60	Ni	72	-0.005	364	13.0	2	3	
63	Cu	72	-0.014	2040	4.0	2	2	
66	Zn	72	-0.033	474	20.9	4	2	
75	As	72	0.016	270	3.1	2	2	
78	Se	72	0.167	116	21.6	1	2	
88	Sr	115	0.002	479	1.1	4	3	
95	Mo	115	0.003	50	46.2	2	2	
107	Ag	115	0.002	159	8.7	0.4	1	
111	Cd	115	0.002	12	68.7	0.4	0.3	
118	Sn	115	0.159	1092	7.5	4	3	
121	Sb	115	-0.067	1445	9.8	2	0.8	
137	Ba	115	0.001	38	43.5	2	3	
205	Tl	209	0.000	33	26.4	2	0.5	
208	Pb	209	0.000	749	11.8	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1348795	0.58	1311317	102.86	70	120	
72	Ge	881605	0.62	862495	102.22	70	120	
115	In	7831386	0.58	7979360	98.15	70	120	
209	Bi	14902136	0.62	15611692	95.45	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/25/2016 17:17	Sample Name	CCV5-160525
Data Batch	160525.b	Comment	CCV ICPMS_TW
Data File Name	183_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	194.510	9970	2.71	200	97.3	90	110	
9	Be	45	189.254	13490	1.12	200	94.6	90	110	
11	B	45	214.043	5754	2.34	200	107.0	90	110	
23	Na	45	5352.025	6158661	2.88	5000	107.0	90	110	
24	Mg	45	4852.473	2719577	0.98	5000	97.0	90	110	
27	Al	45	4888.750	1020275	1.29	5000	97.8	90	110	
39	K	45	4956.598	2987180	0.73	5000	99.1	90	110	
44	Ca	45	4614.672	156429	2.65	5000	92.3	90	110	
47	Ti	45	198.821	42821	1.41	200	99.4	90	110	
51	V	45	203.337	1330287	0.70	200	101.7	90	110	
52	Cr	45	198.803	1587081	0.23	200	99.4	90	110	
55	Mn	45	197.742	900614	0.94	200	98.9	90	110	
56	Fe	45	4810.651	33766680	1.18	5000	96.2	90	110	
59	Co	72	204.334	2478752	0.84	200	102.2	90	110	
60	Ni	72	199.446	670986	0.39	200	99.7	90	110	
63	Cu	72	200.792	1853315	0.90	200	100.4	90	110	
66	Zn	72	203.441	304063	1.08	200	101.7	90	110	
75	As	72	202.237	237864	0.58	200	101.1	90	110	
78	Se	72	204.046	15337	1.25	200	102.0	90	110	
88	Sr	115	203.917	1169222	0.06	200	102.0	90	110	
95	Mo	115	203.035	960544	0.23	200	101.5	90	110	
107	Ag	115	181.791	2681570	0.55	200	90.9	90	110	
111	Cd	115	201.009	412941	1.71	200	100.5	90	110	
118	Sn	115	205.531	897547	0.41	200	102.8	90	110	
121	Sb	115	199.344	1290213	1.52	200	99.7	90	110	
137	Ba	115	202.591	427307	0.41	200	101.3	90	110	
205	Tl	209	201.193	5071249	0.99	200	100.6	90	110	
208	Pb	209	197.736	6720733	0.38	200	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1379770	0.95	1311317	105.22	70	120	
72	Ge	912680	0.52	862495	105.82	70	120	
115	In	8156182	0.22	7979360	102.22	70	120	
209	Bi	15032079	1.82	15611692	96.29	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/25/2016 17:21	Sample Name	LCVL5-160525
Data Batch	160525.b	Comment	LCVLICPMS_TW
Data File Name	185LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	9.066	483	1.33	10	90.7	70	130	
9	Be	45	0.969	71	25.17	1	96.9	70	130	
11	B	45	47.260	1368	1.97	20	236.3	70	130	Fail
23	Na	45	313.020	391169	2.39	100	313.0	70	130	Fail
24	Mg	45	98.669	56456	2.10	100	98.7	70	130	
27	Al	45	98.327	21826	1.14	100	98.3	70	130	
39	K	45	107.962	147473	1.10	100	108.0	70	130	
44	Ca	45	89.024	4143	1.62	100	89.0	70	130	
47	Ti	45	4.736	1030	9.82	5	94.7	70	130	
51	V	45	1.209	15624	1.71	1	120.9	70	130	
52	Cr	45	5.077	42151	0.77	5	101.5	70	130	
55	Mn	45	4.966	22982	1.93	5	99.3	70	130	
56	Fe	45	95.032	682030	0.32	100	95.0	70	130	
59	Co	72	5.060	62215	1.26	5	101.2	70	130	
60	Ni	72	4.939	17215	1.18	5	98.8	70	130	
63	Cu	72	4.945	48435	0.64	5	98.9	70	130	
66	Zn	72	5.168	8353	3.43	5	103.4	70	130	
75	As	72	5.063	6287	2.02	5	101.3	70	130	
78	Se	72	5.358	514	3.46	5	107.2	70	130	
88	Sr	115	4.983	29910	1.54	5	99.7	70	130	
95	Mo	115	4.789	23370	2.33	5	95.8	70	130	
107	Ag	115	1.878	28648	0.58	2	93.9	70	130	
111	Cd	115	0.966	2049	6.98	1	96.6	70	130	
118	Sn	115	5.176	23715	1.66	5	103.5	70	130	
121	Sb	115	1.948	14953	1.10	2	97.4	70	130	
137	Ba	115	5.135	11183	3.71	5	102.7	70	130	
205	Tl	209	0.976	25773	0.35	1	97.6	70	130	
208	Pb	209	0.969	35261	0.70	1	96.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1385975	0.72	1311317	105.69	70	120	
72	Ge	924217	1.07	862495	107.16	70	120	
115	In	8398502	1.77	7979360	105.25	70	120	
209	Bi	15728935	1.42	15611692	100.75	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/25/2016 17:23	Sample Name	CCB5-160525
Data Batch	160525.b	Comment	CCB ICPMS_TW
Data File Name	186_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.392	37	34.3	2	5	
9	Be	45	-0.001	1	114.6	0.4	0.3	
11	B	45	32.764	984	6.5	10	10	FailAq FailSoil
23	Na	45	170.873	227803	2.4	50	100	FailAq FailSoil
24	Mg	45	-0.727	523	11.8	50	100	
27	Al	45	0.323	1305	11.6	50	10	
39	K	45	7.349	88285	1.6	50	100	
44	Ca	45	-5.822	938	11.0	50	100	
47	Ti	45	0.004	7	100.0	4	3	
51	V	45	0.289	9615	1.3	4	3	
52	Cr	45	0.050	1872	6.7	2	2	
55	Mn	45	0.086	664	3.3	2	3	
56	Fe	45	0.279	14184	2.0	50	50	
59	Co	72	0.002	94	8.9	2	3	
60	Ni	72	0.001	400	13.9	2	3	
63	Cu	72	-0.010	2168	5.8	2	2	
66	Zn	72	0.065	642	16.4	4	2	
75	As	72	0.059	331	11.9	2	2	
78	Se	72	0.151	120	7.5	1	2	
88	Sr	115	0.017	598	5.3	4	3	
95	Mo	115	0.009	83	14.4	2	2	
107	Ag	115	0.013	339	16.9	0.4	1	
111	Cd	115	0.002	12	31.5	0.4	0.3	
118	Sn	115	0.113	959	2.5	4	3	
121	Sb	115	-0.007	1932	7.5	2	0.8	
137	Ba	115	0.007	53	37.5	2	3	
205	Tl	209	0.003	117	22.3	2	0.5	
208	Pb	209	0.006	1004	4.7	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1386302	0.46	1311317	105.72	70	120	
72	Ge	920754	0.68	862495	106.75	70	120	
115	In	8320624	0.73	7979360	104.28	70	120	
209	Bi	15832783	2.53	15611692	101.42	70	120	

Method Blank Report

Date Acquired	5/25/16 5:25 PM	Sample Name	MB-75238
Data Batch	160525.b	Comment	MBLKICPMS_TSDOD1
Data File Name	187_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.244	29	36.45		
9	Be	45	-0.001	1	43.30		
11	B	45	34.849	1049	5.60		FAIL
23	Na	45	148.778	204153	1.74		FAIL
24	Mg	45	2.501	2361	3.69		
27	Al	45	15.223	4463	2.97		
39	K	45	11.042	91239	1.11		
44	Ca	45	28.074	2101	6.74		
47	Ti	45	0.197	49	3.93		
51	V	45	0.285	9672	3.76		
52	Cr	45	0.192	3037	5.87		
55	Mn	45	0.198	1183	4.74		
56	Fe	45	4.786	46355	0.85		
59	Co	72	0.009	171	11.25		
60	Ni	72	0.145	890	8.58		
63	Cu	72	0.162	3773	2.26		
66	Zn	72	6.053	9662	3.20		J
75	As	72	0.037	306	5.40		
78	Se	72	0.242	127	9.42		
88	Sr	115	0.080	981	9.83		
95	Mo	115	0.008	82	23.05		
107	Ag	115	0.014	349	8.35		
111	Cd	115	0.011	32	52.06		
118	Sn	115	4.206	19478	1.19		J
121	Sb	115	-0.016	1899	5.37		
137	Ba	115	0.094	244	11.91		
205	Tl	209	0.002	102	29.59		
208	Pb	209	0.036	2141	5.22		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1398319	0.81	1311317	106.63	70	120	
72	Ge	921411	0.53	862495	106.83	70	120	
115	In	8450423	1.01	7979360	105.90	70	120	
209	Bi	16170023	0.27	15611692	103.58	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/25/2016 17:27	Sample Name	LCS-75238
Data Batch	160525.b	Comment	LCS ICPMS_TSDOD1
Data File Name	188_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	192.525	9813	1.99	200	96.3	80	120	
9	Be	45	189.220	13409	2.34	200	94.6	80	120	
11	B	45	221.105	5906	0.82	200	110.6	80	120	
23	Na	45	5302.023	6065293	1.63	1000	530.2	80	120	Fail
24	Mg	45	5107.959	2846048	0.63	1000	510.8	80	120	Fail
27	Al	45	1034.290	215566	0.41	1000	103.4	80	120	
39	K	45	5231.756	3130128	1.15	1000	523.2	80	120	Fail
44	Ca	45	4829.200	162675	0.37	1000	482.9	80	120	Fail
47	Ti	45	208.054	44547	1.99	200	104.0	80	120	
51	V	45	214.749	1396422	0.27	200	107.4	80	120	
52	Cr	45	210.732	1672500	0.50	200	105.4	80	120	
55	Mn	45	208.984	946300	0.43	200	104.5	80	120	
56	Fe	45	1031.319	7206659	1.29	1000	103.1	80	120	
59	Co	72	212.866	2585525	0.19	200	106.4	80	120	
60	Ni	72	208.049	700798	0.75	200	104.0	80	120	
63	Cu	72	205.381	1898023	1.11	200	102.7	80	120	
66	Zn	72	215.883	323020	1.04	200	107.9	80	120	
75	As	72	210.572	247963	0.82	200	105.3	80	120	
78	Se	72	210.400	15833	2.91	200	105.2	80	120	
88	Sr	115	203.914	1211750	1.88	200	102.0	80	120	
95	Mo	115	200.430	982803	0.87	200	100.2	80	120	
107	Ag	115	190.203	2908163	0.23	200	95.1	80	120	
111	Cd	115	206.573	439842	0.88	200	103.3	80	120	
118	Sn	115	214.394	970446	0.49	200	107.2	80	120	
121	Sb	115	202.729	1360014	1.16	200	101.4	80	120	
137	Ba	115	207.816	454344	0.11	200	103.9	80	120	
205	Tl	209	206.397	5422651	0.46	200	103.2	80	120	
208	Pb	209	205.090	7265601	0.74	200	102.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1371708	0.35	1311317	104.61	70	120	
72	Ge	913814	0.36	862495	105.95	70	120	
115	In	8455024	1.22	7979360	105.96	70	120	
209	Bi	15669349	2.45	15611692	100.37	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/25/2016 17:29	Sample Name	LCSD-75238
Data Batch	160525.b	Comment	LCSDICPMS_TSDOD1
Data File Name	189_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	189.252	9684	1.04	200	94.6	80	120	
9	Be	45	186.541	13269	1.45	200	93.3	80	120	
11	B	45	212.391	5700	1.51	200	106.2	80	120	
23	Na	45	5169.156	5936943	0.85	1000	516.9	80	120	Fail
24	Mg	45	5084.556	2843715	1.95	1000	508.5	80	120	Fail
27	Al	45	1036.032	216754	0.64	1000	103.6	80	120	
39	K	45	5258.304	3157580	0.51	1000	525.8	80	120	Fail
44	Ca	45	4868.270	164624	1.24	1000	486.8	80	120	Fail
47	Ti	45	206.289	44341	1.24	200	103.1	80	120	
51	V	45	211.872	1383084	1.26	200	105.9	80	120	
52	Cr	45	206.716	1647041	0.87	200	103.4	80	120	
55	Mn	45	206.675	939510	1.12	200	103.3	80	120	
56	Fe	45	1021.509	7165922	0.62	1000	102.2	80	120	
59	Co	72	213.189	2598674	0.29	200	106.6	80	120	
60	Ni	72	208.118	703455	1.11	200	104.1	80	120	
63	Cu	72	207.432	1923670	0.58	200	103.7	80	120	
66	Zn	72	214.893	322690	0.25	200	107.4	80	120	
75	As	72	209.641	247744	0.62	200	104.8	80	120	
78	Se	72	211.089	15940	0.12	200	105.5	80	120	
88	Sr	115	204.359	1218418	1.13	200	102.2	80	120	
95	Mo	115	200.235	985048	0.04	200	100.1	80	120	
107	Ag	115	190.989	2929303	0.80	200	95.5	80	120	
111	Cd	115	205.276	438516	0.56	200	102.6	80	120	
118	Sn	115	213.649	970174	0.23	200	106.8	80	120	
121	Sb	115	202.841	1365265	1.06	200	101.4	80	120	
137	Ba	115	206.735	453418	0.44	200	103.4	80	120	
205	Tl	209	206.599	5443664	1.22	200	103.3	80	120	
208	Pb	209	205.160	7289018	0.07	200	102.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1377075	1.03	1311317	105.01	70	120	
72	Ge	917215	1.59	862495	106.34	70	120	
115	In	8482345	1.44	7979360	106.30	70	120	
209	Bi	15711214	1.06	15611692	100.64	70	120	

Sample Report

Date Acquired	5/25/16 5:33 PM	Sample Name	1605121-22A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	191_ARF.d	Dilution	~~2~~ 5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	68.890	3628	3.19	2000	>RL
9	Be	45	2.397	176	11.36	2000	>RL
11	B	45	135.056	3763	1.54	2000	>RL
23	Na	45	15729.171	18471389	1.80	25000	>RL
24	Mg	45	15809.137	9071137	0.70	25000	>RL
27	Al	45	80737.475	17234777	1.28	10000	OUTCAL
39	K	45	15498.068	9382757	1.19	25000	>RL
44	Ca	45	65565.183	2260460	0.18	25000	OUTCAL
47	Ti	45	407.026	89757	0.97	2000	>RL
51	V	45	127.139	854808	0.33	2000	>RL
52	Cr	45	70.228	575160	1.31	2000	>RL
55	Mn	45	724.872	3380307	0.44	2000	>RL
56	Fe	45	66733.133	479544692	0.31	10000	OUTCAL
59	Co	72	24.385	293365	1.01	2000	>RL
60	Ni	72	45.089	150710	0.61	2000	>RL
63	Cu	72	22.698	209714	0.82	2000	>RL
66	Zn	72	209.923	311068	1.00	2000	>RL
75	As	72	20.543	24189	1.01	2000	>RL
78	Se	72	6.194	565	2.82	2000	>RL
88	Sr	115	478.175	2807037	0.95	2000	>RL
95	Mo	115	1.358	6620	4.06	2000	
107	Ag	115	0.113	1847	4.03	500	
111	Cd	115	0.485	1028	0.75	2000	>RL
118	Sn	115	6.466	29360	1.00	2000	>RL
121	Sb	115	0.846	7582	5.07	500	
137	Ba	115	536.946	1159698	0.55	2000	>RL
205	Tl	209	0.714	17846	1.36	2000	
208	Pb	209	76.131	2562651	0.52	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1413015	0.91	1311317	107.76	70	120	
72	Ge	904986	0.68	862495	104.93	70	120	
115	In	8352532	0.71	7979360	104.68	70	120	
209	Bi	14889207	3.04	15611692	95.37	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/25/2016 17:35	Sample Name	1605121-22A SD
Data Batch	160525.b	Comment	SD ICPMS_TSDOD1
Data File Name	192_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	13.880	747	4.55	68.9	100.7	110	90	Good
9	Be	45	0.467	36	7.06	2.4	97.5	110	90	Good
11	B	45	40.645	1220	3.42	135.1	150.5	110	90	
23	Na	45	3337.599	3957324	0.88	15729.2	106.1	110	90	Good
24	Mg	45	3249.869	1871552	0.30	15809.1	102.8	110	90	Good
27	Al	45	16634.598	3563526	0.24	80737.5	103.0	110	90	Good
39	K	45	3225.632	2027059	1.34	15498.1	104.1	110	90	Good
44	Ca	45	13724.791	475624	0.92	65565.2	104.7	110	90	Good
47	Ti	45	83.487	18476	2.48	407.0	102.6	110	90	Good
51	V	45	25.806	180345	0.68	127.1	101.5	110	90	Good
52	Cr	45	14.360	119171	1.48	70.2	102.2	110	90	Good
55	Mn	45	150.313	703415	0.63	724.9	103.7	110	90	Good
56	Fe	45	14053.026	101321138	0.80	66733.1	105.3	110	90	Good
59	Co	72	5.054	62813	1.41	24.4	103.6	110	90	Good
60	Ni	72	9.433	32862	2.04	45.1	104.6	110	90	Good
63	Cu	72	4.725	46876	0.32	22.7	104.1	110	90	Good
66	Zn	72	44.099	67888	0.62	209.9	105.0	110	90	Good
75	As	72	4.142	5247	1.12	20.5	100.8	110	90	Good
78	Se	72	1.562	230	8.20	6.2	126.1	110	90	
88	Sr	115	97.043	579922	1.08	478.2	101.5	110	90	Good
95	Mo	115	0.291	1476	4.17	1.4	107.1	110	90	Good
107	Ag	115	0.039	733	9.97	0.1	170.5	110	90	
111	Cd	115	0.094	209	13.57	0.5	96.8	110	90	Good
118	Sn	115	1.384	6756	0.84	6.5	107.0	110	90	Good
121	Sb	115	0.072	2504	6.15	0.8	42.7	110	90	
137	Ba	115	109.212	240000	0.87	536.9	101.7	110	90	Good
205	Tl	209	0.146	3808	5.26	0.7	102.0	110	90	Good
208	Pb	209	15.383	538858	1.14	76.1	101.0	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1417505	0.64	1311317	108.10	70	120	
72	Ge	934082	0.26	862495	108.30	70	120	
115	In	8498316	1.62	7979360	106.50	70	120	
209	Bi	15471798	1.89	15611692	99.10	70	120	

Sample Report

Date Acquired	5/25/16 5:37 PM	Sample Name	1605121-18A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	193SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	58.096	3077	2.90	2000	>RL
9	Be	45	2.381	176	12.33	2000	>RL
11	B	45	136.617	3823	1.88	2000	>RL
23	Na	45	11393.236	13450081	1.50	25000	>RL
24	Mg	45	14221.032	8199059	1.25	25000	>RL
27	Al	45	70670.164	15156379	1.31	10000	OUTCAL
39	K	45	13826.495	8419047	0.96	25000	>RL
44	Ca	45	80787.751	2798161	0.53	25000	OUTCAL
47	Ti	45	313.203	69401	0.98	2000	>RL
51	V	45	123.313	833163	1.85	2000	>RL
52	Cr	45	66.096	543862	1.60	2000	>RL
55	Mn	45	1637.533	7672119	0.69	2000	>RL
56	Fe	45	72297.956	521911713	1.70	10000	OUTCAL
59	Co	72	36.009	435504	1.41	2000	>RL
60	Ni	72	53.168	178598	0.51	2000	>RL
63	Cu	72	24.054	223288	1.20	2000	>RL
66	Zn	72	222.928	332079	0.42	2000	>RL
75	As	72	28.537	33681	0.69	2000	>RL
78	Se	72	6.223	571	6.64	2000	>RL
88	Sr	115	410.564	2383848	0.50	2000	>RL
95	Mo	115	2.762	13272	2.15	2000	>RL
107	Ag	115	0.083	1377	3.42	500	
111	Cd	115	0.792	1656	6.16	2000	>RL
118	Sn	115	6.450	28966	0.54	2000	>RL
121	Sb	115	3.406	24255	1.51	500	>RL
137	Ba	115	784.165	1675109	0.80	2000	>RL
205	Tl	209	0.849	21435	3.98	2000	
208	Pb	209	276.333	9389952	1.11	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1419684	1.14	1311317	108.26	70	120	
72	Ge	909794	0.22	862495	105.48	70	120	
115	In	8260935	0.20	7979360	103.53	70	120	
209	Bi	15026625	0.80	15611692	96.25	70	120	

Sample Report

Date Acquired	5/25/16 5:39 PM	Sample Name	1605121-19A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	194SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	53.083	2768	1.38	2000	>RL
9	Be	45	2.285	166	4.55	2000	>RL
11	B	45	144.235	3965	2.11	2000	>RL
23	Na	45	10172.989	11823494	1.61	25000	>RL
24	Mg	45	12090.543	6860077	1.91	25000	>RL
27	Al	45	59822.606	12627581	0.40	10000	OUTCAL
39	K	45	12468.954	7480973	1.80	25000	>RL
44	Ca	45	192971.116	6575925	0.87	25000	OUTCAL
47	Ti	45	179.091	39054	0.26	2000	>RL
51	V	45	97.319	648743	0.81	2000	>RL
52	Cr	45	59.663	483305	1.24	2000	>RL
55	Mn	45	385.855	1779184	0.64	2000	>RL
56	Fe	45	76694.874	544906112	0.61	10000	OUTCAL
59	Co	72	15.611	188208	1.43	2000	>RL
60	Ni	72	27.066	90795	0.78	2000	>RL
63	Cu	72	16.110	149776	0.91	2000	>RL
66	Zn	72	160.062	237798	1.25	2000	>RL
75	As	72	22.210	26181	0.02	2000	>RL
78	Se	72	6.877	617	5.30	2000	>RL
88	Sr	115	674.541	3916679	0.34	2000	>RL
95	Mo	115	2.970	14273	1.72	2000	>RL
107	Ag	115	0.042	769	3.64	500	
111	Cd	115	0.843	1762	9.80	2000	>RL
118	Sn	115	6.033	27125	2.21	2000	>RL
121	Sb	115	0.664	6306	4.59	500	
137	Ba	115	3005.888	6421962	0.98	2000	OUTCAL
205	Tl	209	0.454	11079	0.34	2000	
208	Pb	209	85.309	2802488	0.82	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1397042	0.43	1311317	106.54	70	120	
72	Ge	906816	1.47	862495	105.14	70	120	
115	In	8262194	0.85	7979360	103.54	70	120	
209	Bi	14527925	2.47	15611692	93.06	70	120	

Sample Report

Date Acquired	5/25/16 5:41 PM	Sample Name	1605121-20A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	195SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	54.132	2884	2.36	2000	>RL
9	Be	45	2.625	195	10.47	2000	>RL
11	B	45	130.161	3668	0.69	2000	>RL
23	Na	45	9871.747	11725900	0.79	25000	>RL
24	Mg	45	12392.777	7185518	2.08	25000	>RL
27	Al	45	62843.040	13556886	1.17	10000	OUTCAL
39	K	45	12263.540	7520412	2.96	25000	>RL
44	Ca	45	69146.789	2408686	1.30	25000	OUTCAL
47	Ti	45	113.023	25191	2.12	2000	>RL
51	V	45	87.920	599731	0.61	2000	>RL
52	Cr	45	59.331	491186	0.32	2000	>RL
55	Mn	45	332.780	1568212	0.71	2000	>RL
56	Fe	45	66438.173	482388692	0.69	10000	OUTCAL
59	Co	72	18.290	225559	1.16	2000	>RL
60	Ni	72	30.544	104771	2.85	2000	>RL
63	Cu	72	20.574	195047	2.57	2000	>RL
66	Zn	72	218.740	332227	1.58	2000	>RL
75	As	72	22.564	27208	0.87	2000	>RL
78	Se	72	6.542	606	3.32	2000	>RL
88	Sr	115	448.694	2622444	0.96	2000	>RL
95	Mo	115	2.502	12114	2.84	2000	>RL
107	Ag	115	0.053	942	7.03	500	
111	Cd	115	0.465	983	8.23	2000	>RL
118	Sn	115	6.289	28451	1.91	2000	>RL
121	Sb	115	1.623	12673	2.11	500	
137	Ba	115	452.926	974041	0.50	2000	>RL
205	Tl	209	0.462	11725	1.21	2000	
208	Pb	209	200.889	6852709	0.62	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1427739	0.73	1311317	108.88	70	120	
72	Ge	927624	0.42	862495	107.55	70	120	
115	In	8320202	2.45	7979360	104.27	70	120	
209	Bi	15084534	0.82	15611692	96.62	70	120	

Sample Report

Date Acquired	5/25/16 5:43 PM	Sample Name	1605121-21A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	196SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	51.275	2774	0.86	2000	>RL
9	Be	45	2.433	184	15.13	2000	>RL
11	B	45	81.153	2368	3.97	2000	>RL
23	Na	45	4459.628	5395125	2.04	25000	>RL
24	Mg	45	12423.343	7311921	1.01	25000	>RL
27	Al	45	68761.812	15056329	0.46	10000	OUTCAL
39	K	45	15776.340	9794660	0.83	25000	>RL
44	Ca	45	28125.705	995204	0.61	25000	OUTCAL
47	Ti	45	268.096	60644	0.84	2000	>RL
51	V	45	103.442	714804	1.45	2000	>RL
52	Cr	45	66.303	556981	0.75	2000	>RL
55	Mn	45	588.297	2813832	0.29	2000	>RL
56	Fe	45	62928.801	463822133	1.73	10000	OUTCAL
59	Co	72	25.319	314794	1.72	2000	>RL
60	Ni	72	39.399	136151	0.53	2000	>RL
63	Cu	72	24.495	233711	1.06	2000	>RL
66	Zn	72	268.883	411623	0.62	2000	>RL
75	As	72	34.271	41526	0.68	2000	>RL
78	Se	72	5.908	562	2.77	2000	>RL
88	Sr	115	274.724	1596494	0.55	2000	>RL
95	Mo	115	1.563	7536	1.46	2000	
107	Ag	115	0.178	2797	0.24	500	
111	Cd	115	0.641	1345	7.43	2000	>RL
118	Sn	115	5.955	26798	1.18	2000	>RL
121	Sb	115	15.125	101044	2.00	500	>RL
137	Ba	115	416.938	891290	0.67	2000	>RL
205	Tl	209	0.638	16031	1.72	2000	
208	Pb	209	841.095	28450077	0.97	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1449211	0.52	1311317	110.52	70	120	
72	Ge	935254	0.42	862495	108.44	70	120	
115	In	8268555	1.67	7979360	103.62	70	120	
209	Bi	14958299	0.40	15611692	95.81	70	120	

Sample Report

Date Acquired	5/25/16 5:45 PM	Sample Name	1605121-23A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	197SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	53.948	2866	1.13	2000	>RL
9	Be	45	2.555	189	6.87	2000	>RL
11	B	45	123.052	3464	4.35	2000	>RL
23	Na	45	10805.429	12795296	1.84	25000	>RL
24	Mg	45	13714.041	7928850	0.81	25000	>RL
27	Al	45	66946.246	14399994	0.92	10000	OUTCAL
39	K	45	13851.607	8458461	0.13	25000	>RL
44	Ca	45	70112.792	2435441	0.84	25000	OUTCAL
47	Ti	45	285.681	63478	1.05	2000	>RL
51	V	45	113.814	771819	0.52	2000	>RL
52	Cr	45	65.680	542028	0.57	2000	>RL
55	Mn	45	868.347	4079735	0.99	2000	>RL
56	Fe	45	71696.008	519098966	0.72	10000	OUTCAL
59	Co	72	26.818	329741	1.16	2000	>RL
60	Ni	72	41.335	141244	1.03	2000	>RL
63	Cu	72	26.910	253687	0.65	2000	>RL
66	Zn	72	266.015	402741	0.19	2000	>RL
75	As	72	32.525	38987	0.77	2000	>RL
78	Se	72	5.688	540	4.99	2000	>RL
88	Sr	115	416.850	2417455	0.64	2000	>RL
95	Mo	115	2.527	12138	2.20	2000	>RL
107	Ag	115	0.103	1676	7.29	500	
111	Cd	115	0.897	1873	6.47	2000	>RL
118	Sn	115	5.990	26902	0.33	2000	>RL
121	Sb	115	6.221	42633	0.25	500	>RL
137	Ba	115	1014.026	2163303	1.34	2000	>RL
205	Tl	209	0.692	17624	2.32	2000	
208	Pb	209	474.987	16270839	0.91	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1423634	0.77	1311317	108.57	70	120	
72	Ge	924919	0.48	862495	107.24	70	120	
115	In	8253153	1.77	7979360	103.43	70	120	
209	Bi	15150589	2.14	15611692	97.05	70	120	

Sample Report

Date Acquired	5/25/16 5:47 PM	Sample Name	1605121-24A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	198SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	54.195	2839	1.90	2000	>RL
9	Be	45	2.449	179	4.03	2000	>RL
11	B	45	147.413	4068	2.98	2000	>RL
23	Na	45	10700.337	12492646	1.43	25000	>RL
24	Mg	45	12217.160	6964153	1.11	25000	>RL
27	Al	45	63738.982	13517556	0.81	10000	OUTCAL
39	K	45	14914.707	8973710	0.70	25000	>RL
44	Ca	45	110685.101	3790107	0.65	25000	OUTCAL
47	Ti	45	184.397	40403	1.63	2000	>RL
51	V	45	105.669	707107	0.72	2000	>RL
52	Cr	45	62.927	512110	0.51	2000	>RL
55	Mn	45	373.229	1729147	0.54	2000	>RL
56	Fe	45	83523.181	596222394	0.96	10000	OUTCAL
59	Co	72	16.747	203764	0.73	2000	>RL
60	Ni	72	30.072	101783	0.74	2000	>RL
63	Cu	72	18.276	171186	0.28	2000	>RL
66	Zn	72	179.647	269288	0.41	2000	>RL
75	As	72	24.000	28534	0.79	2000	>RL
78	Se	72	6.131	567	1.28	2000	>RL
88	Sr	115	502.784	2875942	1.09	2000	>RL
95	Mo	115	2.992	14161	0.80	2000	>RL
107	Ag	115	0.033	621	8.63	500	
111	Cd	115	0.558	1151	0.60	2000	>RL
118	Sn	115	6.047	26779	0.73	2000	>RL
121	Sb	115	0.745	6738	1.98	500	
137	Ba	115	604.263	1271624	0.35	2000	>RL
205	Tl	209	0.478	12083	1.04	2000	
208	Pb	209	80.759	2745054	0.51	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1403682	0.58	1311317	107.04	70	120	
72	Ge	915270	1.54	862495	106.12	70	120	
115	In	8138762	0.95	7979360	102.00	70	120	
209	Bi	15030767	1.96	15611692	96.28	70	120	

Sample Report

Date Acquired	5/25/16 5:49 PM	Sample Name	1605121-25A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	199SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	74.193	4002	2.54	2000	>RL
9	Be	45	4.274	321	7.37	2000	>RL
11	B	45	140.073	3994	3.80	2000	>RL
23	Na	45	12277.117	14783770	0.66	25000	>RL
24	Mg	45	14285.762	8401259	0.38	25000	>RL
27	Al	45	76913.445	16828245	1.30	10000	OUTCAL
39	K	45	12690.197	7890424	1.31	25000	>RL
44	Ca	45	55352.197	1956083	0.54	25000	OUTCAL
47	Ti	45	111.093	25112	1.00	2000	>RL
51	V	45	108.773	750674	1.09	2000	>RL
52	Cr	45	70.625	592757	0.34	2000	>RL
55	Mn	45	435.258	2080375	0.38	2000	>RL
56	Fe	45	100638.786	741174371	0.31	10000	OUTCAL
59	Co	72	33.968	420903	0.31	2000	>RL
60	Ni	72	50.687	174460	0.99	2000	>RL
63	Cu	72	22.899	217903	1.05	2000	>RL
66	Zn	72	393.764	600537	1.55	2000	>RL
75	As	72	30.105	36389	0.37	2000	>RL
78	Se	72	8.505	759	2.04	2000	>RL
88	Sr	115	461.529	2689614	0.91	2000	>RL
95	Mo	115	2.578	12436	2.49	2000	>RL
107	Ag	115	0.050	890	14.28	500	
111	Cd	115	0.538	1132	7.97	2000	>RL
118	Sn	115	6.639	29911	1.81	2000	>RL
121	Sb	115	0.879	7748	3.63	500	
137	Ba	115	246.676	528901	1.09	2000	>RL
205	Tl	209	0.671	16771	1.92	2000	
208	Pb	209	139.715	4701450	0.20	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1448198	0.98	1311317	110.44	70	120	
72	Ge	932140	0.51	862495	108.07	70	120	
115	In	8291943	0.70	7979360	103.92	70	120	
209	Bi	14879588	0.88	15611692	95.31	70	120	

Sample Report

Date Acquired	5/25/16 5:51 PM	Sample Name	1605121-26A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	200SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	51.836	2802	1.29	2000	>RL
9	Be	45	2.579	194	8.01	2000	>RL
11	B	45	77.790	2272	4.86	2000	>RL
23	Na	45	4292.281	5189865	0.45	25000	>RL
24	Mg	45	13013.283	7653169	0.91	25000	>RL
27	Al	45	72755.486	15919051	1.52	10000	OUTCAL
39	K	45	16494.573	10230092	1.23	25000	>RL
44	Ca	45	25452.013	900100	0.83	25000	OUTCAL
47	Ti	45	287.441	64964	1.87	2000	>RL
51	V	45	105.561	728768	1.79	2000	>RL
52	Cr	45	67.693	568204	0.77	2000	>RL
55	Mn	45	621.135	2968649	0.74	2000	>RL
56	Fe	45	65096.773	479401563	0.80	10000	OUTCAL
59	Co	72	25.997	319154	1.33	2000	>RL
60	Ni	72	41.602	141931	0.62	2000	>RL
63	Cu	72	30.162	283621	0.32	2000	>RL
66	Zn	72	279.867	423018	0.77	2000	>RL
75	As	72	34.960	41821	0.79	2000	>RL
78	Se	72	6.106	570	2.92	2000	>RL
88	Sr	115	257.587	1492371	0.75	2000	>RL
95	Mo	115	1.787	8581	2.17	2000	
107	Ag	115	0.186	2910	2.19	500	
111	Cd	115	0.845	1763	7.28	2000	>RL
118	Sn	115	5.944	26666	1.63	2000	>RL
121	Sb	115	12.595	84214	0.69	500	>RL
137	Ba	115	392.798	837173	0.79	2000	>RL
205	Tl	209	0.717	17979	0.82	2000	
208	Pb	209	752.683	25411631	1.24	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1448205	0.98	1311317	110.44	70	120	
72	Ge	923449	0.18	862495	107.07	70	120	
115	In	8242215	0.38	7979360	103.29	70	120	
209	Bi	14933880	1.51	15611692	95.66	70	120	

Sample Report

Date Acquired	5/25/16 5:53 PM	Sample Name	1605121-27A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	201SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	63.729	3382	1.46	2000	>RL
9	Be	45	2.465	183	3.96	2000	>RL
11	B	45	117.200	3306	9.71	2000	>RL
23	Na	45	13801.179	16329670	0.62	25000	>RL
24	Mg	45	14764.772	8533838	1.85	25000	>RL
27	Al	45	75147.999	16160894	0.75	10000	OUTCAL
39	K	45	15222.642	9285335	0.72	25000	>RL
44	Ca	45	57169.759	1985697	1.46	25000	OUTCAL
47	Ti	45	375.555	83430	0.76	2000	>RL
51	V	45	117.667	797473	1.40	2000	>RL
52	Cr	45	66.098	545369	0.29	2000	>RL
55	Mn	45	657.133	3086856	0.57	2000	>RL
56	Fe	45	62755.593	454288622	1.09	10000	OUTCAL
59	Co	72	23.679	290605	0.62	2000	>RL
60	Ni	72	41.565	141751	0.45	2000	>RL
63	Cu	72	22.017	207571	1.05	2000	>RL
66	Zn	72	205.986	311383	0.76	2000	>RL
75	As	72	23.438	28115	0.52	2000	>RL
78	Se	72	5.498	524	6.48	2000	>RL
88	Sr	115	416.144	2424533	0.92	2000	>RL
95	Mo	115	1.448	7002	4.26	2000	
107	Ag	115	0.112	1810	8.31	500	
111	Cd	115	0.557	1170	9.75	2000	>RL
118	Sn	115	5.936	26785	0.98	2000	>RL
121	Sb	115	3.512	25039	0.93	500	>RL
137	Ba	115	426.400	913991	1.50	2000	>RL
205	Tl	209	0.691	16931	2.86	2000	
208	Pb	209	249.006	8214248	0.14	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1423347	0.59	1311317	108.54	70	120	
72	Ge	923140	0.50	862495	107.03	70	120	
115	In	8289257	0.15	7979360	103.88	70	120	
209	Bi	14589348	1.63	15611692	93.45	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/25/2016 17:55	Sample Name	1605121-22A PDS
Data Batch	160525.b	Comment	PDS ICPMS_TSDOD1
Data File Name	202_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	243.594	12997	0.38	68.9	200	87.4	75	125	
9	Be	45	176.621	13107	0.39	2.4	200	87.1	75	125	
11	B	45	303.700	8448	3.48	135.1	200	84.3	75	125	
23	Na	45	20872.772	24907627	1.02	15729.2	5000	102.9	75	125	
24	Mg	45	20796.748	12131367	0.90	15809.1	5000	99.8	75	125	
27	Al	45	86379.873	18747874	1.24	80737.5	5000	112.8	75	125	
39	K	45	20790.945	12766869	1.27	15498.1	5000	105.9	75	125	
44	Ca	45	70292.462	2463779	1.62	65565.2	5000	94.5	75	125	
47	Ti	45	612.628	137341	1.13	407.0	200	102.8	75	125	
51	V	45	323.600	2199406	0.58	127.1	200	98.2	75	125	
52	Cr	45	263.530	2189772	0.72	70.2	200	96.7	75	125	
55	Mn	45	918.985	4356534	0.57	724.9	200	97.1	75	125	
56	Fe	45	71753.679	524167339	0.84	66733.1	5000	100.4	75	125	
59	Co	72	224.824	2754801	0.28	24.4	200	100.2	75	125	
60	Ni	72	236.702	804275	0.86	45.1	200	95.8	75	125	
63	Cu	72	210.856	1965738	0.84	22.7	200	94.1	75	125	
66	Zn	72	405.526	611652	1.61	209.9	200	97.8	75	125	
75	As	72	221.247	262813	0.13	20.5	200	100.4	75	125	
78	Se	72	204.761	15546	1.52	6.2	200	99.3	75	125	
88	Sr	115	700.260	3983721	0.55	478.2	200	111.0	75	125	
95	Mo	115	195.748	919057	1.28	1.4	200	97.2	75	125	
107	Ag	115	184.776	2704893	1.17	0.1	200	92.3	75	125	
111	Cd	115	195.086	397784	0.50	0.5	200	97.3	75	125	
118	Sn	115	214.683	930448	0.37	6.5	200	104.1	75	125	
121	Sb	115	198.235	1273368	0.92	0.8	200	98.7	75	125	
137	Ba	115	744.159	1557644	0.66	536.9	200	103.6	75	125	
205	Tl	209	198.761	4810969	0.91	0.7	200	99.0	75	125	
208	Pb	209	273.656	8930417	0.33	76.1	200	98.8	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1436469	0.69	1311317	109.54	70	120	
72	Ge	921850	0.20	862495	106.88	70	120	
115	In	8096043	1.34	7979360	101.46	70	120	
209	Bi	14431198	0.93	15611692	92.44	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/25/2016 17:57	Sample Name	1605121-22A MS
Data Batch	160525.b	Comment	MS ICPMS_TSDOD1
Data File Name	203_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	247.587	13010	0.21	68.9	200	89.3	80	120	
9	Be	45	179.848	13144	0.46	2.4	200	88.7	80	120	
11	B	45	301.535	8263	0.94	135.1	200	83.2	80	120	
23	Na	45	19322.074	22712972	1.87	15729.2	1000	359.3	80	120	Fail
24	Mg	45	20156.166	11580816	1.82	15809.1	1000	434.7	80	120	Fail
27	Al	45	84140.870	17986086	1.36	80737.5	1000	340.3	80	120	Fail
39	K	45	20715.816	12528934	1.33	15498.1	1000	521.8	80	120	Fail
44	Ca	45	64965.394	2242554	0.79	65565.2	1000	-60.0	80	120	Fail
47	Ti	45	628.857	138852	1.36	407.0	200	110.9	80	120	
51	V	45	327.258	2190643	0.05	127.1	200	100.1	80	120	
52	Cr	45	261.964	2143958	0.73	70.2	200	95.9	80	120	
55	Mn	45	884.591	4130154	0.65	724.9	200	79.9	80	120	Fail
56	Fe	45	67281.720	484105492	1.48	66733.1	1000	54.9	80	120	Fail
59	Co	72	221.263	2670421	1.69	24.4	200	98.4	80	120	
60	Ni	72	234.461	784694	0.88	45.1	200	94.7	80	120	
63	Cu	72	213.742	1962680	0.99	22.7	200	95.5	80	120	
66	Zn	72	398.303	591744	1.28	209.9	200	94.2	80	120	
75	As	72	218.526	255686	0.92	20.5	200	99.0	80	120	
78	Se	72	207.331	15503	1.03	6.2	200	100.6	80	120	
88	Sr	115	669.493	3775164	0.67	478.2	200	95.7	80	120	
95	Mo	115	183.555	854241	0.54	1.4	200	91.1	80	120	
107	Ag	115	185.242	2687937	0.28	0.1	200	92.6	80	120	
111	Cd	115	199.549	403240	0.92	0.5	200	99.5	80	120	
118	Sn	115	209.191	898656	0.85	6.5	200	101.4	80	120	
121	Sb	115	65.276	416894	1.31	0.8	200	32.2	80	120	Fail
137	Ba	115	804.479	1668993	0.73	536.9	200	133.8	80	120	Fail
205	Tl	209	202.902	4901684	1.44	0.7	200	101.1	80	120	
208	Pb	209	259.846	8464055	0.83	76.1	200	91.9	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1414771	0.65	1311317	107.89	70	120	
72	Ge	908006	0.19	862495	105.28	70	120	
115	In	8023338	0.55	7979360	100.55	70	120	
209	Bi	14404634	1.12	15611692	92.27	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/25/2016 17:59	Sample Name	1605121-22A MSD
Data Batch	160525.b	Comment	MSD ICPMS_TSDOD1
Data File Name	204_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	251.198	13340	0.58	68.9	200	91.2	80	120	
9	Be	45	180.324	13319	1.25	2.4	200	89.0	80	120	
11	B	45	310.060	8583	0.98	135.1	200	87.5	80	120	
23	Na	45	19865.028	23597102	0.48	15729.2	1000	413.6	80	120	Fail
24	Mg	45	20654.730	11993037	1.66	15809.1	1000	484.6	80	120	Fail
27	Al	45	85796.567	18533125	1.29	80737.5	1000	505.9	80	120	Fail
39	K	45	21485.650	13129051	0.80	15498.1	1000	598.8	80	120	Fail
44	Ca	45	69325.011	2418479	0.87	65565.2	1000	376.0	80	120	Fail
47	Ti	45	588.650	131356	0.54	407.0	200	90.8	80	120	
51	V	45	326.743	2210317	1.34	127.1	200	99.8	80	120	
52	Cr	45	263.730	2181202	1.23	70.2	200	96.8	80	120	
55	Mn	45	895.152	4223840	0.80	724.9	200	85.1	80	120	
56	Fe	45	69130.893	502682753	1.30	66733.1	1000	239.8	80	120	Fail
59	Co	72	225.118	2746743	0.52	24.4	200	100.4	80	120	
60	Ni	72	236.815	801214	1.14	45.1	200	95.9	80	120	
63	Cu	72	214.171	1988197	0.13	22.7	200	95.7	80	120	
66	Zn	72	407.924	612622	0.95	209.9	200	99.0	80	120	
75	As	72	223.298	264125	0.60	20.5	200	101.4	80	120	
78	Se	72	205.348	15524	1.28	6.2	200	99.6	80	120	
88	Sr	115	710.219	4035728	0.82	478.2	200	116.0	80	120	
95	Mo	115	184.373	864687	0.99	1.4	200	91.5	80	120	
107	Ag	115	185.019	2705543	0.72	0.1	200	92.5	80	120	
111	Cd	115	201.788	410940	0.83	0.5	200	100.7	80	120	
118	Sn	115	210.922	913085	0.56	6.5	200	102.2	80	120	
121	Sb	115	68.415	440225	0.31	0.8	200	33.8	80	120	Fail
137	Ba	115	810.558	1694692	0.78	536.9	200	136.8	80	120	Fail
205	Tl	209	202.308	4880972	0.77	0.7	200	100.8	80	120	
208	Pb	209	275.475	8960566	0.45	76.1	200	99.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1429760	0.45	1311317	109.03	70	120	
72	Ge	918043	1.11	862495	106.44	70	120	
115	In	8085469	0.27	7979360	101.33	70	120	
209	Bi	14384278	0.92	15611692	92.14	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/25/2016 18:01	Sample Name	CCV6-160525
Data Batch	160525.b	Comment	CCV ICPMS_TW
Data File Name	205_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	187.929	9823	0.79	200	94.0	90	110	
9	Be	45	183.848	13359	1.73	200	91.9	90	110	
11	B	45	202.555	5558	2.64	200	101.3	90	110	
23	Na	45	4923.619	5778043	0.58	5000	98.5	90	110	
24	Mg	45	4825.544	2757191	0.92	5000	96.5	90	110	
27	Al	45	4873.260	1036883	0.48	5000	97.5	90	110	
39	K	45	5079.825	3119091	0.47	5000	101.6	90	110	
44	Ca	45	4653.462	160786	1.17	5000	93.1	90	110	
47	Ti	45	202.257	44407	1.05	200	101.1	90	110	
51	V	45	201.831	1346349	1.49	200	100.9	90	110	
52	Cr	45	198.269	1613757	0.43	200	99.1	90	110	
55	Mn	45	197.935	919106	1.14	200	99.0	90	110	
56	Fe	45	4880.448	34925739	0.24	5000	97.6	90	110	
59	Co	72	203.615	2504290	1.14	200	101.8	90	110	
60	Ni	72	199.612	680906	1.21	200	99.8	90	110	
63	Cu	72	199.755	1869448	0.73	200	99.9	90	110	
66	Zn	72	201.306	305046	1.76	200	100.7	90	110	
75	As	72	205.398	244934	0.55	200	102.7	90	110	
78	Se	72	207.794	15834	0.26	200	103.9	90	110	
88	Sr	115	201.635	1173281	0.96	200	100.8	90	110	
95	Mo	115	197.410	947765	0.36	200	98.7	90	110	
107	Ag	115	179.653	2689306	0.30	200	89.8	90	110	Fail
111	Cd	115	200.637	418274	0.54	200	100.3	90	110	
118	Sn	115	202.203	896129	1.13	200	101.1	90	110	
121	Sb	115	199.375	1309523	0.48	200	99.7	90	110	
137	Ba	115	200.456	429075	1.26	200	100.2	90	110	
205	Tl	209	197.981	4953935	1.43	200	99.0	90	110	
208	Pb	209	194.882	6574438	0.45	200	97.4	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1406660	0.42	1311317	107.27	70	120	
72	Ge	925369	0.74	862495	107.29	70	120	
115	In	8277085	0.52	7979360	103.73	70	120	
209	Bi	14918213	1.32	15611692	95.56	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/25/2016 18:05	Sample Name	LCVL6-160525
Data Batch	160525.b	Comment	LCVLICPMS_TW
Data File Name	207LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	8.464	462	6.22	10	84.6	70	130	
9	Be	45	0.841	63	15.63	1	84.1	70	130	
11	B	45	37.765	1141	6.17	20	188.8	70	130	Fail
23	Na	45	124.727	178572	0.50	100	124.7	70	130	
24	Mg	45	95.794	56060	0.59	100	95.8	70	130	
27	Al	45	99.003	22453	1.90	100	99.0	70	130	
39	K	45	108.714	151195	1.45	100	108.7	70	130	
44	Ca	45	94.641	4429	0.80	100	94.6	70	130	
47	Ti	45	5.245	1166	0.72	5	104.9	70	130	
51	V	45	0.658	12289	4.33	1	65.8	70	130	Fail
52	Cr	45	4.998	42443	2.51	5	100.0	70	130	
55	Mn	45	4.792	22679	0.92	5	95.8	70	130	
56	Fe	45	94.909	696290	0.57	100	94.9	70	130	
59	Co	72	5.054	63296	0.78	5	101.1	70	130	
60	Ni	72	4.805	17066	2.48	5	96.1	70	130	
63	Cu	72	4.881	48724	0.29	5	97.6	70	130	
66	Zn	72	5.121	8440	5.29	5	102.4	70	130	
75	As	72	5.030	6363	0.22	5	100.6	70	130	
78	Se	72	5.548	538	5.99	5	111.0	70	130	
88	Sr	115	4.982	29878	1.12	5	99.6	70	130	
95	Mo	115	4.719	23011	0.75	5	94.4	70	130	
107	Ag	115	1.854	28271	1.36	2	92.7	70	130	
111	Cd	115	0.978	2075	2.92	1	97.8	70	130	
118	Sn	115	5.140	23539	0.97	5	102.8	70	130	
121	Sb	115	2.018	15410	2.30	2	100.9	70	130	
137	Ba	115	4.954	10787	1.45	5	99.1	70	130	
205	Tl	209	0.954	24680	0.40	1	95.4	70	130	
208	Pb	209	0.979	34907	2.01	1	97.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1416736	0.58	1311317	108.04	70	120	
72	Ge	941479	1.32	862495	109.16	70	120	
115	In	8391716	0.41	7979360	105.17	70	120	
209	Bi	15409895	0.40	15611692	98.71	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/25/2016 18:07	Sample Name	CCB6-160525
Data Batch	160525.b	Comment	CCB ICPMS_TW
Data File Name	208_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.152	25	6.2	2	5	
9	Be	45	-0.010	1	86.6	0.4	0.3	
11	B	45	16.496	560	8.0	10	10	FailAq FailSoil
23	Na	45	29.791	66262	1.5	50	100	
24	Mg	45	-0.444	690	7.4	50	100	
27	Al	45	0.129	1278	1.2	50	10	
39	K	45	6.968	89023	0.4	50	100	
44	Ca	45	-5.515	959	7.1	50	100	
47	Ti	45	0.044	16	49.5	4	3	
51	V	45	-0.261	6086	1.1	4	3	
52	Cr	45	0.058	1961	1.0	2	2	
55	Mn	45	0.026	393	15.4	2	3	
56	Fe	45	0.407	15254	1.6	50	50	
59	Co	72	0.003	100	23.1	2	3	
60	Ni	72	0.009	433	6.3	2	3	
63	Cu	72	-0.052	1801	4.4	2	2	
66	Zn	72	0.023	588	3.8	4	2	
75	As	72	0.013	281	4.9	2	2	
78	Se	72	0.326	135	8.5	1	2	
88	Sr	115	0.005	534	8.5	4	3	
95	Mo	115	0.010	88	34.5	2	2	
107	Ag	115	0.019	436	8.7	0.4	1	
111	Cd	115	0.005	19	36.7	0.4	0.3	
118	Sn	115	0.087	857	12.2	4	3	
121	Sb	115	0.075	2507	2.8	2	0.8	
137	Ba	115	0.011	63	41.8	2	3	
205	Tl	209	0.007	220	17.5	2	0.5	
208	Pb	209	0.023	1581	6.6	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1401418	0.16	1311317	106.87	70	120	
72	Ge	933963	0.15	862495	108.29	70	120	
115	In	8443246	0.72	7979360	105.81	70	120	
209	Bi	15436139	0.26	15611692	98.88	70	120	

Sample Report

Date Acquired	5/25/16 6:09 PM	Sample Name	1605121-28A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	209SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	54.672	2870	1.40	2000	>RL
9	Be	45	2.238	164	10.68	2000	>RL
11	B	45	119.983	3341	2.15	2000	>RL
23	Na	45	9895.466	11582286	1.29	25000	>RL
24	Mg	45	12946.887	7397441	2.37	25000	>RL
27	Al	45	64204.823	13647603	0.48	10000	OUTCAL
39	K	45	13510.486	8155237	0.60	25000	>RL
44	Ca	45	69819.322	2396593	0.70	25000	OUTCAL
47	Ti	45	307.187	67451	0.84	2000	>RL
51	V	45	102.401	687035	0.97	2000	>RL
52	Cr	45	64.328	524658	0.56	2000	>RL
55	Mn	45	635.516	2950771	0.85	2000	>RL
56	Fe	45	60204.227	430748730	0.61	10000	OUTCAL
59	Co	72	21.607	264177	0.90	2000	>RL
60	Ni	72	36.407	123741	1.37	2000	>RL
63	Cu	72	25.907	242913	0.85	2000	>RL
66	Zn	72	243.431	366485	0.82	2000	>RL
75	As	72	29.635	35345	0.44	2000	>RL
78	Se	72	5.634	532	4.34	2000	>RL
88	Sr	115	374.548	2141171	1.01	2000	>RL
95	Mo	115	2.198	10410	1.94	2000	>RL
107	Ag	115	0.125	1968	4.10	500	
111	Cd	115	0.906	1865	1.66	2000	>RL
118	Sn	115	6.236	27585	1.60	2000	>RL
121	Sb	115	8.515	56802	0.97	500	>RL
137	Ba	115	697.804	1467650	0.92	2000	>RL
205	Tl	209	0.691	17528	0.81	2000	
208	Pb	209	579.295	19769615	0.51	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1406838	0.34	1311317	107.28	70	120	
72	Ge	919671	0.68	862495	106.63	70	120	
115	In	8134107	1.01	7979360	101.94	70	120	
209	Bi	15091460	0.53	15611692	96.67	70	120	

Sample Report

Date Acquired	5/25/16 6:11 PM	Sample Name	1605121-29A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	210SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	74.518	3840	3.93	2000	>RL
9	Be	45	2.718	196	17.65	2000	>RL
11	B	45	168.145	4555	2.96	2000	>RL
23	Na	45	18558.116	21322005	1.74	25000	>RL
24	Mg	45	15881.603	8919121	0.60	25000	>RL
27	Al	45	77996.830	16296110	0.64	10000	OUTCAL
39	K	45	14699.360	8713899	1.00	25000	>RL
44	Ca	45	103752.085	3500159	0.16	25000	OUTCAL
47	Ti	45	184.674	39863	0.56	2000	>RL
51	V	45	118.427	779834	0.98	2000	>RL
52	Cr	45	77.943	624569	0.92	2000	>RL
55	Mn	45	468.034	2136145	0.64	2000	>RL
56	Fe	45	82522.606	580382946	0.29	10000	OUTCAL
59	Co	72	21.794	259284	1.13	2000	>RL
60	Ni	72	39.638	131066	1.38	2000	>RL
63	Cu	72	18.043	165286	0.55	2000	>RL
66	Zn	72	181.382	265849	0.25	2000	>RL
75	As	72	24.172	28099	0.89	2000	>RL
78	Se	72	6.746	600	9.71	2000	>RL
88	Sr	115	646.798	3696731	0.62	2000	>RL
95	Mo	115	3.069	14521	2.18	2000	>RL
107	Ag	115	0.038	687	9.70	500	
111	Cd	115	0.456	943	3.94	2000	>RL
118	Sn	115	6.289	27825	2.72	2000	>RL
121	Sb	115	0.423	4654	3.47	500	
137	Ba	115	1347.936	2834368	0.85	2000	>RL
205	Tl	209	0.570	13929	3.16	2000	
208	Pb	209	58.512	1923570	1.55	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1382910	0.73	1311317	105.46	70	120	
72	Ge	894857	0.71	862495	103.75	70	120	
115	In	8136925	2.67	7979360	101.97	70	120	
209	Bi	14533391	0.48	15611692	93.09	70	120	

Sample Report

Date Acquired	5/25/16 6:13 PM	Sample Name	1605121-30A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	211SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	60.582	3152	1.14	2000	>RL
9	Be	45	2.944	214	6.90	2000	>RL
11	B	45	122.145	3370	6.77	2000	>RL
23	Na	45	10542.093	12233502	1.99	25000	>RL
24	Mg	45	13885.510	7867022	0.55	25000	>RL
27	Al	45	66269.000	13969056	1.37	10000	OUTCAL
39	K	45	13628.665	8156579	1.17	25000	>RL
44	Ca	45	88851.747	3024107	0.55	25000	OUTCAL
47	Ti	45	109.063	23752	1.42	2000	>RL
51	V	45	89.949	599365	0.14	2000	>RL
52	Cr	45	61.726	499283	0.74	2000	>RL
55	Mn	45	305.522	1406858	0.56	2000	>RL
56	Fe	45	77611.760	550655391	0.40	10000	OUTCAL
59	Co	72	18.211	218962	0.76	2000	>RL
60	Ni	72	33.490	111960	1.09	2000	>RL
63	Cu	72	22.959	211934	1.34	2000	>RL
66	Zn	72	268.407	397305	0.63	2000	>RL
75	As	72	28.512	33449	0.39	2000	>RL
78	Se	72	6.633	597	6.87	2000	>RL
88	Sr	115	458.682	2600832	0.31	2000	>RL
95	Mo	115	2.942	13804	0.73	2000	>RL
107	Ag	115	0.069	1132	10.30	500	
111	Cd	115	0.892	1820	1.20	2000	>RL
118	Sn	115	6.440	28235	1.19	2000	>RL
121	Sb	115	2.404	17288	2.44	500	>RL
137	Ba	115	611.325	1275377	1.00	2000	>RL
205	Tl	209	0.692	17179	2.23	2000	
208	Pb	209	290.189	9692096	0.45	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1395098	0.73	1311317	106.39	70	120	
72	Ge	904335	0.57	862495	104.85	70	120	
115	In	8075122	3.83	7979360	101.20	70	120	
209	Bi	14769750	1.16	15611692	94.61	70	120	

Sample Report

Date Acquired	5/25/16 6:15 PM	Sample Name	1605121-31A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	212SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	69.069	3559	0.80	2000	>RL
9	Be	45	2.706	195	1.07	2000	>RL
11	B	45	118.771	3251	2.50	2000	>RL
23	Na	45	5638.601	6501521	3.15	25000	>RL
24	Mg	45	17248.793	9686184	2.09	25000	>RL
27	Al	45	75312.334	15733623	0.44	10000	OUTCAL
39	K	45	16304.761	9656232	1.02	25000	>RL
44	Ca	45	143150.702	4828527	0.86	25000	OUTCAL
47	Ti	45	303.657	65531	0.77	2000	>RL
51	V	45	122.682	807340	1.13	2000	>RL
52	Cr	45	65.340	523706	0.41	2000	>RL
55	Mn	45	801.971	3659750	0.53	2000	>RL
56	Fe	45	72340.035	508754611	1.58	10000	OUTCAL
59	Co	72	32.819	389978	0.42	2000	>RL
60	Ni	72	50.915	168043	1.28	2000	>RL
63	Cu	72	32.402	294749	0.30	2000	>RL
66	Zn	72	253.649	371152	0.73	2000	>RL
75	As	72	26.558	30812	0.37	2000	>RL
78	Se	72	6.347	570	5.35	2000	>RL
88	Sr	115	636.762	3580992	0.50	2000	>RL
95	Mo	115	2.584	12030	2.93	2000	>RL
107	Ag	115	0.181	2745	6.24	500	
111	Cd	115	0.567	1151	5.62	2000	>RL
118	Sn	115	6.262	27254	1.83	2000	>RL
121	Sb	115	0.989	8174	1.79	500	
137	Ba	115	788.744	1631996	0.57	2000	>RL
205	Tl	209	0.683	16812	2.15	2000	
208	Pb	209	81.865	2712309	0.94	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1382830	1.40	1311317	105.45	70	120	
72	Ge	893862	0.74	862495	103.64	70	120	
115	In	8002006	0.61	7979360	100.28	70	120	
209	Bi	14652278	1.83	15611692	93.85	70	120	

Sample Report

Date Acquired	5/25/16 6:17 PM	Sample Name	1605121-32A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	213SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	44.473	2262	3.76	2000	>RL
9	Be	45	1.282	92	12.02	2000	>RL
11	B	45	127.126	3420	2.23	2000	>RL
23	Na	45	10930.880	12383145	1.10	25000	>RL
24	Mg	45	10284.765	5689391	2.54	25000	>RL
27	Al	45	40381.488	8309519	0.47	10000	OUTCAL
39	K	45	7486.281	4411359	0.42	25000	>RL
44	Ca	45	385416.736	12805505	2.43	25000	OUTCAL
47	Ti	45	158.619	33726	1.90	2000	>RL
51	V	45	65.572	428595	1.24	2000	>RL
52	Cr	45	35.824	283464	1.39	2000	>RL
55	Mn	45	177.412	797694	1.55	2000	>RL
56	Fe	45	40765.799	282397615	1.40	10000	OUTCAL
59	Co	72	12.154	144044	0.53	2000	>RL
60	Ni	72	31.190	102810	1.35	2000	>RL
63	Cu	72	10.312	95027	1.17	2000	>RL
66	Zn	72	80.863	118364	2.12	2000	>RL
75	As	72	12.783	14922	2.06	2000	>RL
78	Se	72	3.189	338	4.07	2000	>RL
88	Sr	115	2078.181	11538428	1.82	2000	OUTCAL
95	Mo	115	1.536	7076	3.10	2000	
107	Ag	115	0.061	1008	1.38	500	
111	Cd	115	0.149	304	11.81	2000	
118	Sn	115	5.396	23248	2.32	2000	>RL
121	Sb	115	0.206	3164	2.76	500	
137	Ba	115	400.624	818588	1.02	2000	>RL
205	Tl	209	0.328	7864	3.20	2000	
208	Pb	209	35.158	1132132	1.00	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1362148	1.87	1311317	103.88	70	120	
72	Ge	891398	1.31	862495	103.35	70	120	
115	In	7903380	1.61	7979360	99.05	70	120	
209	Bi	14231478	1.00	15611692	91.16	70	120	

Sample Report

Date Acquired	5/25/16 6:19 PM	Sample Name	1605121-33A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	214SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	53.762	2696	0.40	2000	>RL
9	Be	45	2.103	147	9.04	2000	>RL
11	B	45	160.687	4235	0.48	2000	>RL
23	Na	45	16092.542	17968524	2.38	25000	>RL
24	Mg	45	12761.000	6962740	1.87	25000	>RL
27	Al	45	51765.003	10508575	0.76	10000	OUTCAL
39	K	45	8608.874	4992271	0.53	25000	>RL
44	Ca	45	289965.963	9502291	0.66	25000	OUTCAL
47	Ti	45	132.212	27729	1.32	2000	>RL
51	V	45	86.379	554615	1.97	2000	>RL
52	Cr	45	47.005	366510	0.87	2000	>RL
55	Mn	45	120.736	535594	0.54	2000	>RL
56	Fe	45	77861.289	532039890	0.68	10000	OUTCAL
59	Co	72	20.312	236301	1.31	2000	>RL
60	Ni	72	31.619	102311	1.78	2000	>RL
63	Cu	72	12.710	114488	1.19	2000	>RL
66	Zn	72	145.615	208792	0.54	2000	>RL
75	As	72	21.769	24767	1.28	2000	>RL
78	Se	72	4.815	448	6.79	2000	>RL
88	Sr	115	4607.233	25391807	1.61	2000	OUTCAL
95	Mo	115	2.416	11030	1.66	2000	>RL
107	Ag	115	0.037	651	10.36	500	
111	Cd	115	0.084	173	23.32	2000	
118	Sn	115	5.750	24560	1.16	2000	>RL
121	Sb	115	0.188	3035	2.04	500	
137	Ba	115	507.933	1030129	1.06	2000	>RL
205	Tl	209	0.334	8018	1.96	2000	
208	Pb	209	33.557	1081382	0.58	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1343581	0.47	1311317	102.46	70	120	
72	Ge	875123	1.42	862495	101.46	70	120	
115	In	7844113	1.31	7979360	98.31	70	120	
209	Bi	14243711	1.32	15611692	91.24	70	120	

Sample Report

Date Acquired	5/25/16 6:21 PM	Sample Name	1605121-34A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	215SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	46.646	2437	1.25	2000	>RL
9	Be	45	2.135	156	6.87	2000	>RL
11	B	45	166.499	4564	3.73	2000	>RL
23	Na	45	28099.987	32639754	1.46	25000	OUTCAL
24	Mg	45	18433.549	10470556	0.99	25000	>RL
27	Al	45	78407.305	16569654	1.21	10000	OUTCAL
39	K	45	23555.822	14074007	1.53	25000	>RL
44	Ca	45	59399.489	2027396	1.15	25000	OUTCAL
47	Ti	45	123.115	26882	0.86	2000	>RL
51	V	45	110.239	734725	0.72	2000	>RL
52	Cr	45	70.197	569087	1.84	2000	>RL
55	Mn	45	81.272	375421	1.44	2000	>RL
56	Fe	45	95864.484	681957235	2.29	10000	OUTCAL
59	Co	72	8.287	99578	2.15	2000	>RL
60	Ni	72	15.522	52046	0.84	2000	>RL
63	Cu	72	20.243	186919	0.79	2000	>RL
66	Zn	72	99.779	147875	1.04	2000	>RL
75	As	72	23.144	27169	0.25	2000	>RL
78	Se	72	6.839	612	5.28	2000	>RL
88	Sr	115	3378.943	18365360	1.15	2000	OUTCAL
95	Mo	115	1.537	6933	3.47	2000	
107	Ag	115	0.023	452	11.92	500	
111	Cd	115	0.026	58	8.81	2000	
118	Sn	115	6.967	29262	1.40	2000	>RL
121	Sb	115	0.155	2785	7.18	500	
137	Ba	115	1625.109	3250550	0.77	2000	>RL
205	Tl	209	0.402	9671	1.90	2000	
208	Pb	209	64.579	2089045	0.61	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1398709	0.51	1311317	106.66	70	120	
72	Ge	903366	1.06	862495	104.74	70	120	
115	In	7736000	1.34	7979360	96.95	70	120	
209	Bi	14300547	0.14	15611692	91.60	70	120	

Sample Report

Date Acquired	5/25/16 6:23 PM	Sample Name	1605121-35A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	216SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	47.292	2455	0.56	2000	>RL
9	Be	45	2.436	176	5.15	2000	>RL
11	B	45	156.531	4269	5.90	2000	>RL
23	Na	45	30107.584	34743776	0.77	25000	OUTCAL
24	Mg	45	19022.618	10734713	1.98	25000	>RL
27	Al	45	81936.473	17203133	1.32	10000	OUTCAL
39	K	45	15827.245	9422531	0.23	25000	>RL
44	Ca	45	49086.956	1664681	1.01	25000	OUTCAL
47	Ti	45	140.459	30469	1.19	2000	>RL
51	V	45	107.095	709392	0.42	2000	>RL
52	Cr	45	73.872	594912	0.42	2000	>RL
55	Mn	45	62.652	287597	0.47	2000	>RL
56	Fe	45	61079.892	431684436	0.28	10000	OUTCAL
59	Co	72	6.570	79685	0.46	2000	>RL
60	Ni	72	17.637	59635	1.59	2000	>RL
63	Cu	72	24.301	226060	0.49	2000	>RL
66	Zn	72	90.439	135351	0.91	2000	>RL
75	As	72	19.159	22751	1.55	2000	>RL
78	Se	72	7.276	650	3.39	2000	>RL
88	Sr	115	882.838	4910343	0.40	2000	>RL
95	Mo	115	1.348	6226	1.27	2000	
107	Ag	115	0.019	410	8.25	500	
111	Cd	115	0.020	48	62.92	2000	
118	Sn	115	7.259	31178	1.54	2000	>RL
121	Sb	115	0.056	2229	4.42	500	
137	Ba	115	886.568	1814375	1.14	2000	>RL
205	Tl	209	0.464	11106	1.60	2000	
208	Pb	209	53.450	1720595	1.16	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1389661	0.43	1311317	105.97	70	120	
72	Ge	911909	1.06	862495	105.73	70	120	
115	In	7914288	0.02	7979360	99.18	70	120	
209	Bi	14229903	1.09	15611692	91.15	70	120	

Sample Report

Date Acquired	5/25/16 6:25 PM	Sample Name	1605121-36A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	217SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	65.570	3311	3.66	2000	>RL
9	Be	45	2.424	171	5.20	2000	>RL
11	B	45	118.015	3167	0.95	2000	>RL
23	Na	45	5060.086	5718817	1.68	25000	>RL
24	Mg	45	16036.977	8824456	2.16	25000	>RL
27	Al	45	66230.943	13558982	2.10	10000	OUTCAL
39	K	45	14849.322	8624413	1.62	25000	>RL
44	Ca	45	123947.272	4096700	0.88	25000	OUTCAL
47	Ti	45	243.691	51538	2.25	2000	>RL
51	V	45	104.839	677217	0.22	2000	>RL
52	Cr	45	59.167	464844	0.13	2000	>RL
55	Mn	45	683.296	3055384	0.32	2000	>RL
56	Fe	45	61499.210	423753450	0.73	10000	OUTCAL
59	Co	72	25.453	301918	1.23	2000	>RL
60	Ni	72	42.635	140535	0.12	2000	>RL
63	Cu	72	25.292	230149	0.26	2000	>RL
66	Zn	72	203.390	297194	1.54	2000	>RL
75	As	72	23.662	27432	0.74	2000	>RL
78	Se	72	5.553	511	4.51	2000	>RL
88	Sr	115	601.447	3298818	0.81	2000	>RL
95	Mo	115	2.175	9877	2.76	2000	>RL
107	Ag	115	0.174	2587	3.95	500	
111	Cd	115	0.601	1189	5.06	2000	>RL
118	Sn	115	5.995	25456	1.99	2000	>RL
121	Sb	115	1.302	9908	3.12	500	
137	Ba	115	845.609	1706856	1.54	2000	>RL
205	Tl	209	0.575	13864	2.84	2000	
208	Pb	209	46.013	1494138	0.84	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1354876	0.52	1311317	103.32	70	120	
72	Ge	892306	0.76	862495	103.46	70	120	
115	In	7807603	2.70	7979360	97.85	70	120	
209	Bi	14357154	2.41	15611692	91.96	70	120	

Sample Report

Date Acquired	5/25/16 6:27 PM	Sample Name	1605121-37A
Data Batch	160525.b	Comment	SAMPICPMS_TSDOD1
Data File Name	218SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	57.001	2866	1.87	2000	>RL
9	Be	45	1.996	140	11.52	2000	>RL
11	B	45	150.090	3975	1.26	2000	>RL
23	Na	45	13051.815	14622704	1.46	25000	>RL
24	Mg	45	12062.997	6601678	1.78	25000	>RL
27	Al	45	46217.270	9410533	1.00	10000	OUTCAL
39	K	45	7806.670	4548192	0.59	25000	>RL
44	Ca	45	360104.883	11834816	2.11	25000	OUTCAL
47	Ti	45	160.947	33855	1.05	2000	>RL
51	V	45	74.254	479253	0.84	2000	>RL
52	Cr	45	40.366	315878	0.63	2000	>RL
55	Mn	45	191.314	851060	0.92	2000	>RL
56	Fe	45	49452.504	338927809	1.07	10000	OUTCAL
59	Co	72	14.907	175404	0.60	2000	>RL
60	Ni	72	25.949	84978	0.96	2000	>RL
63	Cu	72	10.895	99565	1.73	2000	>RL
66	Zn	72	99.892	145026	1.02	2000	>RL
75	As	72	19.641	22626	0.53	2000	>RL
78	Se	72	3.395	350	2.97	2000	>RL
88	Sr	115	4183.643	22633038	0.92	2000	OUTCAL
95	Mo	115	3.600	16112	0.84	2000	>RL
107	Ag	115	0.052	849	6.38	500	
111	Cd	115	0.149	297	5.15	2000	
118	Sn	115	5.513	23130	2.87	2000	>RL
121	Sb	115	0.388	4196	2.46	500	
137	Ba	115	377.463	751467	0.37	2000	>RL
205	Tl	209	0.420	9833	1.39	2000	
208	Pb	209	29.382	926243	0.48	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1347556	0.43	1311317	102.76	70	120	
72	Ge	884950	0.35	862495	102.60	70	120	
115	In	7699686	1.30	7979360	96.50	70	120	
209	Bi	13930581	0.39	15611692	89.23	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/25/2016 18:29	Sample Name	CCV7-160525
Data Batch	160525.b	Comment	CCV ICPMS_TW
Data File Name	219_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	219.873	10726	1.97	200	109.9	90	110	
9	Be	45	210.248	14260	0.88	200	105.1	90	110	
11	B	45	212.347	5432	3.22	200	106.2	90	110	
23	Na	45	5103.957	5589972	0.35	5000	102.1	90	110	
24	Mg	45	4904.672	2616006	0.89	5000	98.1	90	110	
27	Al	45	4810.796	955486	0.47	5000	96.2	90	110	
39	K	45	5076.184	2909322	0.53	5000	101.5	90	110	
44	Ca	45	4675.236	150811	1.84	5000	93.5	90	110	
47	Ti	45	198.981	40777	1.52	200	99.5	90	110	
51	V	45	210.721	1311748	0.47	200	105.4	90	110	
52	Cr	45	205.868	1563864	1.05	200	102.9	90	110	
55	Mn	45	199.203	863438	0.42	200	99.6	90	110	
56	Fe	45	4958.806	33124259	0.16	5000	99.2	90	110	
59	Co	72	206.354	2461805	0.04	200	103.2	90	110	
60	Ni	72	203.854	674454	0.82	200	101.9	90	110	
63	Cu	72	199.261	1808758	0.61	200	99.6	90	110	
66	Zn	72	199.905	293829	0.81	200	100.0	90	110	
75	As	72	203.418	235283	1.00	200	101.7	90	110	
78	Se	72	194.229	14363	1.23	200	97.1	90	110	
88	Sr	115	199.063	1102753	0.69	200	99.5	90	110	
95	Mo	115	204.822	936207	0.35	200	102.4	90	110	
107	Ag	115	186.219	2653653	0.92	200	93.1	90	110	
111	Cd	115	204.429	405726	0.38	200	102.2	90	110	
118	Sn	115	205.746	868022	1.12	200	102.9	90	110	
121	Sb	115	196.900	1231237	0.35	200	98.5	90	110	
137	Ba	115	201.428	410483	0.80	200	100.7	90	110	
205	Tl	209	202.008	4931403	0.41	200	101.0	90	110	
208	Pb	209	196.512	6468617	1.47	200	98.3	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1313252	1.59	1311317	100.15	70	120	
72	Ge	897536	0.20	862495	104.06	70	120	
115	In	7880679	1.21	7979360	98.76	70	120	
209	Bi	14556133	1.29	15611692	93.24	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/25/2016 18:33	Sample Name	LCVL7-160525
Data Batch	160525.b	Comment	LCVLICPMS_TW
Data File Name	221LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.167	562	3.10	10	111.7	70	130	
9	Be	45	1.027	71	6.32	1	102.7	70	130	
11	B	45	26.458	778	4.70	20	132.3	70	130	Fail
23	Na	45	125.677	167260	0.64	100	125.7	70	130	
24	Mg	45	99.211	54011	1.17	100	99.2	70	130	
27	Al	45	94.159	19936	0.71	100	94.2	70	130	
39	K	45	103.536	137837	1.36	100	103.5	70	130	
44	Ca	45	87.819	3904	0.85	100	87.8	70	130	
47	Ti	45	5.091	1053	3.65	5	101.8	70	130	
51	V	45	0.563	10845	2.03	1	56.3	70	130	Fail
52	Cr	45	5.097	40260	1.81	5	101.9	70	130	
55	Mn	45	4.832	21286	4.93	5	96.6	70	130	
56	Fe	45	95.546	652407	1.29	100	95.5	70	130	
59	Co	72	5.186	61310	1.92	5	103.7	70	130	
60	Ni	72	5.078	17006	1.08	5	101.6	70	130	
63	Cu	72	4.977	46853	1.19	5	99.5	70	130	
66	Zn	72	5.177	8044	2.11	5	103.5	70	130	
75	As	72	5.029	6006	1.26	5	100.6	70	130	
78	Se	72	5.282	489	4.64	5	105.6	70	130	
88	Sr	115	4.931	27662	1.32	5	98.6	70	130	
95	Mo	115	4.845	22089	0.86	5	96.9	70	130	
107	Ag	115	1.902	27114	0.85	2	95.1	70	130	
111	Cd	115	1.019	2021	7.16	1	101.9	70	130	
118	Sn	115	5.109	21884	2.92	5	102.2	70	130	
121	Sb	115	1.910	13743	3.00	2	95.5	70	130	
137	Ba	115	4.937	10052	1.68	5	98.7	70	130	
205	Tl	209	0.978	24651	1.10	1	97.8	70	130	
208	Pb	209	0.976	33862	0.93	1	97.6	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1318683	0.26	1311317	100.56	70	120	
72	Ge	888607	0.67	862495	103.03	70	120	
115	In	7846793	0.46	7979360	98.34	70	120	
209	Bi	15011381	1.90	15611692	96.15	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/25/2016 18:45	Sample Name	CCB7-160525
Data Batch	160525.b	Comment	CCB ICPMS_TW
Data File Name	227_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.056	18	30.0	2	5	
9	Be	45	-0.010	1	86.6	0.4	0.3	
11	B	45	8.675	327	9.1	10	10	
23	Na	45	22.914	54259	0.5	50	100	
24	Mg	45	-0.577	572	2.9	50	100	
27	Al	45	0.051	1175	1.2	50	10	
39	K	45	7.899	83417	0.8	50	100	
44	Ca	45	-6.309	867	8.5	50	100	
47	Ti	45	-0.016	2	86.6	4	3	
51	V	45	-0.366	5017	3.5	4	3	
52	Cr	45	0.054	1791	4.0	2	2	
55	Mn	45	0.008	288	12.3	2	3	
56	Fe	45	0.339	13756	1.7	50	50	
59	Co	72	-0.002	37	79.3	2	3	
60	Ni	72	0.003	389	15.6	2	3	
63	Cu	72	-0.065	1589	1.7	2	2	
66	Zn	72	0.045	588	16.2	4	2	
75	As	72	-0.015	234	7.4	2	2	
78	Se	72	0.463	138	12.6	1	2	
88	Sr	115	0.014	552	13.2	4	3	
95	Mo	115	-0.001	33	62.4	2	2	
107	Ag	115	0.003	169	20.5	0.4	1	
111	Cd	115	-0.002	3	100.1	0.4	0.3	
118	Sn	115	0.015	496	3.3	4	3	
121	Sb	115	-0.056	1530	4.3	2	0.8	
137	Ba	115	0.009	54	31.4	2	3	
205	Tl	209	0.001	56	3.5	2	0.5	
208	Pb	209	0.003	863	1.4	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1305041	0.12	1311317	99.52	70	120	
72	Ge	883726	0.38	862495	102.46	70	120	
115	In	7934838	1.74	7979360	99.44	70	120	
209	Bi	15191428	1.37	15611692	97.31	70	120	

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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M [illegible] M [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M [illegible] /M [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70067

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walto
ADDITIONAL REPORT COPIES TO: Erika.Arkenberger@arcadis.com

DATE: May 11, 2016 PAGE 1 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605135
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) ☐; TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐; GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐; VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐; SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐; 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ 8270 PCB ☐; 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐; 8321 HERB ☐ T PHOS, AMMONIA ☐; METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ 12ml; RCRA ☐ TX11 ☐ ___; PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐; CHLORIDE ☐ ANIONS ___ ☐; TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐; TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐; RCI ☐ FLASHPOINT ☐ DGAS ☐; TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐ (METHOD 8021) ☐	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ 8270 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ ___	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ___ ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU077(0-2)-A	01	5-11-16	0930	S	Bag	1				X						X						X								
SGR-DU077(2-4)-A	02	5-11-16	0931	S	Bag	1				X						X						X								
SGR-DU077(4-6)-A	03	5-11-16	0933	S	Bag	1				X						X						X								
SGR-DU077(6-8)-A	04	5-11-16	0934	S	Bag	1				X						X						X								
SGR-DU077(8-10)-A	05	5-11-16	0935	S	Bag	1				X						X						X								
SGR-DU077(0-2)-B	06	5-11-16	0942	S	Bag	1				X						X						X								
SGR-DU077(2-4)-B	07	5-11-16	0943	S	Bag	1				X						X						X								
SGR-DU077(4-6)-B	08	5-11-16	0946	S	Bag	1				X						X						X								
SGR-DU077(6-8)-B	09	5-11-16	0947	S	Bag	1				X						X						X								
SGR-DU077(8-10)-B	10	5-11-16	0951	S	Bag	1				X						X						X								
SGR-DU077(0-2)-C	11	5-11-16	1000	S	Bag	1				X						X						X								
SGR-DU077(2-4)-C	12	5-11-16	1001	S	Bag	1				X						X						X								
SGR-DU077(4-6)-C	13	5-11-16	1002	S	Bag	1				X						X						X								
SGR-DU077(6-8)-C	14	5-11-16	1003	S	Bag	1				X						X						X								
SGR-DU077(8-10)-C	15	5-11-16	1004	S	Bag	1				X						X						X								

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-11-16/1800	FedEx
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
FedEx	5/12/16 9:50	[signature]
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ ___

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED
0.1 | 1.0 | 0.1 | 1.9 | 0.5 | 0.1

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70068

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: Alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika, R.Kalberger@Arcadis.com

DATE: May 11, 2016 PAGE 2 OF 4
PO #: 04285091.0000.00044 DHL WORK ORDER #: 1605135
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285091.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) / TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ / GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐ / VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ / SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ / 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ 8270 PCB ☐ / 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ / 8321 HERB ☐ T PHOS, AMMONIA ☐ / METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ / RCRA ☐ TX11 ☐ Lead / PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ / CHLORIDE ☐ ANIONS / TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ / TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ / RCI ☐ FLASHPOINT ☐ DGAS ☐ / TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX	TPH 1005	GRO	VOC 8260	SVOC 8270	8270 PEST	8270 O-P PEST	8321 HERB	METALS 6020	RCRA	PH	CHLORIDE	TCLP-SVOC	TCLP-METALS	RCI	TDS	FIELD NOTES
SGR-DU063 (0-2)-A	16	5-11-16	1224	S	Bag	1				X					X				X									
SGR-DU063 (2-4)-A	17	5-11-16	1225	S	Bag	1				X					X				X									
SGR-DU063 (4-6)-A	18	5-11-16	1226	S	Bag	1				X					X				X									
SGR-DU063 (6-8)-A	19	5-11-16	1227	S	Bag	1				X					X				X									
~~SGR-DU063 (8-10)-A~~		~~5-11-16~~		S	Bag	1				X					X				X									GF
SGR-DU063 (0-2)-B	20	5-11-16	1229	S	Bag	1				X					X				X									
SGR-DU063 (2-4)-B	21	5-11-16	1230	S	Bag	1				X					X				X									
SGR-DU063 (4-6)-B	22	5-11-16	1231	S	Bag	1				X					X				X									
SGR-DU063 (6-8)-B	23	5-11-16	1232	S	Bag	1				X					X				X									
~~SGR-DU063 (8-10)-B~~		~~5-11-16~~		S	Bag	1				X					X				X									GF
SGR-DU063 (0-2)-C	24	5-11-16	1234	S	Bag	1				X					X				X									
SGR-DU063 (2-4)-C	25	5-11-16	1235	S	Bag	1				X					X				X									
SGR-DU063 (4-6)-C	26	5-11-16	1236	S	Bag	1				X					X				X									
SGR-DU063 (6-8)-C	27	5-11-16	1237	S	Bag	1				X					X				X									
~~SGR-DU063 (8-10)-C~~		~~5-11-16~~		S	Bag	1				X					X				X									GF

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[signature]	5-11-16/1800	FedEx
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
FedEx	5/12/16 9:50	[signature]
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

4

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70069

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 325 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Dirkenberger@arcadis.com

DATE: May 11, 2016 PAGE 3 OF 4
PO #: 04295081.0000.00044 DHL WORK ORDER #: 16005135
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04295081.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) ☐ TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐ VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ 8270 PCB ☐ 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ 8321 HERB ☐ T PHOS, AMMONIA ☐ METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ RCRA ☐ TX11 ☐ Lead PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ CHLORIDE ☐ ANIONS ☐ TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ RCI ☐ FLASHPOINT ☐ DGAS ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐ (METHOD 8021)	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ Lead	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU053(0-2)-A	26	5-11-16	1607	S	Bag	1				X						X						X								
SGR-DU053(2-4)-A	27	5-11-16	1608	S	Bag	1				X						X						X								
SGR-DU053(4-6)-A	30	5-11-16	1611	S	Bag	1				X						X						X								
SGR-DU053(6-8)-A	31	5-11-16	1612	S	Bag	1				X						X						X								
SGR-DU053(8-10)-A	32	5-11-16	1613	S	Bag	1				X						X						X								
SGR-DU053(0-2)-B	33	5-11-16	1615	S	Bag	1				X						X						X								
SGR-DU053(2-4)-B	34	5-11-16	1616	S	Bag	1				X						X						X								
SGR-DU053(4-6)-B	35	5-11-16	1620	S	Bag	1				X						X						X								
SGR-DU053(6-8)-B	36	5-11-16	1621	S	Bag	1				X						X						X								
SGR-DU053(8-10)-B	37	5-11-16	1622	S	Bag	1				X						X						X								
SGR-DU053(0-2)-C	38	5-11-16	1624	S	Bag	1				X						X						X								
SGR-DU053(2-4)-C	39	5-11-16	1625	S	Bag	1				X						X						X								
SGR-DU053(4-6)-C	40	5-11-16	1626	S	Bag	1				X						X						X								
SGR-DU053(6-8)-C	41	5-11-16	1627	S	Bag	1				X						X						X								
SGR-DU053(8-10)-C	42	5-11-16	1628	S		1				X						X						X								

RELINQUISHED BY: (Signature) DATE/TIME 5-11-16 / 1800 RECEIVED BY: (Signature) Fedex
RELINQUISHED BY: (Signature) Fedex DATE/TIME 5/12/16 9:50 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

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E-Mail: login@dhlanalytical.com

№ 70070

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Denkenberger@arcadis.com

DATE: May 11, 2016 PAGE 4 OF 4
PO #: 04285081.0000.0044 DHL WORK ORDER #: 1605135
PROJECT LOCATION OR NAME: Lenexa SGR
CLENT PROJECT #: COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES BTEX ☐ MTBE ☐ (METHOD 8021)	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ Lead	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU063-A	43	5-11-16	1330	S	Bag	1				X					X					X										
SGR-DU063-B	44	5-11-16	1430	S	Bag	1				X					X					X										
SGR-DU063-C	45	5-11-16	1515	S	Bag	1				X					X					X										
ET317 (20160511)	44	5-11-16	1600	W	Glass/Poly	2		X		X					X					X										

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-11-16 / 1800	Fedex
Fedex	5/12/16 9:50	[signature]

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Arcadis** | Date Received: **5/12/2016**

Work Order Number **1605135** | Received by **JT**

Checklist completed by: Signature 5/12/2016 Date | Reviewed by Initials 5/12/2016 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
~~Custody seals intact on shippping container/cooler?~~	~~Yes ☑~~	~~No ☐~~	~~Not Present ☐~~
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	2.7 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted Arcadis Date contacted: 5/12/16 Person contacted Alex Watten

Contacted by: J. Dupont Regarding: sample SGR-DU053116-8)A

Comments: Per Alex proceed with drying and sieving

Corrective Action Flag data

Page 1 of 1

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-01
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:30 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	39.8	0.0909	0.273	0.136		mg/Kg-dry	5	05/26/16 02:35 PM
IS: Bismuth	73.4	0	30-120	0		%REC	5	05/26/16 02:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 06:30 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 06:30 PM
Anthracene	0.0547	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]anthracene	0.488	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]pyrene	0.620	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[b]fluoranthene	0.569	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[e]pyrene	0.470	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[g,h,i]perylene	0.449	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[j]fluoranthene	0.269	0.0495	0.0990	0.0743	N	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[k]fluoranthene	0.273	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Chrysene	0.622	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Dibenz[a,h]anthracene	0.0509	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 06:30 PM
Fluoranthene	0.867	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 06:30 PM
Indeno[1,2,3-cd]pyrene	0.361	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Phenanthrene	0.311	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Pyrene	0.774	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Chrysene-d12	80.4	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Naphthalene-d8	98.4	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Perylene-d12	85.6	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/24/16 06:30 PM
Surr: 2-Fluorobiphenyl	89.1	0	46-115	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-01
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:30 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.9	0	58-133	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-02
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:31 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.43	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 02:41 PM
IS: Bismuth	69.7	0	30-120	0		%REC	5	05/26/16 02:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[a]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[a]pyrene	0.0523	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[b]fluoranthene	0.0500	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[e]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[g,h,i]perylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[j]fluoranthene	0.0748	0.0499	0.0997	0.0748	NU	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[k]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Chrysene	0.0541	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Fluoranthene	0.0969	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Indeno[1,2,3-cd]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Phenanthrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Pyrene	0.0837	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Chrysene-d12	85.4	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Perylene-d12	88.7	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/24/16 07:08 PM
Surr: 2-Fluorobiphenyl	87.7	0	46-115	0		%REC	10	05/24/16 07:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-02
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:31 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.4	0	58-133	0		%REC	10	05/24/16 07:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-03
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:33 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.32	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 03:23 PM
IS: Bismuth	86.8	0	30-120	0		%REC	5	05/26/16 03:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
IS: Acenaphthene-d10	107	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Chrysene-d12	86.5	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Perylene-d12	90.0	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Phenanthrene-d10	79.5	0	50-200	0		%REC	10	05/24/16 07:46 PM
Surr: 2-Fluorobiphenyl	87.6	0	46-115	0		%REC	10	05/24/16 07:46 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-03
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:33 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/24/16 07:46 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-04
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:34 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.07	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 03:29 PM
IS: Bismuth	91.6	0	30-120	0		%REC	5	05/26/16 03:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Chrysene-d12	83.7	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Perylene-d12	87.4	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Phenanthrene-d10	76.7	0	50-200	0		%REC	10	05/24/16 10:52 PM
Surr: 2-Fluorobiphenyl	87.9	0	46-115	0		%REC	10	05/24/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-04
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:34 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/24/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-05
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:35 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	3.49	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 03:35 PM
IS: Bismuth	88.4	0	30-120	0		%REC	5	05/26/16 03:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[a]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[b]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Chrysene-d12	82.9	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Perylene-d12	87.4	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Phenanthrene-d10	76.5	0	50-200	0		%REC	10	05/24/16 11:29 PM
Surr: 2-Fluorobiphenyl	92.2	0	46-115	0		%REC	10	05/24/16 11:29 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-05
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:35 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.5	0	58-133	0		%REC	10	05/24/16 11:29 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-06
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:42 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.8	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 03:41 PM
IS: Bismuth	82.0	0	30-120	0		%REC	5	05/26/16 03:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0655	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/25/16 12:07 AM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 12:07 AM
Anthracene	0.175	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[a]anthracene	1.53	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[a]pyrene	2.03	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[b]fluoranthene	1.81	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[e]pyrene	1.48	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[g,h,i]perylene	1.45	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[j]fluoranthene	0.909	0.0497	0.0993	0.0745	N	mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[k]fluoranthene	0.872	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Chrysene	1.93	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Dibenz[a,h]anthracene	0.235	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Fluoranthene	2.71	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 12:07 AM
Indeno[1,2,3-cd]pyrene	1.17	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Phenanthrene	0.880	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Pyrene	2.44	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Chrysene-d12	85.8	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Perylene-d12	88.4	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Phenanthrene-d10	80.3	0	50-200	0		%REC	10	05/25/16 12:07 AM
Surr: 2-Fluorobiphenyl	92.0	0	46-115	0		%REC	10	05/25/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-06
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:42 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.7	0	58-133	0		%REC	10	05/25/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-07
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:43 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.17	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 03:47 PM
IS: Bismuth	74.8	0	30-120	0		%REC	5	05/26/16 03:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[a]pyrene	0.0539	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Chrysene	0.0514	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Fluoranthene	0.112	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/25/16 12:44 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Phenanthrene	0.0586	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
Pyrene	0.0927	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Chrysene-d12	83.1	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Naphthalene-d8	99.4	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Perylene-d12	87.1	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Phenanthrene-d10	77.7	0	50-200	0		%REC	10	05/25/16 12:44 AM
Surr: 2-Fluorobiphenyl	92.0	0	46-115	0		%REC	10	05/25/16 12:44 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-07
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:43 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.4	0	58-133	0		%REC	10	05/25/16 12:44 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-08
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:46 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.22	0.0847	0.254	0.127		mg/Kg-dry	5	05/26/16 03:53 PM
IS: Bismuth	81.8	0	30-120	0		%REC	5	05/26/16 03:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
IS: Acenaphthene-d10	98.6	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Chrysene-d12	78.0	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Naphthalene-d8	95.4	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Perylene-d12	81.2	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Phenanthrene-d10	72.3	0	50-200	0		%REC	10	05/25/16 01:20 AM
Surr: 2-Fluorobiphenyl	87.9	0	46-115	0		%REC	10	05/25/16 01:20 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-08
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:46 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.1	0	58-133	0		%REC	10	05/25/16 01:20 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-09
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:47 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.76	0.100	0.300	0.150		mg/Kg-dry	5	05/26/16 03:59 PM
IS: Bismuth	88.2	0	30-120	0		%REC	5	05/26/16 03:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Chrysene-d12	84.4	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Perylene-d12	87.7	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Phenanthrene-d10	76.2	0	50-200	0		%REC	10	05/25/16 01:58 AM
Surr: 2-Fluorobiphenyl	82.6	0	46-115	0		%REC	10	05/25/16 01:58 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-09
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:47 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	70.8	0	58-133	0		%REC	10	05/25/16 01:58 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Project No: 04285081.0000.00044
Lab Order: 1605135

Client Sample ID: SGR-DU077(8-10)-B
Lab ID: 1605135-10
Collection Date: 05/11/16 09:51 AM
Matrix: SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.51	0.0862	0.259	0.129		mg/Kg-dry	5	05/26/16 04:05 PM
IS: Bismuth	82.6	0	30-120	0		%REC	5	05/26/16 04:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Chrysene-d12	81.4	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Naphthalene-d8	95.8	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Perylene-d12	84.6	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Phenanthrene-d10	74.4	0	50-200	0		%REC	10	05/25/16 11:25 AM
Surr: 2-Fluorobiphenyl	90.2	0	46-115	0		%REC	10	05/25/16 11:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-10
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:51 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/25/16 11:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-11
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:00 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	27.0	0.0901	0.270	0.135		mg/Kg-dry	5	05/26/16 04:11 PM
IS: Bismuth	84.6	0	30-120	0		%REC	5	05/26/16 04:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0918	0.0464	0.0928	0.0696	J	mg/Kg-dry	10	05/25/16 12:02 PM
Acenaphthylene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 12:02 PM
Anthracene	0.0946	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[a]anthracene	1.66	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[a]pyrene	2.51	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[b]fluoranthene	2.26	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[e]pyrene	1.84	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[g,h,i]perylene	1.89	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[j]fluoranthene	1.08	0.0464	0.0928	0.0696	N	mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[k]fluoranthene	1.04	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Chrysene	2.19	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Dibenz[a,h]anthracene	0.240	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Fluoranthene	2.56	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Fluorene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 12:02 PM
Indeno[1,2,3-cd]pyrene	1.50	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Phenanthrene	0.512	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Pyrene	2.45	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Chrysene-d12	83.8	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Naphthalene-d8	96.7	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Perylene-d12	86.7	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/25/16 12:02 PM
Surr: 2-Fluorobiphenyl	95.2	0	46-115	0		%REC	10	05/25/16 12:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-11
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:00 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.3	0	58-133	0		%REC	10	05/25/16 12:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-12
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:01 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.12	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 05:12 PM
IS: Bismuth	76.4	0	30-120	0		%REC	5	05/26/16 05:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[a]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[b]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[g,h,i]perylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Chrysene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Chrysene-d12	82.0	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Naphthalene-d8	97.5	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Perylene-d12	87.0	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Phenanthrene-d10	74.3	0	50-200	0		%REC	10	05/25/16 12:41 PM
Surr: 2-Fluorobiphenyl	90.5	0	46-115	0		%REC	10	05/25/16 12:41 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-12
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:01 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.2	0	58-133	0		%REC	10	05/25/16 12:41 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-13
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:02 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.29	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 05:18 PM
IS: Bismuth	74.8	0	30-120	0		%REC	5	05/26/16 05:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Chrysene-d12	85.5	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Perylene-d12	89.4	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/25/16 01:18 PM
Surr: 2-Fluorobiphenyl	84.2	0	46-115	0		%REC	10	05/25/16 01:18 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-13
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:02 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/25/16 01:18 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-14
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:03 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	3.38	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 05:00 PM
IS: Bismuth	83.7	0	30-120	0		%REC	5	05/26/16 05:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[a]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[a]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[b]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[e]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[g,h,i]perylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[j]fluoranthene	0.0735	0.0490	0.0980	0.0735	NU	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[k]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Chrysene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Dibenz[a,h]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Indeno[1,2,3-cd]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Phenanthrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
IS: Acenaphthene-d10	99.1	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Chrysene-d12	80.5	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Perylene-d12	84.7	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Phenanthrene-d10	73.0	0	50-200	0		%REC	10	05/25/16 01:56 PM
Surr: 2-Fluorobiphenyl	87.0	0	46-115	0		%REC	10	05/25/16 01:56 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-14
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:03 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.1	0	58-133	0		%REC	10	05/25/16 01:56 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-15
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:04 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.24	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 05:24 PM
IS: Bismuth	76.1	0	30-120	0		%REC	5	05/26/16 05:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Chrysene-d12	82.4	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Naphthalene-d8	98.4	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Perylene-d12	85.9	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Phenanthrene-d10	74.9	0	50-200	0		%REC	10	05/25/16 02:33 PM
Surr: 2-Fluorobiphenyl	90.2	0	46-115	0		%REC	10	05/25/16 02:33 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-15
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:04 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.6	0	58-133	0		%REC	10	05/25/16 02:33 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-16
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	41.5	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 05:29 PM
IS: Bismuth	76.3	0	30-120	0		%REC	5	05/26/16 05:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Acenaphthylene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Anthracene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[a]anthracene	0.200	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[a]pyrene	0.262	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[b]fluoranthene	0.257	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[e]pyrene	0.145	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[g,h,i]perylene	0.222	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[j]fluoranthene	0.0952	0.0470	0.0940	0.0705	N	mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[k]fluoranthene	0.175	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Chrysene	0.242	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Dibenz[a,h]anthracene	0.116	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Fluoranthene	0.304	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Fluorene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Indeno[1,2,3-cd]pyrene	0.203	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Phenanthrene	0.0948	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Pyrene	0.265	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
IS: Acenaphthene-d10	72.4	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Chrysene-d12	74.9	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Perylene-d12	73.9	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Phenanthrene-d10	69.0	0	50-200	0		%REC	10	05/24/16 12:32 PM
Surr: 2-Fluorobiphenyl	71.2	0	46-115	0		%REC	10	05/24/16 12:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-16
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	68.6	0	58-133	0		%REC	10	05/24/16 12:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-17
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.81	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 05:35 PM
IS: Bismuth	76.2	0	30-120	0		%REC	5	05/26/16 05:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Acenaphthylene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[a]anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[a]pyrene	0.0648	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[b]fluoranthene	0.0578	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[e]pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[g,h,i]perylene	0.0717	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[j]fluoranthene	0.0700	0.0466	0.0933	0.0700	NU	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[k]fluoranthene	0.0600	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Chrysene	0.0499	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Dibenz[a,h]anthracene	0.0683	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Fluoranthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Fluorene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Indeno[1,2,3-cd]pyrene	0.0712	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Phenanthrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
IS: Acenaphthene-d10	72.8	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Chrysene-d12	77.1	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Perylene-d12	75.8	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Phenanthrene-d10	71.1	0	50-200	0		%REC	10	05/24/16 01:12 PM
Surr: 2-Fluorobiphenyl	69.7	0	46-115	0		%REC	10	05/24/16 01:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-17
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	67.3	0	58-133	0		%REC	10	05/24/16 01:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-18
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.15	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 05:41 PM
IS: Bismuth	80.4	0	30-120	0		%REC	5	05/26/16 05:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[a]anthracene	0.0558	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[a]pyrene	0.0766	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[b]fluoranthene	0.0724	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[g,h,i]perylene	0.0768	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[k]fluoranthene	0.0648	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Chrysene	0.0649	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Dibenz[a,h]anthracene	0.0630	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Indeno[1,2,3-cd]pyrene	0.0724	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
IS: Acenaphthene-d10	72.6	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Chrysene-d12	76.0	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Perylene-d12	74.9	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Phenanthrene-d10	70.4	0	50-200	0		%REC	10	05/24/16 01:51 PM
Surr: 2-Fluorobiphenyl	73.4	0	46-115	0		%REC	10	05/24/16 01:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-18
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	74.4	0	58-133	0		%REC	10	05/24/16 01:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-19
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.30	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 05:47 PM
IS: Bismuth	74.2	0	30-120	0		%REC	5	05/26/16 05:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[a]pyrene	0.0653	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[b]fluoranthene	0.0593	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[g,h,i]perylene	0.0697	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[k]fluoranthene	0.0597	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Chrysene	0.0501	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Dibenz[a,h]anthracene	0.0669	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Indeno[1,2,3-cd]pyrene	0.0731	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
IS: Acenaphthene-d10	69.3	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Chrysene-d12	72.5	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Perylene-d12	71.3	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Phenanthrene-d10	67.8	0	50-200	0		%REC	10	05/24/16 02:31 PM
Surr: 2-Fluorobiphenyl	72.6	0	46-115	0		%REC	10	05/24/16 02:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-19
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	70.3	0	58-133	0		%REC	10	05/24/16 02:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-20
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:29 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	76.1	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 05:53 PM
IS: Bismuth	78.5	0	30-120	0		%REC	5	05/26/16 05:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[a]anthracene	0.177	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[a]pyrene	0.265	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[b]fluoranthene	0.257	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[e]pyrene	0.164	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[g,h,i]perylene	0.216	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[j]fluoranthene	0.104	0.0497	0.0994	0.0746	N	mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[k]fluoranthene	0.158	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Chrysene	0.227	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Dibenz[a,h]anthracene	0.0970	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:11 PM
Fluoranthene	0.210	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Indeno[1,2,3-cd]pyrene	0.193	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Phenanthrene	0.0648	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:11 PM
Pyrene	0.197	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
IS: Acenaphthene-d10	69.9	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Chrysene-d12	71.7	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Perylene-d12	70.8	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Phenanthrene-d10	66.6	0	50-200	0		%REC	10	05/24/16 03:11 PM
Surr: 2-Fluorobiphenyl	78.2	0	46-115	0		%REC	10	05/24/16 03:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-20
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:29 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	74.6	0	58-133	0		%REC	10	05/24/16 03:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-21
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	14.5	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 05:59 PM
IS: Bismuth	72.8	0	30-120	0		%REC	5	05/26/16 05:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[a]anthracene	0.0580	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[a]pyrene	0.0820	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[b]fluoranthene	0.0761	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[g,h,i]perylene	0.0812	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[k]fluoranthene	0.0697	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Chrysene	0.0700	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Dibenz[a,h]anthracene	0.0697	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Indeno[1,2,3-cd]pyrene	0.0825	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
IS: Acenaphthene-d10	70.8	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Chrysene-d12	74.6	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Perylene-d12	74.0	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Phenanthrene-d10	69.6	0	50-200	0		%REC	10	05/24/16 03:50 PM
Surr: 2-Fluorobiphenyl	78.6	0	46-115	0		%REC	10	05/24/16 03:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-21
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	74.8	0	58-133	0		%REC	10	05/24/16 03:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-22
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:31 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.51	0.0980	0.294	0.147		mg/Kg-dry	5	05/26/16 06:53 PM
IS: Bismuth	81.2	0	30-120	0		%REC	5	05/26/16 06:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[a]pyrene	0.0675	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[b]fluoranthene	0.0632	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[g,h,i]perylene	0.0754	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[k]fluoranthene	0.0616	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Chrysene	0.0537	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Dibenz[a,h]anthracene	0.0722	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Indeno[1,2,3-cd]pyrene	0.0750	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
IS: Acenaphthene-d10	68.2	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Chrysene-d12	69.4	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Perylene-d12	68.3	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Phenanthrene-d10	65.3	0	50-200	0		%REC	10	05/24/16 04:30 PM
Surr: 2-Fluorobiphenyl	71.2	0	46-115	0		%REC	10	05/24/16 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-22
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:31 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	67.9	0	58-133	0		%REC	10	05/24/16 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-23
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:32 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.75	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 06:59 PM
IS: Bismuth	76.3	0	30-120	0		%REC	5	05/26/16 06:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Acenaphthylene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Anthracene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[a]anthracene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[a]pyrene	0.0710	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[b]fluoranthene	0.0652	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[e]pyrene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[g,h,i]perylene	0.0805	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[j]fluoranthene	0.0726	0.0484	0.0968	0.0726	NU	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[k]fluoranthene	0.0637	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Chrysene	0.0520	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Dibenz[a,h]anthracene	0.0750	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Fluoranthene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Fluorene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Indeno[1,2,3-cd]pyrene	0.0797	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Phenanthrene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Pyrene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
IS: Acenaphthene-d10	72.0	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Chrysene-d12	74.9	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Perylene-d12	74.8	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Phenanthrene-d10	69.1	0	50-200	0		%REC	10	05/24/16 05:10 PM
Surr: 2-Fluorobiphenyl	77.2	0	46-115	0		%REC	10	05/24/16 05:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-23
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:32 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	76.4	0	58-133	0		%REC	10	05/24/16 05:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-24
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:34 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.2	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 07:05 PM
IS: Bismuth	82.3	0	30-120	0		%REC	5	05/26/16 07:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Acenaphthylene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Anthracene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[a]anthracene	0.213	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[a]pyrene	0.258	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[b]fluoranthene	0.250	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[e]pyrene	0.157	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[g,h,i]perylene	0.214	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[j]fluoranthene	0.101	0.0461	0.0923	0.0692	N	mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[k]fluoranthene	0.162	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Chrysene	0.258	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Dibenz[a,h]anthracene	0.107	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Fluoranthene	0.340	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Fluorene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Indeno[1,2,3-cd]pyrene	0.194	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Phenanthrene	0.144	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Pyrene	0.290	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
IS: Acenaphthene-d10	72.7	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Chrysene-d12	74.9	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Perylene-d12	75.1	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Phenanthrene-d10	70.5	0	50-200	0		%REC	10	05/24/16 05:50 PM
Surr: 2-Fluorobiphenyl	78.5	0	46-115	0		%REC	10	05/24/16 05:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-24
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:34 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	73.9	0	58-133	0		%REC	10	05/24/16 05:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-25
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:35 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	12.6	0.0980	0.294	0.147		mg/Kg-dry	5	05/26/16 07:11 PM
IS: Bismuth	81.3	0	30-120	0		%REC	5	05/26/16 07:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]anthracene	0.0542	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]pyrene	0.0774	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[b]fluoranthene	0.0688	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[e]pyrene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[g,h,i]perylene	0.0805	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[j]fluoranthene	0.0749	0.0500	0.0999	0.0749	NU	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[k]fluoranthene	0.0662	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Chrysene	0.0613	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Dibenz[a,h]anthracene	0.0715	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Fluoranthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Indeno[1,2,3-cd]pyrene	0.0813	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Phenanthrene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Pyrene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
IS: Acenaphthene-d10	65.6	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Chrysene-d12	66.7	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Perylene-d12	66.8	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Phenanthrene-d10	63.9	0	50-200	0		%REC	10	05/24/16 06:30 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-25
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:35 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.7	0	58-133	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-26
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:36 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.90	0.0909	0.273	0.136		mg/Kg-dry	5	05/26/16 07:17 PM
IS: Bismuth	77.1	0	30-120	0		%REC	5	05/26/16 07:17 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Acenaphthylene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Anthracene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[a]anthracene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[a]pyrene	0.0553	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[b]fluoranthene	0.0527	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[e]pyrene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[g,h,i]perylene	0.0568	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[j]fluoranthene	0.0707	0.0471	0.0943	0.0707	NU	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[k]fluoranthene	0.0511	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Chrysene	0.0491	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Dibenz[a,h]anthracene	0.0521	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Fluoranthene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Fluorene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Indeno[1,2,3-cd]pyrene	0.0582	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Phenanthrene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Pyrene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
IS: Acenaphthene-d10	69.2	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Chrysene-d12	72.3	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Perylene-d12	72.0	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Phenanthrene-d10	68.6	0	50-200	0		%REC	10	05/24/16 07:10 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/24/16 07:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-26
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:36 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	72.5	0	58-133	0		%REC	10	05/24/16 07:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-27
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:37 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.53	0.0885	0.265	0.133		mg/Kg-dry	5	05/26/16 07:23 PM
IS: Bismuth	82.5	0	30-120	0		%REC	5	05/26/16 07:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Acenaphthylene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Anthracene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[a]anthracene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[a]pyrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[b]fluoranthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[e]pyrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[g,h,i]perylene	0.0474	0.0459	0.0917	0.0688	J	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[j]fluoranthene	0.0688	0.0459	0.0917	0.0688	NU	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[k]fluoranthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Chrysene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Dibenz[a,h]anthracene	0.0499	0.0459	0.0917	0.0688	J	mg/Kg-dry	10	05/24/16 07:50 PM
Fluoranthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Fluorene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Indeno[1,2,3-cd]pyrene	0.0492	0.0459	0.0917	0.0688	J	mg/Kg-dry	10	05/24/16 07:50 PM
Phenanthrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Pyrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
IS: Acenaphthene-d10	75.8	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Chrysene-d12	79.1	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Perylene-d12	78.6	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Phenanthrene-d10	74.1	0	50-200	0		%REC	10	05/24/16 07:50 PM
Surr: 2-Fluorobiphenyl	71.8	0	46-115	0		%REC	10	05/24/16 07:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-27
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:37 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	68.7	0	58-133	0		%REC	10	05/24/16 07:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-28
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:07 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	35.8	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 07:29 PM
IS: Bismuth	80.7	0	30-120	0		%REC	5	05/26/16 07:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0568	0.0490	0.0979	0.0735	J	mg/Kg-dry	10	05/25/16 12:27 AM
Acenaphthylene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 12:27 AM
Anthracene	0.210	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[a]anthracene	1.63	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[a]pyrene	2.09	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[b]fluoranthene	1.97	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[e]pyrene	1.57	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[g,h,i]perylene	1.49	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[j]fluoranthene	1.03	0.0490	0.0979	0.0735	N	mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[k]fluoranthene	1.07	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Chrysene	1.96	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Dibenz[a,h]anthracene	0.374	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Fluoranthene	2.81	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Fluorene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 12:27 AM
Indeno[1,2,3-cd]pyrene	1.28	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Phenanthrene	0.990	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Pyrene	2.45	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
IS: Acenaphthene-d10	74.5	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Chrysene-d12	75.9	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Perylene-d12	75.3	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Phenanthrene-d10	71.4	0	50-200	0		%REC	10	05/25/16 12:27 AM
Surr: 2-Fluorobiphenyl	70.6	0	46-115	0		%REC	10	05/25/16 12:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-28
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:07 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	66.4	0	58-133	0		%REC	10	05/25/16 12:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-29
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:08 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.01	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 07:35 PM
IS: Bismuth	83.6	0	30-120	0		%REC	5	05/26/16 07:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Acenaphthylene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Anthracene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[a]anthracene	0.137	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[a]pyrene	0.170	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[b]fluoranthene	0.162	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[e]pyrene	0.0977	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[g,h,i]perylene	0.139	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[j]fluoranthene	0.0624	0.0491	0.0981	0.0736	JN	mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[k]fluoranthene	0.107	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Chrysene	0.162	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Dibenz[a,h]anthracene	0.0711	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/25/16 01:07 AM
Fluoranthene	0.199	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Fluorene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Indeno[1,2,3-cd]pyrene	0.129	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Phenanthrene	0.0743	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/25/16 01:07 AM
Pyrene	0.174	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
IS: Acenaphthene-d10	73.9	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Chrysene-d12	77.4	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Perylene-d12	77.5	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Phenanthrene-d10	71.2	0	50-200	0		%REC	10	05/25/16 01:07 AM
Surr: 2-Fluorobiphenyl	70.9	0	46-115	0		%REC	10	05/25/16 01:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-29
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:08 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	66.4	0	58-133	0		%REC	10	05/25/16 01:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-30
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:11 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.89	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 07:41 PM
IS: Bismuth	85.7	0	30-120	0		%REC	5	05/26/16 07:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[a]anthracene	0.0981	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[a]pyrene	0.115	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[b]fluoranthene	0.110	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[e]pyrene	0.0543	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[g,h,i]perylene	0.0994	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[j]fluoranthene	0.0735	0.0490	0.0980	0.0735	NU	mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[k]fluoranthene	0.0838	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Chrysene	0.115	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Dibenz[a,h]anthracene	0.0648	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Fluoranthene	0.127	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Indeno[1,2,3-cd]pyrene	0.0955	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Phenanthrene	0.0596	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Pyrene	0.112	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
IS: Acenaphthene-d10	71.3	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Chrysene-d12	75.4	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Perylene-d12	74.9	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Phenanthrene-d10	69.7	0	50-200	0		%REC	10	05/25/16 01:46 AM
Surr: 2-Fluorobiphenyl	75.7	0	46-115	0		%REC	10	05/25/16 01:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-30
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:11 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.2	0	58-133	0		%REC	10	05/25/16 01:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-31
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:12 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
~~Lead~~	~~7.04~~	~~0.0935~~	~~0.280~~	~~0.140~~		~~mg/Kg-dry~~	~~5~~	~~05/26/16 07:47 PM~~ R
IS: Bismuth	78.8	0	30-120	0		%REC	5	05/26/16 07:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM R
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[a]pyrene	0.0551	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[b]fluoranthene	0.0508	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[g,h,i]perylene	0.0554	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[k]fluoranthene	0.0524	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Dibenz[a,h]anthracene	0.0552	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Indeno[1,2,3-cd]pyrene	0.0580	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
IS: Acenaphthene-d10	72.5	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Chrysene-d12	76.5	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Perylene-d12	76.3	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Phenanthrene-d10	71.7	0	50-200	0		%REC	10	05/25/16 02:26 AM
Surr: 2-Fluorobiphenyl	76.1	0	46-115	0		%REC	10	05/25/16 02:26 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-31
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:12 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/25/16 02:26 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-32
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:13 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.74	0.0885	0.265	0.133		mg/Kg-dry	5	05/26/16 03:46 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 03:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Acenaphthylene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Anthracene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[a]anthracene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[a]pyrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[b]fluoranthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[e]pyrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[g,h,i]perylene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[j]fluoranthene	0.0735	0.0490	0.0979	0.0735	NU	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[k]fluoranthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Chrysene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Dibenz[a,h]anthracene	0.0530	0.0490	0.0979	0.0735	J	mg/Kg-dry	10	05/25/16 03:05 AM
Fluoranthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Fluorene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Indeno[1,2,3-cd]pyrene	0.0527	0.0490	0.0979	0.0735	J	mg/Kg-dry	10	05/25/16 03:05 AM
Phenanthrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Pyrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
IS: Acenaphthene-d10	71.6	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Chrysene-d12	75.6	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Perylene-d12	75.8	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Phenanthrene-d10	70.0	0	50-200	0		%REC	10	05/25/16 03:05 AM
Surr: 2-Fluorobiphenyl	75.7	0	46-115	0		%REC	10	05/25/16 03:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-32
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:13 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.4	0	58-133	0		%REC	10	05/25/16 03:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-33
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	33.0	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 03:48 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 03:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.111	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Acenaphthylene	0.0714	0.0476	0.0951	0.0714	U	mg/Kg-dry	10	05/25/16 03:45 AM
Anthracene	0.316	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[a]anthracene	2.94	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[a]pyrene	3.78	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[b]fluoranthene	3.57	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[e]pyrene	2.86	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[g,h,i]perylene	2.69	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[j]fluoranthene	1.84	0.0476	0.0951	0.0714	N	mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[k]fluoranthene	1.83	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Chrysene	3.53	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Dibenz[a,h]anthracene	0.646	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Fluoranthene	5.00	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Fluorene	0.0714	0.0476	0.0951	0.0714	U	mg/Kg-dry	10	05/25/16 03:45 AM
Indeno[1,2,3-cd]pyrene	2.33	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Phenanthrene	1.62	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Pyrene	4.41	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
IS: Acenaphthene-d10	78.0	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Chrysene-d12	77.9	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Perylene-d12	78.2	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Phenanthrene-d10	73.0	0	50-200	0		%REC	10	05/25/16 03:45 AM
Surr: 2-Fluorobiphenyl	72.5	0	46-115	0		%REC	10	05/25/16 03:45 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-33
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	67.0	0	58-133	0		%REC	10	05/25/16 03:45 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-34
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:16 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.4	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 03:50 PM
IS: Bismuth	103	0	30-120	0		%REC	5	05/26/16 03:50 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 04:25 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 04:25 AM
Anthracene	0.129	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[a]anthracene	1.14	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[a]pyrene	1.57	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[b]fluoranthene	1.49	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[e]pyrene	1.19	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[g,h,i]perylene	1.20	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[j]fluoranthene	0.740	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[k]fluoranthene	0.791	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Chrysene	1.42	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Dibenz[a,h]anthracene	0.323	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Fluoranthene	1.80	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 04:25 AM
Indeno[1,2,3-cd]pyrene	1.04	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Phenanthrene	0.610	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Pyrene	1.60	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
IS: Acenaphthene-d10	71.8	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Chrysene-d12	73.4	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Perylene-d12	73.6	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Phenanthrene-d10	68.9	0	50-200	0		%REC	10	05/25/16 04:25 AM
Surr: 2-Fluorobiphenyl	76.6	0	46-115	0		%REC	10	05/25/16 04:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-34
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:16 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	70.8	0	58-133	0		%REC	10	05/25/16 04:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-35
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:20 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.41	0.0901	0.270	0.135		mg/Kg-dry	5	05/26/16 03:52 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 03:52 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 05:05 AM
Acenaphthylene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 05:05 AM
Anthracene	0.112	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[a]anthracene	0.532	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[a]pyrene	0.561	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[b]fluoranthene	0.522	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[e]pyrene	0.376	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[g,h,i]perylene	0.374	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[j]fluoranthene	0.263	0.0464	0.0928	0.0696	N	mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[k]fluoranthene	0.308	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Chrysene	0.594	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Dibenz[a,h]anthracene	0.137	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Fluoranthene	1.09	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Fluorene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 05:05 AM
Indeno[1,2,3-cd]pyrene	0.353	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Phenanthrene	0.462	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Pyrene	0.895	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
IS: Acenaphthene-d10	70.5	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Chrysene-d12	74.7	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Perylene-d12	74.5	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Phenanthrene-d10	69.5	0	50-200	0		%REC	10	05/25/16 05:05 AM
Surr: 2-Fluorobiphenyl	70.7	0	46-115	0		%REC	10	05/25/16 05:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-35
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:20 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	66.4	0	58-133	0		%REC	10	05/25/16 05:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-36
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:21 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.37	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 03:42 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 03:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[a]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Chrysene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
IS: Acenaphthene-d10	69.3	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Chrysene-d12	73.5	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Perylene-d12	73.8	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Phenanthrene-d10	69.0	0	50-200	0		%REC	10	05/25/16 11:33 AM
Surr: 2-Fluorobiphenyl	79.0	0	46-115	0		%REC	10	05/25/16 11:33 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-36
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:21 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.8	0	58-133	0		%REC	10	05/25/16 11:33 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-37
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:22 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.63	0.0990	0.297	0.149		mg/Kg-dry	5	05/26/16 03:54 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 03:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Chrysene-d12	73.7	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Perylene-d12	73.4	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Phenanthrene-d10	68.9	0	50-200	0		%REC	10	05/25/16 12:13 PM
Surr: 2-Fluorobiphenyl	76.9	0	46-115	0		%REC	10	05/25/16 12:13 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-37
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:22 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.2	0	58-133	0		%REC	10	05/25/16 12:13 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-38
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	39.3	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 03:56 PM
IS: Bismuth	103	0	30-120	0		%REC	5	05/26/16 03:56 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0708	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/25/16 12:53 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 12:53 PM
Anthracene	0.309	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[a]anthracene	2.74	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[a]pyrene	3.79	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[b]fluoranthene	3.61	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[e]pyrene	2.90	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[g,h,i]perylene	2.67	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[j]fluoranthene	1.86	0.0500	0.0999	0.0749	N	mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[k]fluoranthene	1.83	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Chrysene	3.38	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Dibenz[a,h]anthracene	0.622	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Fluoranthene	4.32	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 12:53 PM
Indeno[1,2,3-cd]pyrene	2.32	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Phenanthrene	1.48	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Pyrene	3.80	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
IS: Acenaphthene-d10	67.7	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Chrysene-d12	70.6	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Perylene-d12	70.1	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Phenanthrene-d10	66.7	0	50-200	0		%REC	10	05/25/16 12:53 PM
Surr: 2-Fluorobiphenyl	80.5	0	46-115	0		%REC	10	05/25/16 12:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-38
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/25/16 12:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-39
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.33	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 03:58 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 03:58 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[a]anthracene	0.174	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[a]pyrene	0.264	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[b]fluoranthene	0.249	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[e]pyrene	0.214	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[g,h,i]perylene	0.201	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[j]fluoranthene	0.131	0.0500	0.0999	0.0749	N	mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[k]fluoranthene	0.125	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Chrysene	0.224	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Dibenz[a,h]anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Fluoranthene	0.245	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Indeno[1,2,3-cd]pyrene	0.173	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Phenanthrene	0.0722	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/25/16 01:32 PM
Pyrene	0.230	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
IS: Acenaphthene-d10	71.4	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Chrysene-d12	76.3	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Perylene-d12	76.0	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Phenanthrene-d10	70.8	0	50-200	0		%REC	10	05/25/16 01:32 PM
Surr: 2-Fluorobiphenyl	75.4	0	46-115	0		%REC	10	05/25/16 01:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-39
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.7	0	58-133	0		%REC	10	05/25/16 01:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-40
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.31	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 04:00 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 02:12 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 02:12 PM
Anthracene	0.0636	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[a]anthracene	0.465	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[a]pyrene	0.637	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[b]fluoranthene	0.598	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[e]pyrene	0.485	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[g,h,i]perylene	0.427	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[j]fluoranthene	0.312	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[k]fluoranthene	0.293	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Chrysene	0.569	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Dibenz[a,h]anthracene	0.110	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Fluoranthene	0.770	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 02:12 PM
Indeno[1,2,3-cd]pyrene	0.388	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Phenanthrene	0.304	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Pyrene	0.665	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
IS: Acenaphthene-d10	70.8	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Chrysene-d12	75.7	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Perylene-d12	75.0	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Phenanthrene-d10	70.9	0	50-200	0		%REC	10	05/25/16 02:12 PM
Surr: 2-Fluorobiphenyl	78.2	0	46-115	0		%REC	10	05/25/16 02:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-40
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.4	0	58-133	0		%REC	10	05/25/16 02:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-41
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.60	0.0990	0.297	0.149		mg/Kg-dry	5	05/26/16 04:02 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:02 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[a]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[b]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[g,h,i]perylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Chrysene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Chrysene-d12	73.0	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Perylene-d12	72.7	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Phenanthrene-d10	68.5	0	50-200	0		%REC	10	05/25/16 02:52 PM
Surr: 2-Fluorobiphenyl	77.0	0	46-115	0		%REC	10	05/25/16 02:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-41
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.9	0	58-133	0		%REC	10	05/25/16 02:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-42
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:28 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.21	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 04:30 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 04:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
IS: Acenaphthene-d10	70.2	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Chrysene-d12	73.6	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Perylene-d12	73.9	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Phenanthrene-d10	70.8	0	50-200	0		%REC	10	05/25/16 03:32 PM
Surr: 2-Fluorobiphenyl	75.2	0	46-115	0		%REC	10	05/25/16 03:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-42
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:28 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.3	0	58-133	0		%REC	10	05/25/16 03:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-A
Project:	Laredo SGR	**Lab ID:**	1605135-43
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 01:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	24.6	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 04:32 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 04:32 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[a]anthracene	0.153	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[a]pyrene	0.201	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[b]fluoranthene	0.199	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[e]pyrene	0.162	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[g,h,i]perylene	0.154	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[j]fluoranthene	0.0706	0.0499	0.0997	0.0748	JN	mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[k]fluoranthene	0.0796	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/25/16 03:10 PM
Chrysene	0.204	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Fluoranthene	0.307	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Indeno[1,2,3-cd]pyrene	0.113	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Phenanthrene	0.116	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Pyrene	0.273	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
IS: Acenaphthene-d10	95.6	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Chrysene-d12	77.6	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Naphthalene-d8	91.6	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Perylene-d12	81.1	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Phenanthrene-d10	69.7	0	50-200	0		%REC	10	05/25/16 03:10 PM
Surr: 2-Fluorobiphenyl	96.2	0	46-115	0		%REC	10	05/25/16 03:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-A
Project:	Laredo SGR	**Lab ID:**	1605135-43
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 01:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.5	0	58-133	0		%REC	10	05/25/16 03:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-B
Project:	Laredo SGR	**Lab ID:**	1605135-44
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 02:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	27.2	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 04:34 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 04:34 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[a]anthracene	0.159	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[a]pyrene	0.208	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[b]fluoranthene	0.206	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[e]pyrene	0.167	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[g,h,i]perylene	0.161	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[j]fluoranthene	0.0785	0.0497	0.0994	0.0746	JN	mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[k]fluoranthene	0.0862	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/25/16 03:47 PM
Chrysene	0.214	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Fluoranthene	0.326	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Indeno[1,2,3-cd]pyrene	0.119	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Phenanthrene	0.125	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Pyrene	0.287	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Chrysene-d12	86.2	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Perylene-d12	91.2	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/25/16 03:47 PM
Surr: 2-Fluorobiphenyl	90.0	0	46-115	0		%REC	10	05/25/16 03:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-B
Project:	Laredo SGR	**Lab ID:**	1605135-44
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 02:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/25/16 03:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-C
Project:	Laredo SGR	**Lab ID:**	1605135-45
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 03:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	28.8	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 04:36 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 04:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[a]anthracene	0.175	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[a]pyrene	0.220	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[b]fluoranthene	0.218	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[e]pyrene	0.177	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[g,h,i]perylene	0.172	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[j]fluoranthene	0.0855	0.0499	0.0997	0.0748	JN	mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[k]fluoranthene	0.0921	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/25/16 04:24 PM
Chrysene	0.233	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Fluoranthene	0.368	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Indeno[1,2,3-cd]pyrene	0.127	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Phenanthrene	0.149	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Pyrene	0.321	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Chrysene-d12	83.5	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Naphthalene-d8	98.8	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Perylene-d12	87.5	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Phenanthrene-d10	76.1	0	50-200	0		%REC	10	05/25/16 04:24 PM
Surr: 2-Fluorobiphenyl	90.8	0	46-115	0		%REC	10	05/25/16 04:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-C
Project:	Laredo SGR	**Lab ID:**	1605135-45
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 03:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.4	0	58-133	0		%REC	10	05/25/16 04:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB17(20160511)
Project:	Laredo SGR	**Lab ID:**	1605135-46
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:00 PM
Lab Order:	1605135	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:20 PM
IS: Bismuth	99.2	0	30-120	0		%REC	1	05/20/16 02:20 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Acenaphthylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[a]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[a]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[b]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[e]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[g,h,i]perylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[j]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	NU	mg/L	1	05/19/16 12:31 AM
Benzo[k]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Chrysene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Dibenz[a,h]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Fluorene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Indeno[1,2,3-cd]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Phenanthrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
IS: Acenaphthene-d10	89.8	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Chrysene-d12	94.5	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Naphthalene-d8	91.3	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Perylene-d12	94.6	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Phenanthrene-d10	90.3	0	50-200	0		%REC	1	05/19/16 12:31 AM
Surr: 2-Fluorobiphenyl	62.9	0	53-106	0		%REC	1	05/19/16 12:31 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB17(20160511)
Project:	Laredo SGR	**Lab ID:**	1605135-46
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:00 PM
Lab Order:	1605135	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.6	0	58-132	0		%REC	1	05/19/16 12:31 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

June 02, 2016

Alex Walter
Arcadis
8725 Rosehill #350
Lenexa, Kansas 66215
TEL: (913) 492-0900
FAX (913) 492-0902

Order No.: 1605135

RE: Laredo SGR

Dear Alex Walter:

DHL Analytical, Inc. received 46 sample(s) on 5/12/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of DoD QSM Ver 5 and NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. This report shall not be reproduced except in full without the written approval of DHL Analytical, Inc. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas & DoD Laboratory Certification Number: T104704211-16-16 & DoD-ELAP #L15-426

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GCMS6 Raw Data 169

GCMS8 Raw Data 417

ICP-MS3 Raw Data 604

ICP-MS4 Raw Data 722

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Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70067

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Arkenberger@arcadis.com

DATE: May 11, 2016 PAGE 1 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1L05135
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT
P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO (METHOD 8015) ☐ DRO (METHOD 8015) ☐ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ | 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ T PHOS, AMMONIA ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ | RCRA ☐ TX11 ☐ Lead | PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ X | CHLORIDE ☐ ANIONS ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ FLASHPOINT ☐ DGAS ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX	TPH 1005	GRO	VOC 8260	SVOC 8270	8270 PEST	8270 O-P PEST	8321 HERB	METALS 6020	RCRA	PH	CHLORIDE	TCLP-SVOC	TCLP-METALS	RCI	TDS	FIELD NOTES
SGR-DU077(0-2)-A	01	5-11-16	0930	S	Bag	1				X					X					X								
SGR-DU077(2-4)-A	02	5-11-16	0931	S	Bag	1				X					X					X								
SGR-DU077(4-6)-A	03	5-11-16	0933	S	Bag	1				X					X					X								
SGR-DU077(6-8)-A	04	5-11-16	0934	S	Bag	1				X					X					X								
SGR-DU077(8-10)-A	05	5-11-16	0935	S	Bag	1				X					X					X								
SGR-DU077(0-2)-B	06	5-11-16	0942	S	Bag	1				X					X					X								
SGR-DU077(2-4)-B	07	5-11-16	0943	S	Bag	1				X					X					X								
SGR-DU077(4-6)-B	08	5-11-16	0946	S	Bag	1				X					X					X								
SGR-DU077(6-8)-B	09	5-11-16	0947	S	Bag	1				X					X					X								
SGR-DU077(8-10)-B	10	5-11-16	0951	S	Bag	1				X					X					X								
SGR-DU077(0-2)-C	11	5-11-16	1000	S	Bag	1				X					X					X								
SGR-DU077(2-4)-C	12	5-11-16	1001	S	Bag	1				X					X					X								
SGR-DU077(4-6)-C	13	5-11-16	1002	S	Bag	1				X					X					X								
SGR-DU077(6-8)-C	14	5-11-16	1003	S	Bag	1				X					X					X								
SGR-DU077(8-10)-C	15	5-11-16	1004	S	Bag	1				X					X					X								

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FedEx	5/12/16 9:50	[signature]

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3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED
0.1 | 1.0 | 0.1 | 1.9 | 0.5 | 0.1

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E-Mail: login@dhlanalytical.com

nelap

№ 70068

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: Alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Rotenberger@Arcadis.com

DATE: May 11, 2016 PAGE 2 OF 4
PO #: 04285091.0000.00044 DHL WORK ORDER #: 1160 5135
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285091.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ | 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ T PHOS, AMMONIA ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ | RCRA ☐ TX11 ☐ Lead | PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ | CHLORIDE ☐ ANIONS ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ FLASHPOINT ☐ DGAS ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	BTEX	TPH 1005	GRO	VOC 8260	SVOC 8270	8270 PEST	8270 O-P PEST	8321 HERB	METALS 6020	RCRA	PH	CHLORIDE	TCLP-SVOC	TCLP-METALS	RCI	TDS	FIELD NOTES
SGR-DU063 (0-2)-A	16	5-11-16	1224	S	Bag	1				X					X				X									
SGR-DU063 (2-4)-A	17	5-11-16	1225	S	Bag	1				X					X				X									
SGR-DU063 (4-6)-A	18	5-11-16	1226	S	Bag	1				X					X				X									
SGR-DU063 (6-8)-A	19	5-11-16	1227	S	Bag	1				X					X				X									
~~SGR-DU063 (8-10)-A~~		~~5-11-16~~		S	Bag	1				X					X				X									GF
SGR-DU063 (0-2)-B	20	5-11-16	1229	S	Bag	1				X					X				X									
SGR-DU063 (2-4)-B	21	5-11-16	1230	S	Bag	1				X					X				X									
SGR-DU063 (4-6)-B	22	5-11-16	1231	S	Bag	1				X					X				X									
SGR-DU063 (6-8)-B	23	5-11-16	1232	S	Bag	1				X					X				X									
~~SGR-DU063 (8-10)-B~~		~~5-11-16~~		S	Bag	1				X					X				X									GF
SGR-DU063 (0-2)-C	24	5-11-16	1234	S	Bag	1				X					X				X									
SGR-DU063 (2-4)-C	25	5-11-16	1235	S	Bag	1				X					X				X									
SGR-DU063 (4-6)-C	26	5-11-16	1236	S	Bag	1				X					X				X									
SGR-DU063 (6-8)-C	27	5-11-16	1237	S	Bag	1				X					X				X									
~~SGR-DU063 (8-10)-C~~		~~5-11-16~~		S	Bag	1				X					X				X									GF

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TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

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E-Mail: login@dhlanalytical.com

№ 70069

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 325 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Dinkelberger@arcadis.com

DATE: May 11, 2016 PAGE 3 OF 4
PO #: 04295081.0000.00044 DHL WORK ORDER #: 16005135
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04295081.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO (METHOD 8015) ☐ DRO (METHOD 8015) ☐ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ | 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ T PHOS, AMMONIA ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ lead | RCRA ☐ TX11 ☐ | PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ | CHLORIDE ☐ ANIONS ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ FLASHPOINT ☐ DGAS ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐ (METHOD 8021)	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO (METHOD 8015) ☐ DRO (METHOD 8015) ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU053(0-2)-A	28	5-11-16	1607	S	Bag	1				X						X						X								
SGR-DU053(2-4)-A	29	5-11-16	1608	S	Bag	1				X						X						X								
SGR-DU053(4-6)-A	30	5-11-16	1611	S	Bag	1				X						X						X								
SGR-DU053(6-8)-A	31	5-11-16	1612	S	Bag	1				X						X						X								
SGR-DU053(8-10)-A	32	5-11-16	1613	S	Bag	1				X						X						X								
SGR-DU053(0-2)-B	33	5-11-16	1615	S	Bag	1				X						X						X								
SGR-DU053(2-4)-B	34	5-11-16	1616	S	Bag	1				X						X						X								
SGR-DU053(4-6)-B	35	5-11-16	1620	S	Bag	1				X						X						X								
SGR-DU053(6-8)-B	36	5-11-16	1621	S	Bag	1				X						X						X								
SGR-DU053(8-10)-B	37	5-11-16	1622	S	Bag	1				X						X						X								
SGR-DU053(0-2)-C	38	5-11-16	1624	S	Bag	1				X						X						X								
SGR-DU053(2-4)-C	39	5-11-16	1625	S	Bag	1				X						X						X								
SGR-DU053(4-6)-C	40	5-11-16	1626	S	Bag	1				X						X						X								
SGR-DU053(6-8)-C	41	5-11-16	1627	S	Bag	1				X						X						X								
SGR-DU053(8-10)-C	42	5-11-16	1628	S		1				X						X						X								

RELINQUISHED BY: (Signature) [signature] DATE/TIME 5-11-16 1800 RECEIVED BY: (Signature) Fedex
RELINQUISHED BY: (Signature) Fedex DATE/TIME 5/12/16 9:50 RECEIVED BY: (Signature) [signature]
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TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

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Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70070

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Denkenberger@arcadis.com

DATE: May 11, 2016 PAGE 4 OF 4
PO #: 04285081.0000.0044 DHL WORK ORDER #: 1605135
PROJECT LOCATION OR NAME: Lenexa SGR
CLENT PROJECT #: COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ❑ Yes ❑ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ❑ NaOH ❑, ICE, UNPRESERVED

ANALYSES: BTEX ❑ MTBE ❑ (METHOD 8021) | TPH 1005 ❑ TPH 1006 ❑ HOLD 1006 ❑ | GRO (METHOD 8015) ❑ DRO (METHOD 8015) ❑ | VOC 8260 ❑ VOC 624 ❑ VOC 8260/5035 ❑ | SVOC 8270 ❑ PAH 8270 ❑ HOLD PAH ❑ SVOC 625 ❑ | 8270 PEST ❑ 625 PEST/PCB ❑ 608 PCB ❑ | 8270 O-P PEST ❑ 8082 PCB ❑ 8270 PCB ❑ | 8321 HERB ❑ T PHOS, AMMONIA ❑ | METALS 6020 ❑ METALS 200.8 ❑ DISS. METALS ❑ Lead | RCRA ❑ TX11 ❑ | PH ❑ HEX CHROM ❑ ALKALINITY ❑ COD ❑ | CHLORIDE ❑ ANIONS ❑ | TCLP-SVOC ❑ VOC ❑ PEST ❑ HERB ❑ | TCLP-METALS ❑ RCRA 8 ❑ TX-11 ❑ Pb ❑ | RCI ❑ FLASHPOINT ❑ DGAS ❑ | TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ❑ NaOH ❑	ICE	UNPRESERVED	BTEX ❑ MTBE ❑ (METHOD 8021)	TPH 1005 ❑ TPH 1006 ❑ HOLD 1006 ❑	GRO (METHOD 8015) ❑ DRO (METHOD 8015) ❑	VOC 8260 ❑ VOC 624 ❑ VOC 8260/5035 ❑	SVOC 8270 ❑ PAH 8270 ❑ HOLD PAH ❑ SVOC 625 ❑	8270 PEST ❑ 625 PEST/PCB ❑ 608 PCB ❑	8270 O-P PEST ❑ 8082 PCB ❑ 8270 PCB ❑	8321 HERB ❑ T PHOS, AMMONIA ❑	METALS 6020 ❑ METALS 200.8 ❑ DISS. METALS ❑ Lead	RCRA ❑ TX11 ❑	PH ❑ HEX CHROM ❑ ALKALINITY ❑ COD ❑	CHLORIDE ❑ ANIONS ❑	TCLP-SVOC ❑ VOC ❑ PEST ❑ HERB ❑	TCLP-METALS ❑ RCRA 8 ❑ TX-11 ❑ Pb ❑	RCI ❑ FLASHPOINT ❑ DGAS ❑	TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑	FIELD NOTES
SGR-DU063-A	43	5-11-16	1330	S	Bag	1				X						X						X									
SGR-DU063-B	44	5-11-16	1430	S	Bag	1				X						X						X									
SGR-DU063-C	45	5-11-16	1515	S	Bag	1				X						X						X									
ET317(20160511)	44	5-11-16	1600	W	Glass/Poly	2		X		X						X						X									

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-11-16 / 1700	FedEx
FedEx	5/12/16 9:50	[signature]

❑ DHL DISPOSAL @ $5.00 each ❑ Return

TURN AROUND TIME
RUSH ❑ CALL FIRST
1 DAY ❑ CALL FIRST
2 DAY ❑
NORMAL ☒
OTHER ❑ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 78
CUSTODY SEALS: ❑ BROKEN ☒ INTACT ❑ NOT USED
CARRIER: ❑ LONE STAR ☒ FEDEX ❑ UPS ❑ OTHER
❑ COURIER DELIVERY
❑ HAND DELIVERED

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 11MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1/6323/727F

FedEx Express

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THU - 12 MAY 10:30A
PRIORITY OVERNIGHT

2 of 7
MPS# 0263 7763 2102 1822
Mstr# 7763 2102 2141 0201

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TX-US AUS

44 BSMA

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 5-11-16
SIGNATURE

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5 of 7

THU - 12 MAY 10:30A
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Mstr# 7763 2102 2141

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TX-US AUS

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 5.11
SIGNATURE

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6 of 7

THU - 12 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7763 2102 1763
Mstr# 7763 2102 2141

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TX-US AUS

CUSTODY SEAL
DATE 5.11.16
SIGNATURE

QEC
Quality Environmental Containers
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UNITED STATES US

SHIP DATE: 11MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
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PO: 04285081.0000.00044 DEPT:

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7 of 7

THU - 12 MAY 10:30A
PRIORITY OVERNIGHT

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Mstr# 7763 2102 2141 0201

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TX-US AUS

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CUSTODY SEAL
DATE
SIGNATURE

QEC
Quality Environmental Containers
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ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 11MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

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1 of 7

THU - 12 MAY 10:30A
PRIORITY OVERNIGHT

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CUSTODY SEAL
DATE 5-11-16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
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ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

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THU - 12 MAY 10:30A
PRIORITY OVERNIGHT

4 of 7
MPS# 0263 7763 2102 2325
Mstr# 7763 2102 2141 0201

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QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

5-11-16

ORIGIN ID:LRDA (915) 433-1761
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BILL SENDER

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THU - 12 MAY 10:30A
PRIORITY OVERNIGHT

3 of 7
MPS# 0263 7763 2102 2299
Mstr# 7763 2102 2141 0201

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TX-US AUS

CUSTODY SEAL
DATE
SIGNATURE

QEC
Quality Environmental Cont
800-255-3950 • 304-255-3

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Arcadis | Date Received: 5/12/2016

Work Order Number 1605135 | Received by JT

Checklist completed by: Signature 5/12/2016 Date | Reviewed by Initials 5/12/2016 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
~~Custody seals intact on shippping container/cooler?~~	~~Yes ☑~~	~~No ☐~~	~~Not Present ☐~~
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	2.7 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted Arcadis Date contacted: 5/12/16 Person contacted Alex Watten

Contacted by: J. Dupont Regarding: sample SGR-DU053116-8)A

Comments: Per Alex proceed with drying and sieving

Corrective Action Flag data

Page 1 of 1

DHL Analytical, Inc.
Laboratory Review Checklist: Reportable Data

Project Name: Laredo SGR	**Date:** 6/2/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605135
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				**R1-01**
		2) Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample detection limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?	X				
		7) Were % moisture (or solids) reported for all soil and sediment samples?	X				
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			X		
		9) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	X				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			**R7-03**
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				**R10-01**
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.
Laboratory Review Checklist (continued): Supporting Data

Project Name: Laredo SGR | **Date:** 6/2/2016

Reviewer Name: Angie O'Donnell | **Laboratory Work Order:** 1605135

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	X				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
- a) Items consistent with NELAC Chapter 5,
- b) dilution factors,
- c) preparation methods,
- d) cleanup methods, and
- e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:
- a) Calculated recovery (%R), and
- b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- a) LCS spiking amounts,
- b) Calculated %R for each analyte, and
- c) The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- a) Samples associated with the MS/MSD clearly identified,
- b) MS/MSD spiking amounts,
- c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
- d) Calculated %Rs and relative percent differences (RPDs), and
- e) The laboratory's MS/MSD QC limits

R8 Laboratory analytical duplicate (if applicable) recovery and precision:
- a) The amount of analyte measured in the duplicate,
- b) The calculated RPD, and
- c) The laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on June 1-5, 2015. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

John DuPont – General Manager		06/03/16
Scott Schroeder – Technical Director	Signature	Date

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605135

CASE NARRATIVE

This case narrative describes abnormalities and deviations that may affect the results and summarizes all known issues that need to be highlighted for the data user to assess the results. This case narrative and the report contents are compliant with DoD QSM Ver. 5.0 and NELAC.

The "U" flag indicates the results for that sample are nondetect.

Samples were analyzed using the methods outlined in the following references:

Method SW8270D-LL - PAH Analysis (The compound Benzo[j]fluoranthene is not NELAC or DOD Certified)
Method SW6020A- Metals Analysis

Exception Report R1-01

Samples were received on and log-in performed on 5/12/2016. A total of 46 samples were received and analyzed. Sample SGR-DU053(6-8)-A was compromised during shipment likely due to melted ice; the client was notified on 5/12/2016. The laboratory proceeded with the requested analysis per the client's request. The remaining samples arrived in good condition and were properly packaged.

Exception Report R7-03

For Metals Analysis, for water Batch 75180, the recovery of Lead for the Matrix Spike (1605097-27 MS) was below the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

Exception Report R10-01

For PAH Analysis, the samples were diluted due to observed color of extract; dilution meets project specifications.

For all of the surface and subsurface samples in this project, DHL Analytical performed an Incremental Sampling Method (ISM) according to an internal SOP, as approved by the client and included in the project QAPP. This workorder consist of the following sample types: sub-surface Samples (DHL WO # 1605135-01 through -42) processed to pass #10 sieve (2mm). Of these subsurface samples, Sample SGR-DU053(6-8)-A had insufficient sample volume to perform the sub-sampling procedure as stated in the SOP and the entire sieved sample mass was used for the analysis. Additionally, surface soil Samples (DHL WO # 1605135-43 through -45) processed to pass a #60 sieve (250µ particle size).

CASE NARRATIVE

A summary of project communication follows:

The Subcontract Agreement No. D16-003 for Arcadis Project No. 04285081.0000.00043 was sent to DHL Analytical from client and signed on 1/6/2016, the contract for work signed and approved by both parties on 1/12/2016. A Modification No. 01-D16-003 was signed by both parties on 4/21/2016.

The bottlekit was requested from Ana Gutierrez of Arcadis sent via email to John DuPont on 4/21/2016.
The following DHL Bottle Orders:
#6941 sent on 4/28/2016 via Lonestar Overnight Ground to arrive by 5/2/2016
#6942 sent on 5/3/2016 via Lonestar Overnight Ground to arrive by 5/4/2016
#6943 sent on 5/6/2016 via Lonestar Overnight Ground to arrive by 5/9/2016
#6944 sent on 5/10/2016 via Lonestar Overnight Ground to arrive by 5/11/2016.

This sample delivery group arrives at DHL Analytical on 5/12/2016 and a Sample Summary was sent on 5/13/2016. Associated shipping documents are kept in the project folder and/or client folder as part of the Administrative records filed in the QA office.

DHL project manager/qa staff discussed with client the following issues:
email communications 5/13/2016 - from J. DuPont to the Arcadis Kansas Laredo email group regarding request to dilute based on color of extract
email communications 5/27/2016 - from J. DuPont to L. Mott of Arcadis regarding exceedance(s) for the recovery of MS for Lead. The client accepted the corrective action for the quality exceedances on 5/31/2016.

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605135

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605135-01	SGR-DU077(0-2)-A		05/11/16 09:30 AM	5/12/2016
1605135-02	SGR-DU077(2-4)-A		05/11/16 09:31 AM	5/12/2016
1605135-03	SGR-DU077(4-6)-A		05/11/16 09:33 AM	5/12/2016
1605135-04	SGR-DU077(6-8)-A		05/11/16 09:34 AM	5/12/2016
1605135-05	SGR-DU077(8-10)-A		05/11/16 09:35 AM	5/12/2016
1605135-06	SGR-DU077(0-2)-B		05/11/16 09:42 AM	5/12/2016
1605135-07	SGR-DU077(2-4)-B		05/11/16 09:43 AM	5/12/2016
1605135-08	SGR-DU077(4-6)-B		05/11/16 09:46 AM	5/12/2016
1605135-09	SGR-DU077(6-8)-B		05/11/16 09:47 AM	5/12/2016
1605135-10	SGR-DU077(8-10)-B		05/11/16 09:51 AM	5/12/2016
1605135-11	SGR-DU077(0-2)-C		05/11/16 10:00 AM	5/12/2016
1605135-12	SGR-DU077(2-4)-C		05/11/16 10:01 AM	5/12/2016
1605135-13	SGR-DU077(4-6)-C		05/11/16 10:02 AM	5/12/2016
1605135-14	SGR-DU077(6-8)-C		05/11/16 10:03 AM	5/12/2016
1605135-15	SGR-DU077(8-10)-C		05/11/16 10:04 AM	5/12/2016
1605135-16	SGR-DU063(0-2)-A		05/11/16 12:24 PM	5/12/2016
1605135-17	SGR-DU063(2-4)-A		05/11/16 12:25 PM	5/12/2016
1605135-18	SGR-DU063(4-6)-A		05/11/16 12:26 PM	5/12/2016
1605135-19	SGR-DU063(6-8)-A		05/11/16 12:27 PM	5/12/2016
1605135-20	SGR-DU063(0-2)-B		05/11/16 12:29 PM	5/12/2016
1605135-21	SGR-DU063(2-4)-B		05/11/16 12:30 PM	5/12/2016
1605135-22	SGR-DU063(4-6)-B		05/11/16 12:31 PM	5/12/2016
1605135-23	SGR-DU063(6-8)-B		05/11/16 12:32 PM	5/12/2016
1605135-24	SGR-DU063(0-2)-C		05/11/16 12:34 PM	5/12/2016
1605135-25	SGR-DU063(2-4)-C		05/11/16 12:35 PM	5/12/2016
1605135-26	SGR-DU063(4-6)-C		05/11/16 12:36 PM	5/12/2016
1605135-27	SGR-DU063(6-8)-C		05/11/16 12:37 PM	5/12/2016
1605135-28	SGR-DU053(0-2)-A		05/11/16 04:07 PM	5/12/2016
1605135-29	SGR-DU053(2-4)-A		05/11/16 04:08 PM	5/12/2016
1605135-30	SGR-DU053(4-6)-A		05/11/16 04:11 PM	5/12/2016
1605135-31	SGR-DU053(6-8)-A		05/11/16 04:12 PM	5/12/2016
1605135-32	SGR-DU053(8-10)-A		05/11/16 04:13 PM	5/12/2016
1605135-33	SGR-DU053(0-2)-B		05/11/16 04:15 PM	5/12/2016
1605135-34	SGR-DU053(2-4)-B		05/11/16 04:16 PM	5/12/2016
1605135-35	SGR-DU053(4-6)-B		05/11/16 04:20 PM	5/12/2016
1605135-36	SGR-DU053(6-8)-B		05/11/16 04:21 PM	5/12/2016
1605135-37	SGR-DU053(8-10)-B		05/11/16 04:22 PM	5/12/2016
1605135-38	SGR-DU053(0-2)-C		05/11/16 04:24 PM	5/12/2016
1605135-39	SGR-DU053(2-4)-C		05/11/16 04:25 PM	5/12/2016
1605135-40	SGR-DU053(4-6)-C		05/11/16 04:26 PM	5/12/2016
1605135-41	SGR-DU053(6-8)-C		05/11/16 04:27 PM	5/12/2016
1605135-42	SGR-DU053(8-10)-C		05/11/16 04:28 PM	5/12/2016

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605135

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605135-43	SGR-DU063-A		05/11/16 01:30 PM	5/12/2016
1605135-44	SGR-DU063-B		05/11/16 02:30 PM	5/12/2016
1605135-45	SGR-DU063-C		05/11/16 03:15 PM	5/12/2016
1605135-46	EB17(20160511)		05/11/16 04:00 PM	5/12/2016

DHL Analytical, Inc.

02-Jun-16

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605135-01A	SGR-DU077(0-2)-A	05/11/16 09:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(0-2)-A	05/11/16 09:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-02A	SGR-DU077(2-4)-A	05/11/16 09:31 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(2-4)-A	05/11/16 09:31 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-03A	SGR-DU077(4-6)-A	05/11/16 09:33 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(4-6)-A	05/11/16 09:33 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-04A	SGR-DU077(6-8)-A	05/11/16 09:34 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(6-8)-A	05/11/16 09:34 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-05A	SGR-DU077(8-10)-A	05/11/16 09:35 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(8-10)-A	05/11/16 09:35 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-06A	SGR-DU077(0-2)-B	05/11/16 09:42 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(0-2)-B	05/11/16 09:42 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-07A	SGR-DU077(2-4)-B	05/11/16 09:43 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(2-4)-B	05/11/16 09:43 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-08A	SGR-DU077(4-6)-B	05/11/16 09:46 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(4-6)-B	05/11/16 09:46 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-09A	SGR-DU077(6-8)-B	05/11/16 09:47 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 08:40 AM	75227
	SGR-DU077(6-8)-B	05/11/16 09:47 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-10A	SGR-DU077(8-10)-B	05/11/16 09:51 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU077(8-10)-B	05/11/16 09:51 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-11A	SGR-DU077(0-2)-C	05/11/16 10:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU077(0-2)-C	05/11/16 10:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/20/16 09:40 AM	75258
1605135-12A	SGR-DU077(2-4)-C	05/11/16 10:01 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU077(2-4)-C	05/11/16 10:01 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-13A	SGR-DU077(4-6)-C	05/11/16 10:02 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU077(4-6)-C	05/11/16 10:02 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-14A	SGR-DU077(6-8)-C	05/11/16 10:03 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU077(6-8)-C	05/11/16 10:03 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605135-15A	SGR-DU077(8-10)-C	05/11/16 10:04 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU077(8-10)-C	05/11/16 10:04 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-16A	SGR-DU063(0-2)-A	05/11/16 12:24 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(0-2)-A	05/11/16 12:24 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-17A	SGR-DU063(2-4)-A	05/11/16 12:25 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(2-4)-A	05/11/16 12:25 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-18A	SGR-DU063(4-6)-A	05/11/16 12:26 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(4-6)-A	05/11/16 12:26 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-19A	SGR-DU063(6-8)-A	05/11/16 12:27 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(6-8)-A	05/11/16 12:27 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-20A	SGR-DU063(0-2)-B	05/11/16 12:29 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(0-2)-B	05/11/16 12:29 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-21A	SGR-DU063(2-4)-B	05/11/16 12:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(2-4)-B	05/11/16 12:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-22A	SGR-DU063(4-6)-B	05/11/16 12:31 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(4-6)-B	05/11/16 12:31 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-23A	SGR-DU063(6-8)-B	05/11/16 12:32 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(6-8)-B	05/11/16 12:32 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-24A	SGR-DU063(0-2)-C	05/11/16 12:34 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(0-2)-C	05/11/16 12:34 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-25A	SGR-DU063(2-4)-C	05/11/16 12:35 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(2-4)-C	05/11/16 12:35 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-26A	SGR-DU063(4-6)-C	05/11/16 12:36 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(4-6)-C	05/11/16 12:36 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-27A	SGR-DU063(6-8)-C	05/11/16 12:37 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU063(6-8)-C	05/11/16 12:37 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-28A	SGR-DU053(0-2)-A	05/11/16 04:07 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(0-2)-A	05/11/16 04:07 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605135-29A	SGR-DU053(2-4)-A	05/11/16 04:08 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(2-4)-A	05/11/16 04:08 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-30A	SGR-DU053(4-6)-A	05/11/16 04:11 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(4-6)-A	05/11/16 04:11 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-31A	SGR-DU053(6-8)-A	05/11/16 04:12 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(6-8)-A	05/11/16 04:12 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75286
1605135-32A	SGR-DU053(8-10)-A	05/11/16 04:13 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(8-10)-A	05/11/16 04:13 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-33A	SGR-DU053(0-2)-B	05/11/16 04:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(0-2)-B	05/11/16 04:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-34A	SGR-DU053(2-4)-B	05/11/16 04:16 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(2-4)-B	05/11/16 04:16 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-35A	SGR-DU053(4-6)-B	05/11/16 04:20 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:42 AM	75278
	SGR-DU053(4-6)-B	05/11/16 04:20 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-36A	SGR-DU053(6-8)-B	05/11/16 04:21 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(6-8)-B	05/11/16 04:21 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-37A	SGR-DU053(8-10)-B	05/11/16 04:22 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(8-10)-B	05/11/16 04:22 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-38A	SGR-DU053(0-2)-C	05/11/16 04:24 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(0-2)-C	05/11/16 04:24 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-39A	SGR-DU053(2-4)-C	05/11/16 04:25 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(2-4)-C	05/11/16 04:25 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-40A	SGR-DU053(4-6)-C	05/11/16 04:26 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(4-6)-C	05/11/16 04:26 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-41A	SGR-DU053(6-8)-C	05/11/16 04:27 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(6-8)-C	05/11/16 04:27 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-42A	SGR-DU053(8-10)-C	05/11/16 04:28 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU053(8-10)-C	05/11/16 04:28 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605135-43A	SGR-DU063-A	05/11/16 01:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU063-A	05/11/16 01:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-44A	SGR-DU063-B	05/11/16 02:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU063-B	05/11/16 02:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-45A	SGR-DU063-C	05/11/16 03:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU063-C	05/11/16 03:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605135-46A	EB17(20160511)	05/11/16 04:00 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605135-46B	EB17(20160511)	05/11/16 04:00 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605135-01A	SGR-DU077(0-2)-A	5/11/2016 9:30:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-02A	SGR-DU077(2-4)-A	5/11/2016 9:31:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-03A	SGR-DU077(4-6)-A	5/11/2016 9:33:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-04A	SGR-DU077(6-8)-A	5/11/2016 9:34:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-05A	SGR-DU077(8-10)-A	5/11/2016 9:35:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-06A	SGR-DU077(0-2)-B	5/11/2016 9:42:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-07A	SGR-DU077(2-4)-B	5/11/2016 9:43:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-08A	SGR-DU077(4-6)-B	5/11/2016 9:46:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-09A	SGR-DU077(6-8)-B	5/11/2016 9:47:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-10A	SGR-DU077(8-10)-B	5/11/2016 9:51:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-11A	SGR-DU077(0-2)-C	5/11/2016 10:00:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-12A	SGR-DU077(2-4)-C	5/11/2016 10:01:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-13A	SGR-DU077(4-6)-C	5/11/2016 10:02:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-14A	SGR-DU077(6-8)-C	5/11/2016 10:03:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-15A	SGR-DU077(8-10)-C	5/11/2016 10:04:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 3:40:00 PM	75188
1605135-16A	SGR-DU063(0-2)-A	5/11/2016 12:24:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-17A	SGR-DU063(2-4)-A	5/11/2016 12:25:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-18A	SGR-DU063(4-6)-A	5/11/2016 12:26:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-19A	SGR-DU063(6-8)-A	5/11/2016 12:27:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-20A	SGR-DU063(0-2)-B	5/11/2016 12:29:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-21A	SGR-DU063(2-4)-B	5/11/2016 12:30:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-22A	SGR-DU063(4-6)-B	5/11/2016 12:31:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-23A	SGR-DU063(6-8)-B	5/11/2016 12:32:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-24A	SGR-DU063(0-2)-C	5/11/2016 12:34:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-25A	SGR-DU063(2-4)-C	5/11/2016 12:35:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-26A	SGR-DU063(4-6)-C	5/11/2016 12:36:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-27A	SGR-DU063(6-8)-C	5/11/2016 12:37:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-28A	SGR-DU053(0-2)-A	5/11/2016 4:07:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605135-29A	SGR-DU053(2-4)-A	5/11/2016 4:08:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-30A	SGR-DU053(4-6)-A	5/11/2016 4:11:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-31A	SGR-DU053(6-8)-A	5/11/2016 4:12:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-32A	SGR-DU053(8-10)-A	5/11/2016 4:13:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-33A	SGR-DU053(0-2)-B	5/11/2016 4:15:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-34A	SGR-DU053(2-4)-B	5/11/2016 4:16:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-35A	SGR-DU053(4-6)-B	5/11/2016 4:20:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/16/2016 5:00:00 PM	75190
1605135-36A	SGR-DU053(6-8)-B	5/11/2016 4:21:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-37A	SGR-DU053(8-10)-B	5/11/2016 4:22:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-38A	SGR-DU053(0-2)-C	5/11/2016 4:24:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-39A	SGR-DU053(2-4)-C	5/11/2016 4:25:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-40A	SGR-DU053(4-6)-C	5/11/2016 4:26:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-41A	SGR-DU053(6-8)-C	5/11/2016 4:27:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-42A	SGR-DU053(8-10)-C	5/11/2016 4:28:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605135-43A	SGR-DU063-A	5/11/2016 1:30:00 PM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/17/2016 2:17:28 PM	75212
1605135-44A	SGR-DU063-B	5/11/2016 2:30:00 PM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/17/2016 2:17:28 PM	75212
1605135-45A	SGR-DU063-C	5/11/2016 3:15:00 PM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/17/2016 2:17:28 PM	75212

Lab Order: 1605135
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605135-01A	SGR-DU077(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/24/16 06:30 PM	GCMS8_160524A
	SGR-DU077(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 02:35 PM	ICP-MS3_160526A
1605135-02A	SGR-DU077(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/24/16 07:08 PM	GCMS8_160524A
	SGR-DU077(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 02:41 PM	ICP-MS3_160526A
1605135-03A	SGR-DU077(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/24/16 07:46 PM	GCMS8_160524A
	SGR-DU077(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:23 PM	ICP-MS3_160526A
1605135-04A	SGR-DU077(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/24/16 10:52 PM	GCMS8_160524A
	SGR-DU077(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:29 PM	ICP-MS3_160526A
1605135-05A	SGR-DU077(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/24/16 11:29 PM	GCMS8_160524A
	SGR-DU077(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:35 PM	ICP-MS3_160526A
1605135-06A	SGR-DU077(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/25/16 12:07 AM	GCMS8_160524A
	SGR-DU077(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:41 PM	ICP-MS3_160526A
1605135-07A	SGR-DU077(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/25/16 12:44 AM	GCMS8_160524A
	SGR-DU077(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:47 PM	ICP-MS3_160526A
1605135-08A	SGR-DU077(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/25/16 01:20 AM	GCMS8_160524A
	SGR-DU077(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:53 PM	ICP-MS3_160526A
1605135-09A	SGR-DU077(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75227	10	05/25/16 01:58 AM	GCMS8_160524A
	SGR-DU077(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 03:59 PM	ICP-MS3_160526A
1605135-10A	SGR-DU077(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 11:25 AM	GCMS8_160525A
	SGR-DU077(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 04:05 PM	ICP-MS3_160526A
1605135-11A	SGR-DU077(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 12:02 PM	GCMS8_160525A
	SGR-DU077(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75258	5	05/26/16 04:11 PM	ICP-MS3_160526A
1605135-12A	SGR-DU077(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 12:41 PM	GCMS8_160525A
	SGR-DU077(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:12 PM	ICP-MS3_160526A
1605135-13A	SGR-DU077(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 01:18 PM	GCMS8_160525A
	SGR-DU077(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:18 PM	ICP-MS3_160526A
1605135-14A	SGR-DU077(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 01:56 PM	GCMS8_160525A
	SGR-DU077(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:00 PM	ICP-MS3_160526A

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ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605135-15A	SGR-DU077(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 02:33 PM	GCMS8_160525A
	SGR-DU077(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:24 PM	ICP-MS3_160526A
1605135-16A	SGR-DU063(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 12:32 PM	GCMS6_160524A
	SGR-DU063(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:29 PM	ICP-MS3_160526A
1605135-17A	SGR-DU063(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 01:12 PM	GCMS6_160524A
	SGR-DU063(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:35 PM	ICP-MS3_160526A
1605135-18A	SGR-DU063(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 01:51 PM	GCMS6_160524A
	SGR-DU063(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:41 PM	ICP-MS3_160526A
1605135-19A	SGR-DU063(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 02:31 PM	GCMS6_160524A
	SGR-DU063(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:47 PM	ICP-MS3_160526A
1605135-20A	SGR-DU063(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 03:11 PM	GCMS6_160524A
	SGR-DU063(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:53 PM	ICP-MS3_160526A
1605135-21A	SGR-DU063(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 03:50 PM	GCMS6_160524A
	SGR-DU063(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 05:59 PM	ICP-MS3_160526A
1605135-22A	SGR-DU063(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 04:30 PM	GCMS6_160524A
	SGR-DU063(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 06:53 PM	ICP-MS3_160526A
1605135-23A	SGR-DU063(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 05:10 PM	GCMS6_160524A
	SGR-DU063(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 06:59 PM	ICP-MS3_160526A
1605135-24A	SGR-DU063(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 05:50 PM	GCMS6_160524A
	SGR-DU063(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:05 PM	ICP-MS3_160526A
1605135-25A	SGR-DU063(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 06:30 PM	GCMS6_160524A
	SGR-DU063(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:11 PM	ICP-MS3_160526A
1605135-26A	SGR-DU063(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 07:10 PM	GCMS6_160524A
	SGR-DU063(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:17 PM	ICP-MS3_160526A
1605135-27A	SGR-DU063(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/24/16 07:50 PM	GCMS6_160524A
	SGR-DU063(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:23 PM	ICP-MS3_160526A
1605135-28A	SGR-DU053(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 12:27 AM	GCMS6_160524A
	SGR-DU053(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:29 PM	ICP-MS3_160526A

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Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605135-29A	SGR-DU053(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 01:07 AM	GCMS6_160524A
	SGR-DU053(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:35 PM	ICP-MS3_160526A
1605135-30A	SGR-DU053(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 01:46 AM	GCMS6_160524A
	SGR-DU053(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:41 PM	ICP-MS3_160526A
1605135-31A	SGR-DU053(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 02:26 AM	GCMS6_160524A
	SGR-DU053(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75286	5	05/26/16 07:47 PM	ICP-MS3_160526A
1605135-32A	SGR-DU053(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 03:05 AM	GCMS6_160524A
	SGR-DU053(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:46 PM	ICP-MS4_160526F
1605135-33A	SGR-DU053(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 03:45 AM	GCMS6_160524A
	SGR-DU053(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:48 PM	ICP-MS4_160526F
1605135-34A	SGR-DU053(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 04:25 AM	GCMS6_160524A
	SGR-DU053(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:50 PM	ICP-MS4_160526F
1605135-35A	SGR-DU053(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75278	10	05/25/16 05:05 AM	GCMS6_160524A
	SGR-DU053(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:52 PM	ICP-MS4_160526F
1605135-36A	SGR-DU053(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 11:33 AM	GCMS6_160525A
	SGR-DU053(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:42 PM	ICP-MS4_160526F
1605135-37A	SGR-DU053(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 12:13 PM	GCMS6_160525A
	SGR-DU053(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:54 PM	ICP-MS4_160526F
1605135-38A	SGR-DU053(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 12:53 PM	GCMS6_160525A
	SGR-DU053(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:56 PM	ICP-MS4_160526F
1605135-39A	SGR-DU053(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 01:32 PM	GCMS6_160525A
	SGR-DU053(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 03:58 PM	ICP-MS4_160526F
1605135-40A	SGR-DU053(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 02:12 PM	GCMS6_160525A
	SGR-DU053(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:00 PM	ICP-MS4_160526F
1605135-41A	SGR-DU053(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 02:52 PM	GCMS6_160525A
	SGR-DU053(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:02 PM	ICP-MS4_160526F
1605135-42A	SGR-DU053(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 03:32 PM	GCMS6_160525A
	SGR-DU053(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:30 PM	ICP-MS4_160526F

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Client: Arcadis
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ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605135-43A	SGR-DU063-A	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 03:10 PM	GCMS8_160525A
	SGR-DU063-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:32 PM	ICP-MS4_160526F
1605135-44A	SGR-DU063-B	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 03:47 PM	GCMS8_160525A
	SGR-DU063-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:34 PM	ICP-MS4_160526F
1605135-45A	SGR-DU063-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 04:24 PM	GCMS8_160525A
	SGR-DU063-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:36 PM	ICP-MS4_160526F
1605135-46A	EB17(20160511)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 02:20 PM	ICP-MS4_160520C
1605135-46B	EB17(20160511)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/19/16 12:31 AM	GCMS8_160518B

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-01
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:30 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	39.8	0.0909	0.273	0.136		mg/Kg-dry	5	05/26/16 02:35 PM
IS: Bismuth	73.4	0	30-120	0		%REC	5	05/26/16 02:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 06:30 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 06:30 PM
Anthracene	0.0547	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]anthracene	0.488	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]pyrene	0.620	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[b]fluoranthene	0.569	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[e]pyrene	0.470	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[g,h,i]perylene	0.449	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[j]fluoranthene	0.269	0.0495	0.0990	0.0743	N	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[k]fluoranthene	0.273	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Chrysene	0.622	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Dibenz[a,h]anthracene	0.0509	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 06:30 PM
Fluoranthene	0.867	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 06:30 PM
Indeno[1,2,3-cd]pyrene	0.361	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Phenanthrene	0.311	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
Pyrene	0.774	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/24/16 06:30 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Chrysene-d12	80.4	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Naphthalene-d8	98.4	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Perylene-d12	85.6	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/24/16 06:30 PM
Surr: 2-Fluorobiphenyl	89.1	0	46-115	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-01
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:30 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.9	0	58-133	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-02
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:31 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.43	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 02:41 PM
IS: Bismuth	69.7	0	30-120	0		%REC	5	05/26/16 02:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[a]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[a]pyrene	0.0523	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[b]fluoranthene	0.0500	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[e]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[g,h,i]perylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[j]fluoranthene	0.0748	0.0499	0.0997	0.0748	NU	mg/Kg-dry	10	05/24/16 07:08 PM
Benzo[k]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Chrysene	0.0541	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Fluoranthene	0.0969	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Indeno[1,2,3-cd]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Phenanthrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/24/16 07:08 PM
Pyrene	0.0837	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/24/16 07:08 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Chrysene-d12	85.4	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Perylene-d12	88.7	0	50-200	0		%REC	10	05/24/16 07:08 PM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/24/16 07:08 PM
Surr: 2-Fluorobiphenyl	87.7	0	46-115	0		%REC	10	05/24/16 07:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-02
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:31 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.4	0	58-133	0		%REC	10	05/24/16 07:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-03
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:33 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.32	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 03:23 PM
IS: Bismuth	86.8	0	30-120	0		%REC	5	05/26/16 03:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/24/16 07:46 PM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/24/16 07:46 PM
IS: Acenaphthene-d10	107	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Chrysene-d12	86.5	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Perylene-d12	90.0	0	50-200	0		%REC	10	05/24/16 07:46 PM
IS: Phenanthrene-d10	79.5	0	50-200	0		%REC	10	05/24/16 07:46 PM
Surr: 2-Fluorobiphenyl	87.6	0	46-115	0		%REC	10	05/24/16 07:46 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-03
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:33 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/24/16 07:46 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-04
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:34 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.07	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 03:29 PM
IS: Bismuth	91.6	0	30-120	0		%REC	5	05/26/16 03:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/24/16 10:52 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/24/16 10:52 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Chrysene-d12	83.7	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Perylene-d12	87.4	0	50-200	0		%REC	10	05/24/16 10:52 PM
IS: Phenanthrene-d10	76.7	0	50-200	0		%REC	10	05/24/16 10:52 PM
Surr: 2-Fluorobiphenyl	87.9	0	46-115	0		%REC	10	05/24/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-04
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:34 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/24/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-05
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:35 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	3.49	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 03:35 PM
IS: Bismuth	88.4	0	30-120	0		%REC	5	05/26/16 03:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[a]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[b]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/24/16 11:29 PM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 11:29 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Chrysene-d12	82.9	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Perylene-d12	87.4	0	50-200	0		%REC	10	05/24/16 11:29 PM
IS: Phenanthrene-d10	76.5	0	50-200	0		%REC	10	05/24/16 11:29 PM
Surr: 2-Fluorobiphenyl	92.2	0	46-115	0		%REC	10	05/24/16 11:29 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-05
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:35 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.5	0	58-133	0		%REC	10	05/24/16 11:29 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-06
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:42 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.8	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 03:41 PM
IS: Bismuth	82.0	0	30-120	0		%REC	5	05/26/16 03:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0655	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/25/16 12:07 AM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 12:07 AM
Anthracene	0.175	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[a]anthracene	1.53	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[a]pyrene	2.03	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[b]fluoranthene	1.81	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[e]pyrene	1.48	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[g,h,i]perylene	1.45	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[j]fluoranthene	0.909	0.0497	0.0993	0.0745	N	mg/Kg-dry	10	05/25/16 12:07 AM
Benzo[k]fluoranthene	0.872	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Chrysene	1.93	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Dibenz[a,h]anthracene	0.235	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Fluoranthene	2.71	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 12:07 AM
Indeno[1,2,3-cd]pyrene	1.17	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Phenanthrene	0.880	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
Pyrene	2.44	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 12:07 AM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Chrysene-d12	85.8	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Perylene-d12	88.4	0	50-200	0		%REC	10	05/25/16 12:07 AM
IS: Phenanthrene-d10	80.3	0	50-200	0		%REC	10	05/25/16 12:07 AM
Surr: 2-Fluorobiphenyl	92.0	0	46-115	0		%REC	10	05/25/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-06
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:42 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.7	0	58-133	0		%REC	10	05/25/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-07
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:43 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.17	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 03:47 PM
IS: Bismuth	74.8	0	30-120	0		%REC	5	05/26/16 03:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[a]pyrene	0.0539	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/25/16 12:44 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Chrysene	0.0514	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Fluoranthene	0.112	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/25/16 12:44 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 12:44 AM
Phenanthrene	0.0586	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
Pyrene	0.0927	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/25/16 12:44 AM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Chrysene-d12	83.1	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Naphthalene-d8	99.4	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Perylene-d12	87.1	0	50-200	0		%REC	10	05/25/16 12:44 AM
IS: Phenanthrene-d10	77.7	0	50-200	0		%REC	10	05/25/16 12:44 AM
Surr: 2-Fluorobiphenyl	92.0	0	46-115	0		%REC	10	05/25/16 12:44 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-07
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:43 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.4	0	58-133	0		%REC	10	05/25/16 12:44 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-08
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:46 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.22	0.0847	0.254	0.127		mg/Kg-dry	5	05/26/16 03:53 PM
IS: Bismuth	81.8	0	30-120	0		%REC	5	05/26/16 03:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/25/16 01:20 AM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:20 AM
IS: Acenaphthene-d10	98.6	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Chrysene-d12	78.0	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Naphthalene-d8	95.4	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Perylene-d12	81.2	0	50-200	0		%REC	10	05/25/16 01:20 AM
IS: Phenanthrene-d10	72.3	0	50-200	0		%REC	10	05/25/16 01:20 AM
Surr: 2-Fluorobiphenyl	87.9	0	46-115	0		%REC	10	05/25/16 01:20 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-08
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:46 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.1	0	58-133	0		%REC	10	05/25/16 01:20 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-09
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:47 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.76	0.100	0.300	0.150		mg/Kg-dry	5	05/26/16 03:59 PM
IS: Bismuth	88.2	0	30-120	0		%REC	5	05/26/16 03:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/25/16 01:58 AM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:58 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Chrysene-d12	84.4	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Perylene-d12	87.7	0	50-200	0		%REC	10	05/25/16 01:58 AM
IS: Phenanthrene-d10	76.2	0	50-200	0		%REC	10	05/25/16 01:58 AM
Surr: 2-Fluorobiphenyl	82.6	0	46-115	0		%REC	10	05/25/16 01:58 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-09
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:47 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	70.8	0	58-133	0		%REC	10	05/25/16 01:58 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-10
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:51 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.51	0.0862	0.259	0.129		mg/Kg-dry	5	05/26/16 04:05 PM
IS: Bismuth	82.6	0	30-120	0		%REC	5	05/26/16 04:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/25/16 11:25 AM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 11:25 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Chrysene-d12	81.4	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Naphthalene-d8	95.8	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Perylene-d12	84.6	0	50-200	0		%REC	10	05/25/16 11:25 AM
IS: Phenanthrene-d10	74.4	0	50-200	0		%REC	10	05/25/16 11:25 AM
Surr: 2-Fluorobiphenyl	90.2	0	46-115	0		%REC	10	05/25/16 11:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-10
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 09:51 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/25/16 11:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-11
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:00 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	27.0	0.0901	0.270	0.135		mg/Kg-dry	5	05/26/16 04:11 PM
IS: Bismuth	84.6	0	30-120	0		%REC	5	05/26/16 04:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0918	0.0464	0.0928	0.0696	J	mg/Kg-dry	10	05/25/16 12:02 PM
Acenaphthylene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 12:02 PM
Anthracene	0.0946	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[a]anthracene	1.66	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[a]pyrene	2.51	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[b]fluoranthene	2.26	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[e]pyrene	1.84	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[g,h,i]perylene	1.89	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[j]fluoranthene	1.08	0.0464	0.0928	0.0696	N	mg/Kg-dry	10	05/25/16 12:02 PM
Benzo[k]fluoranthene	1.04	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Chrysene	2.19	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Dibenz[a,h]anthracene	0.240	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Fluoranthene	2.56	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Fluorene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 12:02 PM
Indeno[1,2,3-cd]pyrene	1.50	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Phenanthrene	0.512	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
Pyrene	2.45	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 12:02 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Chrysene-d12	83.8	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Naphthalene-d8	96.7	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Perylene-d12	86.7	0	50-200	0		%REC	10	05/25/16 12:02 PM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/25/16 12:02 PM
Surr: 2-Fluorobiphenyl	95.2	0	46-115	0		%REC	10	05/25/16 12:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-11
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:00 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.3	0	58-133	0		%REC	10	05/25/16 12:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-12
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:01 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.12	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 05:12 PM
IS: Bismuth	76.4	0	30-120	0		%REC	5	05/26/16 05:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[a]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[b]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[g,h,i]perylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/25/16 12:41 PM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Chrysene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 12:41 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Chrysene-d12	82.0	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Naphthalene-d8	97.5	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Perylene-d12	87.0	0	50-200	0		%REC	10	05/25/16 12:41 PM
IS: Phenanthrene-d10	74.3	0	50-200	0		%REC	10	05/25/16 12:41 PM
Surr: 2-Fluorobiphenyl	90.5	0	46-115	0		%REC	10	05/25/16 12:41 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-12
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:01 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.2	0	58-133	0		%REC	10	05/25/16 12:41 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-13
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:02 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.29	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 05:18 PM
IS: Bismuth	74.8	0	30-120	0		%REC	5	05/26/16 05:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/25/16 01:18 PM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/25/16 01:18 PM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Chrysene-d12	85.5	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Perylene-d12	89.4	0	50-200	0		%REC	10	05/25/16 01:18 PM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/25/16 01:18 PM
Surr: 2-Fluorobiphenyl	84.2	0	46-115	0		%REC	10	05/25/16 01:18 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-13
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:02 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/25/16 01:18 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-14
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:03 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	3.38	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 05:00 PM
IS: Bismuth	83.7	0	30-120	0		%REC	5	05/26/16 05:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[a]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[a]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[b]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[e]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[g,h,i]perylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[j]fluoranthene	0.0735	0.0490	0.0980	0.0735	NU	mg/Kg-dry	10	05/25/16 01:56 PM
Benzo[k]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Chrysene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Dibenz[a,h]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Indeno[1,2,3-cd]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Phenanthrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
Pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:56 PM
IS: Acenaphthene-d10	99.1	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Chrysene-d12	80.5	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Perylene-d12	84.7	0	50-200	0		%REC	10	05/25/16 01:56 PM
IS: Phenanthrene-d10	73.0	0	50-200	0		%REC	10	05/25/16 01:56 PM
Surr: 2-Fluorobiphenyl	87.0	0	46-115	0		%REC	10	05/25/16 01:56 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-14
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:03 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.1	0	58-133	0		%REC	10	05/25/16 01:56 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-15
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:04 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.24	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 05:24 PM
IS: Bismuth	76.1	0	30-120	0		%REC	5	05/26/16 05:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/25/16 02:33 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 02:33 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Chrysene-d12	82.4	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Naphthalene-d8	98.4	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Perylene-d12	85.9	0	50-200	0		%REC	10	05/25/16 02:33 PM
IS: Phenanthrene-d10	74.9	0	50-200	0		%REC	10	05/25/16 02:33 PM
Surr: 2-Fluorobiphenyl	90.2	0	46-115	0		%REC	10	05/25/16 02:33 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU077(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-15
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 10:04 AM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.6	0	58-133	0		%REC	10	05/25/16 02:33 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-16
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	41.5	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 05:29 PM
IS: Bismuth	76.3	0	30-120	0		%REC	5	05/26/16 05:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Acenaphthylene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Anthracene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[a]anthracene	0.200	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[a]pyrene	0.262	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[b]fluoranthene	0.257	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[e]pyrene	0.145	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[g,h,i]perylene	0.222	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[j]fluoranthene	0.0952	0.0470	0.0940	0.0705	N	mg/Kg-dry	10	05/24/16 12:32 PM
Benzo[k]fluoranthene	0.175	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Chrysene	0.242	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Dibenz[a,h]anthracene	0.116	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Fluoranthene	0.304	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Fluorene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/24/16 12:32 PM
Indeno[1,2,3-cd]pyrene	0.203	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Phenanthrene	0.0948	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
Pyrene	0.265	0.0470	0.0940	0.0705		mg/Kg-dry	10	05/24/16 12:32 PM
IS: Acenaphthene-d10	72.4	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Chrysene-d12	74.9	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Perylene-d12	73.9	0	50-200	0		%REC	10	05/24/16 12:32 PM
IS: Phenanthrene-d10	69.0	0	50-200	0		%REC	10	05/24/16 12:32 PM
Surr: 2-Fluorobiphenyl	71.2	0	46-115	0		%REC	10	05/24/16 12:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-16
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	68.6	0	58-133	0		%REC	10	05/24/16 12:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-17
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.81	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 05:35 PM
IS: Bismuth	76.2	0	30-120	0		%REC	5	05/26/16 05:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Acenaphthylene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[a]anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[a]pyrene	0.0648	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[b]fluoranthene	0.0578	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[e]pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[g,h,i]perylene	0.0717	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[j]fluoranthene	0.0700	0.0466	0.0933	0.0700	NU	mg/Kg-dry	10	05/24/16 01:12 PM
Benzo[k]fluoranthene	0.0600	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Chrysene	0.0499	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Dibenz[a,h]anthracene	0.0683	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Fluoranthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Fluorene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Indeno[1,2,3-cd]pyrene	0.0712	0.0466	0.0933	0.0700	J	mg/Kg-dry	10	05/24/16 01:12 PM
Phenanthrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
Pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/24/16 01:12 PM
IS: Acenaphthene-d10	72.8	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Chrysene-d12	77.1	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Perylene-d12	75.8	0	50-200	0		%REC	10	05/24/16 01:12 PM
IS: Phenanthrene-d10	71.1	0	50-200	0		%REC	10	05/24/16 01:12 PM
Surr: 2-Fluorobiphenyl	69.7	0	46-115	0		%REC	10	05/24/16 01:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-17
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	67.3	0	58-133	0		%REC	10	05/24/16 01:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-18
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.15	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 05:41 PM
IS: Bismuth	80.4	0	30-120	0		%REC	5	05/26/16 05:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[a]anthracene	0.0558	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[a]pyrene	0.0766	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[b]fluoranthene	0.0724	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[g,h,i]perylene	0.0768	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/24/16 01:51 PM
Benzo[k]fluoranthene	0.0648	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Chrysene	0.0649	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Dibenz[a,h]anthracene	0.0630	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Indeno[1,2,3-cd]pyrene	0.0724	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/24/16 01:51 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/24/16 01:51 PM
IS: Acenaphthene-d10	72.6	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Chrysene-d12	76.0	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Perylene-d12	74.9	0	50-200	0		%REC	10	05/24/16 01:51 PM
IS: Phenanthrene-d10	70.4	0	50-200	0		%REC	10	05/24/16 01:51 PM
Surr: 2-Fluorobiphenyl	73.4	0	46-115	0		%REC	10	05/24/16 01:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-18
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	74.4	0	58-133	0		%REC	10	05/24/16 01:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-19
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.30	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 05:47 PM
IS: Bismuth	74.2	0	30-120	0		%REC	5	05/26/16 05:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[a]pyrene	0.0653	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[b]fluoranthene	0.0593	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[g,h,i]perylene	0.0697	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/24/16 02:31 PM
Benzo[k]fluoranthene	0.0597	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Chrysene	0.0501	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Dibenz[a,h]anthracene	0.0669	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Indeno[1,2,3-cd]pyrene	0.0731	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 02:31 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 02:31 PM
IS: Acenaphthene-d10	69.3	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Chrysene-d12	72.5	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Perylene-d12	71.3	0	50-200	0		%REC	10	05/24/16 02:31 PM
IS: Phenanthrene-d10	67.8	0	50-200	0		%REC	10	05/24/16 02:31 PM
Surr: 2-Fluorobiphenyl	72.6	0	46-115	0		%REC	10	05/24/16 02:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-19
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	70.3	0	58-133	0		%REC	10	05/24/16 02:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-20
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:29 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	76.1	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 05:53 PM
IS: Bismuth	78.5	0	30-120	0		%REC	5	05/26/16 05:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[a]anthracene	0.177	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[a]pyrene	0.265	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[b]fluoranthene	0.257	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[e]pyrene	0.164	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[g,h,i]perylene	0.216	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[j]fluoranthene	0.104	0.0497	0.0994	0.0746	N	mg/Kg-dry	10	05/24/16 03:11 PM
Benzo[k]fluoranthene	0.158	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Chrysene	0.227	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Dibenz[a,h]anthracene	0.0970	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:11 PM
Fluoranthene	0.210	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:11 PM
Indeno[1,2,3-cd]pyrene	0.193	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
Phenanthrene	0.0648	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:11 PM
Pyrene	0.197	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/24/16 03:11 PM
IS: Acenaphthene-d10	69.9	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Chrysene-d12	71.7	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Perylene-d12	70.8	0	50-200	0		%REC	10	05/24/16 03:11 PM
IS: Phenanthrene-d10	66.6	0	50-200	0		%REC	10	05/24/16 03:11 PM
Surr: 2-Fluorobiphenyl	78.2	0	46-115	0		%REC	10	05/24/16 03:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-20
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:29 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	74.6	0	58-133	0		%REC	10	05/24/16 03:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-21
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	14.5	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 05:59 PM
IS: Bismuth	72.8	0	30-120	0		%REC	5	05/26/16 05:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[a]anthracene	0.0580	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[a]pyrene	0.0820	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[b]fluoranthene	0.0761	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[g,h,i]perylene	0.0812	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/24/16 03:50 PM
Benzo[k]fluoranthene	0.0697	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Chrysene	0.0700	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Dibenz[a,h]anthracene	0.0697	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Indeno[1,2,3-cd]pyrene	0.0825	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/24/16 03:50 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 03:50 PM
IS: Acenaphthene-d10	70.8	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Chrysene-d12	74.6	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Perylene-d12	74.0	0	50-200	0		%REC	10	05/24/16 03:50 PM
IS: Phenanthrene-d10	69.6	0	50-200	0		%REC	10	05/24/16 03:50 PM
Surr: 2-Fluorobiphenyl	78.6	0	46-115	0		%REC	10	05/24/16 03:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-21
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	74.8	0	58-133	0		%REC	10	05/24/16 03:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-22
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:31 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.51	0.0980	0.294	0.147		mg/Kg-dry	5	05/26/16 06:53 PM
IS: Bismuth	81.2	0	30-120	0		%REC	5	05/26/16 06:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[a]pyrene	0.0675	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[b]fluoranthene	0.0632	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[g,h,i]perylene	0.0754	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/24/16 04:30 PM
Benzo[k]fluoranthene	0.0616	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Chrysene	0.0537	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Dibenz[a,h]anthracene	0.0722	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Indeno[1,2,3-cd]pyrene	0.0750	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/24/16 04:30 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/24/16 04:30 PM
IS: Acenaphthene-d10	68.2	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Chrysene-d12	69.4	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Perylene-d12	68.3	0	50-200	0		%REC	10	05/24/16 04:30 PM
IS: Phenanthrene-d10	65.3	0	50-200	0		%REC	10	05/24/16 04:30 PM
Surr: 2-Fluorobiphenyl	71.2	0	46-115	0		%REC	10	05/24/16 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-22
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:31 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	67.9	0	58-133	0		%REC	10	05/24/16 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-23
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:32 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.75	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 06:59 PM
IS: Bismuth	76.3	0	30-120	0		%REC	5	05/26/16 06:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Acenaphthylene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Anthracene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[a]anthracene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[a]pyrene	0.0710	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[b]fluoranthene	0.0652	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[e]pyrene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[g,h,i]perylene	0.0805	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[j]fluoranthene	0.0726	0.0484	0.0968	0.0726	NU	mg/Kg-dry	10	05/24/16 05:10 PM
Benzo[k]fluoranthene	0.0637	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Chrysene	0.0520	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Dibenz[a,h]anthracene	0.0750	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Fluoranthene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Fluorene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Indeno[1,2,3-cd]pyrene	0.0797	0.0484	0.0968	0.0726	J	mg/Kg-dry	10	05/24/16 05:10 PM
Phenanthrene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
Pyrene	0.0726	0.0484	0.0968	0.0726	U	mg/Kg-dry	10	05/24/16 05:10 PM
IS: Acenaphthene-d10	72.0	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Chrysene-d12	74.9	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Perylene-d12	74.8	0	50-200	0		%REC	10	05/24/16 05:10 PM
IS: Phenanthrene-d10	69.1	0	50-200	0		%REC	10	05/24/16 05:10 PM
Surr: 2-Fluorobiphenyl	77.2	0	46-115	0		%REC	10	05/24/16 05:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-23
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:32 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	76.4	0	58-133	0		%REC	10	05/24/16 05:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-24
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:34 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.2	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 07:05 PM
IS: Bismuth	82.3	0	30-120	0		%REC	5	05/26/16 07:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Acenaphthylene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Anthracene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[a]anthracene	0.213	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[a]pyrene	0.258	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[b]fluoranthene	0.250	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[e]pyrene	0.157	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[g,h,i]perylene	0.214	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[j]fluoranthene	0.101	0.0461	0.0923	0.0692	N	mg/Kg-dry	10	05/24/16 05:50 PM
Benzo[k]fluoranthene	0.162	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Chrysene	0.258	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Dibenz[a,h]anthracene	0.107	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Fluoranthene	0.340	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Fluorene	0.0692	0.0461	0.0923	0.0692	U	mg/Kg-dry	10	05/24/16 05:50 PM
Indeno[1,2,3-cd]pyrene	0.194	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Phenanthrene	0.144	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
Pyrene	0.290	0.0461	0.0923	0.0692		mg/Kg-dry	10	05/24/16 05:50 PM
IS: Acenaphthene-d10	72.7	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Chrysene-d12	74.9	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Perylene-d12	75.1	0	50-200	0		%REC	10	05/24/16 05:50 PM
IS: Phenanthrene-d10	70.5	0	50-200	0		%REC	10	05/24/16 05:50 PM
Surr: 2-Fluorobiphenyl	78.5	0	46-115	0		%REC	10	05/24/16 05:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-24
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:34 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	73.9	0	58-133	0		%REC	10	05/24/16 05:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-25
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:35 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	12.6	0.0980	0.294	0.147		mg/Kg-dry	5	05/26/16 07:11 PM
IS: Bismuth	81.3	0	30-120	0		%REC	5	05/26/16 07:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]anthracene	0.0542	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[a]pyrene	0.0774	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[b]fluoranthene	0.0688	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[e]pyrene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[g,h,i]perylene	0.0805	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[j]fluoranthene	0.0749	0.0500	0.0999	0.0749	NU	mg/Kg-dry	10	05/24/16 06:30 PM
Benzo[k]fluoranthene	0.0662	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Chrysene	0.0613	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Dibenz[a,h]anthracene	0.0715	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Fluoranthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Indeno[1,2,3-cd]pyrene	0.0813	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/24/16 06:30 PM
Phenanthrene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
Pyrene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/24/16 06:30 PM
IS: Acenaphthene-d10	65.6	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Chrysene-d12	66.7	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Perylene-d12	66.8	0	50-200	0		%REC	10	05/24/16 06:30 PM
IS: Phenanthrene-d10	63.9	0	50-200	0		%REC	10	05/24/16 06:30 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-25
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:35 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.7	0	58-133	0		%REC	10	05/24/16 06:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-26
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:36 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.90	0.0909	0.273	0.136		mg/Kg-dry	5	05/26/16 07:17 PM
IS: Bismuth	77.1	0	30-120	0		%REC	5	05/26/16 07:17 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Acenaphthylene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Anthracene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[a]anthracene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[a]pyrene	0.0553	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[b]fluoranthene	0.0527	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[e]pyrene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[g,h,i]perylene	0.0568	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[j]fluoranthene	0.0707	0.0471	0.0943	0.0707	NU	mg/Kg-dry	10	05/24/16 07:10 PM
Benzo[k]fluoranthene	0.0511	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Chrysene	0.0491	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Dibenz[a,h]anthracene	0.0521	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Fluoranthene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Fluorene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Indeno[1,2,3-cd]pyrene	0.0582	0.0471	0.0943	0.0707	J	mg/Kg-dry	10	05/24/16 07:10 PM
Phenanthrene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
Pyrene	0.0707	0.0471	0.0943	0.0707	U	mg/Kg-dry	10	05/24/16 07:10 PM
IS: Acenaphthene-d10	69.2	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Chrysene-d12	72.3	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Perylene-d12	72.0	0	50-200	0		%REC	10	05/24/16 07:10 PM
IS: Phenanthrene-d10	68.6	0	50-200	0		%REC	10	05/24/16 07:10 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/24/16 07:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-26
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:36 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	72.5	0	58-133	0		%REC	10	05/24/16 07:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-27
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:37 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.53	0.0885	0.265	0.133		mg/Kg-dry	5	05/26/16 07:23 PM
IS: Bismuth	82.5	0	30-120	0		%REC	5	05/26/16 07:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Acenaphthylene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Anthracene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[a]anthracene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[a]pyrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[b]fluoranthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[e]pyrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[g,h,i]perylene	0.0474	0.0459	0.0917	0.0688	J	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[j]fluoranthene	0.0688	0.0459	0.0917	0.0688	NU	mg/Kg-dry	10	05/24/16 07:50 PM
Benzo[k]fluoranthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Chrysene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Dibenz[a,h]anthracene	0.0499	0.0459	0.0917	0.0688	J	mg/Kg-dry	10	05/24/16 07:50 PM
Fluoranthene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Fluorene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Indeno[1,2,3-cd]pyrene	0.0492	0.0459	0.0917	0.0688	J	mg/Kg-dry	10	05/24/16 07:50 PM
Phenanthrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
Pyrene	0.0688	0.0459	0.0917	0.0688	U	mg/Kg-dry	10	05/24/16 07:50 PM
IS: Acenaphthene-d10	75.8	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Chrysene-d12	79.1	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Perylene-d12	78.6	0	50-200	0		%REC	10	05/24/16 07:50 PM
IS: Phenanthrene-d10	74.1	0	50-200	0		%REC	10	05/24/16 07:50 PM
Surr: 2-Fluorobiphenyl	71.8	0	46-115	0		%REC	10	05/24/16 07:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-27
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 12:37 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	68.7	0	58-133	0		%REC	10	05/24/16 07:50 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-28
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:07 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	35.8	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 07:29 PM
IS: Bismuth	80.7	0	30-120	0		%REC	5	05/26/16 07:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0568	0.0490	0.0979	0.0735	J	mg/Kg-dry	10	05/25/16 12:27 AM
Acenaphthylene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 12:27 AM
Anthracene	0.210	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[a]anthracene	1.63	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[a]pyrene	2.09	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[b]fluoranthene	1.97	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[e]pyrene	1.57	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[g,h,i]perylene	1.49	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[j]fluoranthene	1.03	0.0490	0.0979	0.0735	N	mg/Kg-dry	10	05/25/16 12:27 AM
Benzo[k]fluoranthene	1.07	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Chrysene	1.96	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Dibenz[a,h]anthracene	0.374	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Fluoranthene	2.81	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Fluorene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 12:27 AM
Indeno[1,2,3-cd]pyrene	1.28	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Phenanthrene	0.990	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
Pyrene	2.45	0.0490	0.0979	0.0735		mg/Kg-dry	10	05/25/16 12:27 AM
IS: Acenaphthene-d10	74.5	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Chrysene-d12	75.9	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Perylene-d12	75.3	0	50-200	0		%REC	10	05/25/16 12:27 AM
IS: Phenanthrene-d10	71.4	0	50-200	0		%REC	10	05/25/16 12:27 AM
Surr: 2-Fluorobiphenyl	70.6	0	46-115	0		%REC	10	05/25/16 12:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605135-28
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:07 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	66.4	0	58-133	0		%REC	10	05/25/16 12:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-29
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:08 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.01	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 07:35 PM
IS: Bismuth	83.6	0	30-120	0		%REC	5	05/26/16 07:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Acenaphthylene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Anthracene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[a]anthracene	0.137	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[a]pyrene	0.170	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[b]fluoranthene	0.162	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[e]pyrene	0.0977	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[g,h,i]perylene	0.139	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[j]fluoranthene	0.0624	0.0491	0.0981	0.0736	JN	mg/Kg-dry	10	05/25/16 01:07 AM
Benzo[k]fluoranthene	0.107	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Chrysene	0.162	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Dibenz[a,h]anthracene	0.0711	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/25/16 01:07 AM
Fluoranthene	0.199	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Fluorene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/25/16 01:07 AM
Indeno[1,2,3-cd]pyrene	0.129	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
Phenanthrene	0.0743	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/25/16 01:07 AM
Pyrene	0.174	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/25/16 01:07 AM
IS: Acenaphthene-d10	73.9	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Chrysene-d12	77.4	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Perylene-d12	77.5	0	50-200	0		%REC	10	05/25/16 01:07 AM
IS: Phenanthrene-d10	71.2	0	50-200	0		%REC	10	05/25/16 01:07 AM
Surr: 2-Fluorobiphenyl	70.9	0	46-115	0		%REC	10	05/25/16 01:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605135-29
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:08 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	66.4	0	58-133	0		%REC	10	05/25/16 01:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-30
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:11 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.89	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 07:41 PM
IS: Bismuth	85.7	0	30-120	0		%REC	5	05/26/16 07:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[a]anthracene	0.0981	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[a]pyrene	0.115	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[b]fluoranthene	0.110	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[e]pyrene	0.0543	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[g,h,i]perylene	0.0994	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[j]fluoranthene	0.0735	0.0490	0.0980	0.0735	NU	mg/Kg-dry	10	05/25/16 01:46 AM
Benzo[k]fluoranthene	0.0838	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Chrysene	0.115	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Dibenz[a,h]anthracene	0.0648	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Fluoranthene	0.127	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 01:46 AM
Indeno[1,2,3-cd]pyrene	0.0955	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Phenanthrene	0.0596	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/25/16 01:46 AM
Pyrene	0.112	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 01:46 AM
IS: Acenaphthene-d10	71.3	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Chrysene-d12	75.4	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Perylene-d12	74.9	0	50-200	0		%REC	10	05/25/16 01:46 AM
IS: Phenanthrene-d10	69.7	0	50-200	0		%REC	10	05/25/16 01:46 AM
Surr: 2-Fluorobiphenyl	75.7	0	46-115	0		%REC	10	05/25/16 01:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605135-30
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:11 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.2	0	58-133	0		%REC	10	05/25/16 01:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-31
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:12 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.04	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 07:47 PM
IS: Bismuth	78.8	0	30-120	0		%REC	5	05/26/16 07:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[a]pyrene	0.0551	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[b]fluoranthene	0.0508	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[g,h,i]perylene	0.0554	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/25/16 02:26 AM
Benzo[k]fluoranthene	0.0524	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Dibenz[a,h]anthracene	0.0552	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Indeno[1,2,3-cd]pyrene	0.0580	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/25/16 02:26 AM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/25/16 02:26 AM
IS: Acenaphthene-d10	72.5	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Chrysene-d12	76.5	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Perylene-d12	76.3	0	50-200	0		%REC	10	05/25/16 02:26 AM
IS: Phenanthrene-d10	71.7	0	50-200	0		%REC	10	05/25/16 02:26 AM
Surr: 2-Fluorobiphenyl	76.1	0	46-115	0		%REC	10	05/25/16 02:26 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605135-31
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:12 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/25/16 02:26 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-32
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:13 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.74	0.0885	0.265	0.133		mg/Kg-dry	5	05/26/16 03:46 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 03:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Acenaphthylene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Anthracene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[a]anthracene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[a]pyrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[b]fluoranthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[e]pyrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[g,h,i]perylene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[j]fluoranthene	0.0735	0.0490	0.0979	0.0735	NU	mg/Kg-dry	10	05/25/16 03:05 AM
Benzo[k]fluoranthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Chrysene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Dibenz[a,h]anthracene	0.0530	0.0490	0.0979	0.0735	J	mg/Kg-dry	10	05/25/16 03:05 AM
Fluoranthene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Fluorene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Indeno[1,2,3-cd]pyrene	0.0527	0.0490	0.0979	0.0735	J	mg/Kg-dry	10	05/25/16 03:05 AM
Phenanthrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
Pyrene	0.0735	0.0490	0.0979	0.0735	U	mg/Kg-dry	10	05/25/16 03:05 AM
IS: Acenaphthene-d10	71.6	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Chrysene-d12	75.6	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Perylene-d12	75.8	0	50-200	0		%REC	10	05/25/16 03:05 AM
IS: Phenanthrene-d10	70.0	0	50-200	0		%REC	10	05/25/16 03:05 AM
Surr: 2-Fluorobiphenyl	75.7	0	46-115	0		%REC	10	05/25/16 03:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605135-32
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:13 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	71.4	0	58-133	0		%REC	10	05/25/16 03:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-33
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	33.0	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 03:48 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 03:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.111	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Acenaphthylene	0.0714	0.0476	0.0951	0.0714	U	mg/Kg-dry	10	05/25/16 03:45 AM
Anthracene	0.316	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[a]anthracene	2.94	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[a]pyrene	3.78	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[b]fluoranthene	3.57	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[e]pyrene	2.86	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[g,h,i]perylene	2.69	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[j]fluoranthene	1.84	0.0476	0.0951	0.0714	N	mg/Kg-dry	10	05/25/16 03:45 AM
Benzo[k]fluoranthene	1.83	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Chrysene	3.53	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Dibenz[a,h]anthracene	0.646	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Fluoranthene	5.00	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Fluorene	0.0714	0.0476	0.0951	0.0714	U	mg/Kg-dry	10	05/25/16 03:45 AM
Indeno[1,2,3-cd]pyrene	2.33	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Phenanthrene	1.62	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
Pyrene	4.41	0.0476	0.0951	0.0714		mg/Kg-dry	10	05/25/16 03:45 AM
IS: Acenaphthene-d10	78.0	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Chrysene-d12	77.9	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Perylene-d12	78.2	0	50-200	0		%REC	10	05/25/16 03:45 AM
IS: Phenanthrene-d10	73.0	0	50-200	0		%REC	10	05/25/16 03:45 AM
Surr: 2-Fluorobiphenyl	72.5	0	46-115	0		%REC	10	05/25/16 03:45 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605135-33
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	67.0	0	58-133	0		%REC	10	05/25/16 03:45 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-34
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:16 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.4	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 03:50 PM
IS: Bismuth	103	0	30-120	0		%REC	5	05/26/16 03:50 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 04:25 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 04:25 AM
Anthracene	0.129	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[a]anthracene	1.14	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[a]pyrene	1.57	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[b]fluoranthene	1.49	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[e]pyrene	1.19	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[g,h,i]perylene	1.20	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[j]fluoranthene	0.740	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/25/16 04:25 AM
Benzo[k]fluoranthene	0.791	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Chrysene	1.42	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Dibenz[a,h]anthracene	0.323	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Fluoranthene	1.80	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/25/16 04:25 AM
Indeno[1,2,3-cd]pyrene	1.04	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Phenanthrene	0.610	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
Pyrene	1.60	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/25/16 04:25 AM
IS: Acenaphthene-d10	71.8	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Chrysene-d12	73.4	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Perylene-d12	73.6	0	50-200	0		%REC	10	05/25/16 04:25 AM
IS: Phenanthrene-d10	68.9	0	50-200	0		%REC	10	05/25/16 04:25 AM
Surr: 2-Fluorobiphenyl	76.6	0	46-115	0		%REC	10	05/25/16 04:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605135-34
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:16 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	70.8	0	58-133	0		%REC	10	05/25/16 04:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-35
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:20 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.41	0.0901	0.270	0.135		mg/Kg-dry	5	05/26/16 03:52 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 03:52 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Acenaphthene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 05:05 AM
Acenaphthylene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 05:05 AM
Anthracene	0.112	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[a]anthracene	0.532	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[a]pyrene	0.561	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[b]fluoranthene	0.522	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[e]pyrene	0.376	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[g,h,i]perylene	0.374	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[j]fluoranthene	0.263	0.0464	0.0928	0.0696	N	mg/Kg-dry	10	05/25/16 05:05 AM
Benzo[k]fluoranthene	0.308	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Chrysene	0.594	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Dibenz[a,h]anthracene	0.137	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Fluoranthene	1.09	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Fluorene	0.0696	0.0464	0.0928	0.0696	U	mg/Kg-dry	10	05/25/16 05:05 AM
Indeno[1,2,3-cd]pyrene	0.353	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Phenanthrene	0.462	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
Pyrene	0.895	0.0464	0.0928	0.0696		mg/Kg-dry	10	05/25/16 05:05 AM
IS: Acenaphthene-d10	70.5	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Chrysene-d12	74.7	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Perylene-d12	74.5	0	50-200	0		%REC	10	05/25/16 05:05 AM
IS: Phenanthrene-d10	69.5	0	50-200	0		%REC	10	05/25/16 05:05 AM
Surr: 2-Fluorobiphenyl	70.7	0	46-115	0		%REC	10	05/25/16 05:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605135-35
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:20 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **AR**
Surr: 4-Terphenyl-d14	66.4	0	58-133	0		%REC	10	05/25/16 05:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-36
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:21 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.37	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 03:42 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 03:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[a]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/25/16 11:33 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Chrysene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
Pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/25/16 11:33 AM
IS: Acenaphthene-d10	69.3	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Chrysene-d12	73.5	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Perylene-d12	73.8	0	50-200	0		%REC	10	05/25/16 11:33 AM
IS: Phenanthrene-d10	69.0	0	50-200	0		%REC	10	05/25/16 11:33 AM
Surr: 2-Fluorobiphenyl	79.0	0	46-115	0		%REC	10	05/25/16 11:33 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605135-36
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:21 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.8	0	58-133	0		%REC	10	05/25/16 11:33 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-37
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:22 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.63	0.0990	0.297	0.149		mg/Kg-dry	5	05/26/16 03:54 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 03:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/25/16 12:13 PM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 12:13 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Chrysene-d12	73.7	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Perylene-d12	73.4	0	50-200	0		%REC	10	05/25/16 12:13 PM
IS: Phenanthrene-d10	68.9	0	50-200	0		%REC	10	05/25/16 12:13 PM
Surr: 2-Fluorobiphenyl	76.9	0	46-115	0		%REC	10	05/25/16 12:13 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605135-37
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:22 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.2	0	58-133	0		%REC	10	05/25/16 12:13 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-38
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	39.3	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 03:56 PM
IS: Bismuth	103	0	30-120	0		%REC	5	05/26/16 03:56 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0708	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/25/16 12:53 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 12:53 PM
Anthracene	0.309	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[a]anthracene	2.74	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[a]pyrene	3.79	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[b]fluoranthene	3.61	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[e]pyrene	2.90	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[g,h,i]perylene	2.67	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[j]fluoranthene	1.86	0.0500	0.0999	0.0749	N	mg/Kg-dry	10	05/25/16 12:53 PM
Benzo[k]fluoranthene	1.83	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Chrysene	3.38	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Dibenz[a,h]anthracene	0.622	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Fluoranthene	4.32	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 12:53 PM
Indeno[1,2,3-cd]pyrene	2.32	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Phenanthrene	1.48	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
Pyrene	3.80	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 12:53 PM
IS: Acenaphthene-d10	67.7	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Chrysene-d12	70.6	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Perylene-d12	70.1	0	50-200	0		%REC	10	05/25/16 12:53 PM
IS: Phenanthrene-d10	66.7	0	50-200	0		%REC	10	05/25/16 12:53 PM
Surr: 2-Fluorobiphenyl	80.5	0	46-115	0		%REC	10	05/25/16 12:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605135-38
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:24 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/25/16 12:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-39
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.33	0.0870	0.261	0.130		mg/Kg-dry	5	05/26/16 03:58 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 03:58 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[a]anthracene	0.174	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[a]pyrene	0.264	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[b]fluoranthene	0.249	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[e]pyrene	0.214	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[g,h,i]perylene	0.201	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[j]fluoranthene	0.131	0.0500	0.0999	0.0749	N	mg/Kg-dry	10	05/25/16 01:32 PM
Benzo[k]fluoranthene	0.125	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Chrysene	0.224	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Dibenz[a,h]anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Fluoranthene	0.245	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/25/16 01:32 PM
Indeno[1,2,3-cd]pyrene	0.173	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
Phenanthrene	0.0722	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/25/16 01:32 PM
Pyrene	0.230	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/25/16 01:32 PM
IS: Acenaphthene-d10	71.4	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Chrysene-d12	76.3	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Perylene-d12	76.0	0	50-200	0		%REC	10	05/25/16 01:32 PM
IS: Phenanthrene-d10	70.8	0	50-200	0		%REC	10	05/25/16 01:32 PM
Surr: 2-Fluorobiphenyl	75.4	0	46-115	0		%REC	10	05/25/16 01:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605135-39
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:25 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.7	0	58-133	0		%REC	10	05/25/16 01:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-40
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.31	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 04:00 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 02:12 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 02:12 PM
Anthracene	0.0636	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[a]anthracene	0.465	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[a]pyrene	0.637	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[b]fluoranthene	0.598	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[e]pyrene	0.485	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[g,h,i]perylene	0.427	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[j]fluoranthene	0.312	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/25/16 02:12 PM
Benzo[k]fluoranthene	0.293	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Chrysene	0.569	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Dibenz[a,h]anthracene	0.110	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Fluoranthene	0.770	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 02:12 PM
Indeno[1,2,3-cd]pyrene	0.388	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Phenanthrene	0.304	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
Pyrene	0.665	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 02:12 PM
IS: Acenaphthene-d10	70.8	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Chrysene-d12	75.7	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Perylene-d12	75.0	0	50-200	0		%REC	10	05/25/16 02:12 PM
IS: Phenanthrene-d10	70.9	0	50-200	0		%REC	10	05/25/16 02:12 PM
Surr: 2-Fluorobiphenyl	78.2	0	46-115	0		%REC	10	05/25/16 02:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605135-40
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:26 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.4	0	58-133	0		%REC	10	05/25/16 02:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-41
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.60	0.0990	0.297	0.149		mg/Kg-dry	5	05/26/16 04:02 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:02 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[a]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[b]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[g,h,i]perylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/25/16 02:52 PM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Chrysene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 02:52 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Chrysene-d12	73.0	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Perylene-d12	72.7	0	50-200	0		%REC	10	05/25/16 02:52 PM
IS: Phenanthrene-d10	68.5	0	50-200	0		%REC	10	05/25/16 02:52 PM
Surr: 2-Fluorobiphenyl	77.0	0	46-115	0		%REC	10	05/25/16 02:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605135-41
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:27 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.9	0	58-133	0		%REC	10	05/25/16 02:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-42
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:28 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.21	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 04:30 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 04:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/25/16 03:32 PM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/25/16 03:32 PM
IS: Acenaphthene-d10	70.2	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Chrysene-d12	73.6	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Perylene-d12	73.9	0	50-200	0		%REC	10	05/25/16 03:32 PM
IS: Phenanthrene-d10	70.8	0	50-200	0		%REC	10	05/25/16 03:32 PM
Surr: 2-Fluorobiphenyl	75.2	0	46-115	0		%REC	10	05/25/16 03:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU053(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605135-42
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:28 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.3	0	58-133	0		%REC	10	05/25/16 03:32 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-A
Project:	Laredo SGR	**Lab ID:**	1605135-43
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 01:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	24.6	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 04:32 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 04:32 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[a]anthracene	0.153	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[a]pyrene	0.201	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[b]fluoranthene	0.199	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[e]pyrene	0.162	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[g,h,i]perylene	0.154	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[j]fluoranthene	0.0706	0.0499	0.0997	0.0748	JN	mg/Kg-dry	10	05/25/16 03:10 PM
Benzo[k]fluoranthene	0.0796	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/25/16 03:10 PM
Chrysene	0.204	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Fluoranthene	0.307	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 03:10 PM
Indeno[1,2,3-cd]pyrene	0.113	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Phenanthrene	0.116	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
Pyrene	0.273	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 03:10 PM
IS: Acenaphthene-d10	95.6	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Chrysene-d12	77.6	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Naphthalene-d8	91.6	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Perylene-d12	81.1	0	50-200	0		%REC	10	05/25/16 03:10 PM
IS: Phenanthrene-d10	69.7	0	50-200	0		%REC	10	05/25/16 03:10 PM
Surr: 2-Fluorobiphenyl	96.2	0	46-115	0		%REC	10	05/25/16 03:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-A
Project:	Laredo SGR	**Lab ID:**	1605135-43
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 01:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.5	0	58-133	0		%REC	10	05/25/16 03:10 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-B
Project:	Laredo SGR	**Lab ID:**	1605135-44
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 02:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	27.2	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 04:34 PM
IS: Bismuth	102	0	30-120	0		%REC	5	05/26/16 04:34 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[a]anthracene	0.159	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[a]pyrene	0.208	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[b]fluoranthene	0.206	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[e]pyrene	0.167	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[g,h,i]perylene	0.161	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[j]fluoranthene	0.0785	0.0497	0.0994	0.0746	JN	mg/Kg-dry	10	05/25/16 03:47 PM
Benzo[k]fluoranthene	0.0862	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/25/16 03:47 PM
Chrysene	0.214	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Fluoranthene	0.326	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/25/16 03:47 PM
Indeno[1,2,3-cd]pyrene	0.119	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Phenanthrene	0.125	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
Pyrene	0.287	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/25/16 03:47 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Chrysene-d12	86.2	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Perylene-d12	91.2	0	50-200	0		%REC	10	05/25/16 03:47 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/25/16 03:47 PM
Surr: 2-Fluorobiphenyl	90.0	0	46-115	0		%REC	10	05/25/16 03:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-B
Project:	Laredo SGR	**Lab ID:**	1605135-44
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 02:30 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/25/16 03:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-C
Project:	Laredo SGR	**Lab ID:**	1605135-45
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 03:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	28.8	0.0935	0.280	0.140		mg/Kg-dry	5	05/26/16 04:36 PM
IS: Bismuth	104	0	30-120	0		%REC	5	05/26/16 04:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[a]anthracene	0.175	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[a]pyrene	0.220	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[b]fluoranthene	0.218	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[e]pyrene	0.177	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[g,h,i]perylene	0.172	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[j]fluoranthene	0.0855	0.0499	0.0997	0.0748	JN	mg/Kg-dry	10	05/25/16 04:24 PM
Benzo[k]fluoranthene	0.0921	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/25/16 04:24 PM
Chrysene	0.233	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Fluoranthene	0.368	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/25/16 04:24 PM
Indeno[1,2,3-cd]pyrene	0.127	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Phenanthrene	0.149	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
Pyrene	0.321	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/25/16 04:24 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Chrysene-d12	83.5	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Naphthalene-d8	98.8	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Perylene-d12	87.5	0	50-200	0		%REC	10	05/25/16 04:24 PM
IS: Phenanthrene-d10	76.1	0	50-200	0		%REC	10	05/25/16 04:24 PM
Surr: 2-Fluorobiphenyl	90.8	0	46-115	0		%REC	10	05/25/16 04:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU063-C
Project:	Laredo SGR	**Lab ID:**	1605135-45
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 03:15 PM
Lab Order:	1605135	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.4	0	58-133	0		%REC	10	05/25/16 04:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB17(20160511)
Project:	Laredo SGR	**Lab ID:**	1605135-46
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:00 PM
Lab Order:	1605135	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:20 PM
IS: Bismuth	99.2	0	30-120	0		%REC	1	05/20/16 02:20 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Acenaphthylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[a]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[a]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[b]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[e]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[g,h,i]perylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Benzo[j]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	NU	mg/L	1	05/19/16 12:31 AM
Benzo[k]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Chrysene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Dibenz[a,h]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Fluorene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Indeno[1,2,3-cd]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Phenanthrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
Pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 12:31 AM
IS: Acenaphthene-d10	89.8	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Chrysene-d12	94.5	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Naphthalene-d8	91.3	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Perylene-d12	94.6	0	50-200	0		%REC	1	05/19/16 12:31 AM
IS: Phenanthrene-d10	90.3	0	50-200	0		%REC	1	05/19/16 12:31 AM
Surr: 2-Fluorobiphenyl	62.9	0	53-106	0		%REC	1	05/19/16 12:31 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB17(20160511)
Project:	Laredo SGR	**Lab ID:**	1605135-46
Project No:	04285081.0000.00044	**Collection Date:**	05/11/16 04:00 PM
Lab Order:	1605135	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.6	0	58-132	0		%REC	1	05/19/16 12:31 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160518B

Sample ID	**DCS1-74845**	Batch ID:	**74845**	TestNo:	**SW6020A**	Units:	**mg/Kg**
SampType:	**DCS**	Run ID:	**ICP-MS3_160518B**	Analysis Date:	**5/18/2016 2:52:00 PM**	Prep Date:	**4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.289	0.300	0.2500	0	116	80	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

The QC data in batch 75258 applies to the following samples: 1605135-01A, 1605135-02A, 1605135-03A, 1605135-04A, 1605135-05A, 1605135-06A, 1605135-07A, 1605135-08A, 1605135-09A, 1605135-10A, 1605135-11A

Sample ID **MB-75258** Batch ID: **75258** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 1:17:00 PM** Prep Date: **5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		103	30	120			

Sample ID **LCS-75258** Batch ID: **75258** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 1:23:00 PM** Prep Date: **5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.6	0.300	50.00	0	99.3	84	118			
IS: Bismuth	50.0		200.0		96.9	30	120			

Sample ID **LCSD-75258** Batch ID: **75258** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 1:29:00 PM** Prep Date: **5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.6	0.300	50.00	0	101	84	118	1.85	20	
IS: Bismuth	50.0		200.0		96.2	30	120	0	0	

Sample ID **1605121-43A SD** Batch ID: **75258** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 1:48:00 PM** Prep Date: **5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	7.84	1.46	0	7.964				1.50	10	
IS: Bismuth	243		194.2		87.2	30	120	0	0	

Sample ID **1605121-43A PDS** Batch ID: **75258** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 2:47:00 PM** Prep Date: **5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	55.1	0.291	48.54	7.964	97.0	80	120			
IS: Bismuth	48.5		970.9		72.6	30	120			

Sample ID **1605121-43A MS** Batch ID: **75258** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 2:53:00 PM** Prep Date: **5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	59.0	0.294	49.02	7.964	104	84	118			
IS: Bismuth	49.0		196.1		79.6	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS3_160526A**

Sample ID	**1605121-43A MSD**	Batch ID:	**75258**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 2:59:00 PM**	Prep Date:	**5/20/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	55.0	0.283	47.17	7.964	99.6	84	118	7.09	20	
IS: Bismuth	47.2		188.7		80.6	30	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

The QC data in batch 75286 applies to the following samples: 1605135-12A, 1605135-13A, 1605135-14A, 1605135-15A, 1605135-16A, 1605135-17A, 1605135-18A, 1605135-19A, 1605135-20A, 1605135-21A, 1605135-22A, 1605135-23A, 1605135-24A, 1605135-25A, 1605135-26A, 1605135-27A, 1605135-28A, 1605135-29A, 1605135-30A, 1605135-31A

Sample ID **MB-75286** Batch ID: **75286** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 4:35:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		96.7	30	120			

Sample ID **LCS-75286** Batch ID: **75286** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 4:41:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.2	0.300	50.00	0	96.4	84	118			
IS: Bismuth	50.0		200.0		87.9	30	120			

Sample ID **LCSD-75286** Batch ID: **75286** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 4:48:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.6	0.300	50.00	0	97.1	84	118	0.672	20	
IS: Bismuth	50.0		200.0		85.0	30	120	0	0	

Sample ID **1605135-14A SD** Batch ID: **75286** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 5:06:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	3.27	1.30	0	3.378				3.34	10	
IS: Bismuth	217		173.9		86.0	30	120	0	0	

Sample ID **1605135-14A PDS** Batch ID: **75286** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 6:05:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	45.2	0.261	43.48	3.378	96.2	80	120			
IS: Bismuth	43.5		869.6		82.2	30	120			

Sample ID **1605135-14A MS** Batch ID: **75286** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 6:11:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.6	0.273	45.45	3.378	99.4	84	118			
IS: Bismuth	45.5		181.8		76.4	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

Sample ID	**1605135-14A MSD**	Batch ID:	**75286**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 6:17:00 PM**	Prep Date:	**5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.4	0.273	45.45	3.378	99.0	84	118	0.422	20	
IS: Bismuth	45.5		181.8		88.8	30	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS3_160526A**

Sample ID	**ICV1-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 12:59:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0982	0.00100	0.100	0	98.2	90	110			
IS: Bismuth	0.200		0.200		97.6	30	120			

Sample ID	**ILCVL-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 1:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00101	0.00100	0.00100	0	101	80	120			
IS: Bismuth	0.200		0.200		101	30	120			

Sample ID	**CCV1-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 3:05:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.192	0.00100	0.200	0	96.2	90	110			
IS: Bismuth	0.200		0.200		91.7	30	120			

Sample ID	**LCVL1-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 3:17:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		93.8	30	120			

Sample ID	**CCV2-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 4:17:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.188	0.00100	0.200	0	93.8	90	110			
IS: Bismuth	0.200		0.200		92.5	30	120			

Sample ID	**LCVL2-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 4:29:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00105	0.00100	0.00100	0	105	80	120			
IS: Bismuth	0.200		0.200		98.5	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

Sample ID	**CCV3-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 6:29:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.191	0.00100	0.200	0	95.4	90	110			
IS: Bismuth	0.200		0.200		93.0	30	120			

Sample ID	**LCVL3-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 6:41:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		101	30	120			

Sample ID	**CCV4-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 7:53:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.191	0.00100	0.200	0	95.6	90	110			
IS: Bismuth	0.200		0.200		82.7	30	120			

Sample ID	**LCVL4-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 8:05:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		82.6	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160427C**

Sample ID	**DCS1-74736**	Batch ID:	**74736**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**DCS**	Run ID:	**ICP-MS4_160427C**	Analysis Date:	**4/27/2016 4:25:00 PM**	Prep Date:	**4/21/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000486	0.00100	0.000500	0	97.2	80	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160429A

Sample ID	**DCS1-74845**	Batch ID:	**74845**	TestNo:	**SW6020A**	Units:	**mg/Kg**
SampType:	**DCS**	Run ID:	**ICP-MS4_160429A**	Analysis Date:	**4/29/2016 12:19:00 PM**	Prep Date:	**4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.310	0.300	0.2500	0	124	70	130	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160520C**

The QC data in batch 75180 applies to the following samples: 1605135-46A

Sample ID **MB-75180** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:22:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000900	0.00100								U
IS: Bismuth	0.200		0.200		100	30	120			

Sample ID **LCS-75180** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:24:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	88	115			
IS: Bismuth	0.200		0.200		95.8	30	120			

Sample ID **LCSD-75180** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:26:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	100	88	115	1.93	20	
IS: Bismuth	0.200		0.200		94.8	30	120	0	0	

Sample ID **1605097-27A SD** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **SD** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:32:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00450	0.00500	0	0				0	10	U
IS: Bismuth	1.00		0.200		96.7	30	120	0	0	

Sample ID **1605097-27A PDS** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **PDS** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:52:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	100	80	120			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID **1605097-27A MS** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **MS** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:54:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.162	0.00100	0.200	0	80.9	88	115			S
IS: Bismuth	0.200		0.200		94.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID	**1605097-27A MSD**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:56:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.196	0.00100	0.200	0	97.9	88	115	19.1	20	
IS: Bismuth	0.200		0.200		96.4	30	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160520C**

Sample ID	**ICV-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 11:28:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.102	0.00100	0.100	0	102	90	110			
IS: Bismuth	0.200		0.200		98.5	30	120			

Sample ID	**LCVL-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 11:40:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000967	0.00100	0.00100	0	96.7	80	120			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID	**CCV2-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:06:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	99.9	90	110			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID	**LCVL2-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000963	0.00100	0.00100	0	96.3	80	120			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID	**CCV3-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:58:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.9	90	110			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID	**LCVL3-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 2:04:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000977	0.00100	0.00100	0	97.7	80	120			
IS: Bismuth	0.200		0.200		96.8	30	120			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID	**CCV4-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 2:24:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	90	110			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID	**LCVL4-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 2:41:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000974	0.00100	0.00100	0	97.4	80	120			
IS: Bismuth	0.200		0.200		95.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160526F

The QC data in batch 75287 applies to the following samples: 1605135-32A, 1605135-33A, 1605135-34A, 1605135-35A, 1605135-36A, 1605135-37A, 1605135-38A, 1605135-39A, 1605135-40A, 1605135-41A, 1605135-42A, 1605135-43A, 1605135-44A, 1605135-45A

Sample ID **MB-75287** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:34:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		108	30	120			

Sample ID **LCS-75287** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:36:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.0	0.300	50.00	0	102	84	118			
IS: Bismuth	50.0		200.0		105	30	120			

Sample ID **LCSD-75287** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:38:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.8	0.300	50.00	0	102	84	118	0.396	20	
IS: Bismuth	50.0		200.0		105	30	120	0	0	

Sample ID **1605135-36A SD** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:44:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	5.41	1.40	0	5.371				0.676	10	
IS: Bismuth	234		186.9		106	30	120	0	0	

Sample ID **1605135-36A PDS** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 4:04:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	52.2	0.280	46.73	5.371	100	80	120			
IS: Bismuth	46.7		934.6		101	30	120			

Sample ID **1605135-36A MS** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 4:18:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	55.2	0.291	48.54	5.371	103	84	118			
IS: Bismuth	48.5		194.2		99.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160526F

Sample ID	**1605135-36A MSD**	Batch ID:	**75287**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:20:00 PM**	Prep Date:	**5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.7	0.270	45.05	5.371	103	84	118	6.57	20	
IS: Bismuth	45.0		180.2		99.3	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160526F**

Sample ID	**ICV-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 11:43:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0989	0.00100	0.100	0	98.9	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**LCVL-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 11:49:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000931	0.00100	0.00100	0	93.1	80	120			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**CCV5-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 3:24:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.199	0.00100	0.200	0	99.4	90	110			
IS: Bismuth	0.200		0.200		106	30	120			

Sample ID	**LCVL5-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 3:29:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000908	0.00100	0.00100	0	90.8	80	120			
IS: Bismuth	0.200		0.200		109	30	120			

Sample ID	**CCV6-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:22:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.9	90	110			
IS: Bismuth	0.200		0.200		104	30	120			

Sample ID	**LCVL6-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:26:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000927	0.00100	0.00100	0	92.7	80	120			
IS: Bismuth	0.200		0.200		106	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160526F**

Sample ID	**CCV7-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:50:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.8	90	110			
IS: Bismuth	0.200		0.200		105	30	120			

Sample ID	**LCVL7-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:54:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000936	0.00100	0.00100	0	93.6	80	120			
IS: Bismuth	0.200		0.200		105	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160502D**

Sample ID	**DCS-74876**	Batch ID:	**74876**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**DCS**	Run ID:	**GCMS6_160502D**	Analysis Date:	**5/2/2016 1:24:00 PM**	Prep Date:	**4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00921	0.0100	0.01000	0	92.1	20	200	0	0	
Acenaphthylene	0.00964	0.0100	0.01000	0	96.4	20	200	0	0	
Anthracene	0.00923	0.0100	0.01000	0	92.3	20	200	0	0	
Benzo[a]anthracene	0.00934	0.0100	0.01000	0	93.4	20	200	0	0	
Benzo[a]pyrene	0.00897	0.0100	0.01000	0	89.7	20	200	0	0	
Benzo[b]fluoranthene	0.00923	0.0100	0.01000	0	92.3	20	200	0	0	
Benzo[e]pyrene	0.00939	0.0100	0.01000	0	93.9	20	200	0	0	
Benzo[g,h,i]perylene	0.0109	0.0100	0.01000	0	109	20	200	0	0	
Benzo[j]fluoranthene	0.00874	0.0100	0.01000	0	87.4	20	200	0	0	N
Benzo[k]fluoranthene	0.00895	0.0100	0.01000	0	89.5	20	200	0	0	
Chrysene	0.00935	0.0100	0.01000	0	93.5	20	200	0	0	
Dibenz[a,h]anthracene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Fluoranthene	0.0109	0.0100	0.01000	0	109	20	200	0	0	
Fluorene	0.00957	0.0100	0.01000	0	95.7	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Phenanthrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160524A**

The QC data in batch 75278 applies to the following samples: 1605135-16A, 1605135-17A, 1605135-18A, 1605135-19A, 1605135-20A, 1605135-21A, 1605135-22A, 1605135-23A, 1605135-24A, 1605135-25A, 1605135-26A, 1605135-27A, 1605135-28A, 1605135-29A, 1605135-30A, 1605135-31A, 1605135-32A, 1605135-33A, 1605135-34A, 1605135-35A

Sample ID **LCS-75278** Batch ID: **75278** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160524A** Analysis Date: **5/24/2016 11:13:00 AM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.702	0.0100	1.000	0	70.2	44	111			
Acenaphthylene	0.741	0.0100	1.000	0	74.1	39	116			
Anthracene	0.754	0.0100	1.000	0	75.4	50	114			
Benzo[a]anthracene	0.791	0.0100	1.000	0	79.1	54	122			
Benzo[a]pyrene	0.756	0.0100	1.000	0	75.6	50	125			
Benzo[b]fluoranthene	0.798	0.0100	1.000	0	79.8	53	128			
Benzo[e]pyrene	0.876	0.0100	1.000	0	87.6	43	140			
Benzo[g,h,i]perylene	0.702	0.0100	1.000	0	70.2	49	127			
Benzo[j]fluoranthene	0.834	0.0100	1.000	0	83.4	45	125			N
Benzo[k]fluoranthene	0.811	0.0100	1.000	0	81.1	56	123			
Chrysene	0.748	0.0100	1.000	0	74.8	57	118			
Dibenz[a,h]anthracene	0.706	0.0100	1.000	0	70.6	50	129			
Fluoranthene	0.790	0.0100	1.000	0	79.0	55	119			
Fluorene	0.740	0.0100	1.000	0	74.0	47	114			
Indeno[1,2,3-cd]pyrene	0.687	0.0100	1.000	0	68.7	49	130			
Phenanthrene	0.724	0.0100	1.000	0	72.4	49	113			
Pyrene	0.768	0.0100	1.000	0	76.8	55	117			
IS: Acenaphthene-d10	4.00		4.000		67.1	50	200			
IS: Chrysene-d12	4.00		4.000		70.8	50	200			
IS: Naphthalene-d8	4.00		4.000		95.9	50	200			
IS: Perylene-d12	4.00		4.000		68.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		69.4	50	200			
Surr: 2-Fluorobiphenyl	0.775		1.000		77.5	46	115			
Surr: 4-Terphenyl-d14	0.744		1.000		74.4	58	133			

Sample ID **MB-75278** Batch ID: **75278** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160524A** Analysis Date: **5/24/2016 11:52:00 AM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160524A

Sample ID **MB-75278**	Batch ID: **75278**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160524A**	Analysis Date: **5/24/2016 11:52:00 AM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		74.7	50	200			
IS: Chrysene-d12	4.00		4.000		79.7	50	200			
IS: Naphthalene-d8	4.00		4.000		107	50	200			
IS: Perylene-d12	4.00		4.000		78.5	50	200			
IS: Phenanthrene-d10	4.00		4.000		77.6	50	200			
Surr: 2-Fluorobiphenyl	0.728		1.000		72.8	46	115			
Surr: 4-Terphenyl-d14	0.708		1.000		70.8	58	133			

Sample ID **1605135-16AMS**	Batch ID: **75278**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160524A**	Analysis Date: **5/24/2016 8:30:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.691	0.0979	0.9794	0	70.6	44	111			
Acenaphthylene	0.701	0.0979	0.9794	0	71.6	39	116			
Anthracene	0.730	0.0979	0.9794	0	74.5	50	114			
Benzo[a]anthracene	0.845	0.0979	0.9794	0.2001	65.9	54	122			
Benzo[a]pyrene	0.849	0.0979	0.9794	0.2618	60.0	50	125			
Benzo[b]fluoranthene	0.861	0.0979	0.9794	0.2570	61.7	53	128			
Benzo[e]pyrene	0.891	0.0979	0.9794	0.1453	76.1	43	140			
Benzo[g,h,i]perylene	0.807	0.0979	0.9794	0.2218	59.8	49	127			
Benzo[j]fluoranthene	0.818	0.0979	0.9794	0.09521	73.8	45	125			N
Benzo[k]fluoranthene	0.830	0.0979	0.9794	0.1749	66.9	56	123			
Chrysene	0.857	0.0979	0.9794	0.2420	62.8	57	118			
Dibenz[a,h]anthracene	0.763	0.0979	0.9794	0.1163	66.0	50	129			
Fluoranthene	0.921	0.0979	0.9794	0.3039	63.0	55	119			
Fluorene	0.671	0.0979	0.9794	0	68.6	47	114			
Indeno[1,2,3-cd]pyrene	0.814	0.0979	0.9794	0.2029	62.4	49	130			
Phenanthrene	0.739	0.0979	0.9794	0.09483	65.7	49	113			
Pyrene	0.894	0.0979	0.9794	0.2653	64.2	55	117			
IS: Acenaphthene-d10	39.2		3.918		70.0	50	200			
IS: Chrysene-d12	39.2		3.918		72.4	50	200			
IS: Naphthalene-d8	39.2		3.918		101	50	200			
IS: Perylene-d12	39.2		3.918		72.6	50	200			
IS: Phenanthrene-d10	39.2		3.918		67.5	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160524A**

Sample ID **1605135-16AMS**	Batch ID: **75278**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160524A**	Analysis Date: **5/24/2016 8:30:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.753		0.9794		76.9	46	115			
Surr: 4-Terphenyl-d14	0.699		0.9794		71.4	58	133			

Sample ID **1605135-16AMSD**	Batch ID: **75278**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160524A**	Analysis Date: **5/24/2016 9:10:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.715	0.0990	0.9901	0	72.3	44	111	3.45	20	
Acenaphthylene	0.737	0.0990	0.9901	0	74.5	39	116	4.97	20	
Anthracene	0.767	0.0990	0.9901	0	77.5	50	114	5.02	20	
Benzo[a]anthracene	0.861	0.0990	0.9901	0.2001	66.8	54	122	1.89	20	
Benzo[a]pyrene	0.873	0.0990	0.9901	0.2618	61.7	50	125	2.71	20	
Benzo[b]fluoranthene	0.875	0.0990	0.9901	0.2570	62.4	53	128	1.64	20	
Benzo[e]pyrene	0.918	0.0990	0.9901	0.1453	78.1	43	140	3.04	20	
Benzo[g,h,i]perylene	0.828	0.0990	0.9901	0.2218	61.2	49	127	2.56	20	
Benzo[j]fluoranthene	0.846	0.0990	0.9901	0.09521	75.8	45	125	3.32	20	N
Benzo[k]fluoranthene	0.863	0.0990	0.9901	0.1749	69.5	56	123	3.90	20	
Chrysene	0.873	0.0990	0.9901	0.2420	63.8	57	118	1.91	20	
Dibenz[a,h]anthracene	0.799	0.0990	0.9901	0.1163	68.9	50	129	4.63	20	
Fluoranthene	0.947	0.0990	0.9901	0.3039	64.9	55	119	2.74	20	
Fluorene	0.709	0.0990	0.9901	0	71.6	47	114	5.46	20	
Indeno[1,2,3-cd]pyrene	0.840	0.0990	0.9901	0.2029	64.3	49	130	3.10	20	
Phenanthrene	0.793	0.0990	0.9901	0.09483	70.6	49	113	7.14	20	
Pyrene	0.924	0.0990	0.9901	0.2653	66.5	55	117	3.28	20	
IS: Acenaphthene-d10	39.6		3.960		67.6	50	200	0	0	
IS: Chrysene-d12	39.6		3.960		70.4	50	200	0	0	
IS: Naphthalene-d8	39.6		3.960		100	50	200	0	0	
IS: Perylene-d12	39.6		3.960		70.0	50	200	0	0	
IS: Phenanthrene-d10	39.6		3.960		65.6	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.792		0.9901		80.0	46	115	0	0	
Surr: 4-Terphenyl-d14	0.741		0.9901		74.8	58	133	0	0	

Sample ID **SB-160524**	Batch ID: **75278**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160524A**	Analysis Date: **5/24/2016 11:47:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160524A**

Sample ID	**SB-160524**	Batch ID:	**75278**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS6_160524A**	Analysis Date:	**5/24/2016 11:47:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160524A**

Sample ID **ICV-160524** Batch ID: **R85985** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160524A** Analysis Date: **5/24/2016 10:33:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.85	0.0100	2.000	0	92.6	80	120			
Acenaphthylene	1.94	0.0100	2.000	0	97.2	80	120			
Anthracene	1.76	0.0100	2.000	0	88.0	80	120			
Benzo[a]anthracene	1.90	0.0100	2.000	0	95.2	80	120			
Benzo[a]pyrene	1.85	0.0100	2.000	0	92.4	80	120			
Benzo[b]fluoranthene	1.90	0.0100	2.000	0	95.2	80	120			
Benzo[e]pyrene	1.87	0.0100	2.000	0	93.5	80	120			
Benzo[g,h,i]perylene	1.73	0.0100	2.000	0	86.7	80	120			
Benzo[j]fluoranthene	1.89	0.0100	2.000	0	94.7	80	120			N
Benzo[k]fluoranthene	1.88	0.0100	2.000	0	93.9	80	120			
Chrysene	1.80	0.0100	2.000	0	89.8	80	120			
Dibenz[a,h]anthracene	1.75	0.0100	2.000	0	87.5	80	120			
Fluoranthene	1.86	0.0100	2.000	0	92.8	80	120			
Fluorene	1.91	0.0100	2.000	0	95.3	80	120			
Indeno[1,2,3-cd]pyrene	1.70	0.0100	2.000	0	84.9	80	120			
Phenanthrene	1.77	0.0100	2.000	0	88.7	80	120			
Pyrene	1.80	0.0100	2.000	0	89.9	80	120			
IS: Acenaphthene-d10	4.00		4.000		112	50	200			
IS: Chrysene-d12	4.00		4.000		111	50	200			
IS: Naphthalene-d8	4.00		4.000		132	50	200			
IS: Perylene-d12	4.00		4.000		108	50	200			
IS: Phenanthrene-d10	4.00		4.000		108	50	200			
Surr: 2-Fluorobiphenyl	1.94		2.000		97.2	65	120			
Surr: 4-Terphenyl-d14	1.80		2.000		90.1	65	120			

Sample ID **ICV2-160524** Batch ID: **R85985** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160524A** Analysis Date: **5/24/2016 10:27:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.87	0.0100	2.000	0	93.4	80	120			
Acenaphthylene	1.95	0.0100	2.000	0	97.7	80	120			
Anthracene	1.74	0.0100	2.000	0	87.2	80	120			
Benzo[a]anthracene	1.92	0.0100	2.000	0	95.9	80	120			
Benzo[a]pyrene	1.83	0.0100	2.000	0	91.7	80	120			
Benzo[b]fluoranthene	1.88	0.0100	2.000	0	93.8	80	120			
Benzo[e]pyrene	1.85	0.0100	2.000	0	92.7	80	120			
Benzo[g,h,i]perylene	1.74	0.0100	2.000	0	87.1	80	120			
Benzo[j]fluoranthene	1.88	0.0100	2.000	0	94.0	80	120			N
Benzo[k]fluoranthene	1.87	0.0100	2.000	0	93.4	80	120			
Chrysene	1.80	0.0100	2.000	0	90.2	80	120			
Dibenz[a,h]anthracene	1.79	0.0100	2.000	0	89.4	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160524A

Sample ID **ICV2-160524**	Batch ID: **R85985**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160524A**	Analysis Date: **5/24/2016 10:27:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.83	0.0100	2.000	0	91.6	80	120			
Fluorene	1.96	0.0100	2.000	0	98.2	80	120			
Indeno[1,2,3-cd]pyrene	1.74	0.0100	2.000	0	86.8	80	120			
Phenanthrene	1.78	0.0100	2.000	0	88.9	80	120			
Pyrene	1.76	0.0100	2.000	0	87.8	80	120			
IS: Acenaphthene-d10	4.00		4.000		111	50	200			
IS: Chrysene-d12	4.00		4.000		111	50	200			
IS: Naphthalene-d8	4.00		4.000		127	50	200			
IS: Perylene-d12	4.00		4.000		109	50	200			
IS: Phenanthrene-d10	4.00		4.000		110	50	200			
Surr: 2-Fluorobiphenyl	1.93		2.000		96.5	65	120			
Surr: 4-Terphenyl-d14	1.77		2.000		88.3	65	120			

Sample ID **CCV1-160524**	Batch ID: **R85985**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS6_160524A**	Analysis Date: **5/25/2016 5:45:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.853	0.0100	1.000	0	85.3	50	150			
Acenaphthylene	0.927	0.0100	1.000	0	92.7	50	150			
Anthracene	0.885	0.0100	1.000	0	88.5	50	150			
Benzo[a]anthracene	0.899	0.0100	1.000	0	89.9	50	150			
Benzo[a]pyrene	0.870	0.0100	1.000	0	87.0	50	150			
Benzo[b]fluoranthene	0.885	0.0100	1.000	0	88.5	50	150			
Benzo[e]pyrene	0.906	0.0100	1.000	0	90.6	50	150			
Benzo[g,h,i]perylene	0.823	0.0100	1.000	0	82.3	50	150			
Benzo[j]fluoranthene	0.912	0.0100	1.000	0	91.2	50	150			N
Benzo[k]fluoranthene	0.891	0.0100	1.000	0	89.1	50	150			
Chrysene	0.850	0.0100	1.000	0	85.0	50	150			
Dibenz[a,h]anthracene	0.862	0.0100	1.000	0	86.2	50	150			
Fluoranthene	0.907	0.0100	1.000	0	90.7	50	150			
Fluorene	0.835	0.0100	1.000	0	83.5	50	150			
Indeno[1,2,3-cd]pyrene	0.841	0.0100	1.000	0	84.1	50	150			
Phenanthrene	0.842	0.0100	1.000	0	84.2	50	150			
Pyrene	0.881	0.0100	1.000	0	88.1	50	150			
IS: Acenaphthene-d10	4.00		4.000		88.1	50	200			
IS: Chrysene-d12	4.00		4.000		86.5	50	200			
IS: Naphthalene-d8	4.00		4.000		121	50	200			
IS: Perylene-d12	4.00		4.000		86.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		82.4	50	200			
Surr: 2-Fluorobiphenyl	1.00		1.000		100	50	150			
Surr: 4-Terphenyl-d14	0.891		1.000		89.1	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

The QC data in batch 75281 applies to the following samples: 1605135-36A, 1605135-37A, 1605135-38A, 1605135-39A, 1605135-40A, 1605135-41A, 1605135-42A

Sample ID **LCS-75281** Batch ID: **75281** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 10:14:00 AM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.678	0.0100	1.000	0	67.8	44	111			
Acenaphthylene	0.721	0.0100	1.000	0	72.1	39	116			
Anthracene	0.734	0.0100	1.000	0	73.4	50	114			
Benzo[a]anthracene	0.768	0.0100	1.000	0	76.8	54	122			
Benzo[a]pyrene	0.737	0.0100	1.000	0	73.7	50	125			
Benzo[b]fluoranthene	0.762	0.0100	1.000	0	76.2	53	128			
Benzo[e]pyrene	0.852	0.0100	1.000	0	85.2	43	140			
Benzo[g,h,i]perylene	0.699	0.0100	1.000	0	69.9	49	127			
Benzo[j]fluoranthene	0.807	0.0100	1.000	0	80.7	45	125			N
Benzo[k]fluoranthene	0.749	0.0100	1.000	0	74.9	56	123			
Chrysene	0.737	0.0100	1.000	0	73.7	57	118			
Dibenz[a,h]anthracene	0.728	0.0100	1.000	0	72.9	50	129			
Fluoranthene	0.772	0.0100	1.000	0	77.2	55	119			
Fluorene	0.744	0.0100	1.000	0	74.4	47	114			
Indeno[1,2,3-cd]pyrene	0.708	0.0100	1.000	0	70.8	49	130			
Phenanthrene	0.712	0.0100	1.000	0	71.2	49	113			
Pyrene	0.744	0.0100	1.000	0	74.4	55	117			
IS: Acenaphthene-d10	4.00		4.000		70.2	50	200			
IS: Chrysene-d12	4.00		4.000		76.1	50	200			
IS: Naphthalene-d8	4.00		4.000		103	50	200			
IS: Perylene-d12	4.00		4.000		75.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		75.5	50	200			
Surr: 2-Fluorobiphenyl	0.728		1.000		72.8	46	115			
Surr: 4-Terphenyl-d14	0.693		1.000		69.3	58	133			

Sample ID **MB-75281** Batch ID: **75281** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 10:53:00 AM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160525A

Sample ID **MB-75281**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 10:53:00 AM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		71.7	50	200			
IS: Chrysene-d12	4.00		4.000		75.0	50	200			
IS: Naphthalene-d8	4.00		4.000		105	50	200			
IS: Perylene-d12	4.00		4.000		74.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.5	50	200			
Surr: 2-Fluorobiphenyl	0.720		1.000		72.0	46	115			
Surr: 4-Terphenyl-d14	0.694		1.000		69.4	58	133			

Sample ID **1605135-36AMS**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 7:32:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.729	0.0988	0.9881	0	73.7	44	111			
Acenaphthylene	0.767	0.0988	0.9881	0	77.6	39	116			
Anthracene	0.777	0.0988	0.9881	0	78.6	50	114			
Benzo[a]anthracene	0.796	0.0988	0.9881	0	80.6	54	122			
Benzo[a]pyrene	0.779	0.0988	0.9881	0	78.8	50	125			
Benzo[b]fluoranthene	0.797	0.0988	0.9881	0	80.7	53	128			
Benzo[e]pyrene	0.901	0.0988	0.9881	0	91.2	43	140			
Benzo[g,h,i]perylene	0.769	0.0988	0.9881	0	77.8	49	127			
Benzo[j]fluoranthene	0.832	0.0988	0.9881	0	84.2	45	125			N
Benzo[k]fluoranthene	0.779	0.0988	0.9881	0	78.9	56	123			
Chrysene	0.793	0.0988	0.9881	0	80.3	57	118			
Dibenz[a,h]anthracene	0.769	0.0988	0.9881	0	77.8	50	129			
Fluoranthene	0.879	0.0988	0.9881	0	88.9	55	119			
Fluorene	0.722	0.0988	0.9881	0	73.0	47	114			
Indeno[1,2,3-cd]pyrene	0.786	0.0988	0.9881	0	79.6	49	130			
Phenanthrene	0.793	0.0988	0.9881	0	80.2	49	113			
Pyrene	0.863	0.0988	0.9881	0	87.4	55	117			
IS: Acenaphthene-d10	39.5		3.953		63.0	50	200			
IS: Chrysene-d12	39.5		3.953		65.8	50	200			
IS: Naphthalene-d8	39.5		3.953		98.2	50	200			
IS: Perylene-d12	39.5		3.953		66.0	50	200			
IS: Phenanthrene-d10	39.5		3.953		62.3	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160525A

Sample ID **1605135-36AMS**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 7:32:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.808		0.9881		81.8	46	115			
Surr: 4-Terphenyl-d14	0.756		0.9881		76.5	58	133			

Sample ID **1605135-36AMSD**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 8:12:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.696	0.0989	0.9891	0	70.4	44	111	0	20	
Acenaphthylene	0.708	0.0989	0.9891	0	71.6	39	116	0	20	
Anthracene	0.727	0.0989	0.9891	0	73.6	50	114	0	20	
Benzo[a]anthracene	0.747	0.0989	0.9891	0	75.5	54	122	0	20	
Benzo[a]pyrene	0.710	0.0989	0.9891	0	71.8	50	125	0	20	
Benzo[b]fluoranthene	0.734	0.0989	0.9891	0	74.2	53	128	0	20	
Benzo[e]pyrene	0.828	0.0989	0.9891	0	83.7	43	140	0	20	
Benzo[g,h,i]perylene	0.721	0.0989	0.9891	0	72.9	49	127	0	20	
Benzo[j]fluoranthene	0.773	0.0989	0.9891	0	78.1	45	125	0	20	N
Benzo[k]fluoranthene	0.722	0.0989	0.9891	0	73.0	56	123	0	20	
Chrysene	0.729	0.0989	0.9891	0	73.7	57	118	0	20	
Dibenz[a,h]anthracene	0.722	0.0989	0.9891	0	73.0	50	129	0	20	
Fluoranthene	0.817	0.0989	0.9891	0	82.6	55	119	0	20	
Fluorene	0.692	0.0989	0.9891	0	70.0	47	114	0	20	
Indeno[1,2,3-cd]pyrene	0.730	0.0989	0.9891	0	73.8	49	130	0	20	
Phenanthrene	0.748	0.0989	0.9891	0	75.6	49	113	0	20	
Pyrene	0.797	0.0989	0.9891	0	80.6	55	117	0	20	
IS: Acenaphthene-d10	39.6		3.956		68.7	50	200	0	0	
IS: Chrysene-d12	39.6		3.956		72.5	50	200	0	0	
IS: Naphthalene-d8	39.6		3.956		107	50	200	0	0	
IS: Perylene-d12	39.6		3.956		72.5	50	200	0	0	
IS: Phenanthrene-d10	39.6		3.956		69.1	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.756		0.9891		76.4	46	115	0	0	
Surr: 4-Terphenyl-d14	0.704		0.9891		71.2	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID **ICV-160525** Batch ID: **R86008** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 9:34:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.86	0.0100	2.000	0	92.9	80	120			
Acenaphthylene	1.97	0.0100	2.000	0	98.3	80	120			
Anthracene	1.74	0.0100	2.000	0	87.1	80	120			
Benzo[a]anthracene	1.91	0.0100	2.000	0	95.3	80	120			
Benzo[a]pyrene	1.83	0.0100	2.000	0	91.7	80	120			
Benzo[b]fluoranthene	1.86	0.0100	2.000	0	93.1	80	120			
Benzo[e]pyrene	1.87	0.0100	2.000	0	93.3	80	120			
Benzo[g,h,i]perylene	1.74	0.0100	2.000	0	87.0	80	120			
Benzo[j]fluoranthene	1.89	0.0100	2.000	0	94.5	80	120			N
Benzo[k]fluoranthene	1.86	0.0100	2.000	0	92.8	80	120			
Chrysene	1.81	0.0100	2.000	0	90.5	80	120			
Dibenz[a,h]anthracene	1.80	0.0100	2.000	0	90.1	80	120			
Fluoranthene	1.91	0.0100	2.000	0	95.5	80	120			
Fluorene	1.84	0.0100	2.000	0	91.8	80	120			
Indeno[1,2,3-cd]pyrene	1.75	0.0100	2.000	0	87.7	80	120			
Phenanthrene	1.81	0.0100	2.000	0	90.3	80	120			
Pyrene	1.84	0.0100	2.000	0	92.1	80	120			
IS: Acenaphthene-d10	4.00		4.000		110	50	200			
IS: Chrysene-d12	4.00		4.000		108	50	200			
IS: Naphthalene-d8	4.00		4.000		131	50	200			
IS: Perylene-d12	4.00		4.000		107	50	200			
IS: Phenanthrene-d10	4.00		4.000		104	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		101	65	120			
Surr: 4-Terphenyl-d14	1.84		2.000		92.1	65	120			

Sample ID **ICV2-160525** Batch ID: **R86008** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 9:28:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.88	0.0100	2.000	0	94.2	80	120			
Acenaphthylene	1.98	0.0100	2.000	0	99.1	80	120			
Anthracene	1.76	0.0100	2.000	0	87.8	80	120			
Benzo[a]anthracene	1.92	0.0100	2.000	0	95.8	80	120			
Benzo[a]pyrene	1.83	0.0100	2.000	0	91.3	80	120			
Benzo[b]fluoranthene	1.86	0.0100	2.000	0	93.1	80	120			
Benzo[e]pyrene	1.85	0.0100	2.000	0	92.6	80	120			
Benzo[g,h,i]perylene	1.79	0.0100	2.000	0	89.4	80	120			
Benzo[j]fluoranthene	1.87	0.0100	2.000	0	93.3	80	120			N
Benzo[k]fluoranthene	1.80	0.0100	2.000	0	90.1	80	120			
Chrysene	1.81	0.0100	2.000	0	90.3	80	120			
Dibenz[a,h]anthracene	1.86	0.0100	2.000	0	93.1	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID	**ICV2-160525**	Batch ID:	**R86008**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**ICV**	Run ID:	**GCMS6_160525A**	Analysis Date:	**5/25/2016 9:28:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.92	0.0100	2.000	0	96.2	80	120			
Fluorene	1.81	0.0100	2.000	0	90.6	80	120			
Indeno[1,2,3-cd]pyrene	1.81	0.0100	2.000	0	90.6	80	120			
Phenanthrene	1.79	0.0100	2.000	0	89.4	80	120			
Pyrene	1.86	0.0100	2.000	0	92.8	80	120			
IS: Acenaphthene-d10	4.00		4.000		113	50	200			
IS: Chrysene-d12	4.00		4.000		109	50	200			
IS: Naphthalene-d8	4.00		4.000		141	50	200			
IS: Perylene-d12	4.00		4.000		110	50	200			
IS: Phenanthrene-d10	4.00		4.000		105	50	200			
Surr: 2-Fluorobiphenyl	2.05		2.000		102	65	120			
Surr: 4-Terphenyl-d14	1.85		2.000		92.6	65	120			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160510B**

Sample ID	**DCS-74876**	Batch ID:	**74876**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**DCS**	Run ID:	**GCMS8_160510B**	Analysis Date:	**5/11/2016 4:29:00 AM**	Prep Date:	**4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0113	0.0100	0.01000	0	113	20	200	0	0	
Acenaphthylene	0.0116	0.0100	0.01000	0	116	20	200	0	0	
Anthracene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Benzo[a]anthracene	0.0111	0.0100	0.01000	0	111	20	200	0	0	
Benzo[a]pyrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Benzo[b]fluoranthene	0.0105	0.0100	0.01000	0	105	20	200	0	0	
Benzo[e]pyrene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[g,h,i]perylene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[j]fluoranthene	0.0106	0.0100	0.01000	0	106	20	200	0	0	N
Benzo[k]fluoranthene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Chrysene	0.0118	0.0100	0.01000	0	118	20	200	0	0	
Dibenz[a,h]anthracene	0.0119	0.0100	0.01000	0	119	20	200	0	0	
Fluoranthene	0.0133	0.0100	0.01000	0	133	20	200	0	0	
Fluorene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	
Phenanthrene	0.0127	0.0100	0.01000	0	127	20	200	0	0	
Pyrene	0.0133	0.0100	0.01000	0	133	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518A**

Sample ID	**DCS-75209**	Batch ID:	**75209**	TestNo:	**SW8270D-LL**	Units:	**mg/L**
SampType:	**DCS**	Run ID:	**GCMS8_160518A**	Analysis Date:	**5/18/2016 10:22:00 AM**	Prep Date:	**5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000307	0.0000500	0.0000400	0	76.8	20	170	0	0	
Acenaphthylene	0.0000308	0.0000500	0.0000400	0	77.0	20	170	0	0	
Anthracene	0.0000322	0.0000500	0.0000400	0	80.5	20	170	0	0	
Benzo[a]anthracene	0.0000306	0.0000500	0.0000400	0	76.4	20	170	0	0	
Benzo[a]pyrene	0.0000288	0.0000500	0.0000400	0	72.0	20	170	0	0	
Benzo[b]fluoranthene	0.0000304	0.0000500	0.0000400	0	76.0	20	170	0	0	
Benzo[e]pyrene	0.0000308	0.0000500	0.0000400	0	76.9	20	170	0	0	
Benzo[g,h,i]perylene	0.0000282	0.0000500	0.0000400	0	70.4	20	170	0	0	
Benzo[j]fluoranthene	0.0000254	0.0000500	0.0000400	0	63.6	20	170	0	0	N
Benzo[k]fluoranthene	0.0000283	0.0000500	0.0000400	0	70.8	20	170	0	0	
Chrysene	0.0000293	0.0000500	0.0000400	0	73.4	20	170	0	0	
Dibenz[a,h]anthracene	0.0000221	0.0000500	0.0000400	0	55.2	20	170	0	0	
Fluoranthene	0.0000331	0.0000500	0.0000400	0	82.7	20	170	0	0	
Fluorene	0.0000302	0.0000500	0.0000400	0	75.4	20	170	0	0	
Indeno[1,2,3-cd]pyrene	0.0000275	0.0000500	0.0000400	0	68.8	20	170	0	0	
Phenanthrene	0.0000339	0.0000500	0.0000400	0	84.6	20	170	0	0	
Pyrene	0.0000328	0.0000500	0.0000400	0	81.9	20	170	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

The QC data in batch 75146 applies to the following samples: 1605135-46B

Sample ID **LCS-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:03:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00262	0.0000500	0.00400	0	65.5	48	114			
Acenaphthylene	0.00261	0.0000500	0.00400	0	65.4	35	121			
Anthracene	0.00247	0.0000500	0.00400	0	61.7	53	119			
Benzo[a]anthracene	0.00297	0.0000500	0.00400	0	74.3	59	120			
Benzo[a]pyrene	0.00301	0.0000500	0.00400	0	75.2	53	120			
Benzo[b]fluoranthene	0.00309	0.0000500	0.00400	0	77.3	53	126			
Benzo[e]pyrene	0.00295	0.0000500	0.00400	0	73.6	40	140			
Benzo[g,h,i]perylene	0.00300	0.0000500	0.00400	0	74.9	44	128			
Benzo[j]fluoranthene	0.00295	0.0000500	0.00400	0	73.8	45	124			N
Benzo[k]fluoranthene	0.00309	0.0000500	0.00400	0	77.1	54	125			
Chrysene	0.00298	0.0000500	0.00400	0	74.6	57	120			
Dibenz[a,h]anthracene	0.00302	0.0000500	0.00400	0	75.4	44	131			
Fluoranthene	0.00291	0.0000500	0.00400	0	72.7	58	120			
Fluorene	0.00272	0.0000500	0.00400	0	68.0	50	118			
Indeno[1,2,3-cd]pyrene	0.00300	0.0000500	0.00400	0	75.0	48	130			
Phenanthrene	0.00259	0.0000500	0.00400	0	64.8	53	115			
Pyrene	0.00292	0.0000500	0.00400	0	73.0	53	121			
IS: Acenaphthene-d10	0.00800		0.00800		78.1	50	200			
IS: Chrysene-d12	0.00800		0.00800		77.8	50	200			
IS: Naphthalene-d8	0.00800		0.00800		81.0	50	200			
IS: Perylene-d12	0.00800		0.00800		76.7	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		78.1	50	200			
Surr: 2-Fluorobiphenyl	4.48		8.000		56.0	53	106			
Surr: 4-Terphenyl-d14	5.28		8.000		65.9	58	132			

Sample ID **MB-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:40:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500								U
Acenaphthylene	0.0000400	0.0000500								U
Anthracene	0.0000400	0.0000500								U
Benzo[a]anthracene	0.0000400	0.0000500								U
Benzo[a]pyrene	0.0000400	0.0000500								U
Benzo[b]fluoranthene	0.0000400	0.0000500								U
Benzo[e]pyrene	0.0000400	0.0000500								U
Benzo[g,h,i]perylene	0.0000400	0.0000500								U
Benzo[j]fluoranthene	0.0000400	0.0000500								NU
Benzo[k]fluoranthene	0.0000400	0.0000500								U
Chrysene	0.0000400	0.0000500								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

Sample ID **MB-75146**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 2:40:00 PM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.0000400	0.0000500								U
Fluoranthene	0.0000400	0.0000500								U
Fluorene	0.0000400	0.0000500								U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500								U
Phenanthrene	0.0000400	0.0000500								U
Pyrene	0.0000400	0.0000500								U
IS: Acenaphthene-d10	0.00800		0.00800		82.7	50	200			
IS: Chrysene-d12	0.00800		0.00800		85.3	50	200			
IS: Naphthalene-d8	0.00800		0.00800		85.3	50	200			
IS: Perylene-d12	0.00800		0.00800		85.3	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		84.3	50	200			
Surr: 2-Fluorobiphenyl	4.61		8.000		57.6	53	106			
Surr: 4-Terphenyl-d14	5.33		8.000		66.7	58	132			

Sample ID **SBLK-160518**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **SBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 10:03:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500	0							U
Acenaphthylene	0.0000400	0.0000500	0							U
Anthracene	0.0000400	0.0000500	0							U
Benzo[a]anthracene	0.0000400	0.0000500	0							U
Benzo[a]pyrene	0.0000400	0.0000500	0							U
Benzo[b]fluoranthene	0.0000400	0.0000500	0							U
Benzo[e]pyrene	0.0000400	0.0000500	0							U
Benzo[g,h,i]perylene	0.0000400	0.0000500	0							U
Benzo[j]fluoranthene	0.0000400	0.0000500	0							NU
Benzo[k]fluoranthene	0.0000400	0.0000500	0							U
Chrysene	0.0000400	0.0000500	0							U
Dibenz[a,h]anthracene	0.0000400	0.0000500	0							U
Fluoranthene	0.0000400	0.0000500	0							U
Fluorene	0.0000400	0.0000500	0							U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500	0							U
Phenanthrene	0.0000400	0.0000500	0							U
Pyrene	0.0000400	0.0000500	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

Sample ID **ICV-160518** Batch ID: **R85875** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 9:35:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	101	80	120			
Acenaphthylene	2.01	0.0000500	2.00	0	101	80	120			
Anthracene	1.88	0.0000500	2.00	0	93.9	80	120			
Benzo[a]anthracene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[b]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.11	0.0000500	2.00	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Chrysene	2.11	0.0000500	2.00	0	106	80	120			
Dibenz[a,h]anthracene	2.11	0.0000500	2.00	0	105	80	120			
Fluoranthene	2.14	0.0000500	2.00	0	107	80	120			
Fluorene	2.02	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.10	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.88	0.0000500	2.00	0	94.0	80	120			
Pyrene	2.14	0.0000500	2.00	0	107	80	120			
IS: Acenaphthene-d10	4.00		4.00		87.5	50	200			
IS: Chrysene-d12	4.00		4.00		88.7	50	200			
IS: Naphthalene-d8	4.00		4.00		88.3	50	200			
IS: Perylene-d12	4.00		4.00		87.9	50	200			
IS: Phenanthrene-d10	4.00		4.00		86.7	50	200			
Surr: 2-Fluorobiphenyl	1910		2000		95.7	65	120			
Surr: 4-Terphenyl-d14	2040		2000		102	65	120			

Sample ID **ICV2-160518** Batch ID: **R85875** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 8:49:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	100	80	120			
Acenaphthylene	1.99	0.0000500	2.00	0	99.7	80	120			
Anthracene	1.86	0.0000500	2.00	0	93.0	80	120			
Benzo[a]anthracene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.13	0.0000500	2.00	0	107	80	120			
Benzo[b]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.14	0.0000500	2.00	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.19	0.0000500	2.00	0	109	80	120			
Chrysene	2.10	0.0000500	2.00	0	105	80	120			
Dibenz[a,h]anthracene	2.13	0.0000500	2.00	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

Sample ID **ICV2-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 8:49:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.07	0.0000500	2.00	0	104	80	120			
Fluorene	2.01	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.11	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.86	0.0000500	2.00	0	93.1	80	120			
Pyrene	2.07	0.0000500	2.00	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.00		96.3	50	200			
IS: Chrysene-d12	4.00		4.00		93.5	50	200			
IS: Naphthalene-d8	4.00		4.00		94.6	50	200			
IS: Perylene-d12	4.00		4.00		93.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		93.3	50	200			
Surr: 2-Fluorobiphenyl	1920		2000		96.2	65	120			
Surr: 4-Terphenyl-d14	2030		2000		102	65	120			

Sample ID **CCV-160520**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **CCV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/19/2016 2:59:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.989	0.0000500	1.00	0	98.9	50	150			
Acenaphthylene	0.998	0.0000500	1.00	0	99.8	50	150			
Anthracene	0.938	0.0000500	1.00	0	93.8	50	150			
Benzo[a]anthracene	1.00	0.0000500	1.00	0	100	50	150			
Benzo[a]pyrene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[b]fluoranthene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[e]pyrene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[g,h,i]perylene	1.02	0.0000500	1.00	0	102	50	150			
Benzo[j]fluoranthene	1.01	0.0000500	1.00	0	101	50	150			N
Benzo[k]fluoranthene	1.04	0.0000500	1.00	0	104	50	150			
Chrysene	1.00	0.0000500	1.00	0	100	50	150			
Dibenz[a,h]anthracene	1.02	0.0000500	1.00	0	102	50	150			
Fluoranthene	0.983	0.0000500	1.00	0	98.3	50	150			
Fluorene	0.978	0.0000500	1.00	0	97.8	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0000500	1.00	0	102	50	150			
Phenanthrene	0.940	0.0000500	1.00	0	94.0	50	150			
Pyrene	0.984	0.0000500	1.00	0	98.4	50	150			
IS: Acenaphthene-d10	4.00		4.00		105	50	200			
IS: Chrysene-d12	4.00		4.00		94.9	50	200			
IS: Naphthalene-d8	4.00		4.00		100	50	200			
IS: Perylene-d12	4.00		4.00		96.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		95.2	50	200			
Surr: 2-Fluorobiphenyl	1000		1000		100	50	150			
Surr: 4-Terphenyl-d14	999		1000		99.9	50	150			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160524A**

The QC data in batch 75227 applies to the following samples: 1605135-01A, 1605135-02A, 1605135-03A, 1605135-04A, 1605135-05A, 1605135-06A, 1605135-07A, 1605135-08A, 1605135-09A

Sample ID **LCS-75227** Batch ID: **75227** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160524A** Analysis Date: **5/24/2016 10:23:00 AM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.732	0.0100	1.000	0	73.2	44	111			
Acenaphthylene	0.742	0.0100	1.000	0	74.2	39	116			
Anthracene	0.727	0.0100	1.000	0	72.7	50	114			
Benzo[a]anthracene	0.752	0.0100	1.000	0	75.2	54	122			
Benzo[a]pyrene	0.752	0.0100	1.000	0	75.2	50	125			
Benzo[b]fluoranthene	0.761	0.0100	1.000	0	76.1	53	128			
Benzo[e]pyrene	0.829	0.0100	1.000	0	82.9	43	140			
Benzo[g,h,i]perylene	0.747	0.0100	1.000	0	74.7	49	127			
Benzo[j]fluoranthene	0.769	0.0100	1.000	0	76.9	45	125			N
Benzo[k]fluoranthene	0.748	0.0100	1.000	0	74.8	56	123			
Chrysene	0.758	0.0100	1.000	0	75.8	57	118			
Dibenz[a,h]anthracene	0.746	0.0100	1.000	0	74.6	50	129			
Fluoranthene	0.805	0.0100	1.000	0	80.5	55	119			
Fluorene	0.718	0.0100	1.000	0	71.8	47	114			
Indeno[1,2,3-cd]pyrene	0.753	0.0100	1.000	0	75.3	49	130			
Phenanthrene	0.723	0.0100	1.000	0	72.3	49	113			
Pyrene	0.811	0.0100	1.000	0	81.1	55	117			
IS: Acenaphthene-d10	4.00		4.000		82.2	50	200			
IS: Chrysene-d12	4.00		4.000		81.9	50	200			
IS: Naphthalene-d8	4.00		4.000		81.6	50	200			
IS: Perylene-d12	4.00		4.000		84.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		71.9	50	200			
Surr: 2-Fluorobiphenyl	0.727		1.000		72.7	46	115			
Surr: 4-Terphenyl-d14	0.689		1.000		68.9	58	133			

Sample ID **MB-75227** Batch ID: **75227** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160524A** Analysis Date: **5/24/2016 11:04:00 AM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160524A

Sample ID **MB-75227**	Batch ID: **75227**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160524A**	Analysis Date: **5/24/2016 11:04:00 AM**	Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		92.1	50	200			
IS: Chrysene-d12	4.00		4.000		81.3	50	200			
IS: Naphthalene-d8	4.00		4.000		93.9	50	200			
IS: Perylene-d12	4.00		4.000		86.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		71.6	50	200			
Surr: 2-Fluorobiphenyl	0.715		1.000		71.5	46	115			
Surr: 4-Terphenyl-d14	0.701		1.000		70.1	58	133			

Sample ID **SBLK-160524**	Batch ID: **75227**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160524A**	Analysis Date: **5/24/2016 10:15:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160524A**

Sample ID **1605121-43AMS**	Batch ID: **75227**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160524A**	Analysis Date: **5/25/2016 2:34:00 AM**	Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.739	0.0977	0.9766	0	75.6	44	111			
Acenaphthylene	0.740	0.0977	0.9766	0	75.8	39	116			
Anthracene	0.710	0.0977	0.9766	0	72.7	50	114			
Benzo[a]anthracene	0.681	0.0977	0.9766	0	69.8	54	122			
Benzo[a]pyrene	0.679	0.0977	0.9766	0	69.5	50	125			
Benzo[b]fluoranthene	0.648	0.0977	0.9766	0	66.3	53	128			
Benzo[e]pyrene	0.755	0.0977	0.9766	0	77.4	43	140			
Benzo[g,h,i]perylene	0.683	0.0977	0.9766	0	70.0	49	127			
Benzo[j]fluoranthene	0.651	0.0977	0.9766	0	66.7	45	125			N
Benzo[k]fluoranthene	0.606	0.0977	0.9766	0	62.0	56	123			
Chrysene	0.703	0.0977	0.9766	0	72.0	57	118			
Dibenz[a,h]anthracene	0.592	0.0977	0.9766	0	60.6	50	129			
Fluoranthene	0.757	0.0977	0.9766	0	77.5	55	119			
Fluorene	0.664	0.0977	0.9766	0	68.0	47	114			
Indeno[1,2,3-cd]pyrene	0.666	0.0977	0.9766	0	68.2	49	130			
Phenanthrene	0.726	0.0977	0.9766	0	74.3	49	113			
Pyrene	0.754	0.0977	0.9766	0	77.2	55	117			
IS: Acenaphthene-d10	39.1		3.906		103	50	200			
IS: Chrysene-d12	39.1		3.906		79.3	50	200			
IS: Naphthalene-d8	39.1		3.906		98.1	50	200			
IS: Perylene-d12	39.1		3.906		83.8	50	200			
IS: Phenanthrene-d10	39.1		3.906		76.4	50	200			
Surr: 2-Fluorobiphenyl	0.807		0.9766		82.7	46	115			
Surr: 4-Terphenyl-d14	0.676		0.9766		69.2	58	133			

Sample ID **1605121-43AMSD**	Batch ID: **75227**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160524A**	Analysis Date: **5/25/2016 3:11:00 AM**	Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.746	0.0988	0.9881	0	75.5	44	111	0.954	20	
Acenaphthylene	0.752	0.0988	0.9881	0	76.1	39	116	1.59	20	
Anthracene	0.730	0.0988	0.9881	0	73.9	50	114	2.87	20	
Benzo[a]anthracene	0.705	0.0988	0.9881	0	71.4	54	122	3.47	20	
Benzo[a]pyrene	0.693	0.0988	0.9881	0	70.1	50	125	2.04	20	
Benzo[b]fluoranthene	0.661	0.0988	0.9881	0	66.9	53	128	1.99	20	
Benzo[e]pyrene	0.774	0.0988	0.9881	0	78.3	43	140	2.41	20	
Benzo[g,h,i]perylene	0.693	0.0988	0.9881	0	70.1	49	127	1.38	20	
Benzo[j]fluoranthene	0.666	0.0988	0.9881	0	67.4	45	125	2.25	20	N
Benzo[k]fluoranthene	0.621	0.0988	0.9881	0	62.8	56	123	2.46	20	
Chrysene	0.719	0.0988	0.9881	0	72.8	57	118	2.26	20	
Dibenz[a,h]anthracene	0.607	0.0988	0.9881	0	61.4	50	129	2.46	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160524A**

Sample ID	**1605121-43AMSD**	Batch ID:	**75227**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**GCMS8_160524A**	Analysis Date:	**5/25/2016 3:11:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	0.770	0.0988	0.9881	0	77.9	55	119	1.71	20	
Fluorene	0.678	0.0988	0.9881	0	68.6	47	114	2.07	20	
Indeno[1,2,3-cd]pyrene	0.676	0.0988	0.9881	0	68.4	49	130	1.54	20	
Phenanthrene	0.749	0.0988	0.9881	0	75.8	49	113	3.08	20	
Pyrene	0.768	0.0988	0.9881	0	77.7	55	117	1.81	20	
IS: Acenaphthene-d10	39.5		3.953		104	50	200	0	0	
IS: Chrysene-d12	39.5		3.953		80.4	50	200	0	0	
IS: Naphthalene-d8	39.5		3.953		101	50	200	0	0	
IS: Perylene-d12	39.5		3.953		84.9	50	200	0	0	
IS: Phenanthrene-d10	39.5		3.953		77.6	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.801		0.9881		81.1	46	115	0	0	
Surr: 4-Terphenyl-d14	0.708		0.9881		71.6	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160524A**

Sample ID **ICV-160524** Batch ID: **R85980** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160524A** Analysis Date: **5/24/2016 9:47:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.04	0.0100	2.000	0	102	80	120			
Acenaphthylene	2.07	0.0100	2.000	0	103	80	120			
Anthracene	1.86	0.0100	2.000	0	93.0	80	120			
Benzo[a]anthracene	2.10	0.0100	2.000	0	105	80	120			
Benzo[a]pyrene	2.09	0.0100	2.000	0	104	80	120			
Benzo[b]fluoranthene	2.12	0.0100	2.000	0	106	80	120			
Benzo[e]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[g,h,i]perylene	2.11	0.0100	2.000	0	106	80	120			
Benzo[j]fluoranthene	2.07	0.0100	2.000	0	103	80	120			N
Benzo[k]fluoranthene	2.06	0.0100	2.000	0	103	80	120			
Chrysene	2.10	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.12	0.0100	2.000	0	106	80	120			
Fluoranthene	2.04	0.0100	2.000	0	102	80	120			
Fluorene	1.91	0.0100	2.000	0	95.5	80	120			
Indeno[1,2,3-cd]pyrene	2.12	0.0100	2.000	0	106	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.6	80	120			
Pyrene	2.02	0.0100	2.000	0	101	80	120			
IS: Acenaphthene-d10	4.00		4.000		96.0	50	200			
IS: Chrysene-d12	4.00		4.000		80.5	50	200			
IS: Naphthalene-d8	4.00		4.000		89.4	50	200			
IS: Perylene-d12	4.00		4.000		84.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.1	50	200			
Surr: 2-Fluorobiphenyl	2.17		2.000		108	65	120			
Surr: 4-Terphenyl-d14	1.97		2.000		98.3	65	120			

Sample ID **ICV2-160524** Batch ID: **R85980** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160524A** Analysis Date: **5/24/2016 9:00:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.03	0.0100	2.000	0	102	80	120			
Acenaphthylene	2.06	0.0100	2.000	0	103	80	120			
Anthracene	1.83	0.0100	2.000	0	91.7	80	120			
Benzo[a]anthracene	2.10	0.0100	2.000	0	105	80	120			
Benzo[a]pyrene	2.10	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.08	0.0100	2.000	0	104	80	120			
Benzo[e]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.13	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.07	0.0100	2.000	0	104	80	120			N
Benzo[k]fluoranthene	2.09	0.0100	2.000	0	105	80	120			
Chrysene	2.10	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.15	0.0100	2.000	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160524A

Sample ID **ICV2-160524**	Batch ID: **R85980**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160524A**	Analysis Date: **5/24/2016 9:00:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.00	0.0100	2.000	0	99.8	80	120			
Fluorene	1.89	0.0100	2.000	0	94.5	80	120			
Indeno[1,2,3-cd]pyrene	2.15	0.0100	2.000	0	107	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.7	80	120			
Pyrene	1.98	0.0100	2.000	0	98.8	80	120			
IS: Acenaphthene-d10	4.00		4.000		99.8	50	200			
IS: Chrysene-d12	4.00		4.000		79.2	50	200			
IS: Naphthalene-d8	4.00		4.000		91.7	50	200			
IS: Perylene-d12	4.00		4.000		82.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.9	50	200			
Surr: 2-Fluorobiphenyl	2.21		2.000		111	65	120			
Surr: 4-Terphenyl-d14	2.00		2.000		99.8	65	120			

Sample ID **CCV-160524**	Batch ID: **R85980**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160524A**	Analysis Date: **5/25/2016 3:48:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.01	0.0100	1.000	0	101	50	150			
Acenaphthylene	1.03	0.0100	1.000	0	103	50	150			
Anthracene	0.920	0.0100	1.000	0	92.0	50	150			
Benzo[a]anthracene	1.01	0.0100	1.000	0	101	50	150			
Benzo[a]pyrene	1.00	0.0100	1.000	0	100	50	150			
Benzo[b]fluoranthene	0.999	0.0100	1.000	0	99.9	50	150			
Benzo[e]pyrene	1.00	0.0100	1.000	0	100	50	150			
Benzo[g,h,i]perylene	0.997	0.0100	1.000	0	99.7	50	150			
Benzo[j]fluoranthene	1.00	0.0100	1.000	0	100	50	150			N
Benzo[k]fluoranthene	0.973	0.0100	1.000	0	97.3	50	150			
Chrysene	1.02	0.0100	1.000	0	102	50	150			
Dibenz[a,h]anthracene	1.00	0.0100	1.000	0	100	50	150			
Fluoranthene	0.982	0.0100	1.000	0	98.2	50	150			
Fluorene	0.930	0.0100	1.000	0	93.0	50	150			
Indeno[1,2,3-cd]pyrene	1.01	0.0100	1.000	0	101	50	150			
Phenanthrene	0.943	0.0100	1.000	0	94.3	50	150			
Pyrene	0.986	0.0100	1.000	0	98.6	50	150			
IS: Acenaphthene-d10	4.00		4.000		119	50	200			
IS: Chrysene-d12	4.00		4.000		93.4	50	200			
IS: Naphthalene-d8	4.00		4.000		112	50	200			
IS: Perylene-d12	4.00		4.000		97.8	50	200			
IS: Phenanthrene-d10	4.00		4.000		92.8	50	200			
Surr: 2-Fluorobiphenyl	1.10		1.000		110	50	150			
Surr: 4-Terphenyl-d14	0.982		1.000		98.2	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

The QC data in batch 75241 applies to the following samples: 1605135-10A, 1605135-11A, 1605135-12A, 1605135-13A, 1605135-14A, 1605135-15A, 1605135-43A, 1605135-44A, 1605135-45A

Sample ID **LCS-75241** Batch ID: **75241** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 10:11:00 AM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.807	0.0100	1.000	0	80.7	44	111			
Acenaphthylene	0.822	0.0100	1.000	0	82.2	39	116			
Anthracene	0.768	0.0100	1.000	0	76.8	50	114			
Benzo[a]anthracene	0.826	0.0100	1.000	0	82.6	54	122			
Benzo[a]pyrene	0.801	0.0100	1.000	0	80.1	50	125			
Benzo[b]fluoranthene	0.826	0.0100	1.000	0	82.6	53	128			
Benzo[e]pyrene	0.920	0.0100	1.000	0	92.0	43	140			
Benzo[g,h,i]perylene	0.810	0.0100	1.000	0	81.0	49	127			
Benzo[j]fluoranthene	0.854	0.0100	1.000	0	85.4	45	125			N
Benzo[k]fluoranthene	0.827	0.0100	1.000	0	82.7	56	123			
Chrysene	0.830	0.0100	1.000	0	83.0	57	118			
Dibenz[a,h]anthracene	0.809	0.0100	1.000	0	80.9	50	129			
Fluoranthene	0.900	0.0100	1.000	0	90.0	55	119			
Fluorene	0.757	0.0100	1.000	0	75.7	47	114			
Indeno[1,2,3-cd]pyrene	0.818	0.0100	1.000	0	81.8	49	130			
Phenanthrene	0.781	0.0100	1.000	0	78.1	49	113			
Pyrene	0.911	0.0100	1.000	0	91.1	55	117			
IS: Acenaphthene-d10	4.00		4.000		81.4	50	200			
IS: Chrysene-d12	4.00		4.000		81.8	50	200			
IS: Naphthalene-d8	4.00		4.000		84.5	50	200			
IS: Perylene-d12	4.00		4.000		83.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		68.8	50	200			
Surr: 2-Fluorobiphenyl	0.811		1.000		81.1	46	115			
Surr: 4-Terphenyl-d14	0.761		1.000		76.1	58	133			

Sample ID **MB-75241** Batch ID: **75241** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 10:48:00 AM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

Sample ID **MB-75241**	Batch ID: **75241**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160525A**	Analysis Date: **5/25/2016 10:48:00 AM**	Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		91.7	50	200			
IS: Chrysene-d12	4.00		4.000		83.6	50	200			
IS: Naphthalene-d8	4.00		4.000		88.6	50	200			
IS: Perylene-d12	4.00		4.000		86.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.7	50	200			
Surr: 2-Fluorobiphenyl	0.807		1.000		80.7	46	115			
Surr: 4-Terphenyl-d14	0.745		1.000		74.5	58	133			

Sample ID **SBLK-160525**	Batch ID: **75241**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160525A**	Analysis Date: **5/25/2016 9:59:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID	**SBLK-160525**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/25/2016 9:59:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.000160		0							
Surr: 4-Terphenyl-d14	0.000420		0							

Sample ID	**1605135-14AMS**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/26/2016 12:27:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.775	0.100	1.000	0	77.5	44	111			
Acenaphthylene	0.785	0.100	1.000	0	78.5	39	116			
Anthracene	0.734	0.100	1.000	0	73.4	50	114			
Benzo[a]anthracene	0.701	0.100	1.000	0	70.1	54	122			
Benzo[a]pyrene	0.666	0.100	1.000	0	66.6	50	125			
Benzo[b]fluoranthene	0.675	0.100	1.000	0	67.5	53	128			
Benzo[e]pyrene	0.779	0.100	1.000	0	77.9	43	140			
Benzo[g,h,i]perylene	0.682	0.100	1.000	0	68.2	49	127			
Benzo[j]fluoranthene	0.683	0.100	1.000	0	68.3	45	125			N
Benzo[k]fluoranthene	0.625	0.100	1.000	0	62.5	56	123			
Chrysene	0.710	0.100	1.000	0	71.0	57	118			
Dibenz[a,h]anthracene	0.619	0.100	1.000	0	61.9	50	129			
Fluoranthene	0.785	0.100	1.000	0	78.5	55	119			
Fluorene	0.700	0.100	1.000	0	70.0	47	114			
Indeno[1,2,3-cd]pyrene	0.673	0.100	1.000	0	67.3	49	130			
Phenanthrene	0.760	0.100	1.000	0	76.0	49	113			
Pyrene	0.785	0.100	1.000	0	78.5	55	117			
IS: Acenaphthene-d10	40.0		4.000		106	50	200			
IS: Chrysene-d12	40.0		4.000		85.5	50	200			
IS: Naphthalene-d8	40.0		4.000		102	50	200			
IS: Perylene-d12	40.0		4.000		88.4	50	200			
IS: Phenanthrene-d10	40.0		4.000		78.7	50	200			
Surr: 2-Fluorobiphenyl	0.876		1.000		87.6	46	115			
Surr: 4-Terphenyl-d14	0.730		1.000		73.0	58	133			

Sample ID	**1605135-14AMSD**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/26/2016 1:04:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.806	0.0985	0.9852	0	81.8	44	111	3.93	20	
Acenaphthylene	0.817	0.0985	0.9852	0	82.9	39	116	3.99	20	
Anthracene	0.751	0.0985	0.9852	0	76.2	50	114	2.28	20	
Benzo[a]anthracene	0.714	0.0985	0.9852	0	72.5	54	122	1.79	20	
Benzo[a]pyrene	0.675	0.0985	0.9852	0	68.5	50	125	1.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID	**1605135-14AMSD**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/26/2016 1:04:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.683	0.0985	0.9852	0	69.3	53	128	1.13	20	
Benzo[e]pyrene	0.789	0.0985	0.9852	0	80.1	43	140	1.31	20	
Benzo[g,h,i]perylene	0.691	0.0985	0.9852	0	70.1	49	127	1.29	20	
Benzo[j]fluoranthene	0.695	0.0985	0.9852	0	70.6	45	125	1.75	20	N
Benzo[k]fluoranthene	0.637	0.0985	0.9852	0	64.6	56	123	1.81	20	
Chrysene	0.727	0.0985	0.9852	0	73.7	57	118	2.30	20	
Dibenz[a,h]anthracene	0.629	0.0985	0.9852	0	63.8	50	129	1.58	20	
Fluoranthene	0.806	0.0985	0.9852	0	81.8	55	119	2.63	20	
Fluorene	0.715	0.0985	0.9852	0	72.6	47	114	2.05	20	
Indeno[1,2,3-cd]pyrene	0.682	0.0985	0.9852	0	69.2	49	130	1.32	20	
Phenanthrene	0.773	0.0985	0.9852	0	78.4	49	113	1.72	20	
Pyrene	0.815	0.0985	0.9852	0	82.7	55	117	3.74	20	
IS: Acenaphthene-d10	39.4		3.941		104	50	200	0	0	
IS: Chrysene-d12	39.4		3.941		85.2	50	200	0	0	
IS: Naphthalene-d8	39.4		3.941		101	50	200	0	0	
IS: Perylene-d12	39.4		3.941		89.3	50	200	0	0	
IS: Phenanthrene-d10	39.4		3.941		76.2	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.880		0.9852		89.3	46	115	0	0	
Surr: 4-Terphenyl-d14	0.729		0.9852		74.0	58	133	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID **ICV-160525** Batch ID: **R86005** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 9:31:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.04	0.0100	2.000	0	102	80	120			
Acenaphthylene	2.06	0.0100	2.000	0	103	80	120			
Anthracene	1.86	0.0100	2.000	0	92.8	80	120			
Benzo[a]anthracene	2.12	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.11	0.0100	2.000	0	105	80	120			
Benzo[e]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.10	0.0100	2.000	0	105	80	120			
Benzo[j]fluoranthene	2.10	0.0100	2.000	0	105	80	120			N
Benzo[k]fluoranthene	2.05	0.0100	2.000	0	103	80	120			
Chrysene	2.10	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.11	0.0100	2.000	0	106	80	120			
Fluoranthene	2.07	0.0100	2.000	0	103	80	120			
Fluorene	1.90	0.0100	2.000	0	94.9	80	120			
Indeno[1,2,3-cd]pyrene	2.12	0.0100	2.000	0	106	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.6	80	120			
Pyrene	2.06	0.0100	2.000	0	103	80	120			
IS: Acenaphthene-d10	4.00		4.000		97.9	50	200			
IS: Chrysene-d12	4.00		4.000		83.1	50	200			
IS: Naphthalene-d8	4.00		4.000		89.7	50	200			
IS: Perylene-d12	4.00		4.000		86.5	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.1	50	200			
Surr: 2-Fluorobiphenyl	2.22		2.000		111	65	120			
Surr: 4-Terphenyl-d14	1.94		2.000		97.2	65	120			

Sample ID **ICV2-160525** Batch ID: **R86005** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 8:44:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.07	0.0100	2.000	0	103	80	120			
Anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Benzo[a]anthracene	2.12	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.10	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.10	0.0100	2.000	0	105	80	120			
Benzo[e]pyrene	2.13	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.12	0.0100	2.000	0	106	80	120			
Benzo[j]fluoranthene	2.08	0.0100	2.000	0	104	80	120			N
Benzo[k]fluoranthene	2.07	0.0100	2.000	0	104	80	120			
Chrysene	2.12	0.0100	2.000	0	106	80	120			
Dibenz[a,h]anthracene	2.13	0.0100	2.000	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

Sample ID **ICV2-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/25/2016 8:44:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.01	0.0100	2.000	0	100	80	120			
Fluorene	1.89	0.0100	2.000	0	94.4	80	120			
Indeno[1,2,3-cd]pyrene	2.13	0.0100	2.000	0	107	80	120			
Phenanthrene	1.88	0.0100	2.000	0	93.8	80	120			
Pyrene	2.01	0.0100	2.000	0	100	80	120			
IS: Acenaphthene-d10	4.00		4.000		101	50	200			
IS: Chrysene-d12	4.00		4.000		81.0	50	200			
IS: Naphthalene-d8	4.00		4.000		91.7	50	200			
IS: Perylene-d12	4.00		4.000		84.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		81.6	50	200			
Surr: 2-Fluorobiphenyl	2.23		2.000		112	65	120			
Surr: 4-Terphenyl-d14	1.99		2.000		99.6	65	120			

Sample ID **CCV-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/26/2016 2:55:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.01	0.0100	1.000	0	101	50	150			
Acenaphthylene	1.03	0.0100	1.000	0	103	50	150			
Anthracene	0.920	0.0100	1.000	0	92.0	50	150			
Benzo[a]anthracene	1.02	0.0100	1.000	0	102	50	150			
Benzo[a]pyrene	1.01	0.0100	1.000	0	101	50	150			
Benzo[b]fluoranthene	1.02	0.0100	1.000	0	102	50	150			
Benzo[e]pyrene	1.03	0.0100	1.000	0	103	50	150			
Benzo[g,h,i]perylene	1.00	0.0100	1.000	0	100	50	150			
Benzo[j]fluoranthene	1.01	0.0100	1.000	0	101	50	150			N
Benzo[k]fluoranthene	0.990	0.0100	1.000	0	99.0	50	150			
Chrysene	1.02	0.0100	1.000	0	102	50	150			
Dibenz[a,h]anthracene	1.01	0.0100	1.000	0	101	50	150			
Fluoranthene	1.00	0.0100	1.000	0	100	50	150			
Fluorene	0.926	0.0100	1.000	0	92.6	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0100	1.000	0	102	50	150			
Phenanthrene	0.939	0.0100	1.000	0	93.9	50	150			
Pyrene	1.01	0.0100	1.000	0	101	50	150			
IS: Acenaphthene-d10	4.00		4.000		123	50	200			
IS: Chrysene-d12	4.00		4.000		99.1	50	200			
IS: Naphthalene-d8	4.00		4.000		115	50	200			
IS: Perylene-d12	4.00		4.000		102	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.9	50	200			
Surr: 2-Fluorobiphenyl	1.11		1.000		111	50	150			
Surr: 4-Terphenyl-d14	0.982		1.000		98.2	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

DHL Analytical, Inc.

Date: *02-Jun-16*

CLIENT: Arcadis
Work Order: 1605135
Project: Laredo SGR

MQL SUMMARY REPORT

TestNo: SW6020A	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Lead	0.100	0.300

TestNo: SW6020A	MDL	MQL
Analyte	**mg/L**	**mg/L**
Lead	0.000300	0.00100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Acenaphthene	0.00500	0.0100
Acenaphthylene	0.00500	0.0100
Anthracene	0.00500	0.0100
Benzo[a]anthracene	0.00500	0.0100
Benzo[a]pyrene	0.00500	0.0100
Benzo[b]fluoranthene	0.00500	0.0100
Benzo[e]pyrene	0.00500	0.0100
Benzo[g,h,i]perylene	0.00500	0.0100
Benzo[j]fluoranthene	0.00500	0.0100
Benzo[k]fluoranthene	0.00500	0.0100
Chrysene	0.00500	0.0100
Dibenz[a,h]anthracene	0.00500	0.0100
Fluoranthene	0.00500	0.0100
Fluorene	0.00500	0.0100
Indeno[1,2,3-cd]pyrene	0.00500	0.0100
Phenanthrene	0.00500	0.0100
Pyrene	0.00500	0.0100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/L**	**mg/L**
Acenaphthene	0.0000250	0.0000500
Acenaphthylene	0.0000250	0.0000500
Anthracene	0.0000250	0.0000500
Benzo[a]anthracene	0.0000250	0.0000500
Benzo[a]pyrene	0.0000250	0.0000500
Benzo[b]fluoranthene	0.0000250	0.0000500
Benzo[e]pyrene	0.0000250	0.0000500
Benzo[g,h,i]perylene	0.0000250	0.0000500
Benzo[j]fluoranthene	0.0000250	0.0000500
Benzo[k]fluoranthene	0.0000250	0.0000500
Chrysene	0.0000250	0.0000500
Dibenz[a,h]anthracene	0.0000250	0.0000500
Fluoranthene	0.0000250	0.0000500
Fluorene	0.0000250	0.0000500
Indeno[1,2,3-cd]pyrene	0.0000250	0.0000500
Phenanthrene	0.0000250	0.0000500
Pyrene	0.0000250	0.0000500

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

GCMS6
For

DHL Work Order
1605135

GCMS6_160524A
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS6_160524A
Batch Number(s): See Run Log.	SOP: ORGANICS-PAH-01
Matrix: See Run Log.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List

EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	X
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)	___ Cannot reanalyze (HT out/Lack of Sample)	

General Comments and Impact on Data: **See Run Log.**

All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.

Analyst: Karyn Lane Date: *REVIEWED/APPROVED* 5/25/2016

By Sherri Herschmann at 10:14:27 AM, 6/1/2016

Second-Level Review: Date: **06/01/2016**

DHL Analytical, Inc.

Run ID: GCMS6_160524A **Run No.:** 85985

Analytical Run Date: 5/24/2016 **InstrumentID:** GCMS6

Analyst: Alex Robbins **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160524	1	PAH_LL_SDOD1	TUNE	R85985	5/24/2016 9:56:00 AM		
ICV-160524	1	PAH_LL_SDOD1	ICV	R85985	5/24/2016 10:33:00 AM		
LCS-75278	1	PAH_LL_SDOD1	LCS	75278	5/24/2016 11:13:00 AM		
MB-75278	1	PAH_LL_SDOD1	MBLK	75278	5/24/2016 11:52:00 AM		
1605135-16A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 12:32:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605135-17A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 1:12:00 PM		
1605135-18A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 1:51:00 PM		
1605135-19A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 2:31:00 PM		
1605135-20A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 3:11:00 PM		
1605135-21A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 3:50:00 PM		
1605135-22A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 4:30:00 PM		
1605135-23A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 5:10:00 PM		
1605135-24A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 5:50:00 PM		
1605135-25A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 6:30:00 PM		
1605135-26A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 7:10:00 PM		
1605135-27A	10	PAH_LL_SDOD1	SAMP	75278	5/24/2016 7:50:00 PM		
1605135-16AMS	10	PAH_LL_SDOD1	MS	75278	5/24/2016 8:30:00 PM		
1605135-16AMSD	10	PAH_LL_SDOD1	MSD	75278	5/24/2016 9:10:00 PM		
DFTPP2-160524	1	PAH_LL_SDOD1	TUNE	R85985	5/24/2016 9:49:00 PM		
ICV2-160524	1	PAH_LL_SDOD1	ICV	R85985	5/24/2016 10:27:00 PM		
SB-160524	1	PAH_LL_SDOD1	SBLK	75278	5/24/2016 11:47:00 PM		
1605135-28A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 12:27:00 AM		
1605135-29A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 1:07:00 AM		
1605135-30A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 1:46:00 AM		
1605135-31A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 2:26:00 AM		
1605135-32A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 3:05:00 AM		
1605135-33A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 3:45:00 AM		
1605135-34A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 4:25:00 AM		
1605135-35A	10	PAH_LL_SDOD1	SAMP	75278	5/25/2016 5:05:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 10:14:31 AM, 6/1/2016

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

DHL Analytical, Inc.

Run ID: **GCMS6_160524A** **Run No.:** 85985

CCV1-160524	1	PAH_LL_SDOD1	CCV	R85985	5/25/2016 5:45:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\HPCHEM\1\SEQUENCE\160524.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160524\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	16052401	DFTPPPAH	DFTPP-160524
2	Sample	2	16052402	PP160421	ICV-160524
3	Sample	3	16052403	PP160421	LCS-75278
4	Sample	4	16052404	PP160421	MB-75278
5	Sample	5	16052405	PP160421	1605135-16A
6	Sample	6	16052406	PP160421	1605135-17A
7	Sample	7	16052407	PP160421	1605135-18A
8	Sample	8	16052408	PP160421	1605135-19A
9	Sample	9	16052409	PP160421	1605135-20A
10	Sample	10	16052410	PP160421	1605135-21A
11	Sample	11	16052411	PP160421	1605135-22A
12	Sample	12	16052412	PP160421	1605135-23A
13	Sample	13	16052413	PP160421	1605135-24A
14	Sample	14	16052414	PP160421	1605135-25A
15	Sample	15	16052415	PP160421	1605135-26A
16	Sample	16	16052416	PP160421	1605135-27A
17	Sample	17	16052417	PP160421	1605135-16AMS
18	Sample	18	16052418	PP160421	1605135-16AMSD
19	Sample	19	16052419	DFTPPPAH	DFTPP2-160524
20	Sample	20	16052420	PP160421	ICV2-160524
21	Sample	21	16052421	PP160421	SBLK
22	Sample	22	16052422	PP160421	SB-160524
23	Sample	23	16052423	PP160421	1605135-28A
24	Sample	24	16052424	PP160421	1605135-29A
25	Sample	25	16052425	PP160421	1605135-30A
26	Sample	26	16052426	PP160421	1605135-31A
27	Sample	27	16052427	PP160421	1605135-32A
28	Sample	28	16052428	PP160421	1605135-33A
29	Sample	29	16052429	PP160421	1605135-34A
30	Sample	30	16052430	PP160421	1605135-35A
31	Sample	31	16052431	PP160421	CCV1-160524

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 8:42:24 AM**
Digestion:
Prep End Date: **5/23/2016 2:15:00 PM**

Prep Batch **75278** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-16A	Soil		10.64	10	0.940	1 of 3	
1605135-16AMS	Soil		10.21	10	0.979	1 of	
1605135-16AMSD	Soil		10.1	10	0.990	1 of	
1605135-17A	Soil		10.72	10	0.933	1 of 1	
1605135-18A	Soil		10.1	10	0.990	1 of 1	
1605135-19A	Soil		10.06	10	0.994	1 of 1	
1605135-20A	Soil		**10.06** ~~10.6~~	10	0.943	1 of 1	
1605135-21A	Soil		10.06	10	0.994	1 of 1	
1605135-22A	Soil		10.11	10	0.989	1 of 1	
1605135-23A	Soil		10.33	10	0.968	1 of 1	
1605135-24A	Soil		10.84	10	0.923	1 of 1	
1605135-25A	Soil		10.01	10	0.999	1 of 1	
1605135-26A	Soil		10.61	10	0.943	1 of 1	
1605135-27A	Soil		10.9	10	0.917	1 of 1	
1605135-28A	Soil		10.21	10	0.979	1 of 1	
1605135-29A	Soil		10.19	10	0.981	1 of 1	
1605135-30A	Soil		10.2	10	0.980	1 of 1	
1605135-31A	Soil		10.11	10	0.989	1 of 1	
1605135-32A	Soil		10.21	10	0.979	1 of 1	
1605135-33A	Soil		10.51	10	0.951	1 of 1	
1605135-34A	Soil		10.2	10	0.980	1 of 1	
1605135-35A	Soil		10.78	10	0.928	1 of 1	
LCS-75278	Soil		10	10	1.000	of	
MB-75278	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10383	1:1 MeCl2/Acetone	120	ml	05/19/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED

By Sherri Herschmann at 10:15:03 AM, 6/1/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 8:42:24 AM**
Digestion:
Prep End Date: 5/23/16 12:15PM

Prep Batch **75278** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-16A	Soil		10.64	10	1.000	1 of 3	
1605135-16AMS	Soil		10.21	10	1.000	1 of 3	
1605135-16AMSD	Soil		10.10	10	1.000	1 of 3	
1605135-17A	Soil		10.72	10	1.000	1 of 1	
1605135-18A	Soil		10.10	10	1.000	1 of 1	
1605135-19A	Soil		10.06	10	1.000	1 of 1	
1605135-20A	Soil		10.06	10	1.000	1 of 1	
1605135-21A	Soil		10.06	10	1.000	1 of 1	
1605135-22A	Soil		10.11	10	1.000	1 of 1	
1605135-23A	Soil		10.33	10	1.000	1 of 1	
1605135-24A	Soil		10.84	10	1.000	1 of 1	
1605135-25A	Soil		10.01	10	1.000	1 of 1	
1605135-26A	Soil		10.61	10	1.000	1 of 1	
1605135-27A	Soil		10.90	10	1.000	1 of 1	
1605135-28A	Soil		10.21	10	1.000	1 of 1	
1605135-29A	Soil		10.19	10	1.000	1 of 1	
1605135-30A	Soil		10.20	10	1.000	1 of 1	
1605135-31A	Soil		10.11	10	1.000	1 of 1	
1605135-32A	Soil		10.21	10	1.000	1 of 1	
1605135-33A	Soil		10.51	10	1.000	1 of 1	
1605135-34A	Soil		10.20	10	1.000	1 of 1	
1605135-35A	Soil		10.78	10	1.000	1 of 1	
LCS-75278	Soil		10	10	1.000	of	
MB-75278	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10383	1:1 MeCl2/Acetone	120	ml	05/19/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED
By Sherri Herschmann at 10:15:13 AM, 6/1/2016

5/23/16

5/23/16

DHL Analytical, Inc.

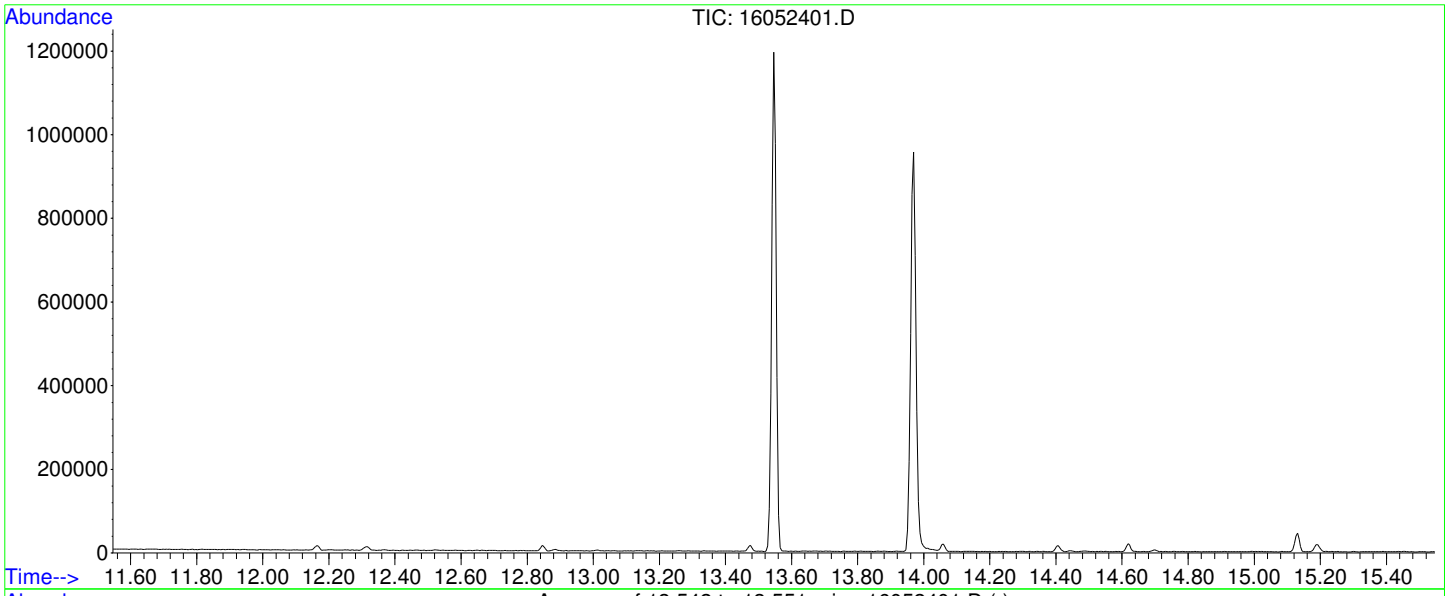
PREP BATCH REPORT

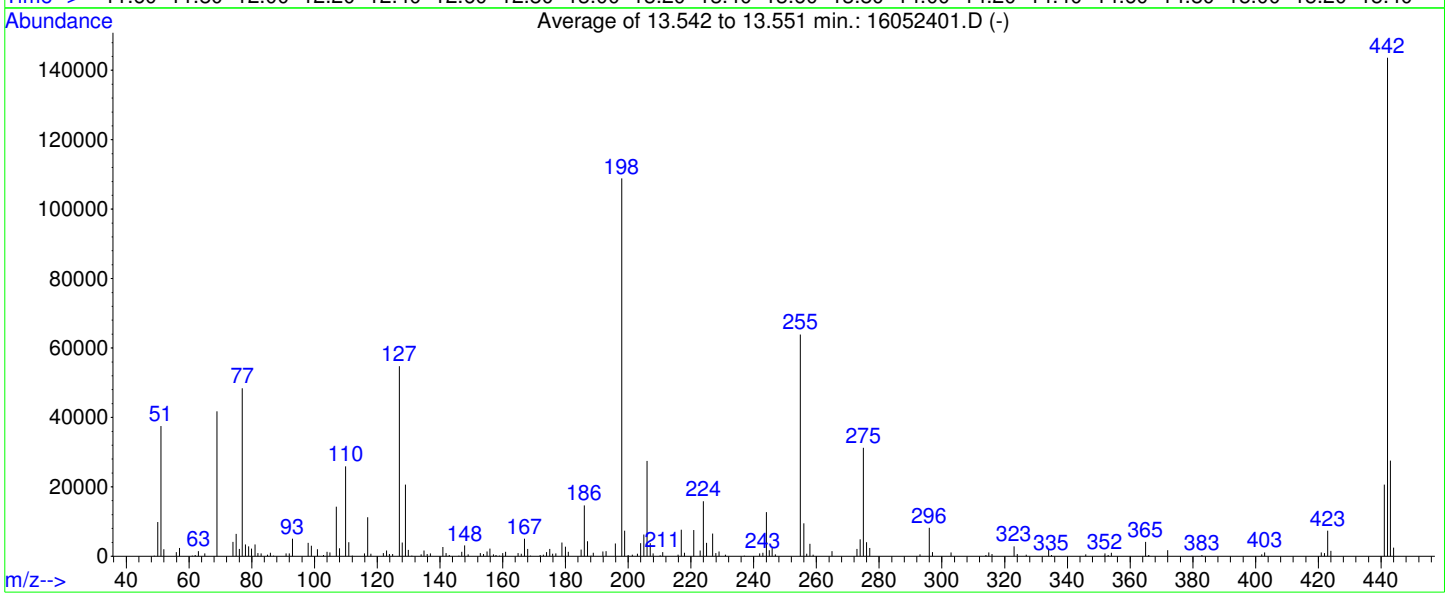
Prep Start Date: **5/16/2016 5:00:00 PM**
Digestion: **Start: 5/16/2016 5:30:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date: **5/19/2016 9:00:00 AM**

Prep Batch **75190** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-16A	Soil		0	0	#Num!	of 3	
Extra sub sampled for MS/MSD							
1605135-17A	Soil		0	0	#Num!	1 of 1	
1605135-18A	Soil		0	0	#Num!	1 of 1	
1605135-19A	Soil		0	0	#Num!	1 of 1	
1605135-20A	Soil		0	0	#Num!	1 of 1	
1605135-21A	Soil		0	0	#Num!	1 of 1	
1605135-22A	Soil		0	0	#Num!	1 of 1	
1605135-23A	Soil		0	0	#Num!	1 of 1	
1605135-24A	Soil		0	0	#Num!	1 of 1	
1605135-25A	Soil		0	0	#Num!	1 of 1	
1605135-26A	Soil		0	0	#Num!	1 of 1	
1605135-27A	Soil		0	0	#Num!	1 of 1	
1605135-28A	Soil		0	0	#Num!	1 of 1	
1605135-29A	Soil		0	0	#Num!	1 of 1	
1605135-30A	Soil		0	0	#Num!	1 of 1	
1605135-31A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling hard clay							
1605135-32A	Soil		0	0	#Num!	1 of 1	
1605135-33A	Soil		0	0	#Num!	1 of 1	
1605135-34A	Soil		0	0	#Num!	1 of 1	
1605135-35A	Soil		0	0	#Num!	1 of 1	

Data File : C:\HPCHEM\1\DATA\160524\16052401.D Vial: 1
Acq On : 24 May 2016 9:56 am Operator:
Sample : DFTPP-160524 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration

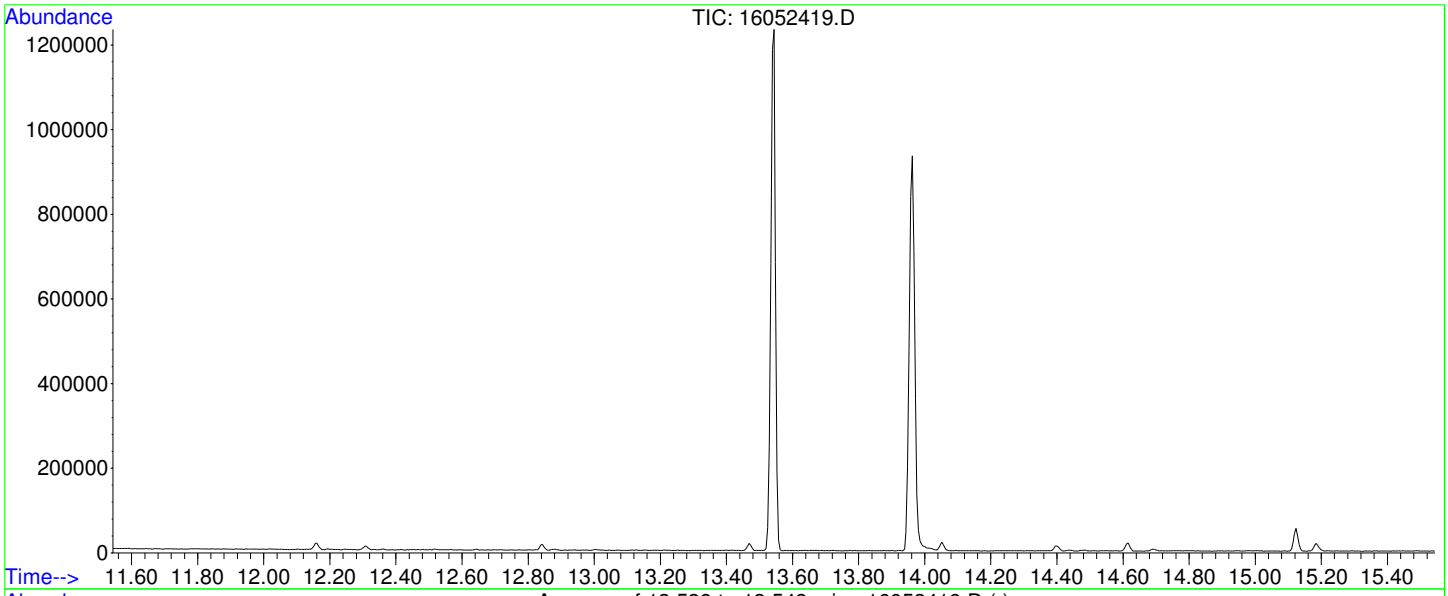


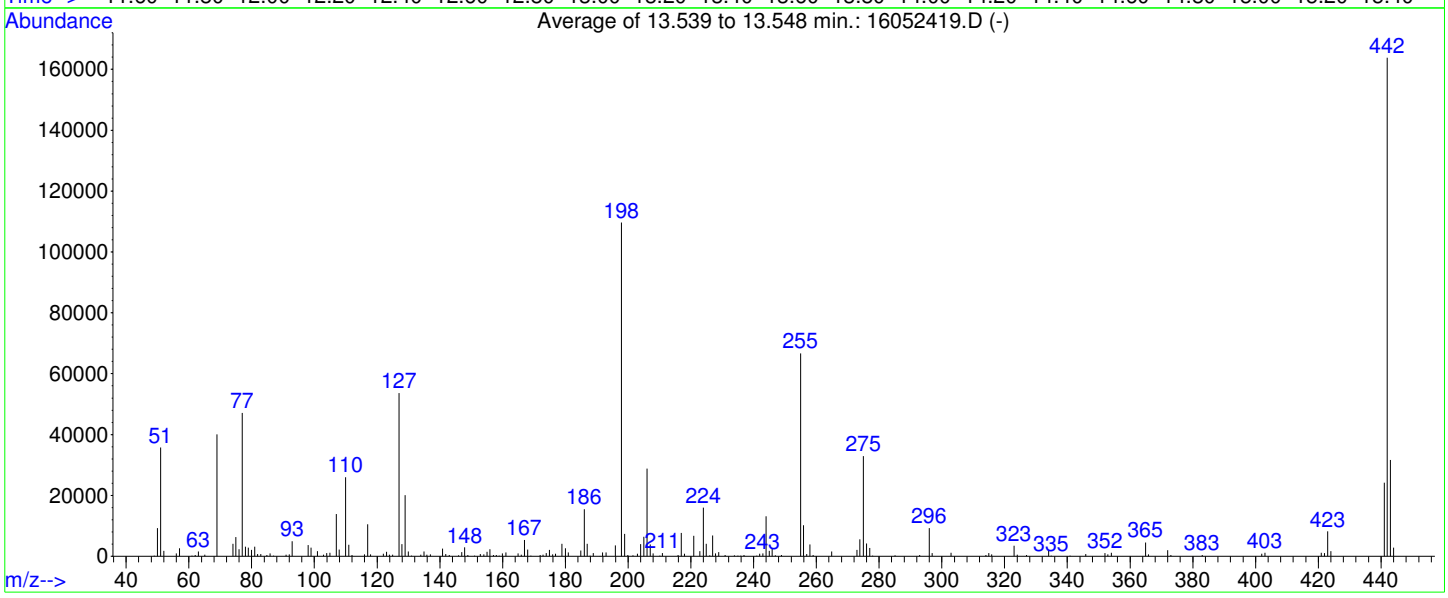


AutoFind: Scans 1585, 1586, 1587; Background Corrected with Scan 1579

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	34.5	37568	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	38.3	41736	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	50.3	54808	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	108875	PASS
199	198	5	9	6.7	7341	PASS
275	198	10	60	28.7	31227	PASS
365	198	1	200	3.8	4189	PASS
441	442	0.01	24	14.4	20697	PASS
442	198	50	400	131.9	143645	PASS
443	442	15	24	19.2	27549	PASS

Data File : C:\HPCHEM\1\DATA\160524\16052419.D Vial: 19
Acq On : 24 May 2016 9:49 pm Operator:
Sample : DFTPP2-160524 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration





AutoFind: Scans 1584, 1585, 1586; Background Corrected with Scan 1577

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	32.6	35721	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.5	40021	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.9	53661	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	109667	PASS
199	198	5	9	6.7	7344	PASS
275	198	10	60	30.0	32928	PASS
365	198	1	200	4.1	4548	PASS
441	442	0.01	24	14.7	24163	PASS
442	198	50	400	149.4	163840	PASS
443	442	15	24	19.3	31696	PASS

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052402.D Vial: 2
Acq On : 24 May 2016 10:33 am Operator:
Sample : ICV-160524 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1527299	4000.00 ug/kg	132
5) Acenaphthene-d10	13.25	164	1286776	4000.00 ug/kg	112
11) Phenanthrene-d10	15.34	188	2215393	4000.00 ug/kg	108
17) Chrysene-d12	21.06	240	2523676	4000.00 ug/kg	111
20) Perylene-d12	26.21	264	2221770	4000.00 ug/kg	108

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	729787	1944.22 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	48.61%	
16) 4-Terphenyl-d14	17.83	244	1033171	1802.58 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	45.06%	

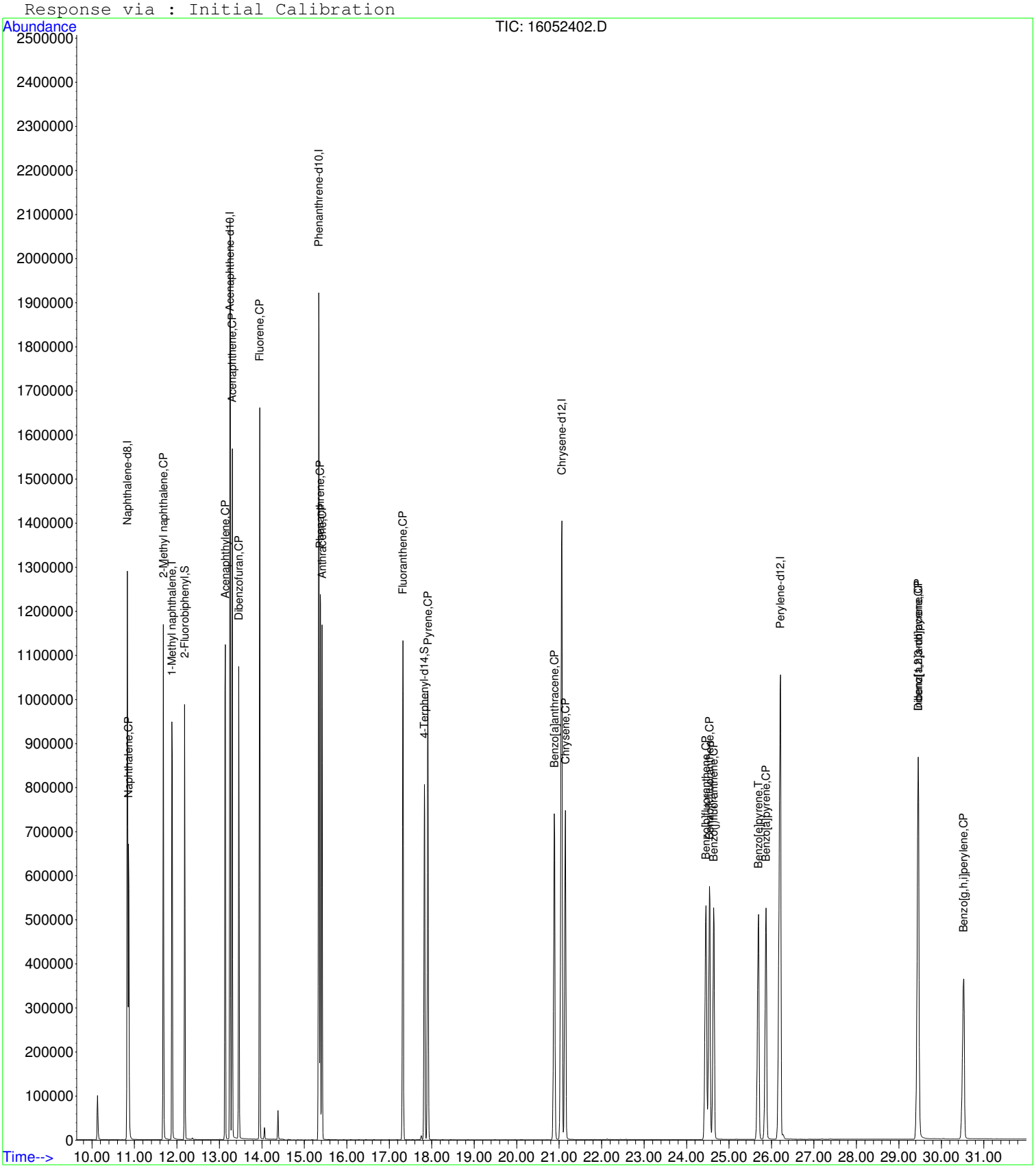
Target Compounds					Qvalue
2) Naphthalene	10.86	128	697884	1826.76 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	593522	1758.79 ug/kg	99
4) 1-Methyl naphthalene	11.89	142	534829	1730.46 ug/kg	97
6) Dibenzofuran	13.46	168	909122	1885.09 ug/kg	98
8) Acenaphthylene	13.14	152	1077430	1944.25 ug/kg	99
9) Acenaphthene	13.30	154	636930	1851.74 ug/kg	98
10) Fluorene	13.95	166	796088	1905.76 ug/kg	98
12) Phenanthrene	15.37	178	1033859	1774.53 ug/kg	99
13) Anthracene	15.42	178	970030	1759.06 ug/kg	100
14) Fluoranthene	17.32	202	1119272	1856.47 ug/kg	100
15) Pyrene	17.91	202	1126384	1798.51 ug/kg	100
18) Benzo[a]anthracene	20.89	228	1125548	1903.72 ug/kg	99
19) Chrysene	21.15	228	1025443	1795.08 ug/kg	100
21) Benzo[b]fluoranthene	24.46	252	1115463	1904.88 ug/kg	100
22) Benzo[k]fluoranthene	24.54	252	1031836	1878.35 ug/kg	100
23) Benzo(j)fluoranthene	24.64	252	927027	1894.45 ug/kg	100
24) Benzo[e]pyrene	25.69	252	981013	1870.66 ug/kg	99
25) Benzo[a]pyrene	25.87	252	989829	1847.05 ug/kg	100
26) Dibenz[a,h]anthracene	29.46	278	854326	1750.47 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.46	276	988178	1697.22 ug/kg	97
28) Benzo[g,h,i]perylene	30.53	276	787381	1734.28 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052402.D Vial: 2
Acq On : 24 May 2016 10:33 am Operator:
Sample : ICV-160524 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: PP160421.RES

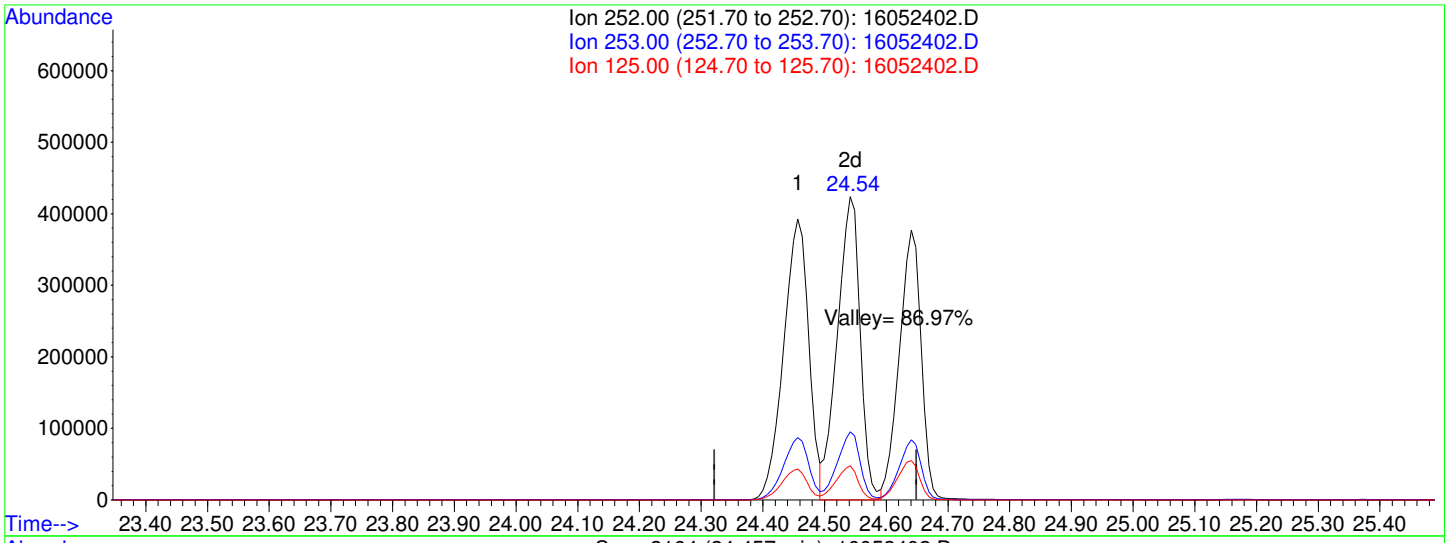
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

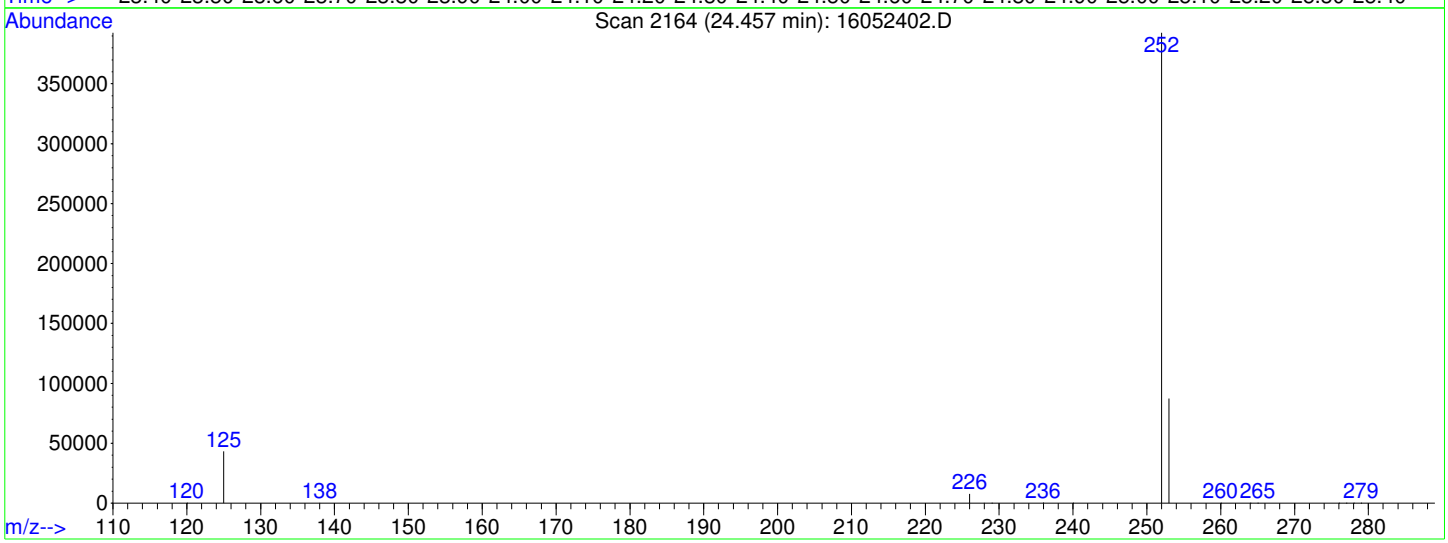


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160524\16052402.D Vial: 2
Acq On : 24 May 2016 10:33 am Operator:
Sample : ICV-160524 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Multiple Level Calibration





TIC: 16052402.D

(21) Benzo[b]fluoranthene (CP)

24.46min 1904.88ug/kg

response 1115463

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.16
125.00	11.00	11.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052403.D Vial: 3
Acq On : 24 May 2016 11:13 am Operator:
Sample : LCS-75278 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1111387	4000.00 ug/kg	96
5) Acenaphthene-d10	13.25	164	772479	4000.00 ug/kg	67
11) Phenanthrene-d10	15.34	188	1417434	4000.00 ug/kg	69
17) Chrysene-d12	21.05	240	1608177	4000.00 ug/kg	71
20) Perylene-d12	26.19	264	1412301	4000.00 ug/kg	69

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	174572	774.71 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.37%#		
16) 4-Terphenyl-d14	17.82	244	272716	743.67 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.59%#		

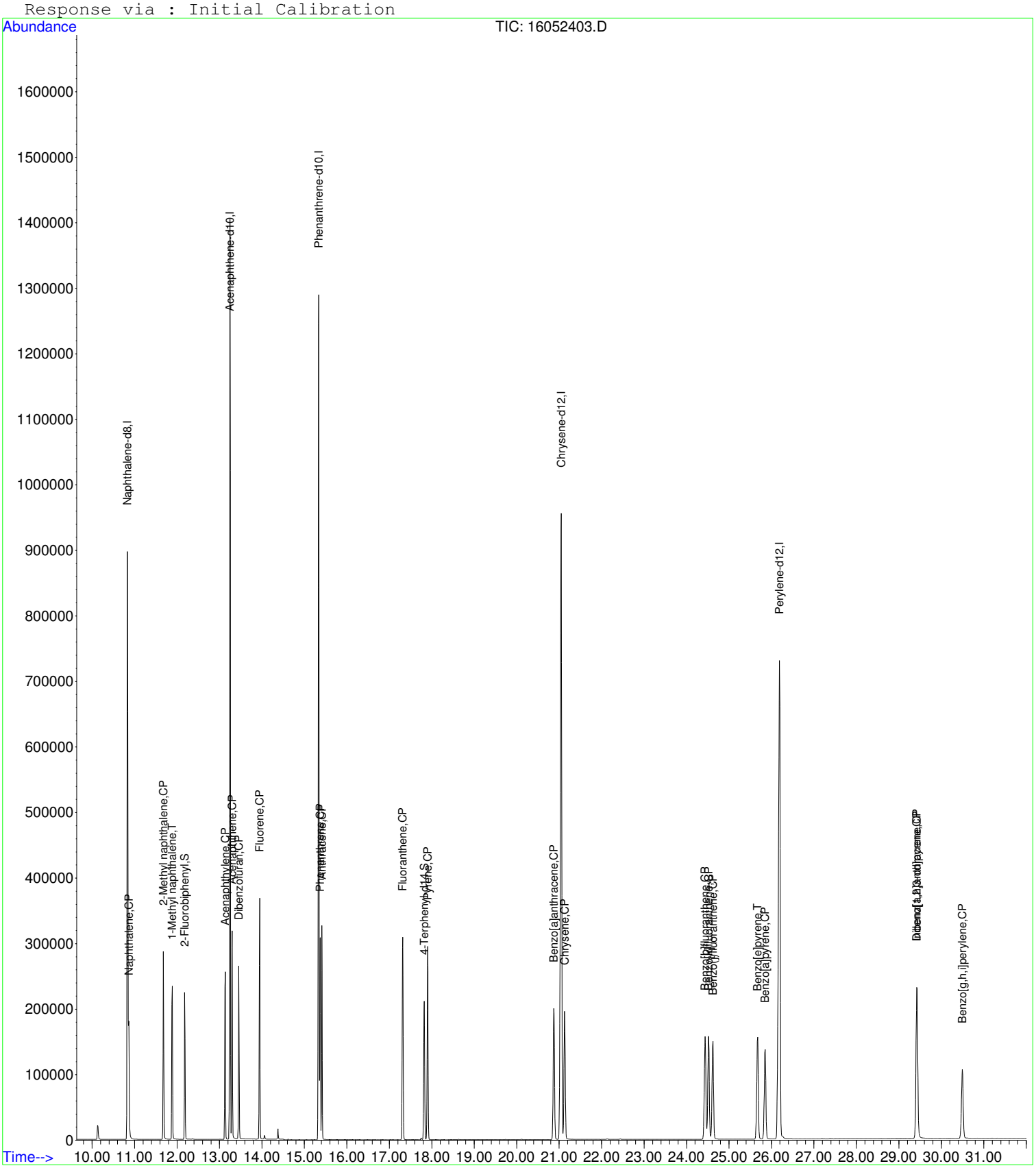
Target Compounds					Qvalue
2) Naphthalene	10.87	128	182916	657.97 ug/kg	100
3) 2-Methyl naphthalene	11.68	142	145289	591.66 ug/kg	98
4) 1-Methyl naphthalene	11.89	142	132873	590.80 ug/kg	100
6) Dibenzofuran	13.46	168	219936	759.66 ug/kg	99
8) Acenaphthylene	13.14	152	246583	741.21 ug/kg	99
9) Acenaphthene	13.30	154	144874	701.61 ug/kg	98
10) Fluorene	13.95	166	185594	740.10 ug/kg	98
12) Phenanthrene	15.37	178	270009	724.35 ug/kg	99
13) Anthracene	15.41	178	266154	754.36 ug/kg	99
14) Fluoranthene	17.31	202	304913	790.45 ug/kg	98
15) Pyrene	17.90	202	307618	767.69 ug/kg	99
18) Benzo[a]anthracene	20.87	228	298064	791.13 ug/kg	99
19) Chrysene	21.13	228	272270	747.95 ug/kg	100
21) Benzo[b]fluoranthene	24.44	252	297074	798.08 ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	283118	810.78 ug/kg	99
23) Benzo(j)fluoranthene	24.62	252	259543	834.39 ug/kg	100
24) Benzo[e]pyrene	25.67	252	291853	875.50 ug/kg	99
25) Benzo[a]pyrene	25.85	252	257570	756.11 ug/kg	100
26) Dibenz[a,h]anthracene	29.42	278	219148	706.38 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.43	276	254123	686.62 ug/kg	94
28) Benzo[g,h,i]perylene	30.50	276	202733	702.47 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052403.D Vial: 3
Acq On : 24 May 2016 11:13 am Operator:
Sample : LCS-75278 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052404.D Vial: 4
Acq On : 24 May 2016 11:52 am Operator:
Sample : MB-75278 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1245476	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	860350	4000.00 ug/kg	75
11) Phenanthrene-d10	15.34	188	1585386	4000.00 ug/kg	78
17) Chrysene-d12	21.05	240	1811025	4000.00 ug/kg	80
20) Perylene-d12	26.19	264	1616510	4000.00 ug/kg	78

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	182771	728.26 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.21%#		
16) 4-Terphenyl-d14	17.82	244	290536	708.34 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.71%#		

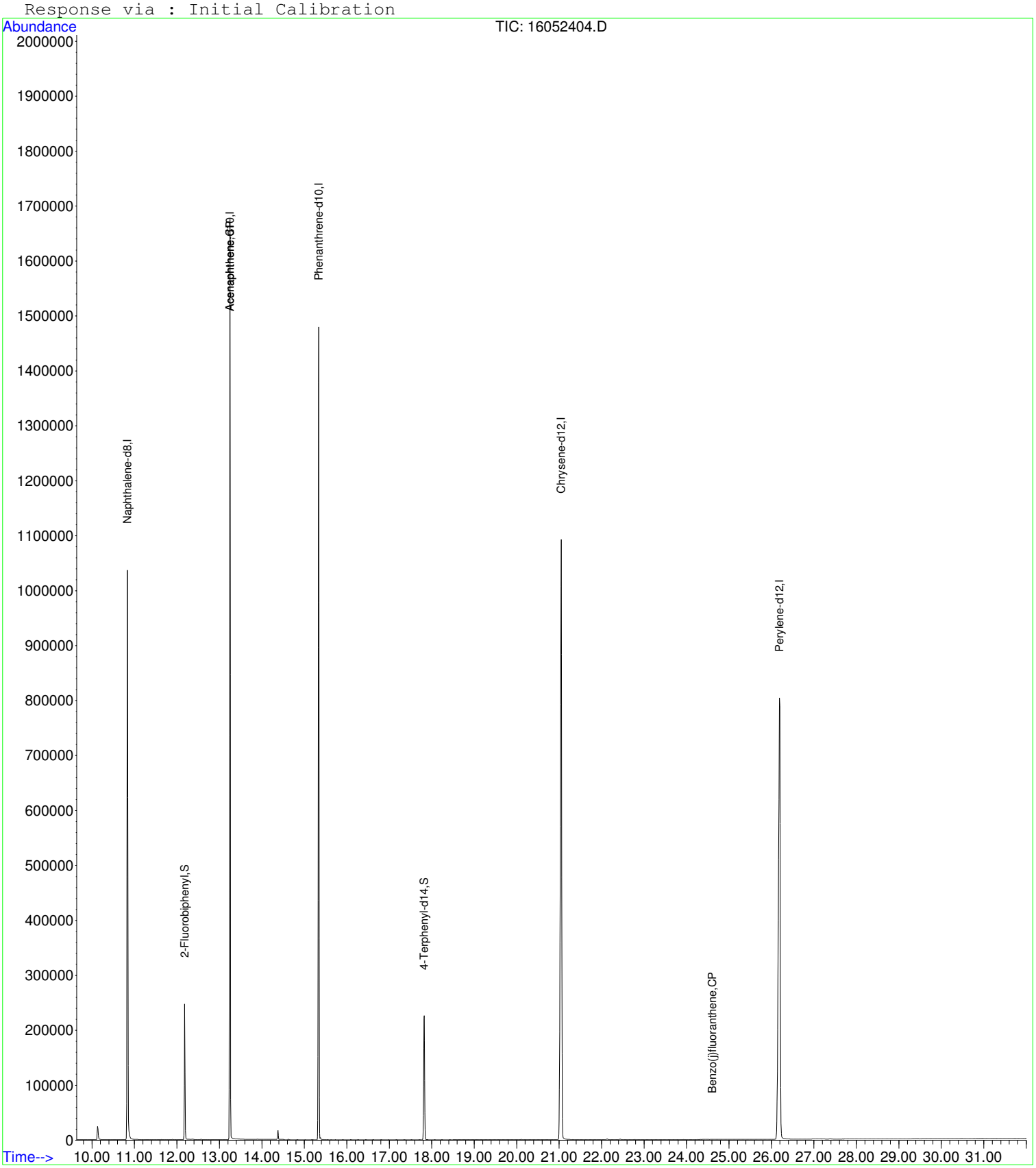
Target Compounds					Qvalue
9) Acenaphthene	13.25	154	2560	~~11.13 ug/kg#~~	~~9~~
23) Benzo(j)fluoranthene	24.61	252	106	0.30 ug/kg	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052404.D Vial: 4
Acq On : 24 May 2016 11:52 am Operator:
Sample : MB-75278 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:40 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052405.D Vial: 5
Acq On : 24 May 2016 12:32 pm Operator:
Sample : 1605135-16A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:47 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1210467	4000.00 ug/kg	104
5) Acenaphthene-d10	13.25	164	832974	4000.00 ug/kg	72
11) Phenanthrene-d10	15.34	188	1408749	4000.00 ug/kg	69
17) Chrysene-d12	21.05	240	1700672	4000.00 ug/kg	75
20) Perylene-d12	26.19	264	1521519	4000.00 ug/kg	74

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.19	172	17293	71.17 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.78%#		
16) 4-Terphenyl-d14	17.82	244	24990	68.57 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.71%#		

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	3738	10.09 ug/kg	99
14) Fluoranthene	17.31	202	12394	32.33 ug/kg	98
15) Pyrene	17.90	202	11242	28.23 ug/kg	99
18) Benzo[a]anthracene	20.87	228	8481	21.29 ug/kg	99
19) Chrysene	21.13	228	9914	25.75 ug/kg	99
21) Benzo[b]fluoranthene	24.43	252	10965	27.34 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	7000	18.61 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	3394	10.13 ug/kg	86
24) Benzo[e]pyrene	25.67	252	5554	15.46 ug/kg	97
25) Benzo[a]pyrene	25.84	252	10226	27.86 ug/kg	99
26) Dibenz[a,h]anthracene	29.41	278	4135	12.37 ug/kg	95
27) Indeno[1,2,3-cd]pyrene	29.42	276	8609	21.59 ug/kg	91
28) Benzo[g,h,i]perylene	30.48	276	7337	23.60 ug/kg	98

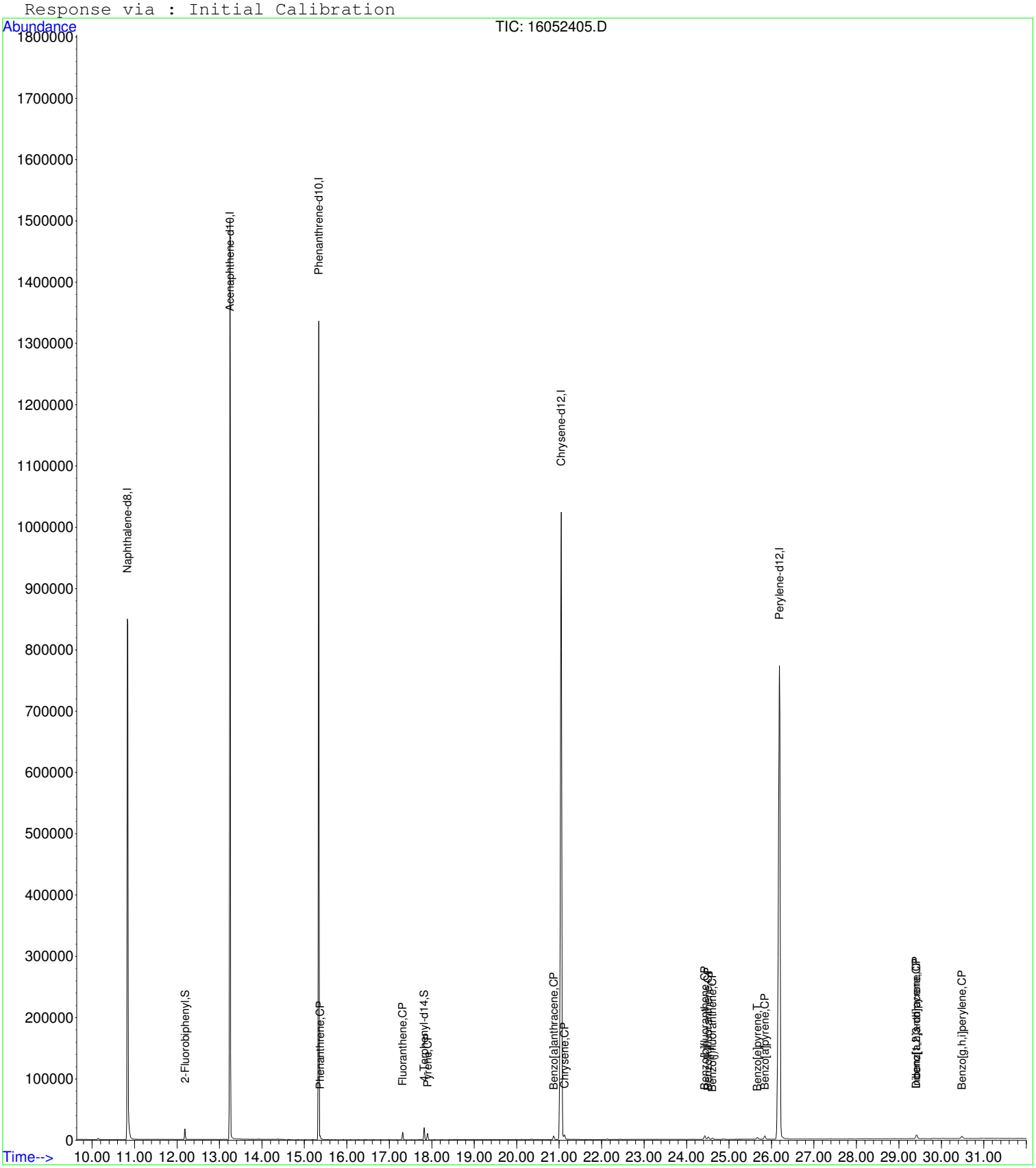
CONFIRMED
By Sherri Herschmann at 10:21:59 AM, 6/1/2016

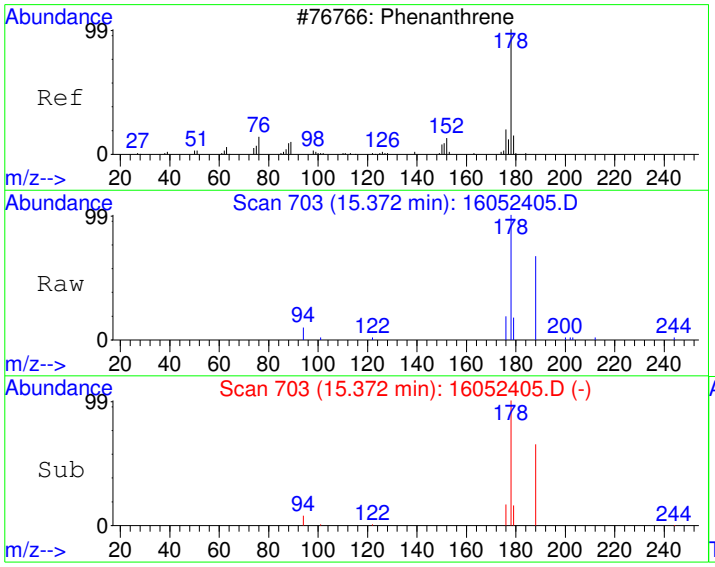
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052405.D Vial: 5
Acq On : 24 May 2016 12:32 pm Operator:
Sample : 1605135-16A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:47 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

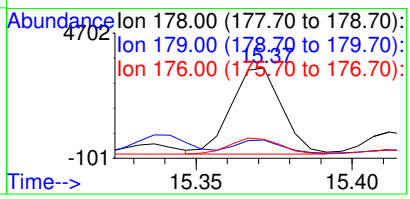


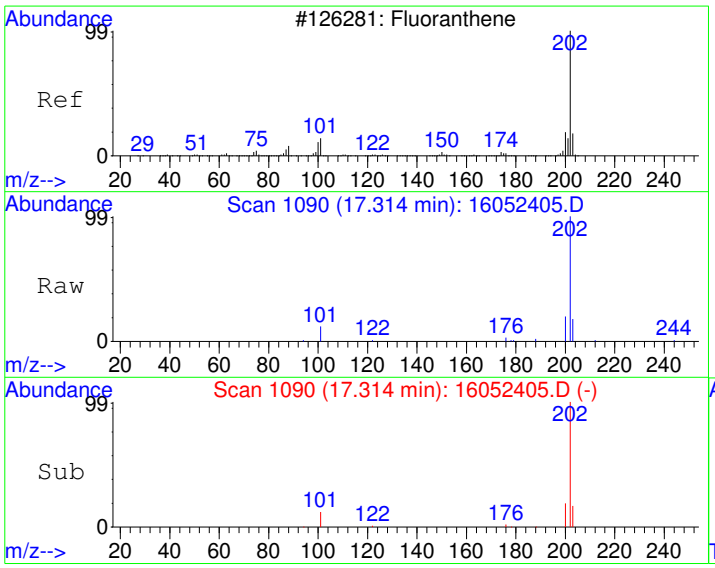


#12
Phenanthrene
Concen: 10.09 ug/kg
RT: 15.37 min Scan# 703
Delta R.T. -0.02 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:178 Resp: 3738

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	45.9
176	17.6	0.0	48.5

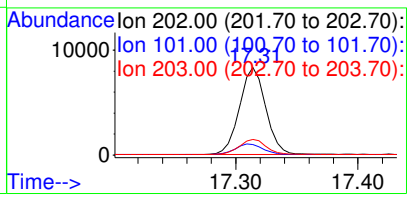


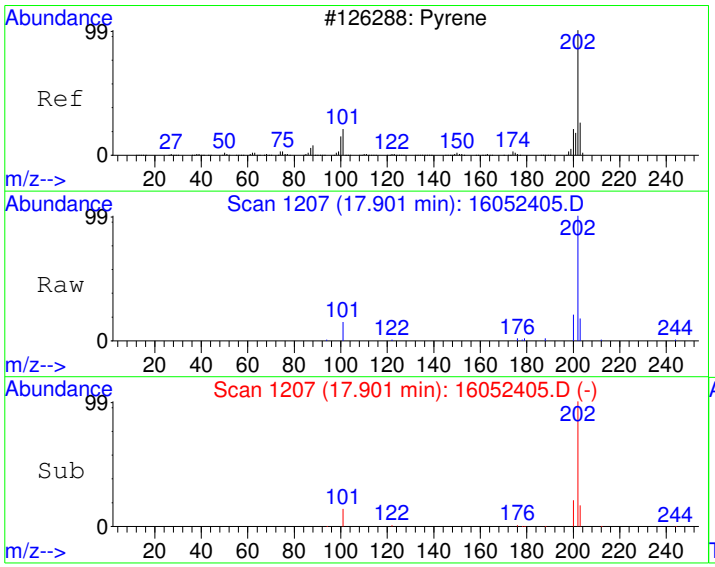


#14
Fluoranthene
Concen: 32.33 ug/kg
RT: 17.31 min Scan# 1090
Delta R.T. -0.03 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:202 Resp: 12394

Ion	Ratio	Lower	Upper
202	100		
101	11.6	0.0	43.0
203	17.4	0.0	47.9

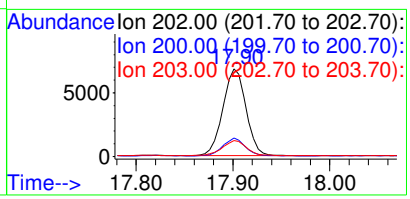


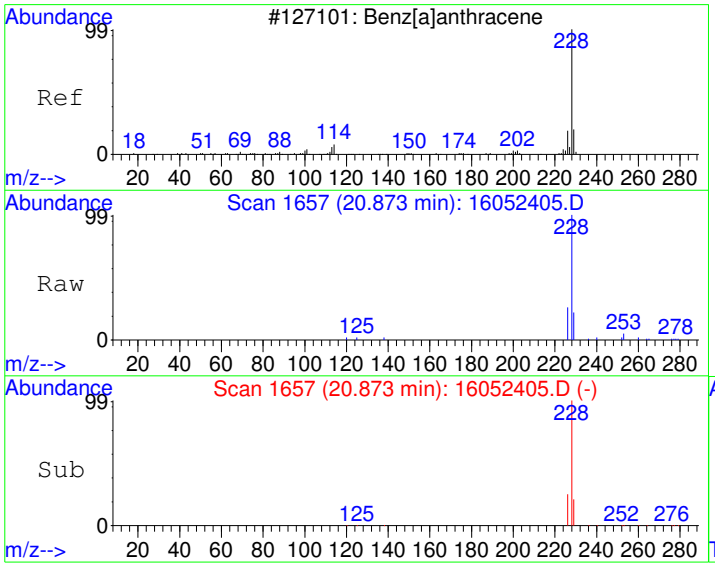


#15
Pyrene
Concen: 28.23 ug/kg
RT: 17.90 min Scan# 1207
Delta R.T. -0.03 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:202 Resp: 11242

Ion	Ratio	Lower	Upper
202	100		
200	20.5	0.0	50.0
203	17.3	0.0	48.0

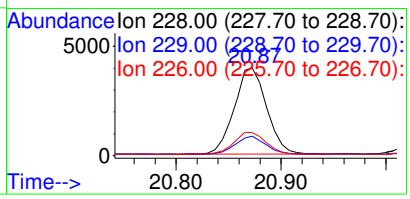


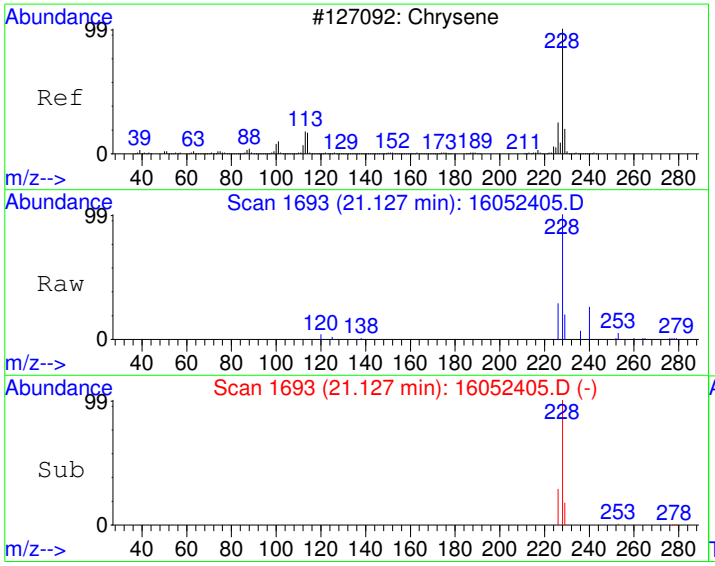


#18
Benzo[a]anthracene
Concen: 21.29 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:228 Resp: 8481

Ion	Ratio	Lower	Upper
228	100		
229	20.8	0.0	50.1
226	25.0	0.0	55.2

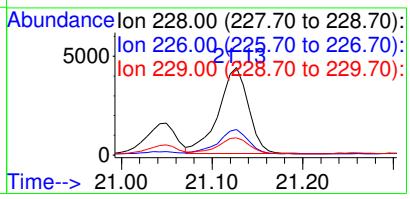


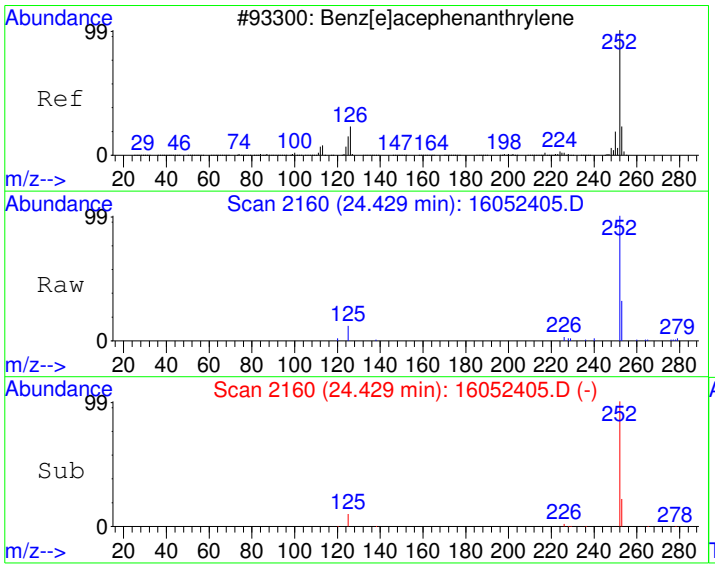


#19
Chrysene
Concen: 25.75 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:228 Resp: 9914

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.1
229	18.7	0.0	50.1

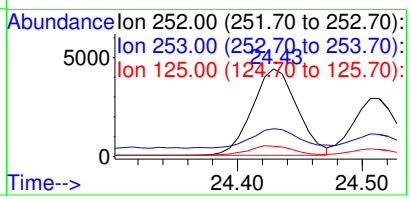


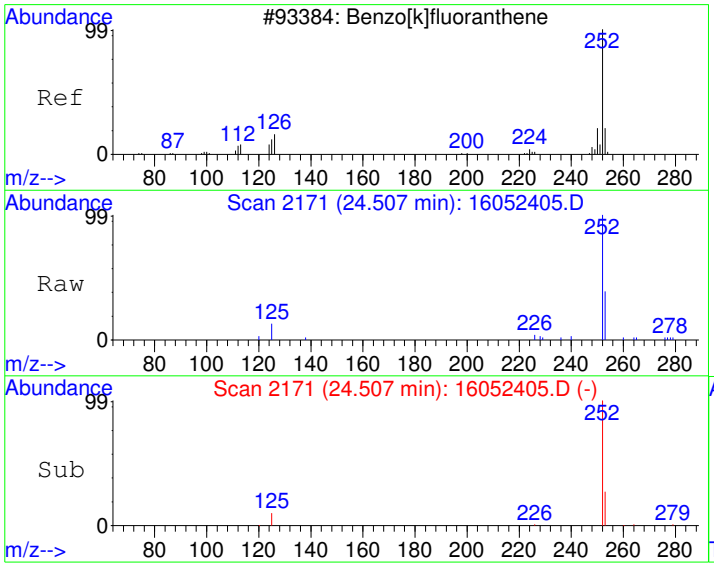


#21
Benzo[b]fluoranthene
Concen: 27.34 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:252 Resp: 10965

Ion	Ratio	Lower	Upper
252	100		
253	22.5	0.0	52.2
125	10.3	0.0	41.0

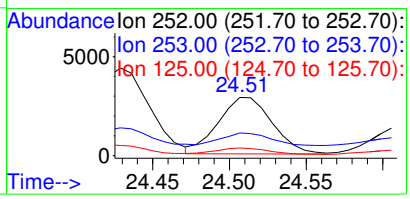


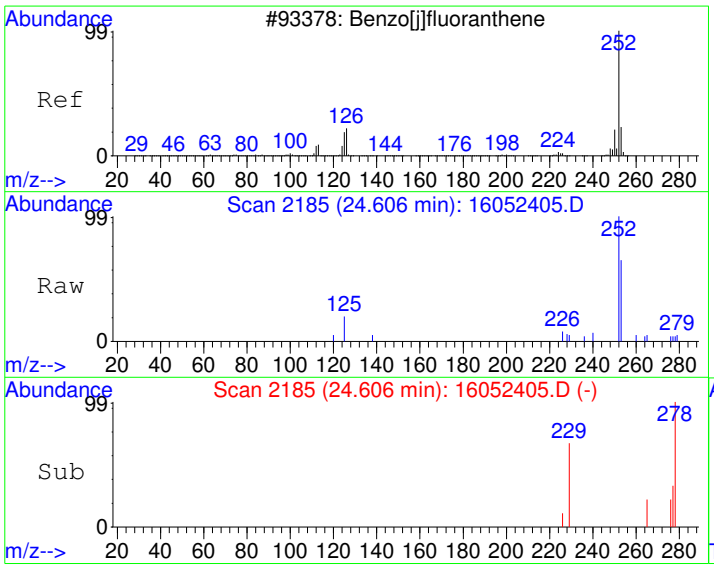


#22
Benzo[k]fluoranthene
Concen: 18.61 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:252 Resp: 7000

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.1	42.1
125	11.5	0.0	31.3

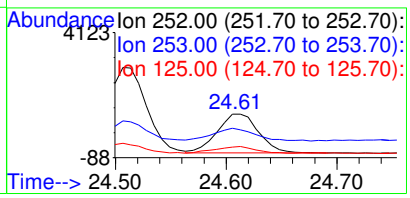


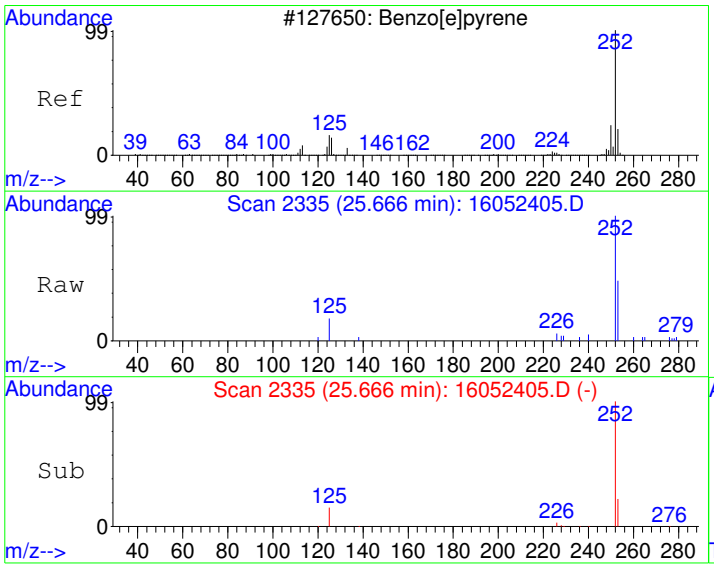


#23
Benzo(j)fluoranthene
Concen: 10.13 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:252 Resp: 3394

Ion	Ratio	Lower	Upper
252	100		
253	31.6	2.1	42.1
125	16.1	0.0	34.4

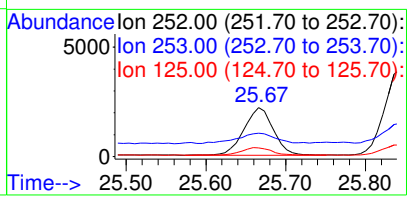


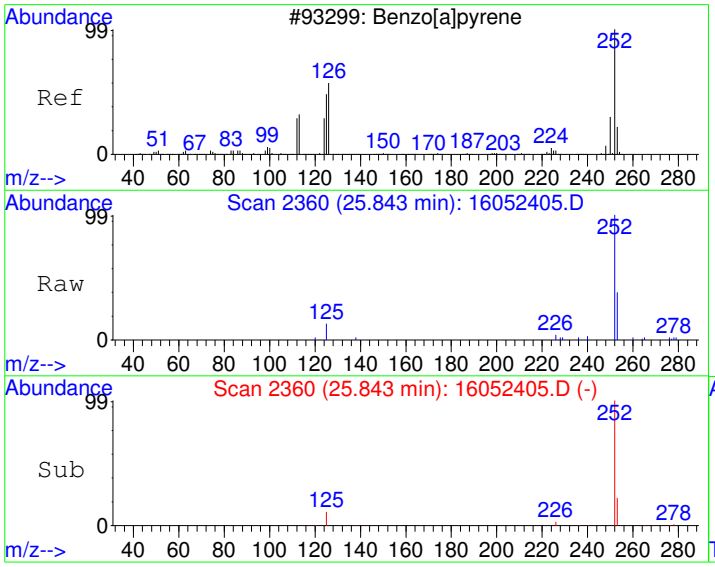


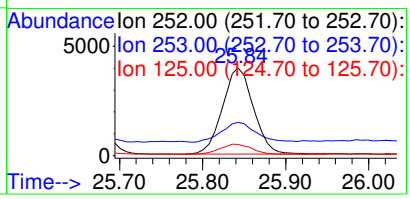
#24
Benzo[e]pyrene
Concen: 15.46 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:252 Resp: 5554

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.2	42.2
125	15.4	0.0	36.1



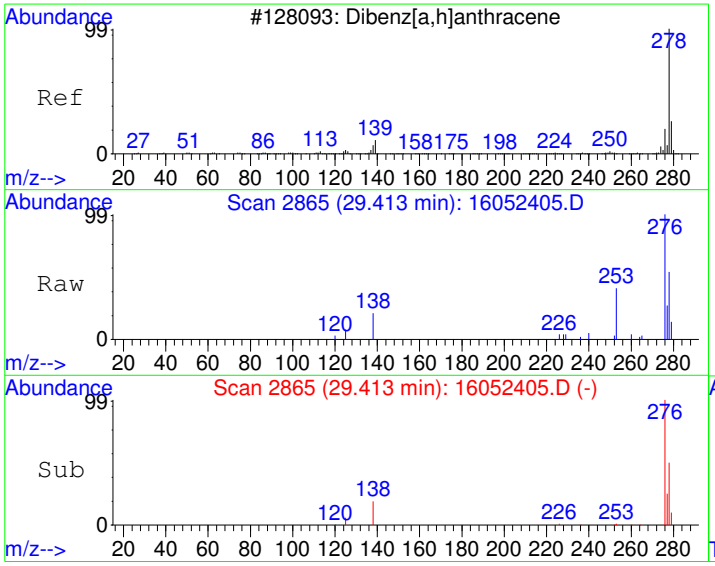


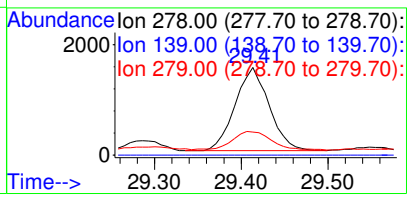


#25
Benzo[a]pyrene
Concen: 27.86 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:252 Resp: 10226

Ion	Ratio	Lower	Upper
252	100		
253	22.6	1.9	41.9
125	11.4	0.0	31.7

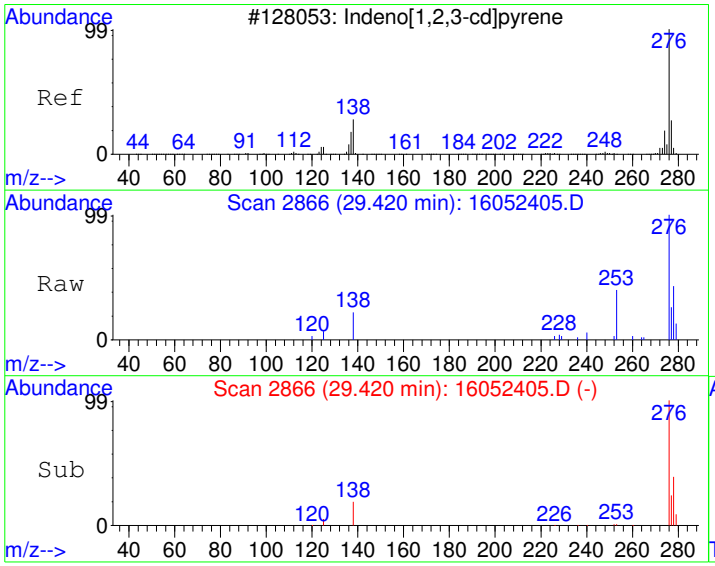


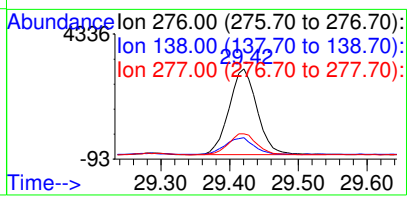


#26
Dibenz[a,h]anthracene
Concen: 12.37 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:278 Resp: 4135

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.5	4.2	44.2

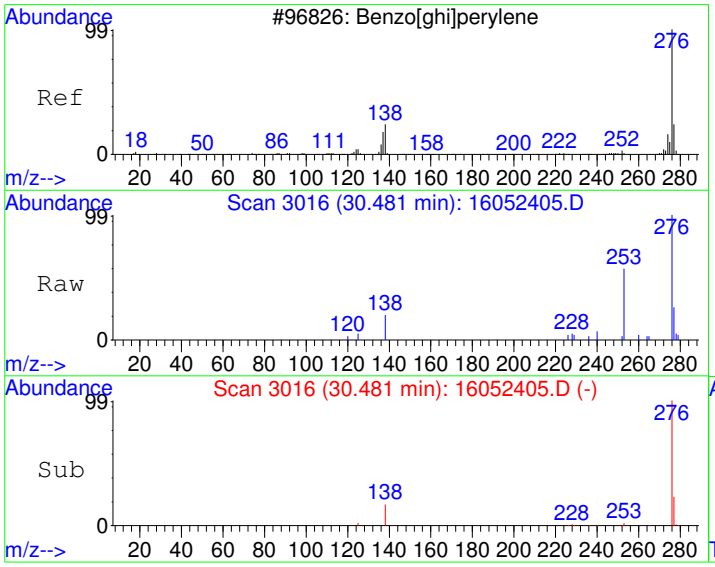




#27
Indeno[1,2,3-cd]pyrene
Concen: 21.59 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:276 Resp: 8609

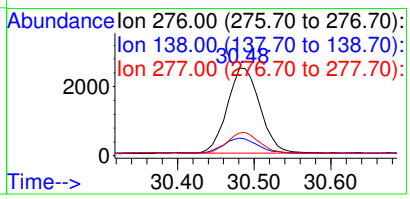
Ion	Ratio	Lower	Upper
276	100		
138	19.5	6.7	46.7
277	24.3	5.8	45.8



#28
Benzo[g,h,i]perylene
Concen: 23.60 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052405.D
Acq: 24 May 2016 12:32 pm

Tgt Ion:276 Resp: 7337

Ion	Ratio	Lower	Upper
276	100		
138	17.5	0.0	39.1
277	23.7	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052406.D Vial: 6
Acq On : 24 May 2016 1:12 pm Operator:
Sample : 1605135-17A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:47 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1238470	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	838581	4000.00 ug/kg	73
11) Phenanthrene-d10	15.34	188	1452480	4000.00 ug/kg	71
17) Chrysene-d12	21.05	240	1751584	4000.00 ug/kg	77
20) Perylene-d12	26.19	264	1560998	4000.00 ug/kg	76

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	17040	69.66 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.74%#	
16) 4-Terphenyl-d14	17.82	244	25277	67.27 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.68%#	

Target Compounds

					Qvalue
19) Chrysene	21.13	228	2120	5.35 ug/kg	97
21) Benzo[b]fluoranthene	24.43	252	2551	6.20 ug/kg	93
22) Benzo[k]fluoranthene	24.51	252	2483	6.43 ug/kg	99
23) Benzo(j)fluoranthene	24.51	252	2364	~~6.88 ug/kg~~	~~97~~
25) Benzo[a]pyrene	25.84	252	2616	6.95 ug/kg	96
26) Dibenz[a,h]anthracene	29.41	278	2509	7.32 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.42	276	3121	7.63 ug/kg	93
28) Benzo[g,h,i]perylene	30.49	276	2453	7.69 ug/kg	98

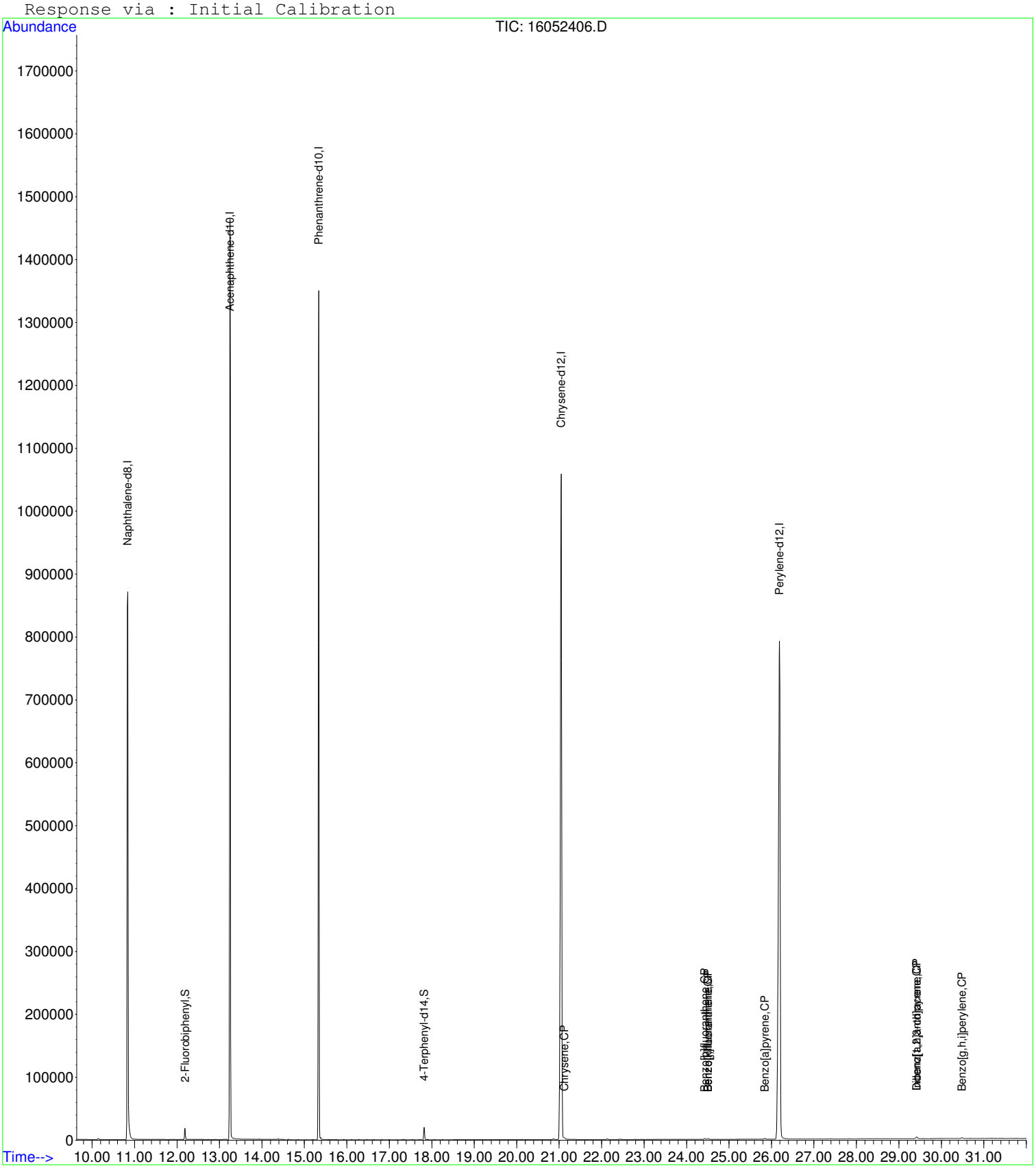
CONFIRMED
By Sherri Herschmann at 10:23:08 AM, 6/1/2016

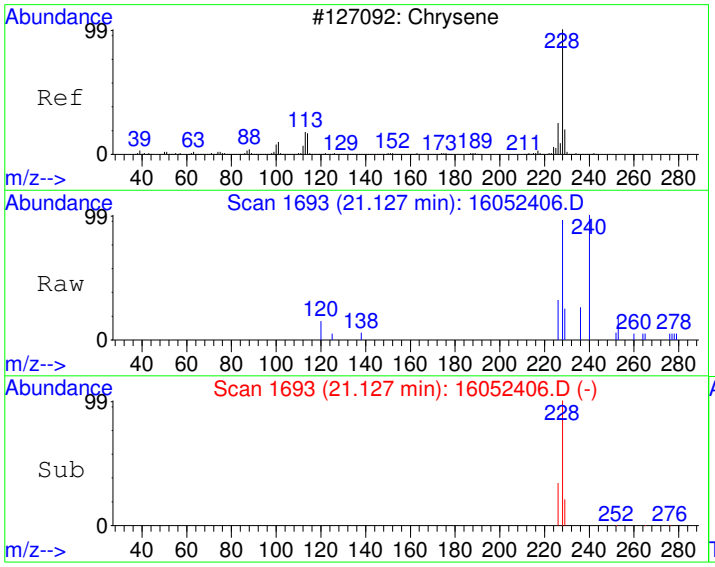
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052406.D Vial: 6
Acq On : 24 May 2016 1:12 pm Operator:
Sample : 1605135-17A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:47 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

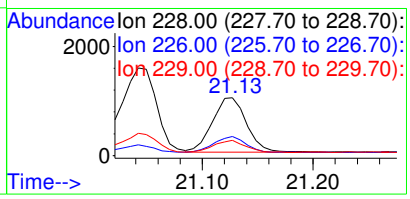


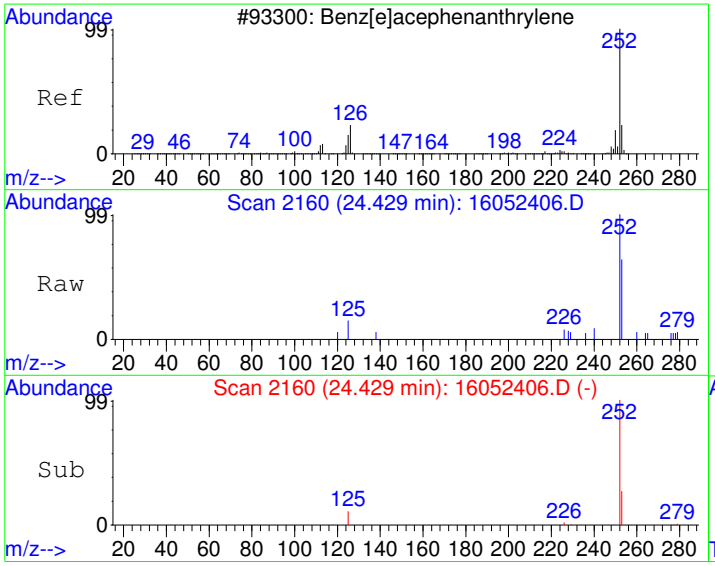


#19
Chrysene
Concen: 5.35 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:228 Resp: 2120

Ion	Ratio	Lower	Upper
228	100		
226	29.2	0.0	58.1
229	21.6	0.0	50.1

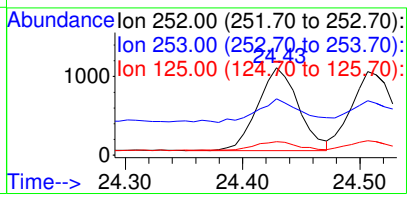


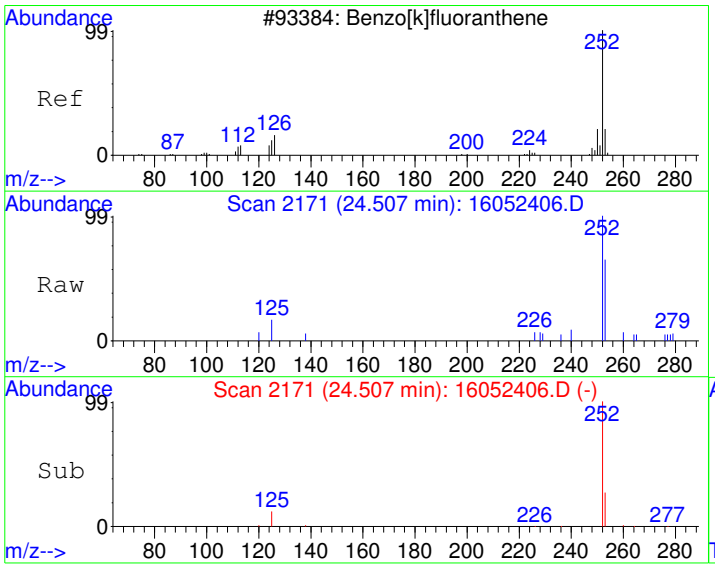


#21
Benzo[b]fluoranthene
Concen: 6.20 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:252 Resp: 2551

Ion	Ratio	Lower	Upper
252	100		
253	26.9	0.0	52.2
125	10.1	0.0	41.0

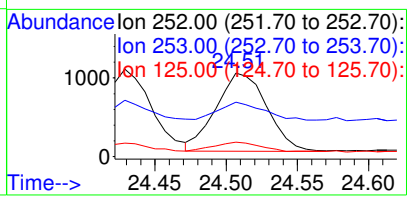


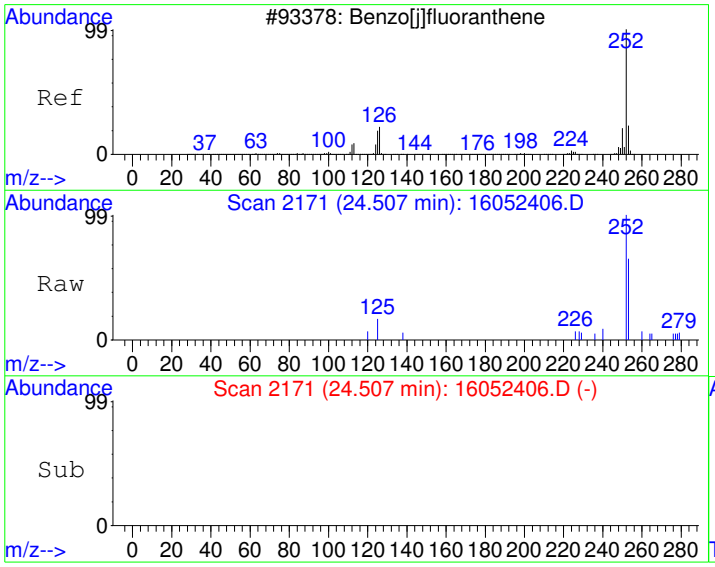


#22
Benzo[k]fluoranthene
Concen: 6.43 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:252 Resp: 2483

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.1	42.1
125	12.1	0.0	31.3

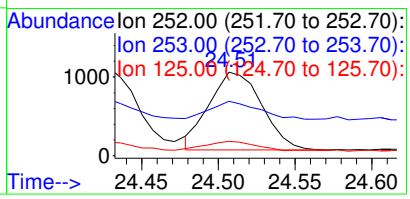


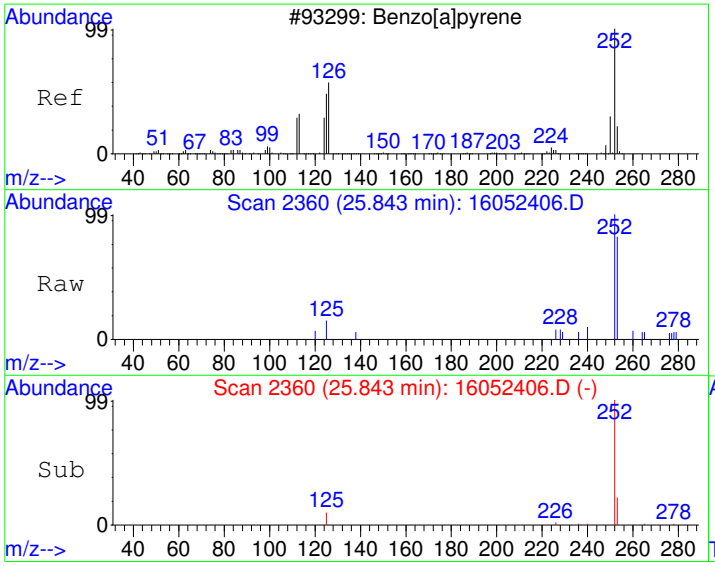


#23
Benzo(j)fluoranthene
Concen: 6.88 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.16 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:252 Resp: 2364

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.1	42.1
125	12.1	0.0	34.4

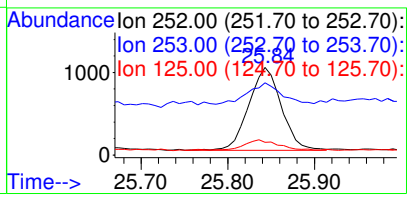


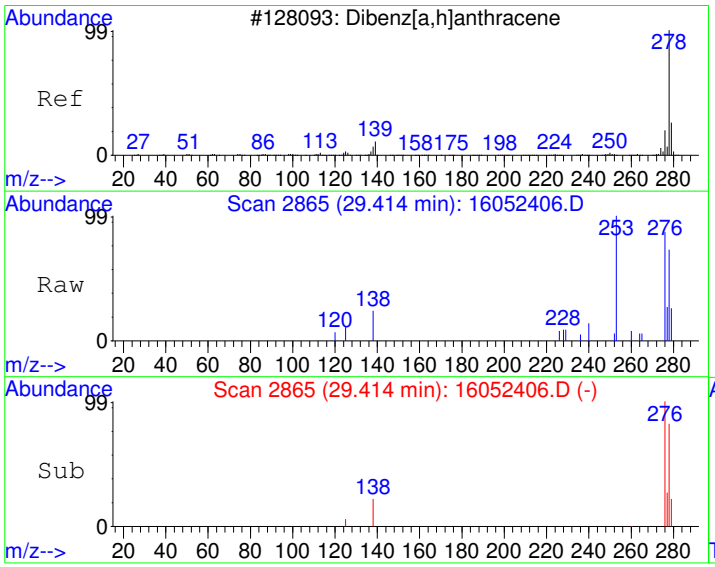


#25
Benzo[a]pyrene
Concen: 6.95 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:252 Resp: 2616

Ion	Ratio	Lower	Upper
252	100		
253	23.7	1.9	41.9
125	9.7	0.0	31.7

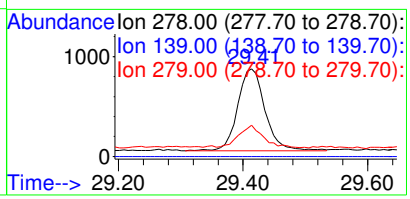


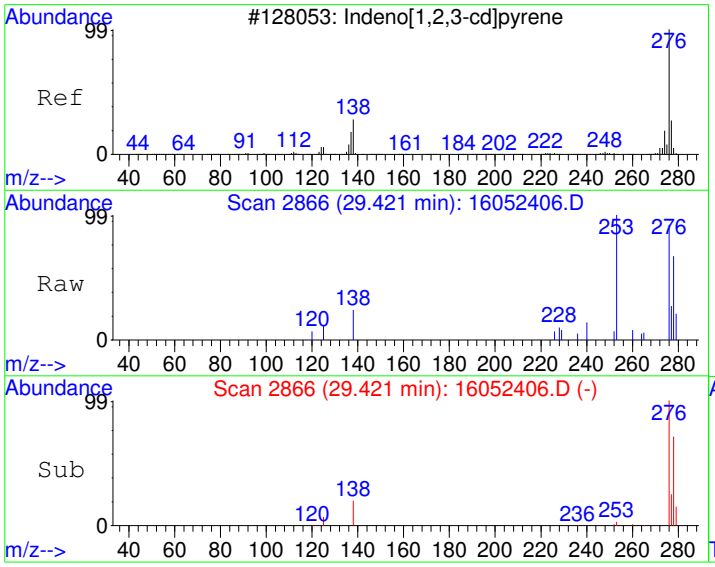


#26
Dibenz[a,h]anthracene
Concen: 7.32 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:278 Resp: 2509

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	26.4	4.2	44.2

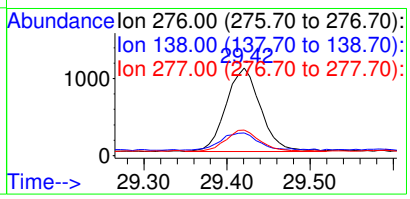


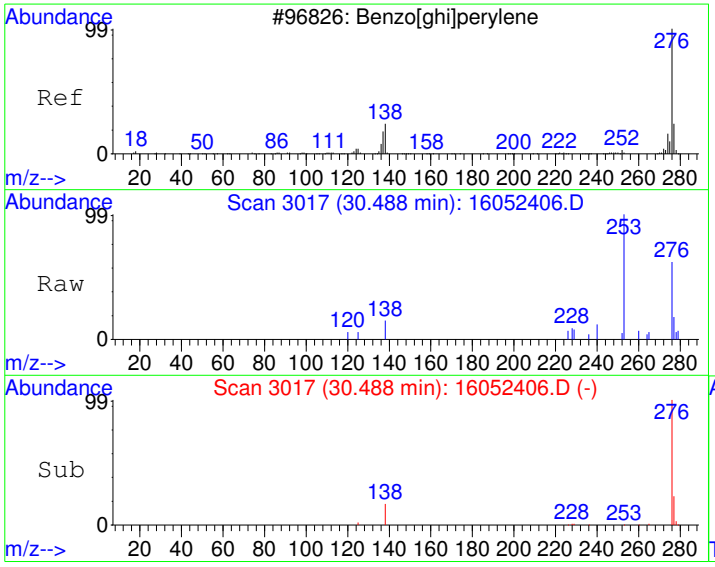


#27
Indeno[1,2,3-cd]pyrene
Concen: 7.63 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:276 Resp: 3121

Ion	Ratio	Lower	Upper
276	100		
138	20.3	6.7	46.7
277	25.6	5.8	45.8

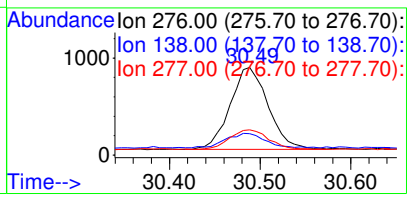




#28
Benzo[g,h,i]perylene
Concen: 7.69 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052406.D
Acq: 24 May 2016 1:12 pm

Tgt Ion:276 Resp: 2453

Ion	Ratio	Lower	Upper
276	100		
138	17.3	0.0	39.1
277	23.7	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052407.D Vial: 7
Acq On : 24 May 2016 1:51 pm Operator:
Sample : 1605135-18A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1239737	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	836344	4000.00 ug/kg	73
11) Phenanthrene-d10	15.34	188	1438738	4000.00 ug/kg	70
17) Chrysene-d12	21.05	240	1726416	4000.00 ug/kg	76
20) Perylene-d12	26.19	264	1541800	4000.00 ug/kg	75

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	17907	73.40 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.84%#	
16) 4-Terphenyl-d14	17.82	244	27700	74.42 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.86%#	

Target Compounds					Qvalue
18) Benzo[a]anthracene	20.87	228	2283	5.64 ug/kg	99
19) Chrysene	21.13	228	2559	6.55 ug/kg	98
21) Benzo[b]fluoranthene	24.43	252	2969	7.31 ug/kg	98
22) Benzo[k]fluoranthene	24.51	252	2492	6.54 ug/kg	98
23) Benzo(j)fluoranthene	24.61	252	380	1.12 ug/kg	82
25) Benzo[a]pyrene	25.84	252	2879	7.74 ug/kg	96
26) Dibenz[a,h]anthracene	29.41	278	2154	6.36 ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.42	276	2955	7.31 ug/kg	91
28) Benzo[g,h,i]perylene	30.48	276	2445	7.76 ug/kg	96

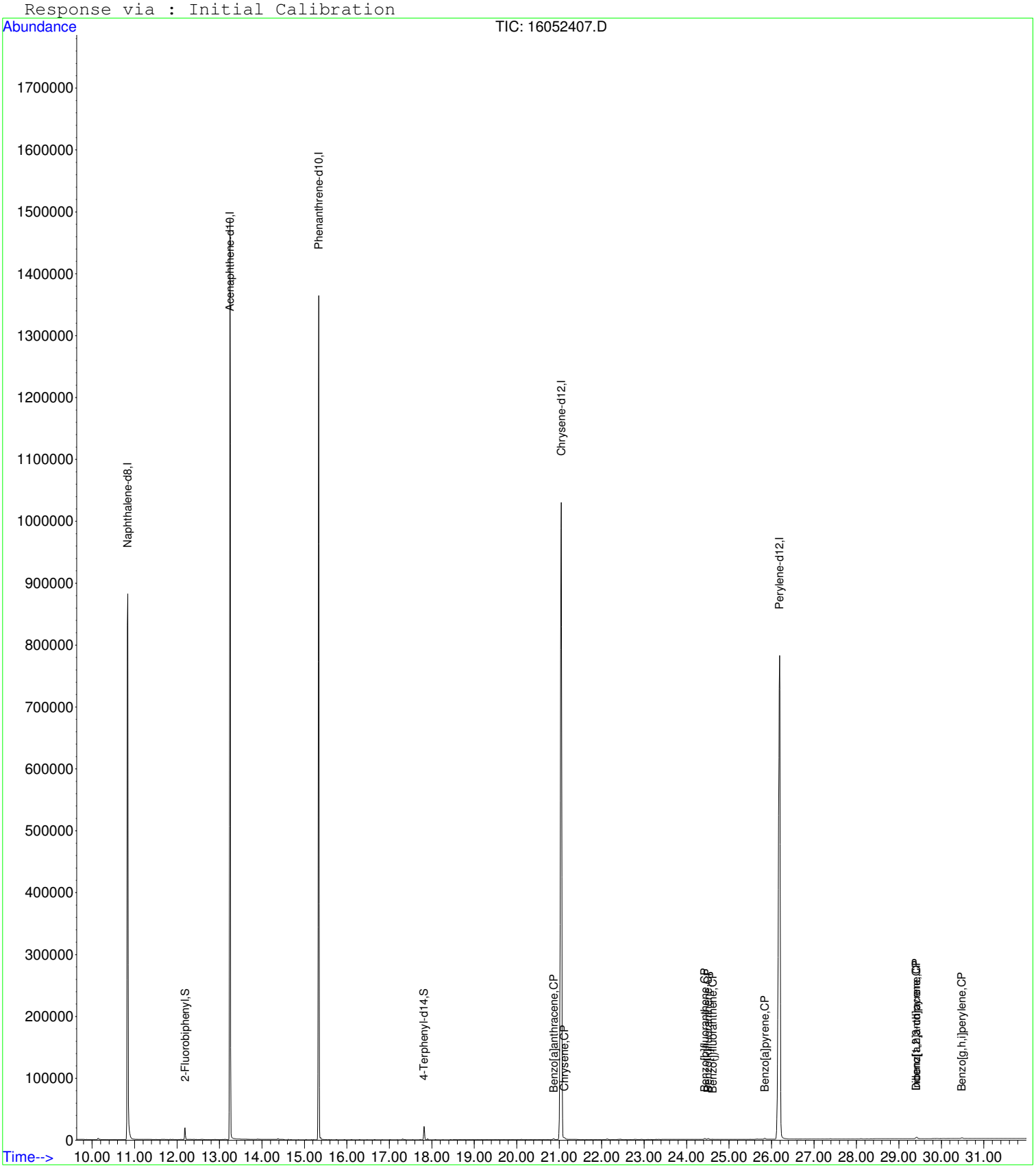
CONFIRMED
By Sherri Herschmann at 10:23:21 AM, 6/1/2016

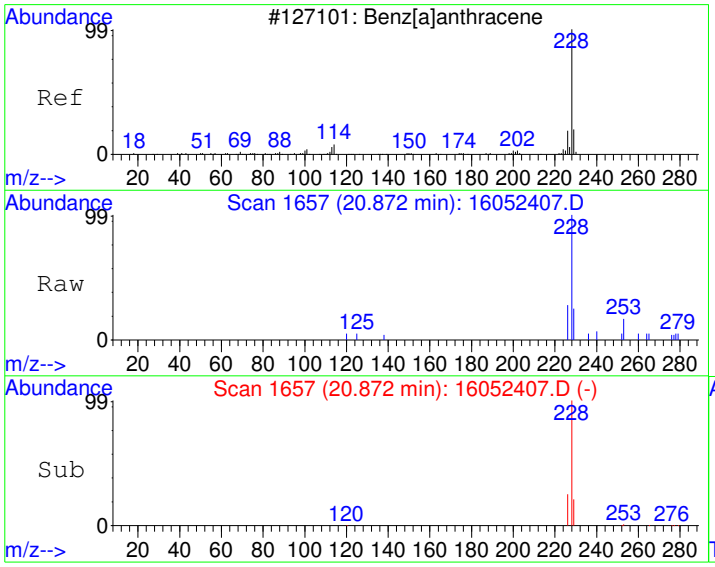
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052407.D Vial: 7
Acq On : 24 May 2016 1:51 pm Operator:
Sample : 1605135-18A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

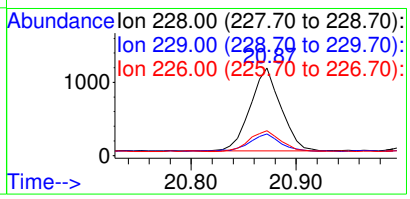


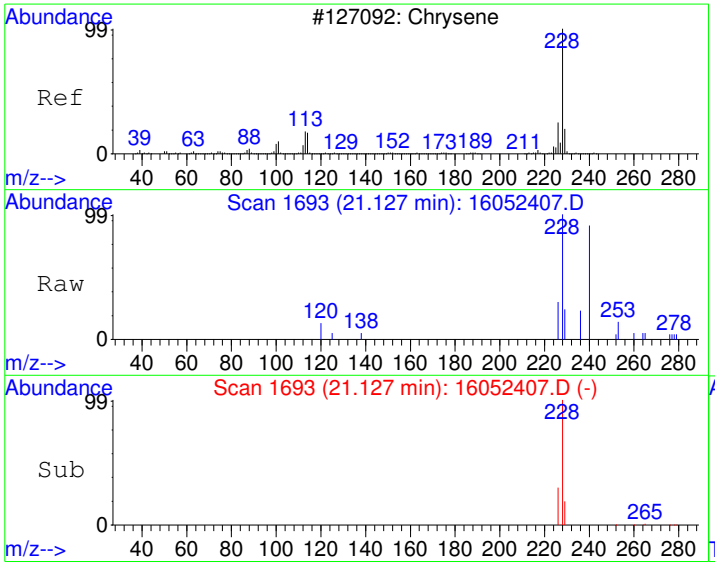


#18
Benzo[a]anthracene
Concen: 5.64 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:228 Resp: 2283

Ion	Ratio	Lower	Upper
228	100		
229	21.1	0.0	50.1
226	24.7	0.0	55.2

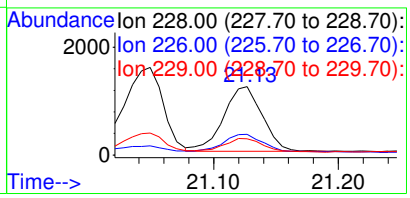


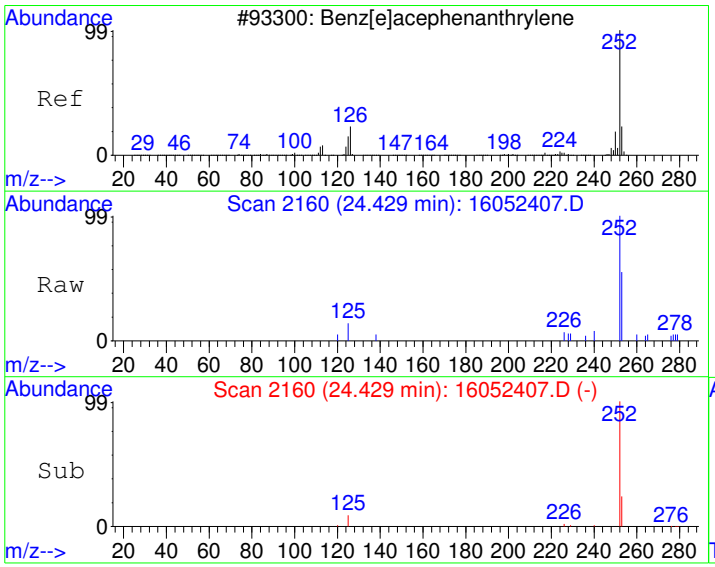


#19
Chrysene
Concen: 6.55 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:228 Resp: 2559

Ion	Ratio	Lower	Upper
228	100		
226	26.7	0.0	58.1
229	20.6	0.0	50.1

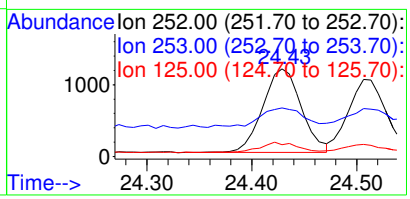


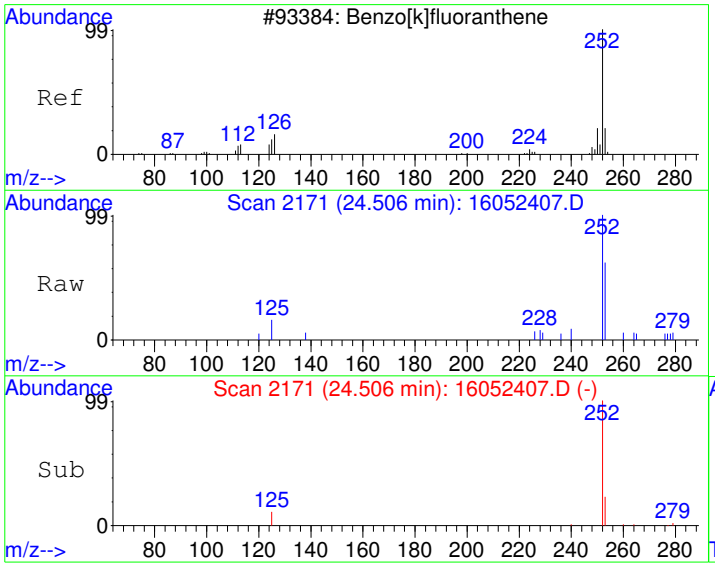


#21
Benzo[b]fluoranthene
Concen: 7.31 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:252 Resp: 2969

Ion	Ratio	Lower	Upper
252	100		
253	22.5	0.0	52.2
125	8.9	0.0	41.0

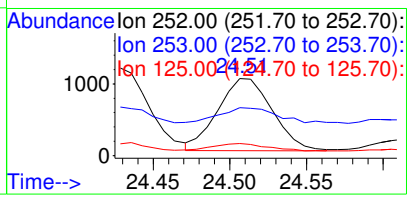


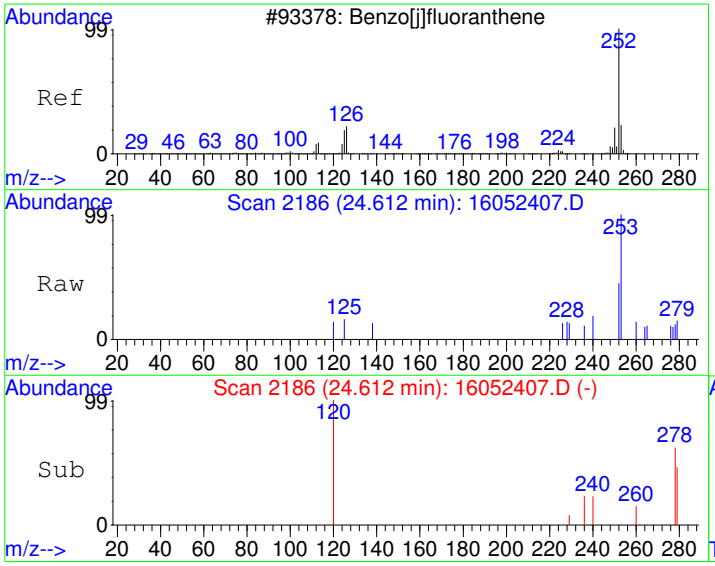


#22
Benzo[k]fluoranthene
Concen: 6.54 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:252 Resp: 2492

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.1	42.1
125	10.7	0.0	31.3

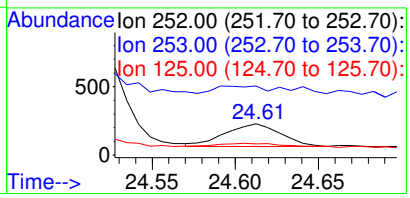


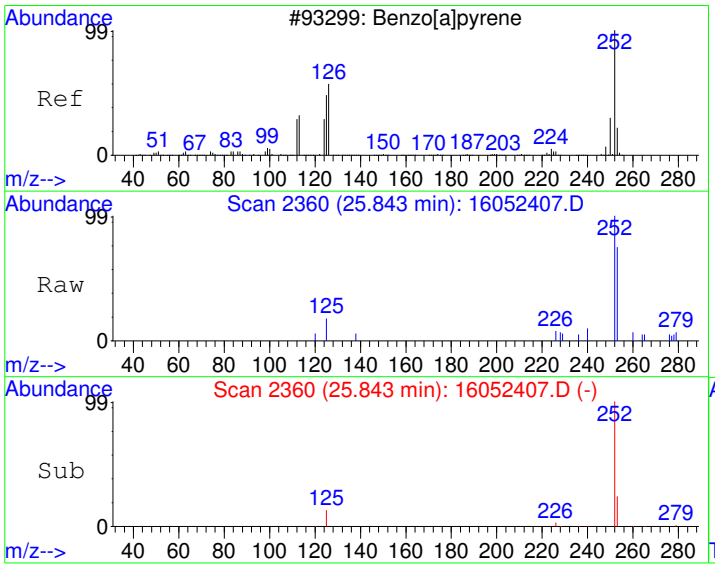


#23
Benzo(j)fluoranthene
Concen: 1.12 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:252 Resp: 380

Ion	Ratio	Lower	Upper
252	100		
253	33.3	2.1	42.1
125	10.3	0.0	34.4

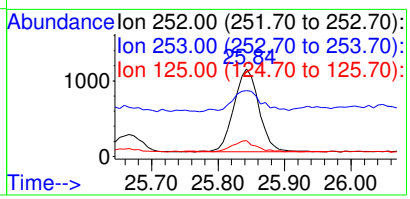


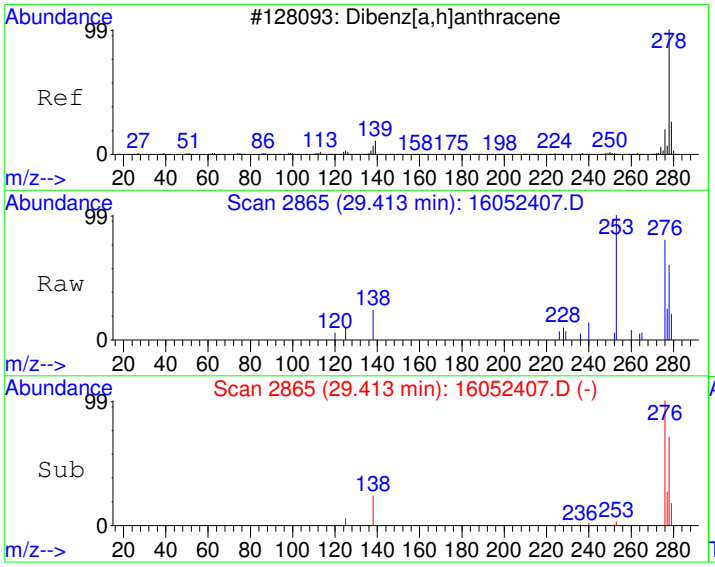


#25
Benzo[a]pyrene
Concen: 7.74 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:252 Resp: 2879

Ion	Ratio	Lower	Upper
252	100		
253	23.3	1.9	41.9
125	13.5	0.0	31.7

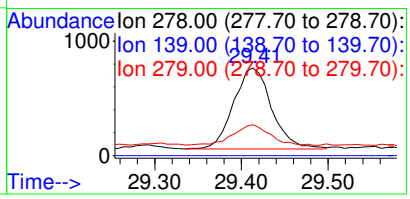


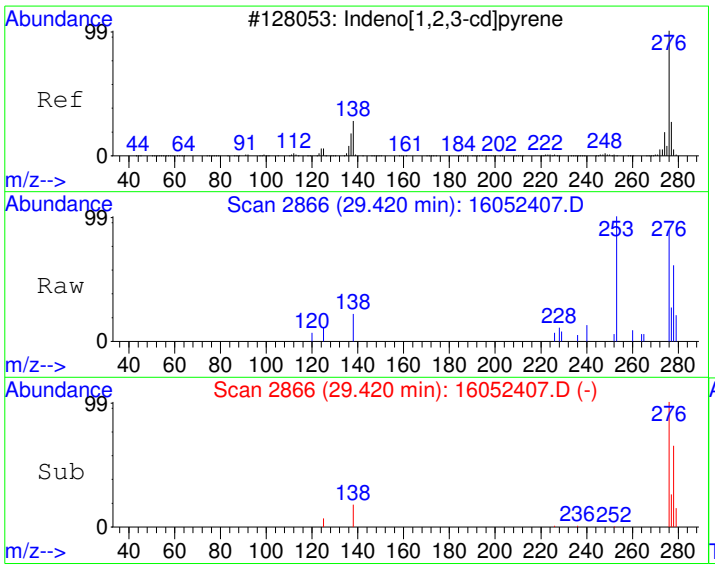


#26
Dibenz[a,h]anthracene
Concen: 6.36 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:278 Resp: 2154

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	25.2	4.2	44.2

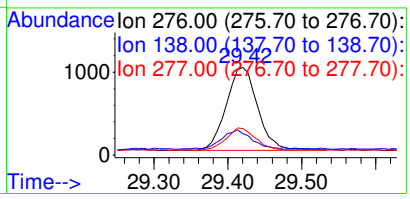


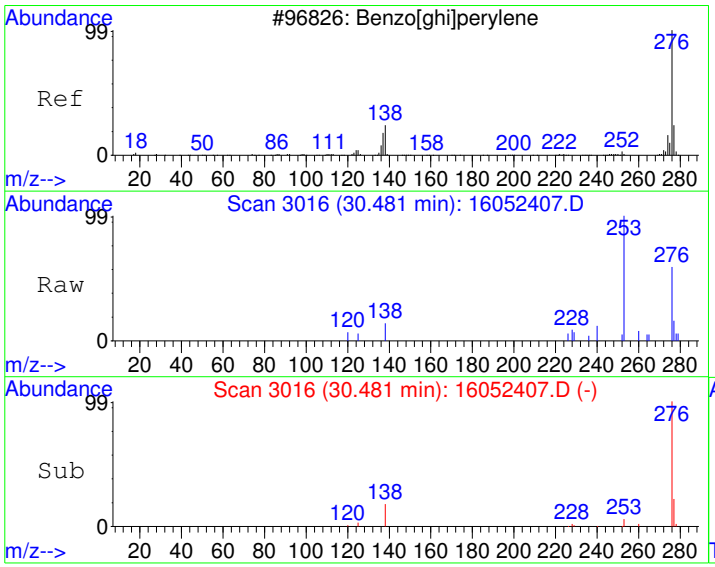


#27
Indeno[1,2,3-cd]pyrene
Concen: 7.31 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:276 Resp: 2955

Ion	Ratio	Lower	Upper
276	100		
138	18.0	6.7	46.7
277	25.7	5.8	45.8

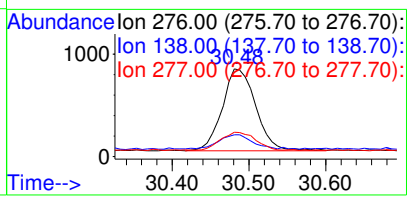




#28
Benzo[g,h,i]perylene
Concen: 7.76 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052407.D
Acq: 24 May 2016 1:51 pm

Tgt Ion:276 Resp: 2445

Ion	Ratio	Lower	Upper
276	100		
138	17.0	0.0	39.1
277	22.0	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052408.D Vial: 8
Acq On : 24 May 2016 2:31 pm Operator:
Sample : 1605135-19A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1192040	4000.00 ug/kg	103
5) Acenaphthene-d10	13.25	164	798308	4000.00 ug/kg	69
11) Phenanthrene-d10	15.34	188	1385398	4000.00 ug/kg	68
17) Chrysene-d12	21.04	240	1646738	4000.00 ug/kg	72
20) Perylene-d12	26.19	264	1468662	4000.00 ug/kg	71

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	16914	72.63 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.82%#	
16) 4-Terphenyl-d14	17.82	244	25206	70.32 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#	

Target Compounds

					Qvalue
19) Chrysene	21.12	228	1880	5.04 ug/kg	98
21) Benzo[b]fluoranthene	24.43	252	2312	5.97 ug/kg	97
22) Benzo[k]fluoranthene	24.51	252	2182	6.01 ug/kg	97
23) Benzo(j)fluoranthene	24.61	252	78	0.24 ug/kg#	5
25) Benzo[a]pyrene	25.84	252	2329	6.57 ug/kg	97
26) Dibenz[a,h]anthracene	29.41	278	2172	6.73 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.42	276	2829	7.35 ug/kg	94
28) Benzo[g,h,i]perylene	30.49	276	2104	7.01 ug/kg	98

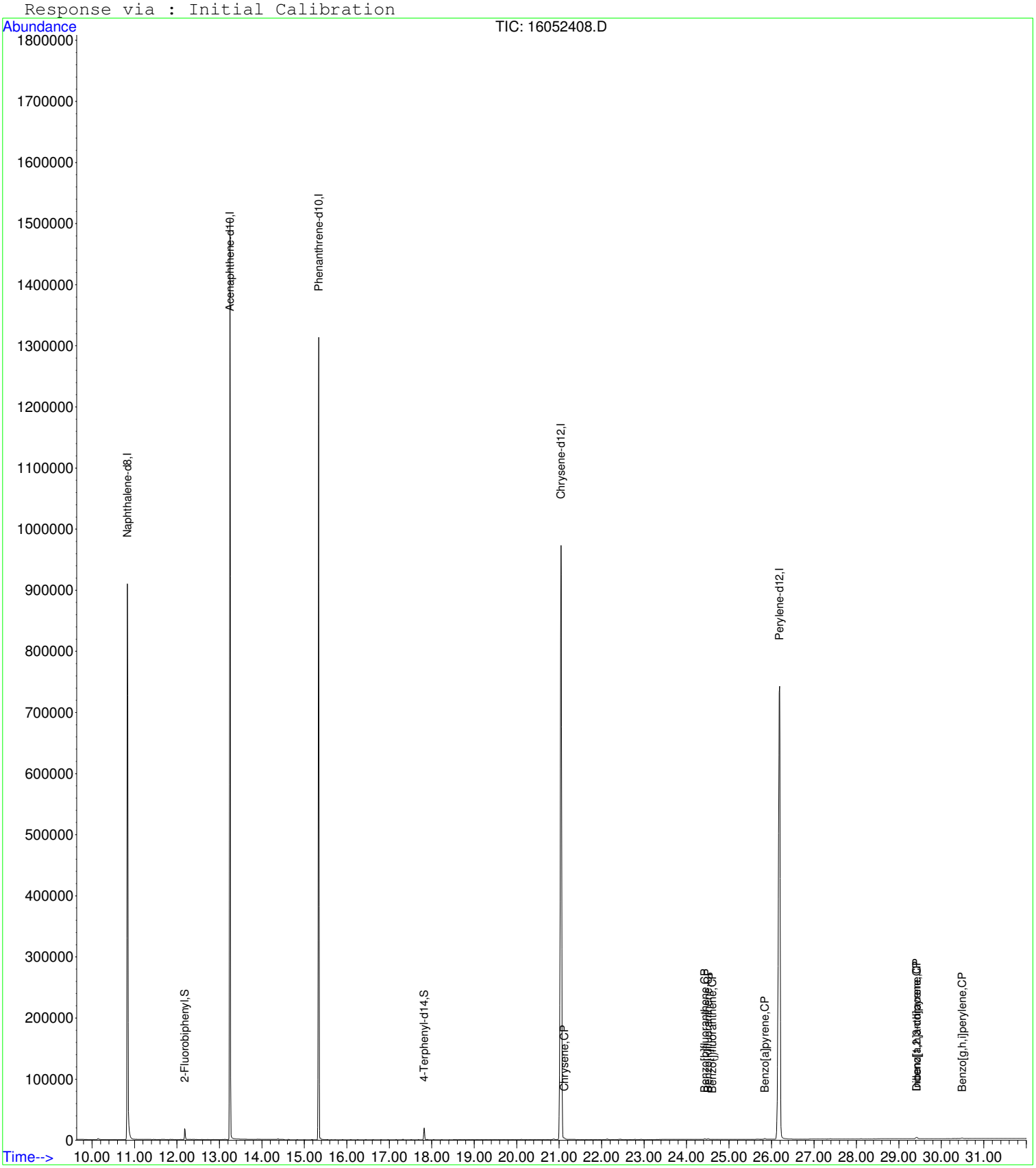
CONFIRMED
By Sherri Herschmann at 10:23:45 AM, 6/1/2016

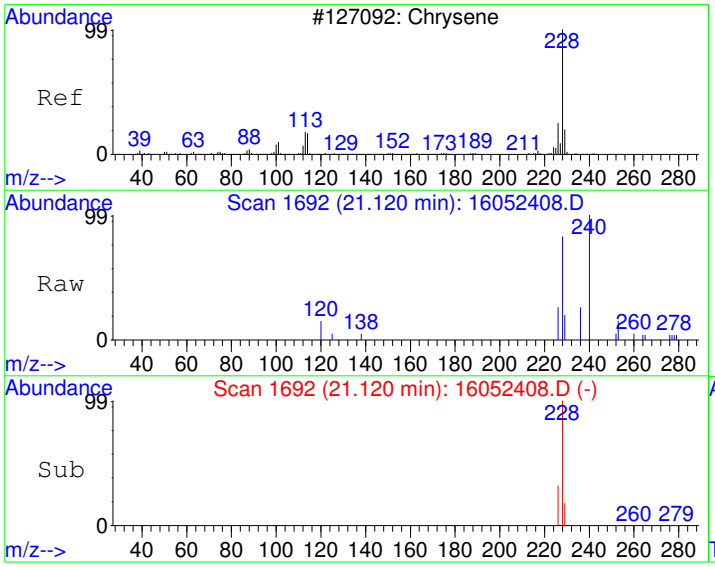
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052408.D Vial: 8
Acq On : 24 May 2016 2:31 pm Operator:
Sample : 1605135-19A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

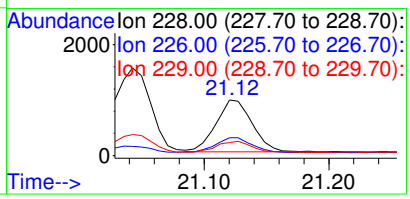


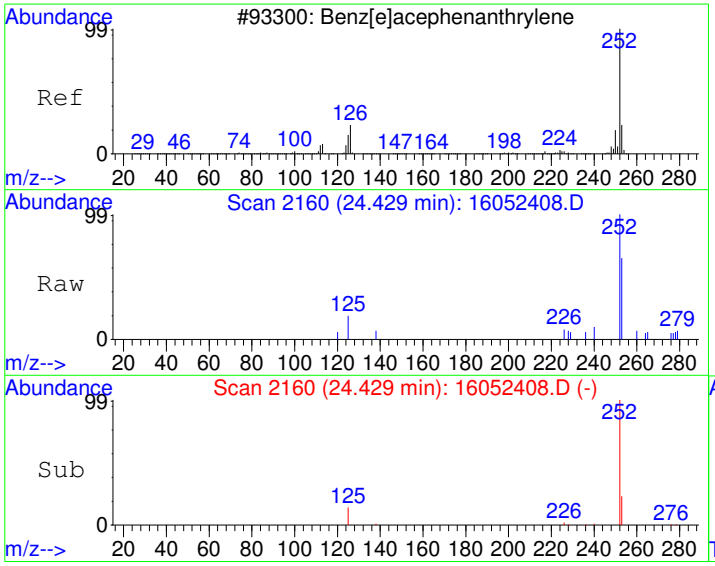


#19
Chrysene
Concen: 5.04 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:228 Resp: 1880

Ion	Ratio	Lower	Upper
228	100		
226	27.4	0.0	58.1
229	19.0	0.0	50.1

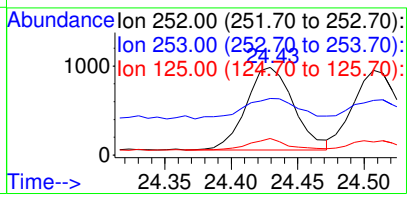


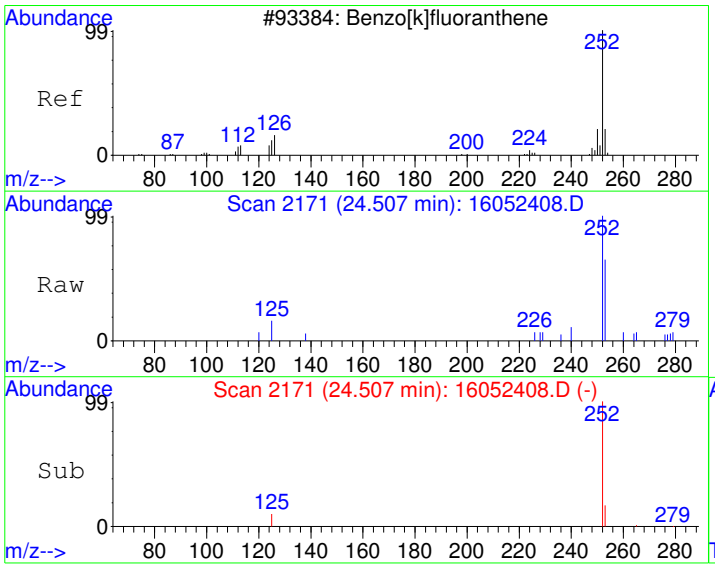


#21
Benzo[b]fluoranthene
Concen: 5.97 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:252 Resp: 2312

Ion	Ratio	Lower	Upper
252	100		
253	21.5	0.0	52.2
125	13.7	0.0	41.0

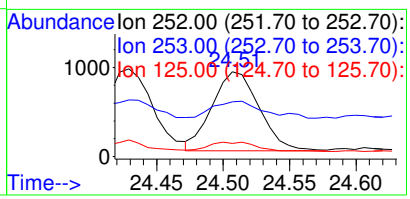


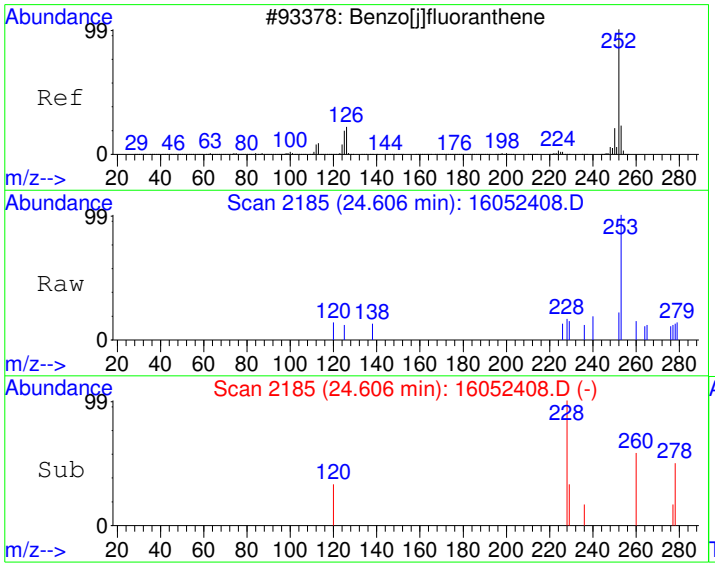


#22
Benzo[k]fluoranthene
Concen: 6.01 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:252 Resp: 2182

Ion	Ratio	Lower	Upper
252	100		
253	20.2	2.1	42.1
125	10.3	0.0	31.3

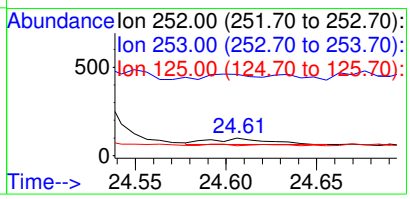


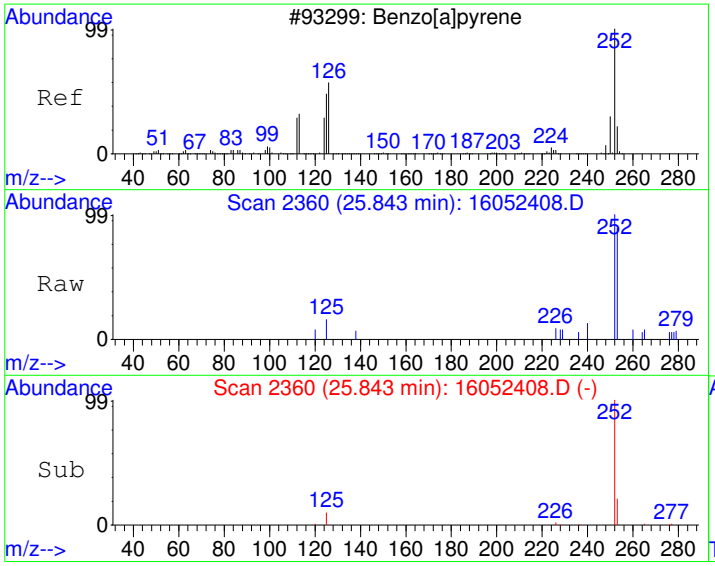


#23
Benzo(j)fluoranthene
Concen: 0.24 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:252 Resp: 78

Ion	Ratio	Lower	Upper
252	100		
253	86.5	2.1	42.1#
125	0.0	0.0	34.4

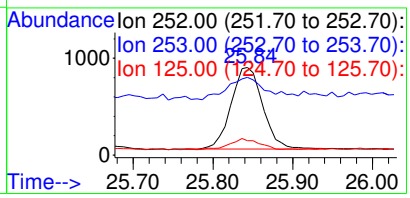


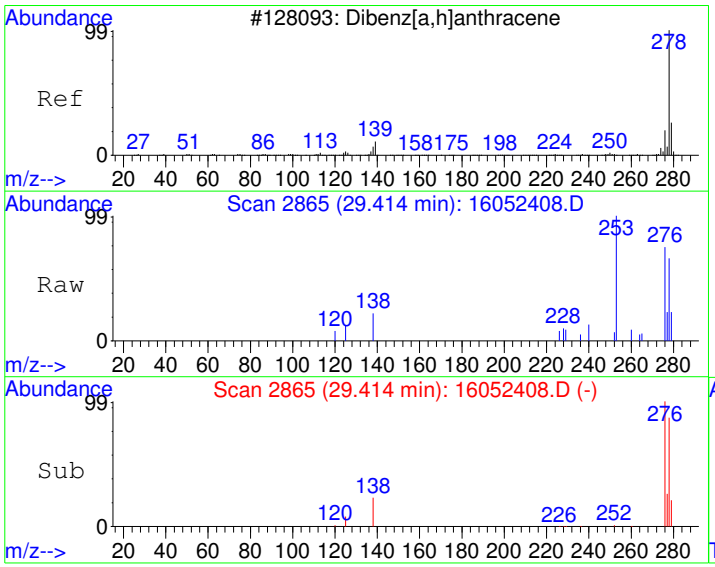


#25
Benzo[a]pyrene
Concen: 6.57 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:252 Resp: 2329

Ion	Ratio	Lower	Upper
252	100		
253	23.3	1.9	41.9
125	10.3	0.0	31.7

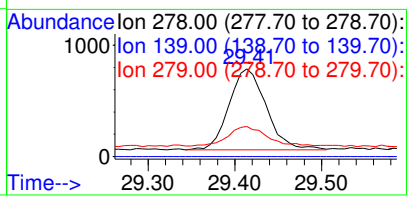


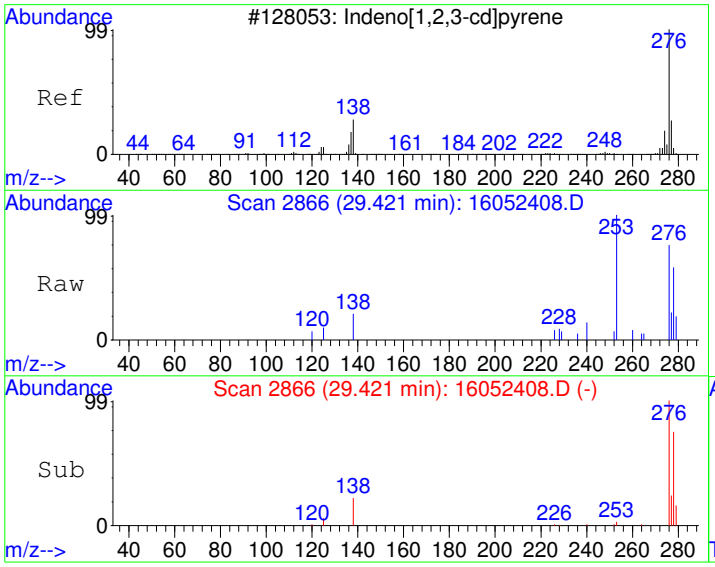


#26
Dibenz[a,h]anthracene
Concen: 6.73 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:278 Resp: 2172

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	24.3	4.2	44.2

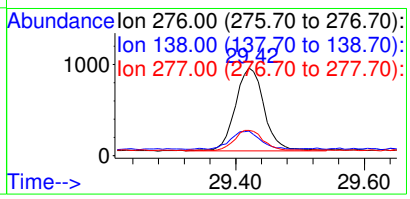


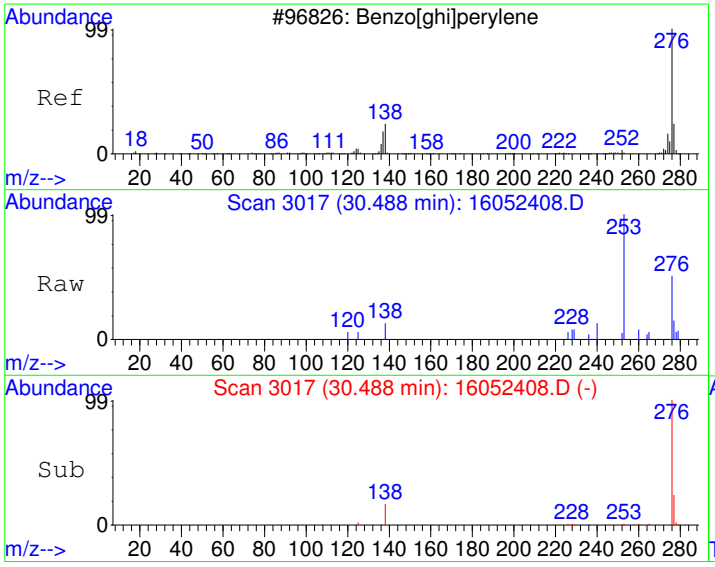


#27
Indeno[1,2,3-cd]pyrene
Concen: 7.35 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:276 Resp: 2829

Ion	Ratio	Lower	Upper
276	100		
138	22.3	6.7	46.7
277	24.3	5.8	45.8

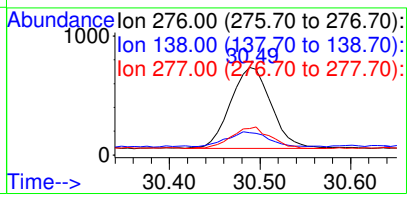




#28
Benzo[g,h,i]perylene
Concen: 7.01 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052408.D
Acq: 24 May 2016 2:31 pm

Tgt Ion:276 Resp: 2104

Ion	Ratio	Lower	Upper
276	100		
138	17.4	0.0	39.1
277	24.3	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052409.D Vial: 9
Acq On : 24 May 2016 3:11 pm Operator:
Sample : 1605135-20A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1169663	4000.00 ug/kg	101
5) Acenaphthene-d10	13.25	164	804816	4000.00 ug/kg	70
11) Phenanthrene-d10	15.34	188	1360237	4000.00 ug/kg	67
17) Chrysene-d12	21.05	240	1629783	4000.00 ug/kg	72
20) Perylene-d12	26.19	264	1458417	4000.00 ug/kg	71

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	18368	78.24 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.96%#		
16) 4-Terphenyl-d14	17.82	244	26262	74.63 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.87%#		

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	2332	6.52 ug/kg	98
14) Fluoranthene	17.31	202	7812	21.10 ug/kg	97
15) Pyrene	17.90	202	7614	19.80 ug/kg	99
18) Benzo[a]anthracene	20.87	228	6789	17.78 ug/kg	98
19) Chrysene	21.13	228	8438	22.87 ug/kg	99
21) Benzo[b]fluoranthene	24.43	252	9937	25.85 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	5735	15.90 ug/kg	95
23) Benzo(j)fluoranthene	24.61	252	3356	10.45 ug/kg	94
24) Benzo[e]pyrene	25.67	252	5694	16.54 ug/kg	98
25) Benzo[a]pyrene	25.84	252	9373	26.64 ug/kg	100
26) Dibenz[a,h]anthracene	29.41	278	3127	9.76 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.42	276	7439	19.46 ug/kg	91
28) Benzo[g,h,i]perylene	30.49	276	6466	21.70 ug/kg	98

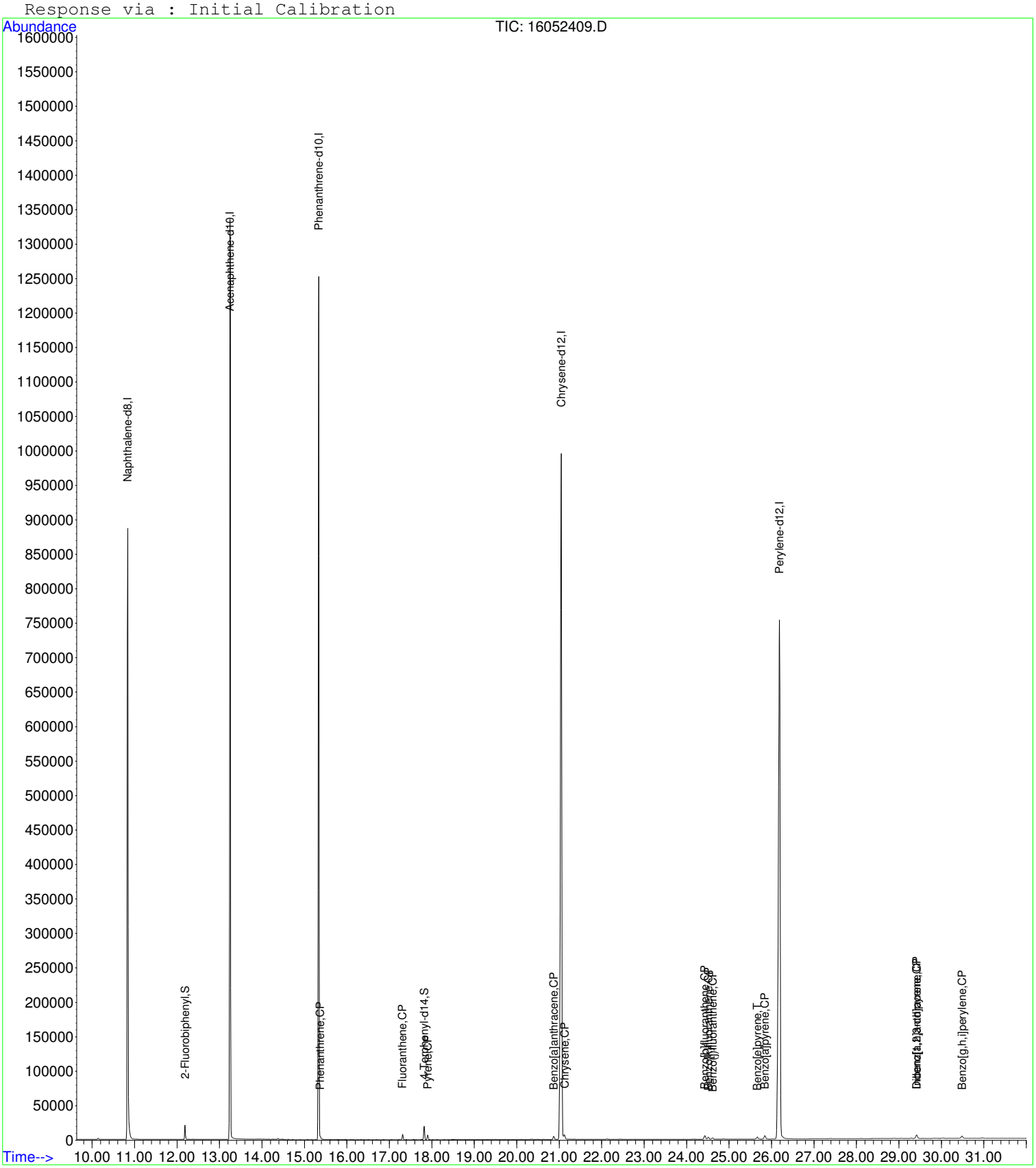
CONFIRMED
By Sherri Herschmann at 10:24:06 AM, 6/1/2016

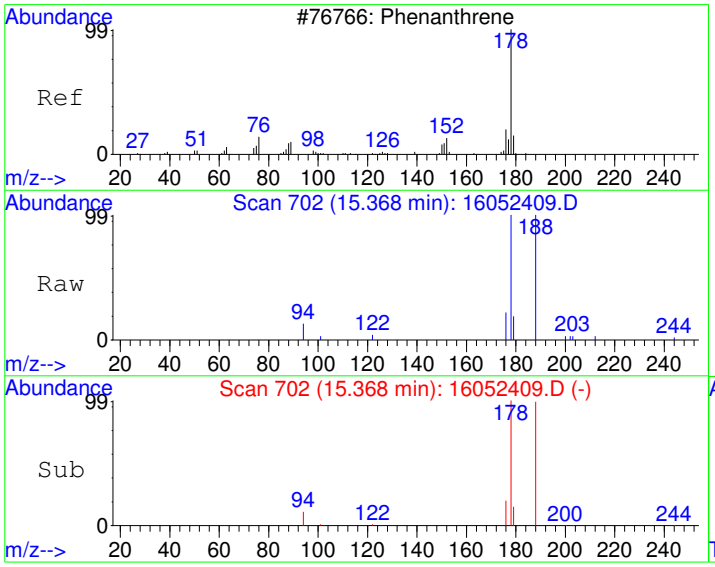
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052409.D Vial: 9
Acq On : 24 May 2016 3:11 pm Operator:
Sample : 1605135-20A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

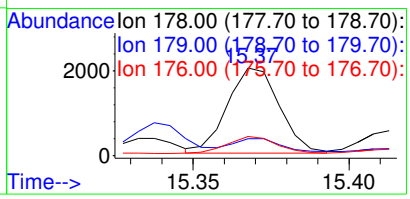


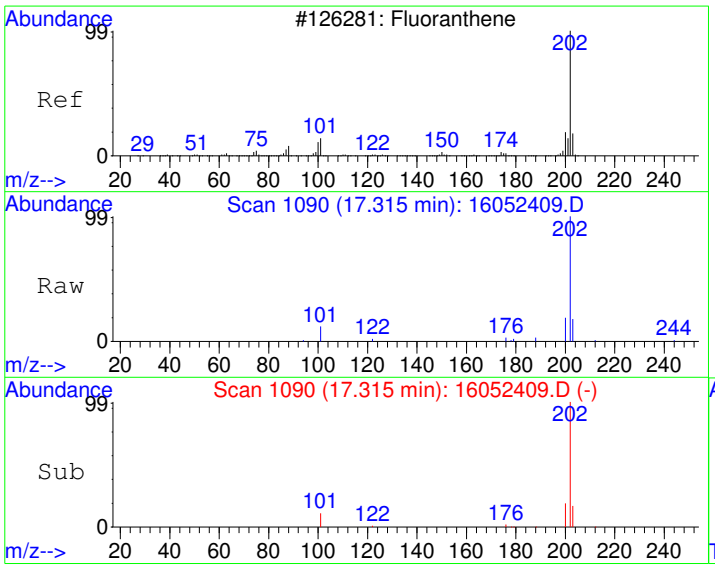


#12
Phenanthrene
Concen: 6.52 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:178 Resp: 2332

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	20.1	0.0	48.5

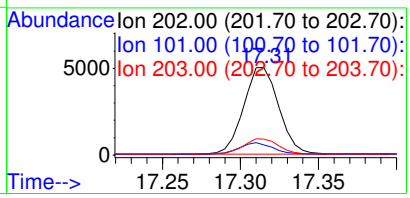


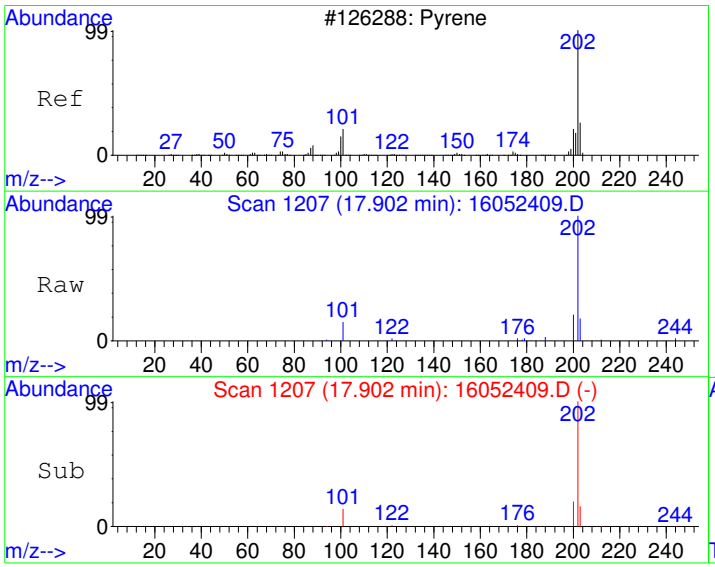


#14
Fluoranthene
Concen: 21.10 ug/kg
RT: 17.31 min Scan# 1090
Delta R.T. -0.03 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:202 Resp: 7812

Ion	Ratio	Lower	Upper
202	100		
101	10.7	0.0	43.0
203	17.3	0.0	47.9

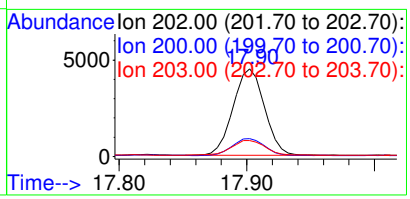


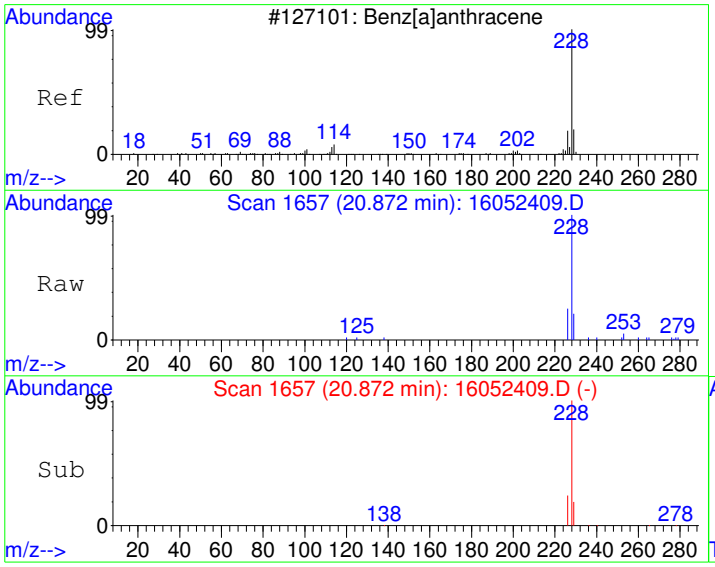


#15
Pyrene
Concen: 19.80 ug/kg
RT: 17.90 min Scan# 1207
Delta R.T. -0.03 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:202 Resp: 7614

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	17.3	0.0	48.0

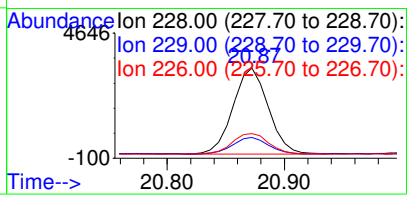


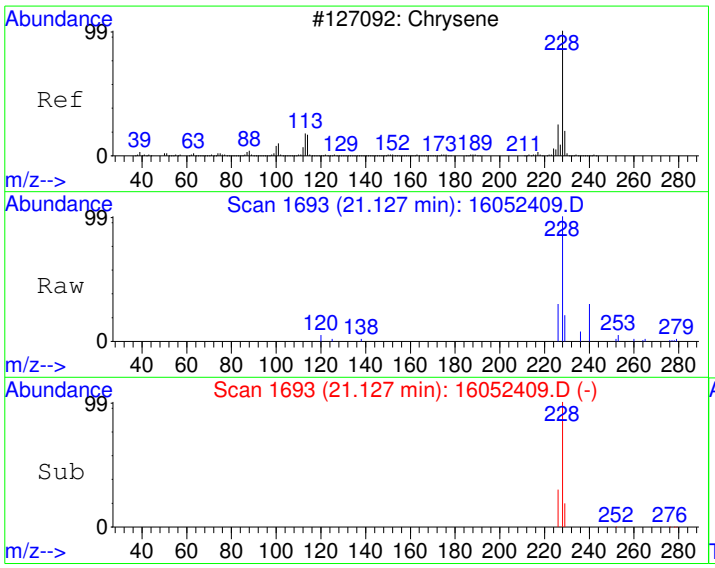


#18
Benzo[a]anthracene
Concen: 17.78 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:228 Resp: 6789

Ion	Ratio	Lower	Upper
228	100		
229	19.2	0.0	50.1
226	23.9	0.0	55.2

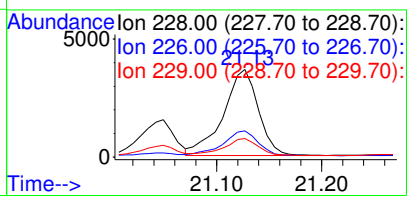


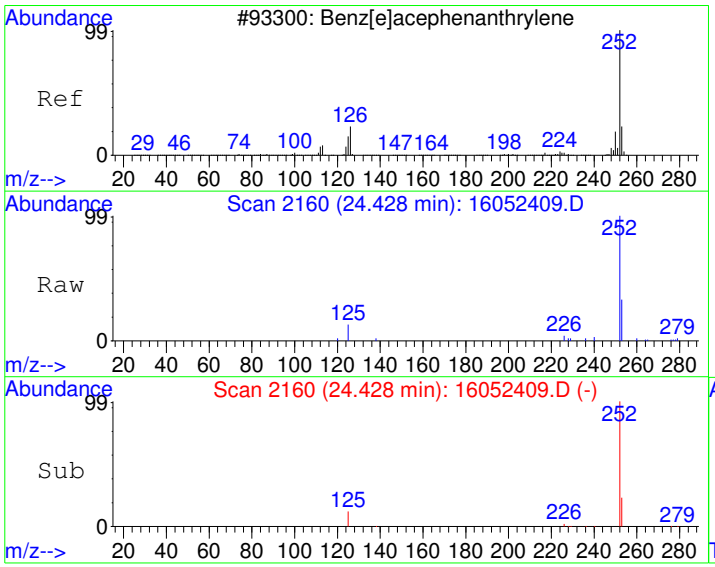


#19
Chrysene
Concen: 22.87 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:228 Resp: 8438

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	58.1
229	19.6	0.0	50.1

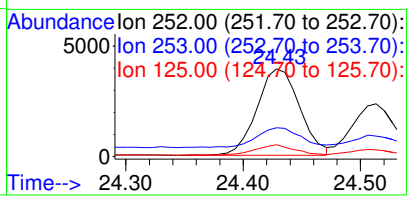


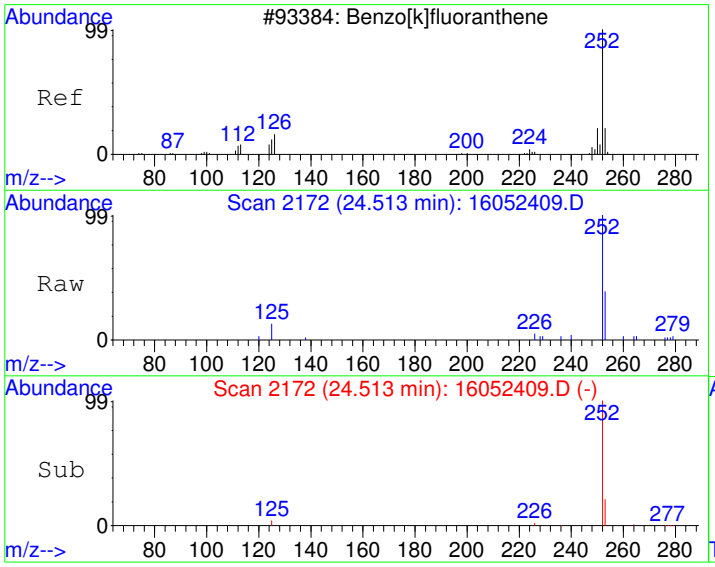


#21
Benzo[b]fluoranthene
Concen: 25.85 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:252 Resp: 9937

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	52.2
125	11.9	0.0	41.0

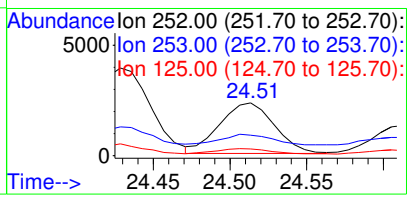


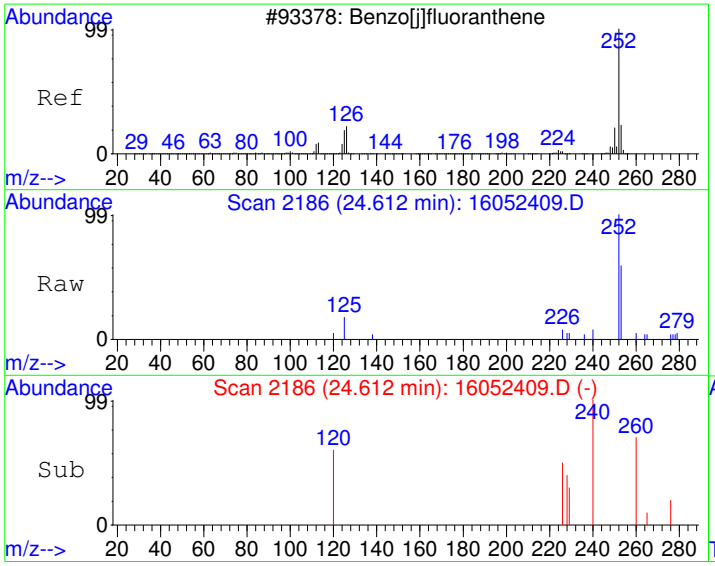


#22
Benzo[k]fluoranthene
Concen: 15.90 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:252 Resp: 5735

Ion	Ratio	Lower	Upper
252	100		
253	19.4	2.1	42.1
125	9.9	0.0	31.3

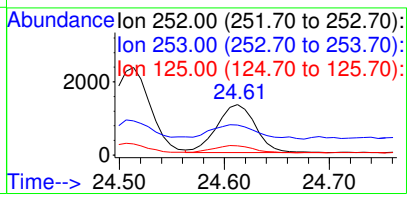


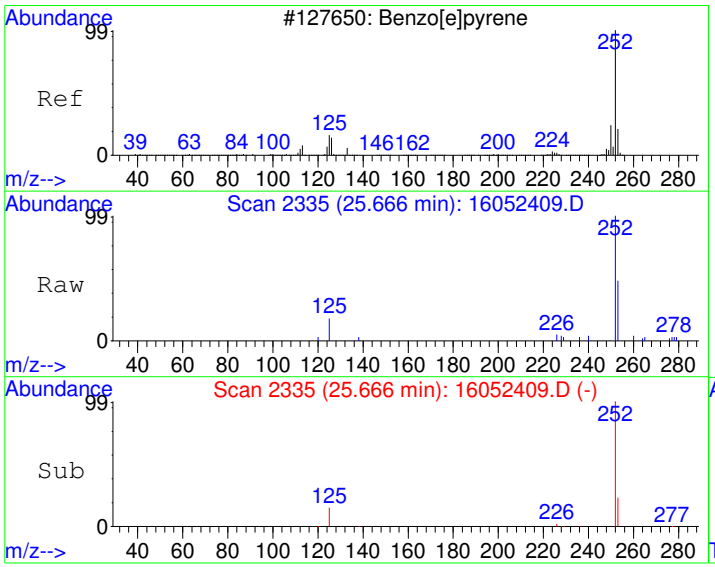


#23
Benzo(j)fluoranthene
Concen: 10.45 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:252 Resp: 3356

Ion	Ratio	Lower	Upper
252	100		
253	26.5	2.1	42.1
125	14.2	0.0	34.4

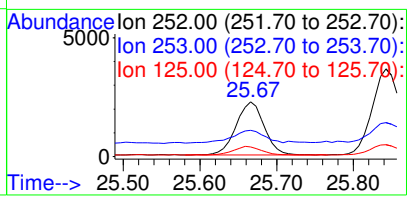


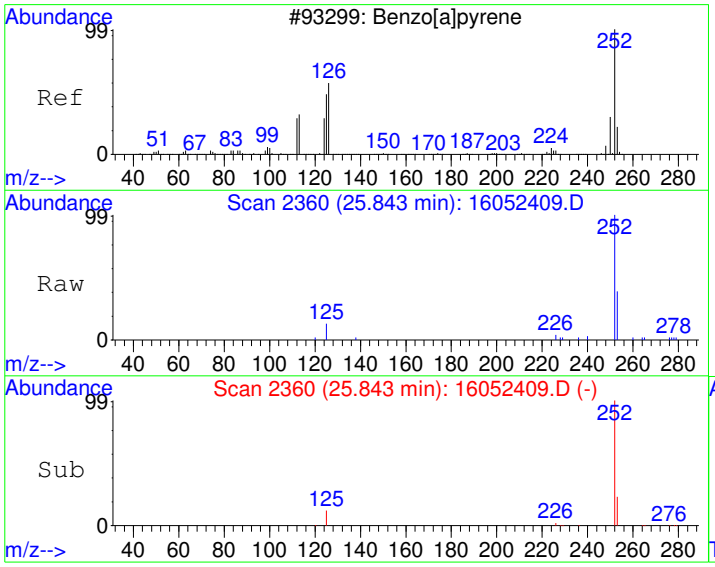


#24
Benzo[e]pyrene
Concen: 16.54 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:252 Resp: 5694

Ion	Ratio	Lower	Upper
252	100		
253	23.6	2.2	42.2
125	15.3	0.0	36.1

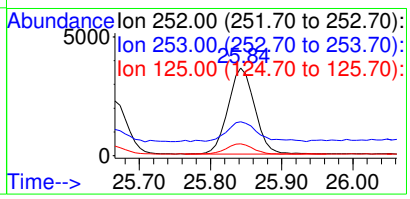


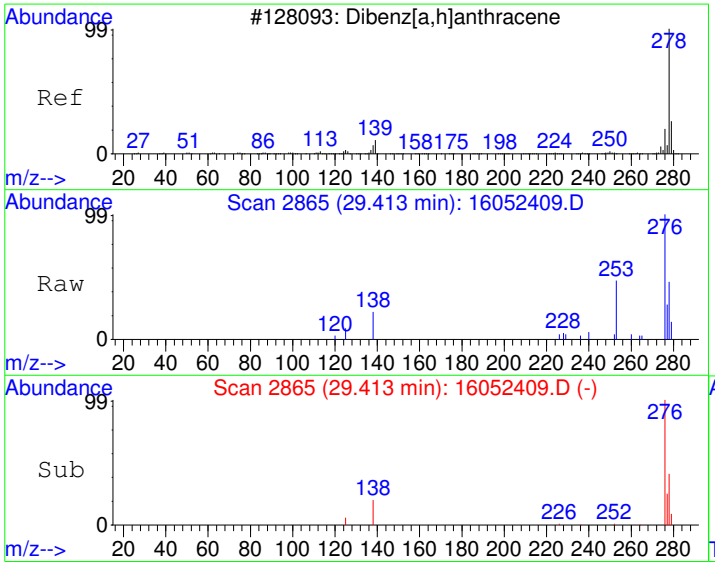


#25
Benzo[a]pyrene
Concen: 26.64 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:252 Resp: 9373

Ion	Ratio	Lower	Upper
252	100		
253	22.1	1.9	41.9
125	11.9	0.0	31.7

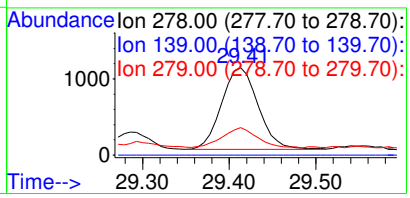


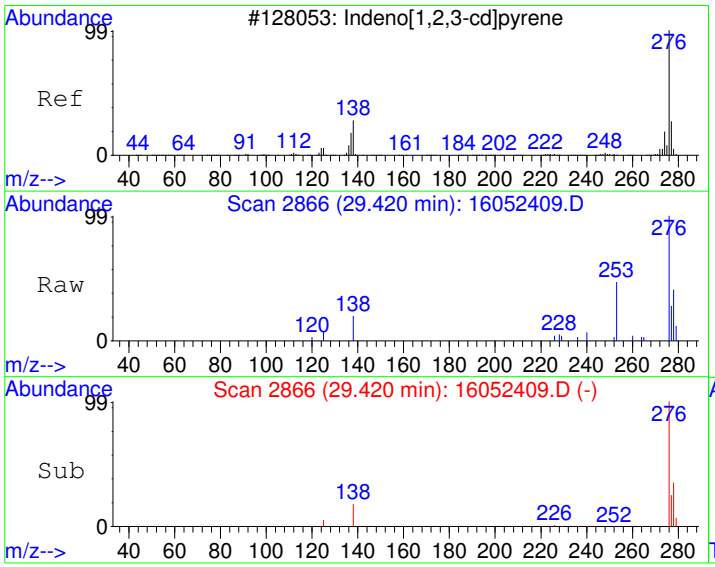


#26
Dibenz[a,h]anthracene
Concen: 9.76 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:278 Resp: 3127

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	24.3	4.2	44.2

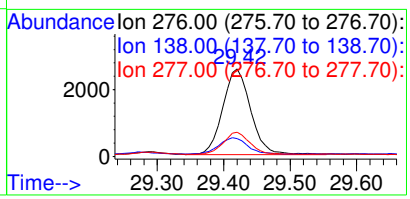


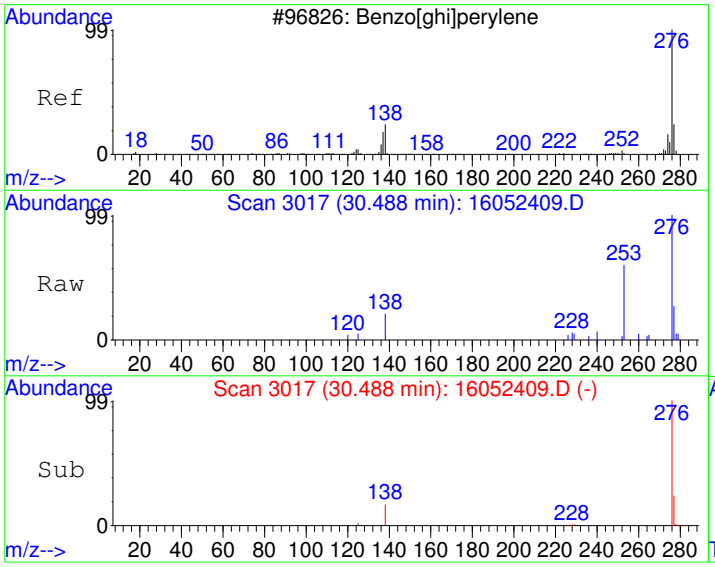


#27
Indeno[1,2,3-cd]pyrene
Concen: 19.46 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:276 Resp: 7439

Ion	Ratio	Lower	Upper
276	100		
138	18.1	6.7	46.7
277	26.0	5.8	45.8

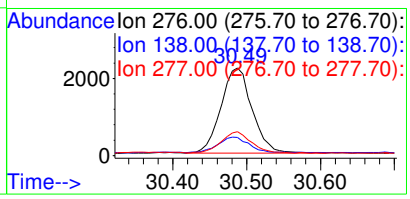




#28
Benzo[g,h,i]perylene
Concen: 21.70 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052409.D
Acq: 24 May 2016 3:11 pm

Tgt Ion:276 Resp: 6466

Ion	Ratio	Lower	Upper
276	100		
138	18.0	0.0	39.1
277	25.2	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052410.D Vial: 10
Acq On : 24 May 2016 3:50 pm Operator:
Sample : 1605135-21A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1194699	4000.00 ug/kg	103
5) Acenaphthene-d10	13.25	164	814517	4000.00 ug/kg	71
11) Phenanthrene-d10	15.34	188	1422221	4000.00 ug/kg	70
17) Chrysene-d12	21.05	240	1694428	4000.00 ug/kg	75
20) Perylene-d12	26.19	264	1523805	4000.00 ug/kg	74

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	18675	78.60 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.96%#	
16) 4-Terphenyl-d14	17.82	244	27539	74.84 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.87%#	

Target Compounds					Qvalue
18) Benzo[a]anthracene	20.87	228	2316	5.83 ug/kg	98
19) Chrysene	21.13	228	2702	7.04 ug/kg	98
21) Benzo[b]fluoranthene	24.44	252	3077	7.66 ug/kg	96
22) Benzo[k]fluoranthene	24.51	252	2640	7.01 ug/kg	97
23) Benzo(j)fluoranthene	24.61	252	380	1.13 ug/kg	91
25) Benzo[a]pyrene	25.84	252	3032	8.25 ug/kg	97
26) Dibenz[a,h]anthracene	29.42	278	2346	7.01 ug/kg	95
27) Indeno[1,2,3-cd]pyrene	29.42	276	3313	8.30 ug/kg	93
28) Benzo[g,h,i]perylene	30.49	276	2544	8.17 ug/kg	97

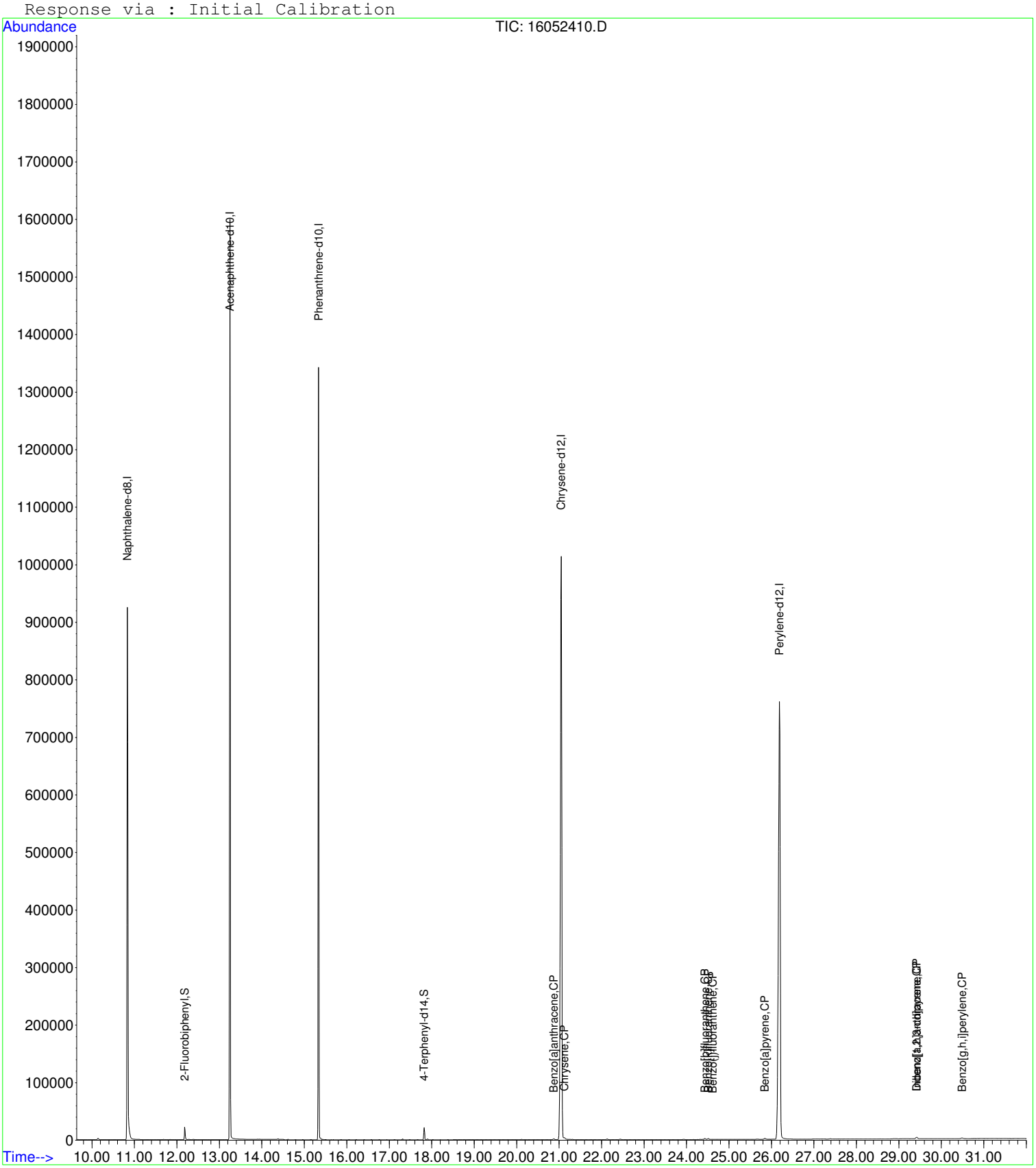
CONFIRMED
By Sherri Herschmann at 10:24:39 AM, 6/1/2016

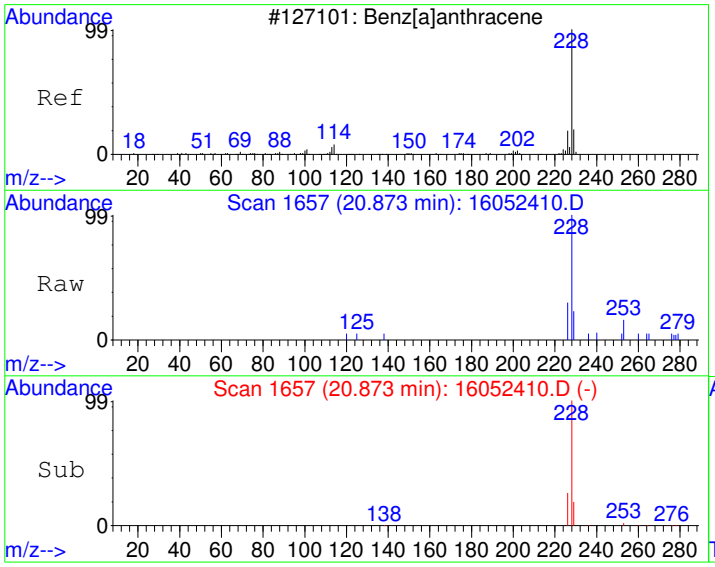
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052410.D Vial: 10
Acq On : 24 May 2016 3:50 pm Operator:
Sample : 1605135-21A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

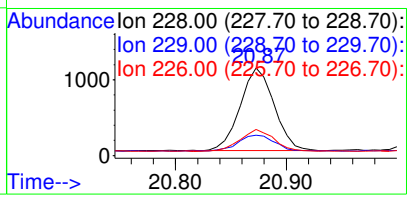


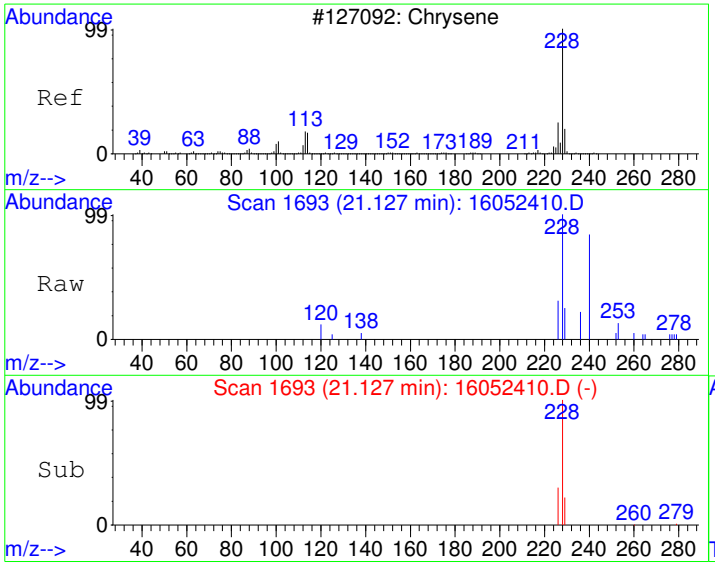


#18
Benzo[a]anthracene
Concen: 5.83 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:228 Resp: 2316

Ion	Ratio	Lower	Upper
228	100		
229	18.9	0.0	50.1
226	26.0	0.0	55.2

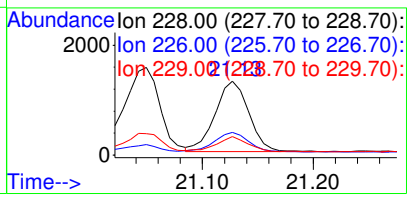


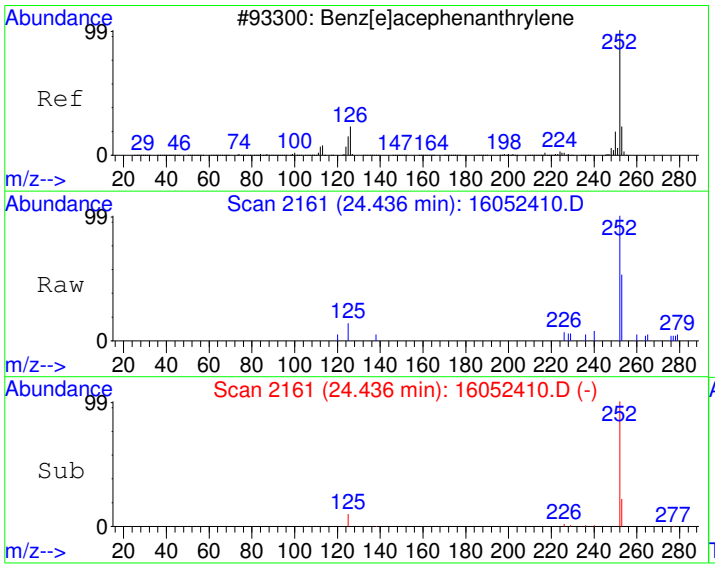


#19
Chrysene
Concen: 7.04 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:228 Resp: 2702

Ion	Ratio	Lower	Upper
228	100		
226	27.6	0.0	58.1
229	21.2	0.0	50.1

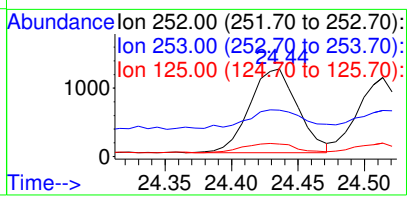


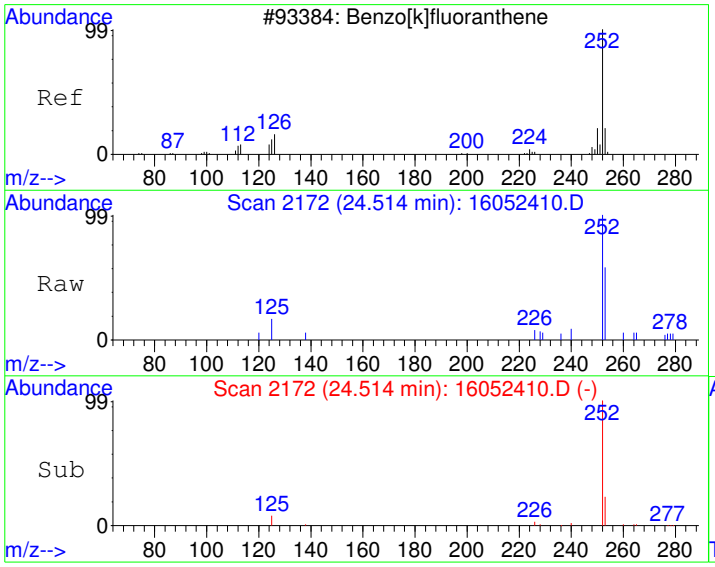


#21
Benzo[b]fluoranthene
Concen: 7.66 ug/kg
RT: 24.44 min Scan# 2161
Delta R.T. -0.05 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:252 Resp: 3077

Ion	Ratio	Lower	Upper
252	100		
253	20.0	0.0	52.2
125	9.7	0.0	41.0

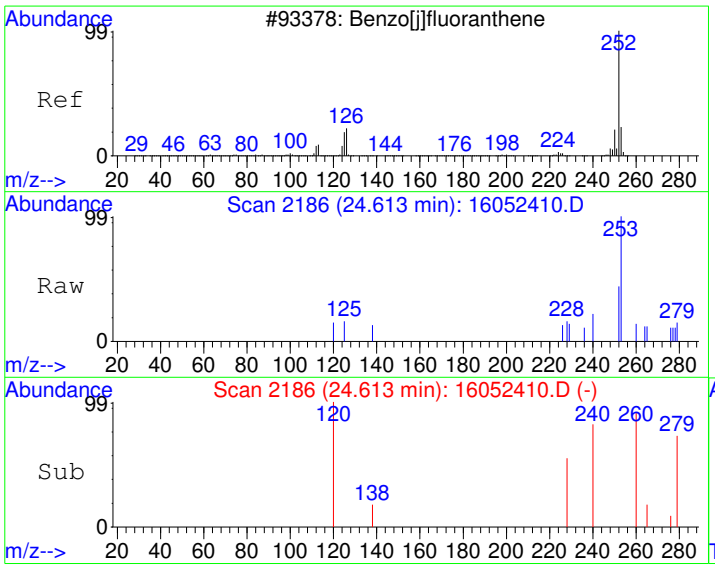




#22
Benzo[k]fluoranthene
Concen: 7.01 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:252 Resp: 2640

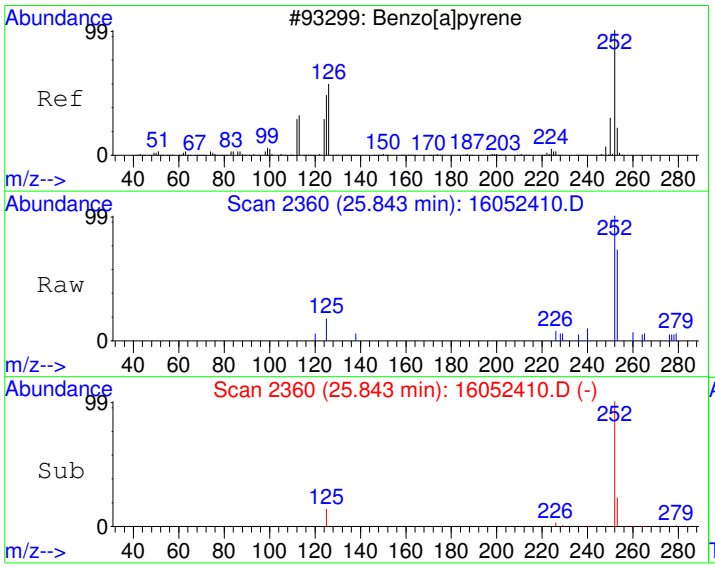
Ion	Ratio	Lower	Upper
252	100		
253	20.0	2.1	42.1
125	11.6	0.0	31.3



#23
Benzo(j)fluoranthene
Concen: 1.13 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:252 Resp: 380

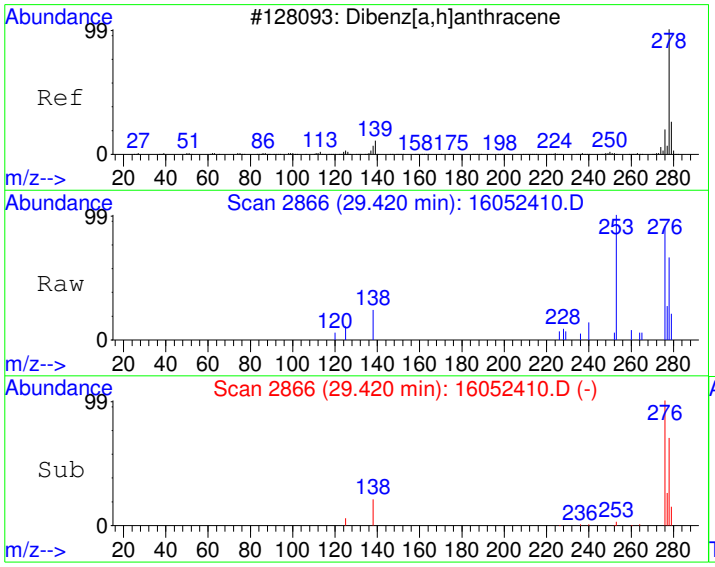
Ion	Ratio	Lower	Upper
252	100		
253	19.5	2.1	42.1
125	8.4	0.0	34.4



#25
Benzo[a]pyrene
Concen: 8.25 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:252 Resp: 3032

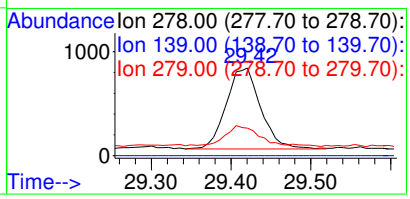
Ion	Ratio	Lower	Upper
252	100		
253	23.0	1.9	41.9
125	13.3	0.0	31.7

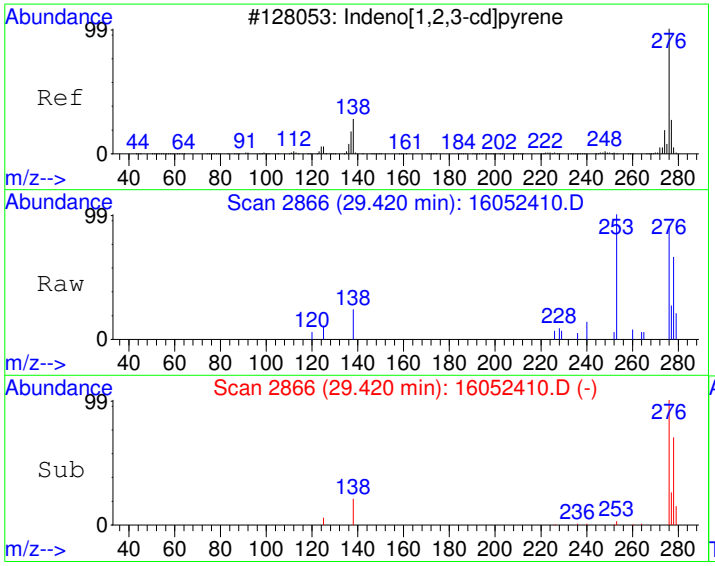


#26
Dibenz[a,h]anthracene
Concen: 7.01 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:278 Resp: 2346

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.7	4.2	44.2

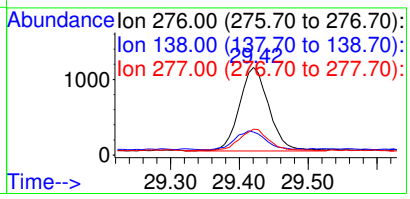


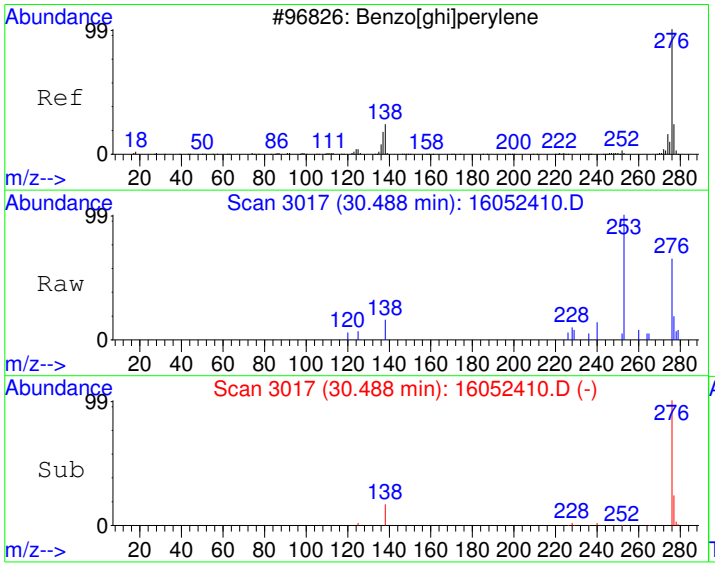


#27
Indeno[1,2,3-cd]pyrene
Concen: 8.30 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:276 Resp: 3313

Ion	Ratio	Lower	Upper
276	100		
138	20.0	6.7	46.7
277	25.8	5.8	45.8

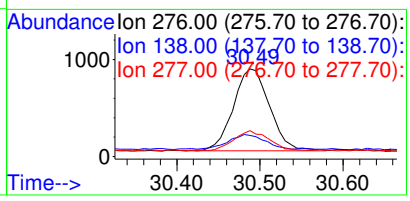




#28
Benzo[g,h,i]perylene
Concen: 8.17 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052410.D
Acq: 24 May 2016 3:50 pm

Tgt Ion:276 Resp: 2544

Ion	Ratio	Lower	Upper
276	100		
138	16.7	0.0	39.1
277	24.8	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052411.D Vial: 11
Acq On : 24 May 2016 4:30 pm Operator:
Sample : 1605135-22A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1167778	4000.00 ug/kg	101
5) Acenaphthene-d10	13.25	164	785201	4000.00 ug/kg	68
11) Phenanthrene-d10	15.34	188	1334376	4000.00 ug/kg	65
17) Chrysene-d12	21.05	240	1575884	4000.00 ug/kg	69
20) Perylene-d12	26.19	264	1407453	4000.00 ug/kg	68

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	16297	71.15 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	
16) 4-Terphenyl-d14	17.82	244	23428	67.86 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.70%#	

Target Compounds

					Qvalue
19) Chrysene	21.13	228	1938	5.43 ug/kg	100
21) Benzo[b]fluoranthene	24.43	252	2370	6.39 ug/kg	97
22) Benzo[k]fluoranthene	24.51	252	2168	6.23 ug/kg	98
23) Benzo(j)fluoranthene	24.61	252	154	0.50 ug/kg	77
25) Benzo[a]pyrene	25.84	252	2316	6.82 ug/kg	93
26) Dibenz[a,h]anthracene	29.41	278	2257	7.30 ug/kg	90
27) Indeno[1,2,3-cd]pyrene	29.42	276	2796	7.58 ug/kg	96
28) Benzo[g,h,i]perylene	30.49	276	2191	7.62 ug/kg	96

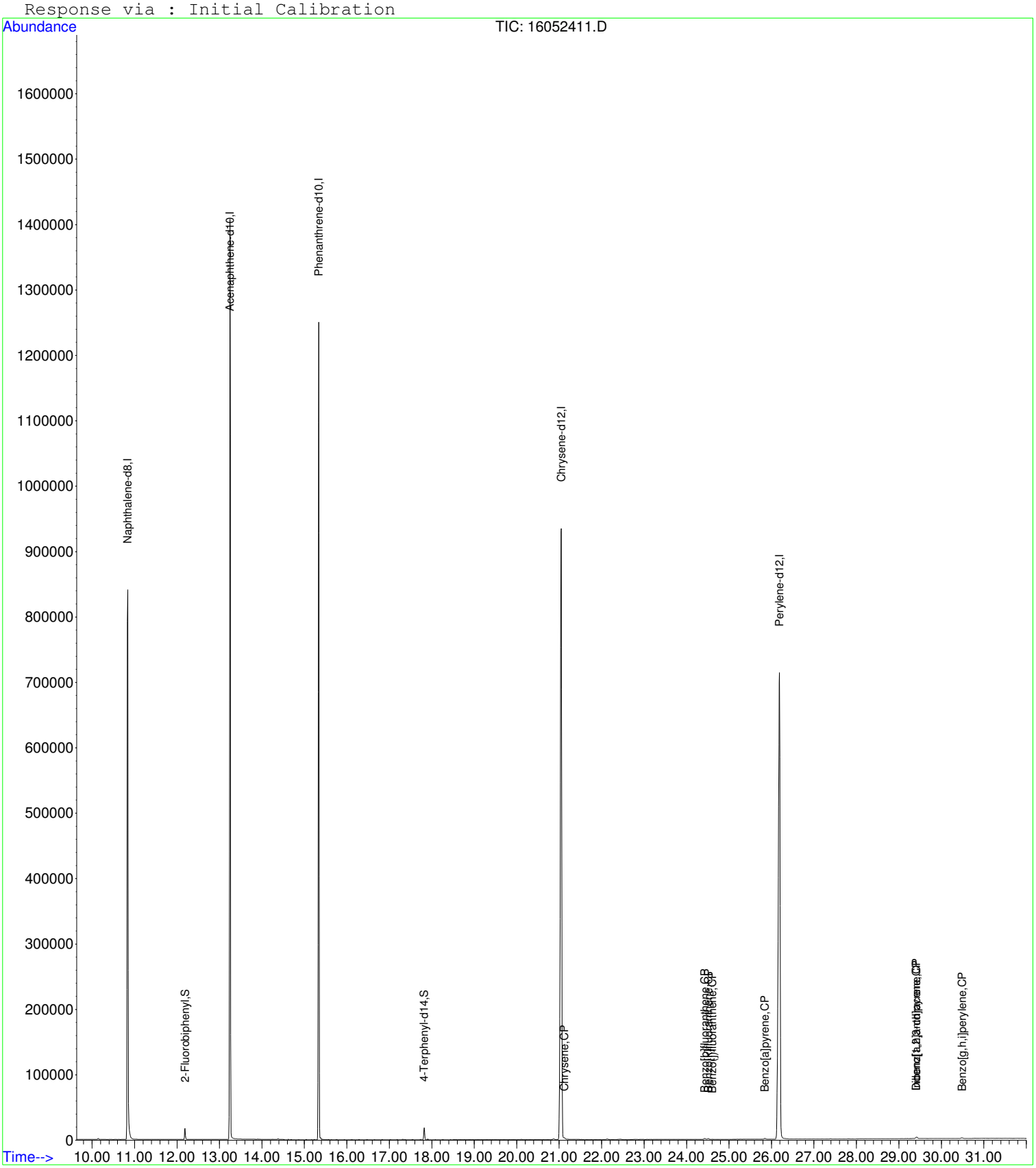
CONFIRMED
By Sherri Herschmann at 10:25:00 AM, 6/1/2016

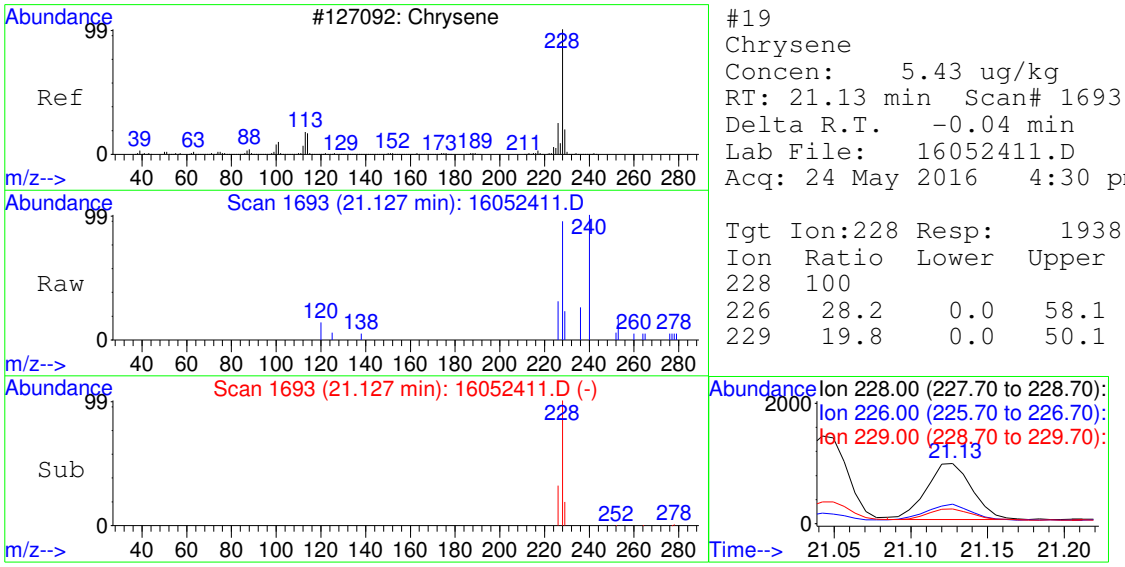
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052411.D Vial: 11
Acq On : 24 May 2016 4:30 pm Operator:
Sample : 1605135-22A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

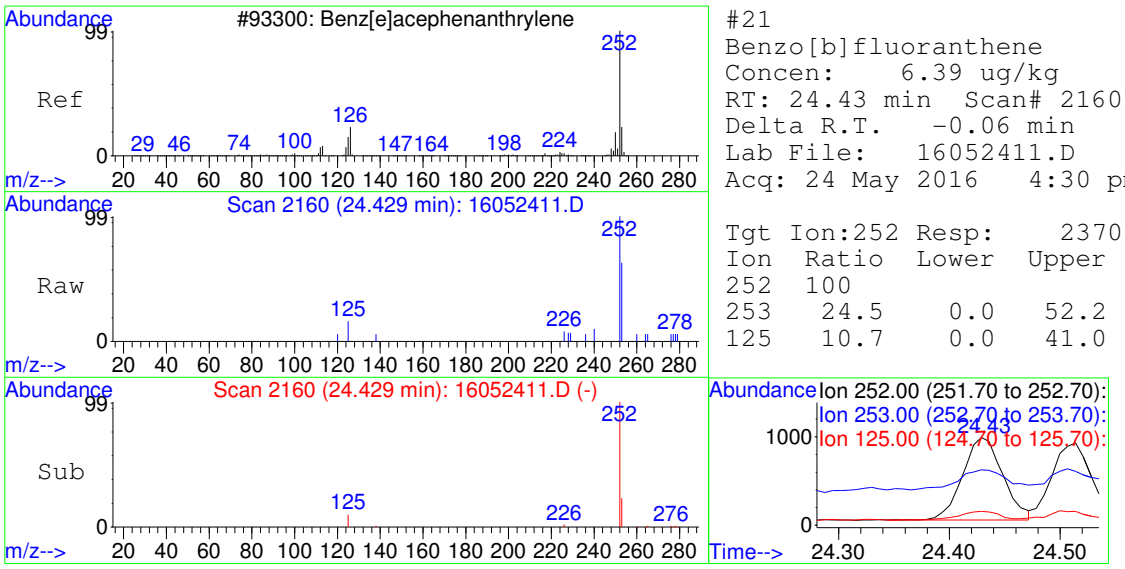




#19
Chrysene
Concen: 5.43 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:228 Resp: 1938

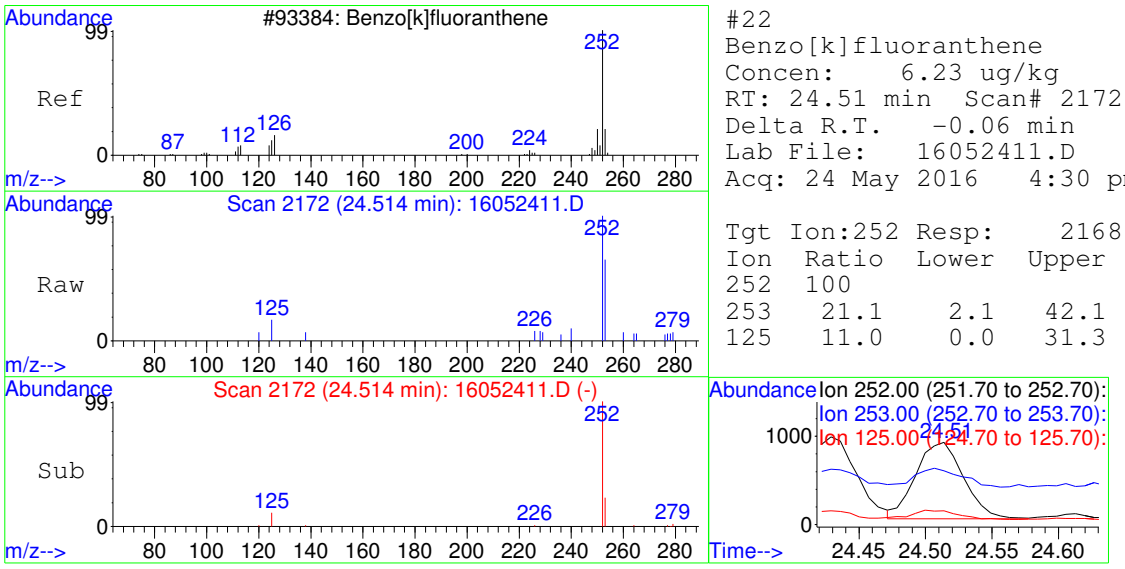
Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.1
229	19.8	0.0	50.1



#21
Benzo[b]fluoranthene
Concen: 6.39 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:252 Resp: 2370

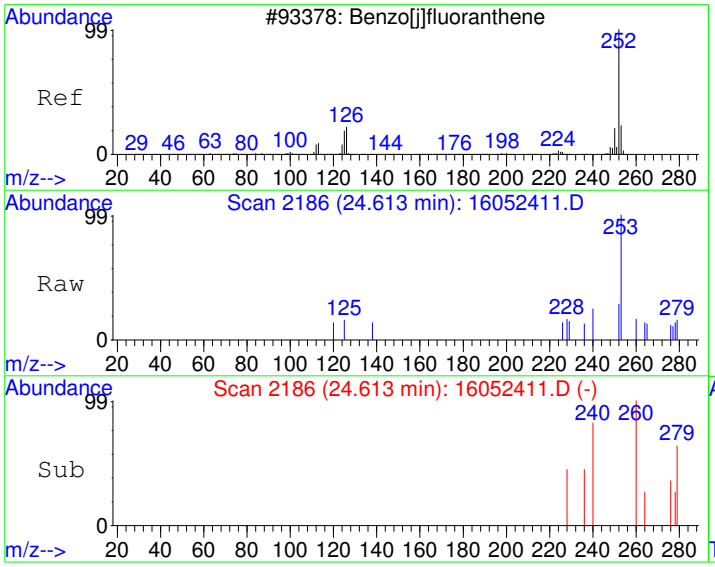
Ion	Ratio	Lower	Upper
252	100		
253	24.5	0.0	52.2
125	10.7	0.0	41.0



#22
Benzo[k]fluoranthene
Concen: 6.23 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:252 Resp: 2168

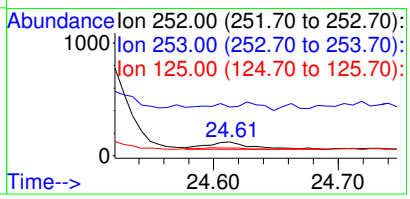
Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.1	42.1
125	11.0	0.0	31.3

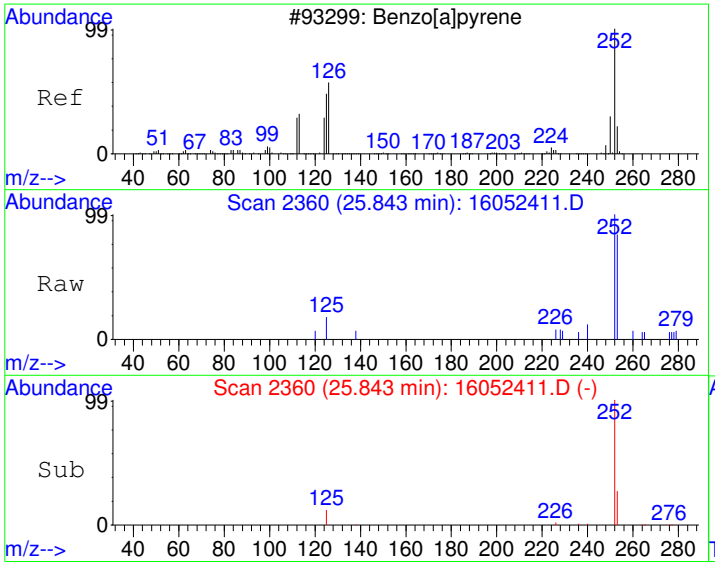


#23
Benzo(j)fluoranthene
Concen: 0.50 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:252 Resp: 154

Ion	Ratio	Lower	Upper
252	100		
253	4.6	2.1	42.1
125	13.8	0.0	34.4

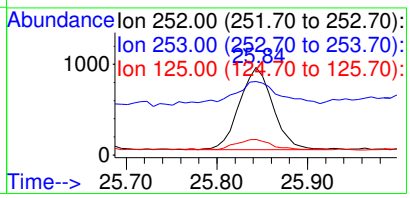


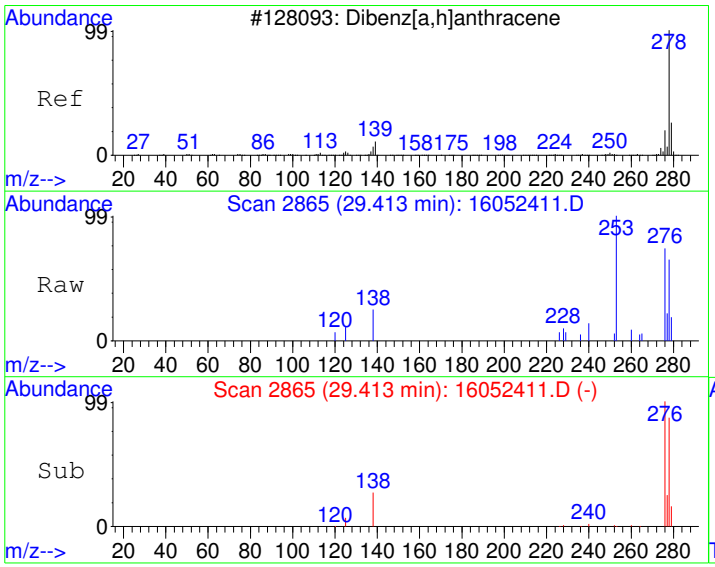


#25
Benzo[a]pyrene
Concen: 6.82 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:252 Resp: 2316

Ion	Ratio	Lower	Upper
252	100		
253	26.2	1.9	41.9
125	12.7	0.0	31.7

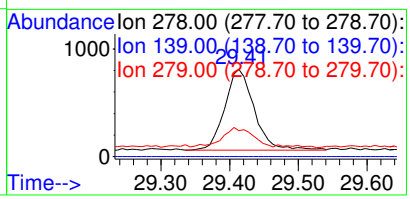


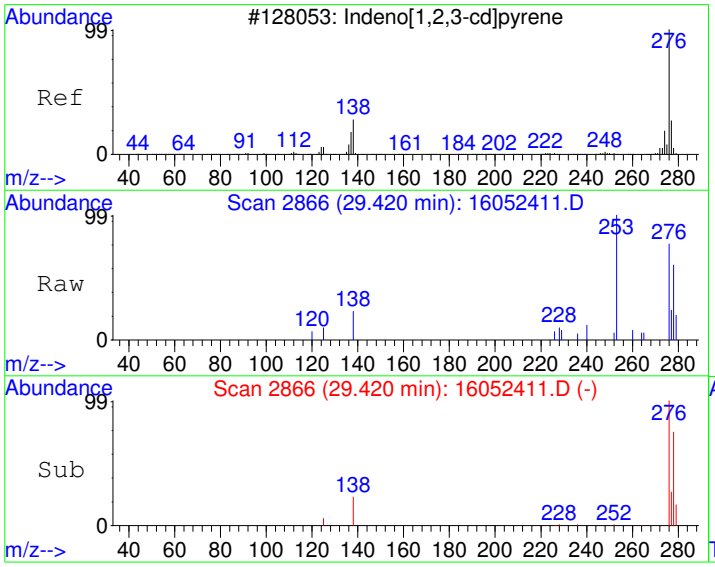


#26
Dibenz[a,h]anthracene
Concen: 7.30 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:278 Resp: 2257

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	19.4	4.2	44.2

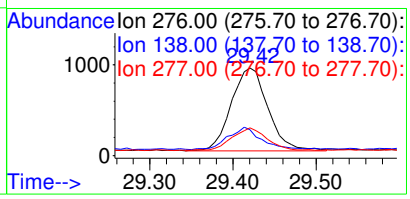


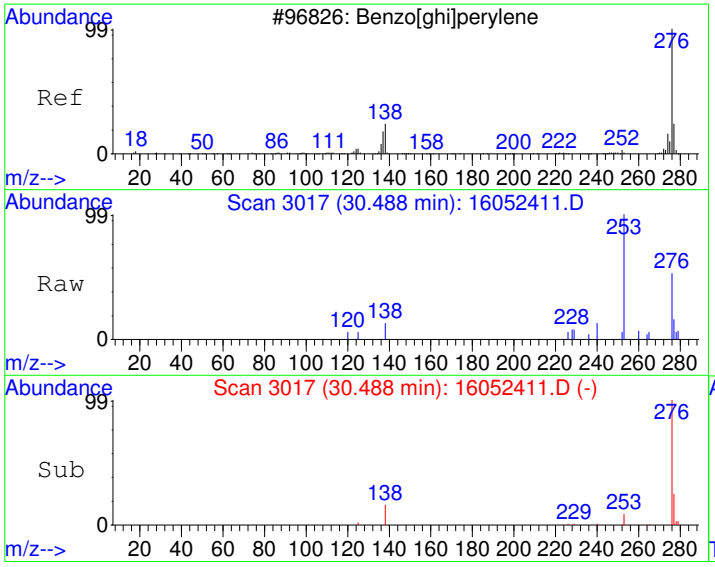


#27
Indeno[1,2,3-cd]pyrene
Concen: 7.58 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:276 Resp: 2796

Ion	Ratio	Lower	Upper
276	100		
138	23.5	6.7	46.7
277	27.1	5.8	45.8

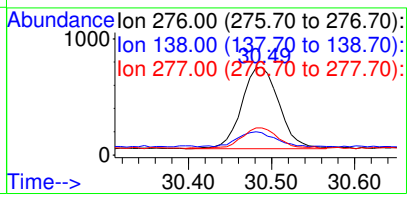




#28
Benzo[g,h,i]perylene
Concen: 7.62 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052411.D
Acq: 24 May 2016 4:30 pm

Tgt Ion:276 Resp: 2191

Ion	Ratio	Lower	Upper
276	100		
138	16.9	0.0	39.1
277	25.3	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052412.D Vial: 12
Acq On : 24 May 2016 5:10 pm Operator:
Sample : 1605135-23A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1221929	4000.00 ug/kg	105
5) Acenaphthene-d10	13.25	164	829343	4000.00 ug/kg	72
11) Phenanthrene-d10	15.34	188	1411454	4000.00 ug/kg	69
17) Chrysene-d12	21.05	240	1701692	4000.00 ug/kg	75
20) Perylene-d12	26.19	264	1541642	4000.00 ug/kg	75

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	18684	77.23 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.93%#	
16) 4-Terphenyl-d14	17.82	244	27884	76.36 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.91%#	

Target Compounds					Qvalue
19) Chrysene	21.13	228	2069	5.37 ug/kg	97
21) Benzo[b]fluoranthene	24.43	252	2737	6.74 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	2507	6.58 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	109	0.32 ug/kg	71
25) Benzo[a]pyrene	25.84	252	2724	7.33 ug/kg	98
26) Dibenz[a,h]anthracene	29.41	278	2625	7.75 ug/kg	94
27) Indeno[1,2,3-cd]pyrene	29.42	276	3326	8.23 ug/kg	95
28) Benzo[g,h,i]perylene	30.49	276	2621	8.32 ug/kg	96

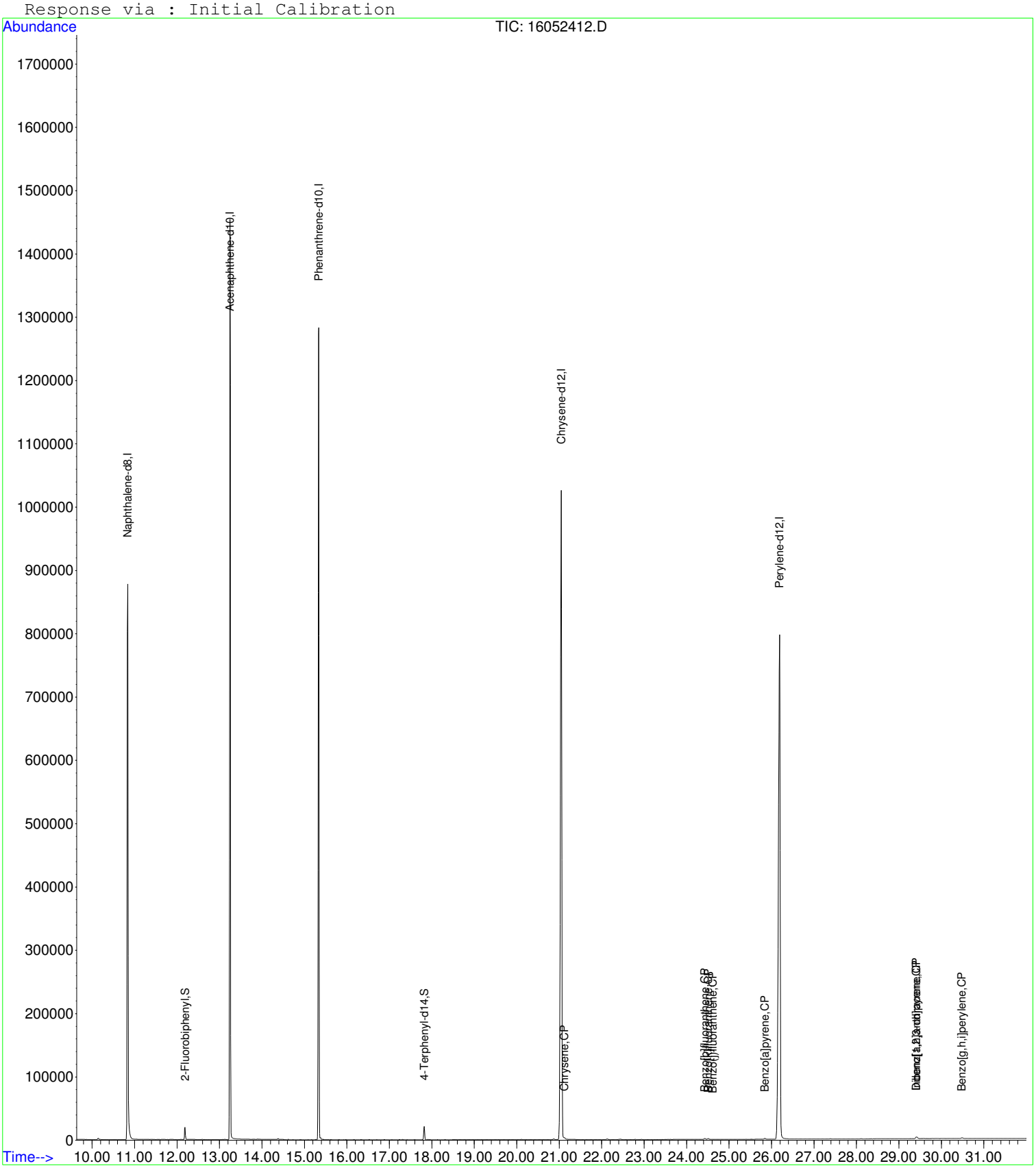
CONFIRMED
By Sherri Herschmann at 10:25:37 AM, 6/1/2016

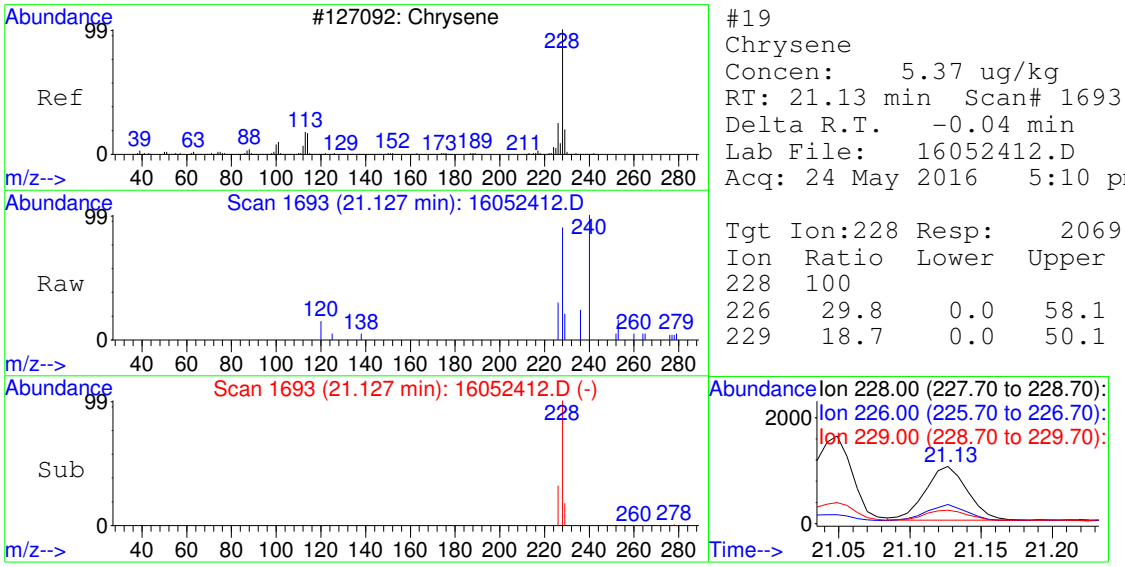
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052412.D Vial: 12
Acq On : 24 May 2016 5:10 pm Operator:
Sample : 1605135-23A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

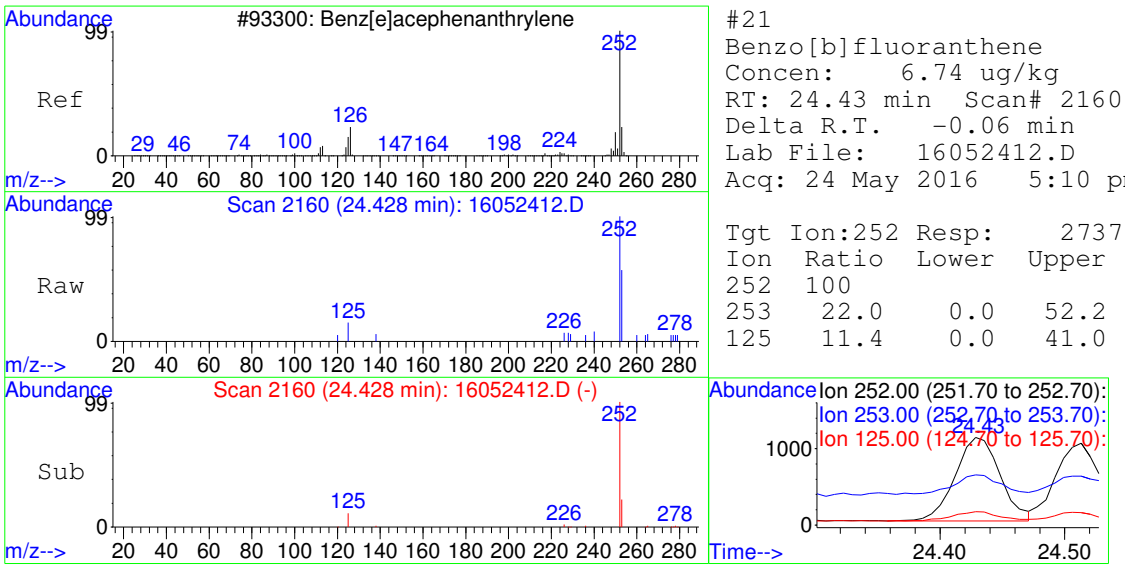




#19
Chrysene
Concen: 5.37 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:228 Resp: 2069

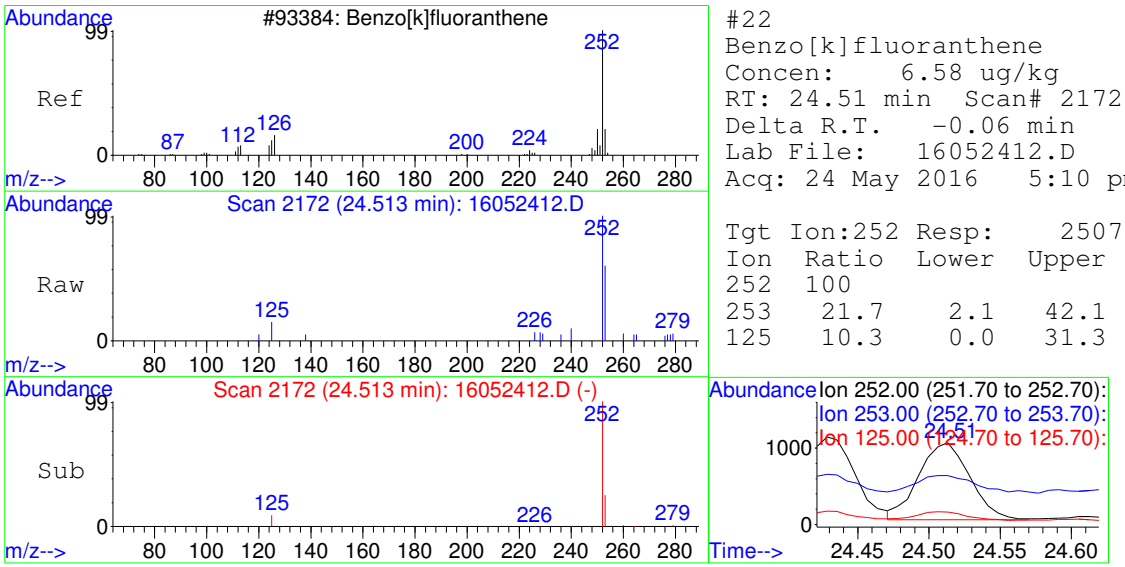
Ion	Ratio	Lower	Upper
228	100		
226	29.8	0.0	58.1
229	18.7	0.0	50.1



#21
Benzo[b]fluoranthene
Concen: 6.74 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:252 Resp: 2737

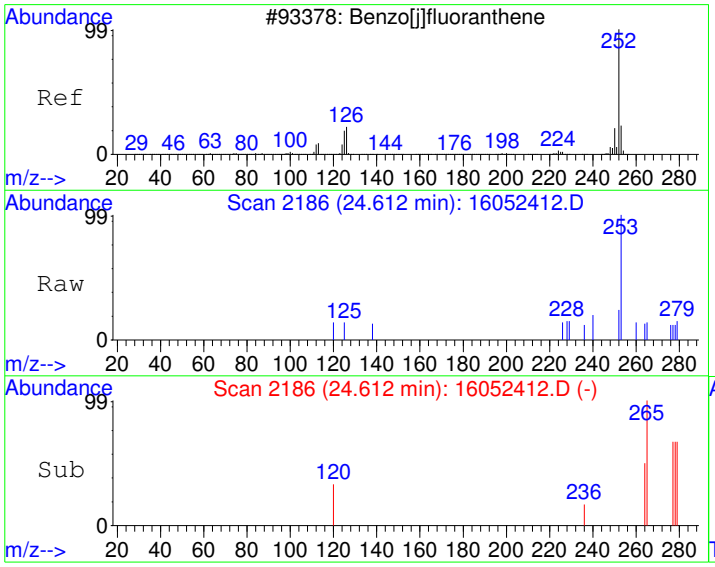
Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	11.4	0.0	41.0



#22
Benzo[k]fluoranthene
Concen: 6.58 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:252 Resp: 2507

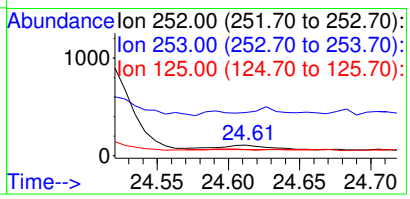
Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.1	42.1
125	10.3	0.0	31.3

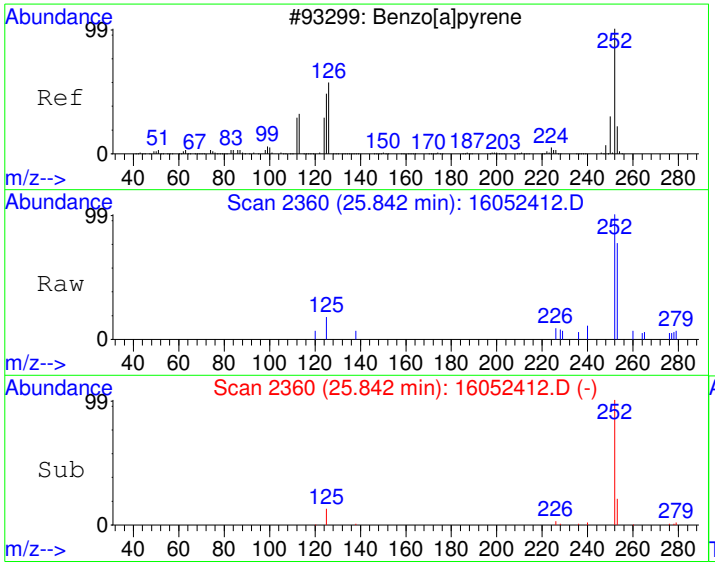


#23
Benzo(j)fluoranthene
Concen: 0.32 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:252 Resp: 109

Ion	Ratio	Lower	Upper
252	100		
253	40.9	2.1	42.1
125	9.1	0.0	34.4

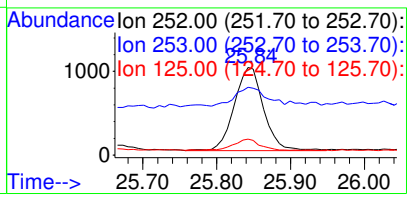


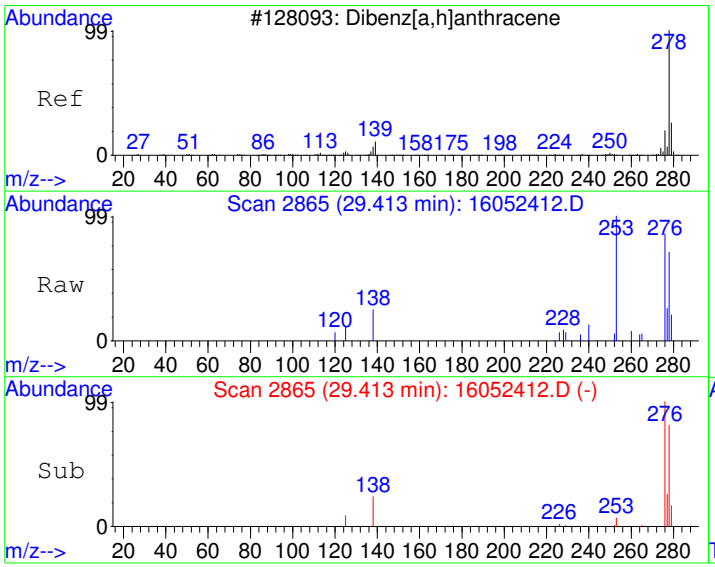


#25
Benzo[a]pyrene
Concen: 7.33 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:252 Resp: 2724

Ion	Ratio	Lower	Upper
252	100		
253	22.2	1.9	41.9
125	13.6	0.0	31.7

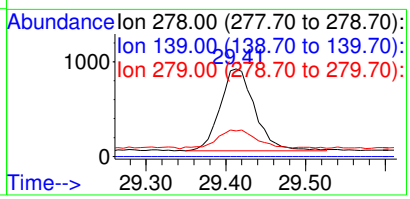


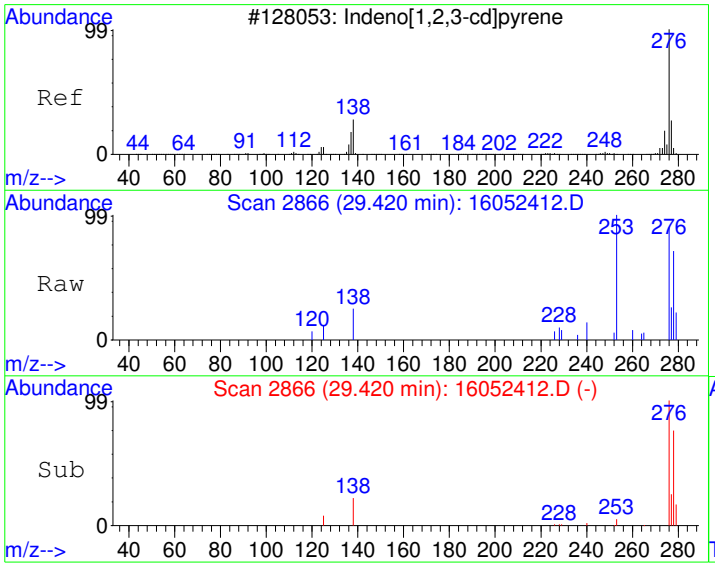


#26
Dibenz[a,h]anthracene
Concen: 7.75 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:278 Resp: 2625

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.1	4.2	44.2

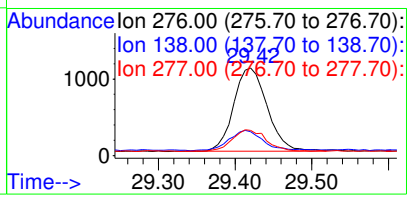


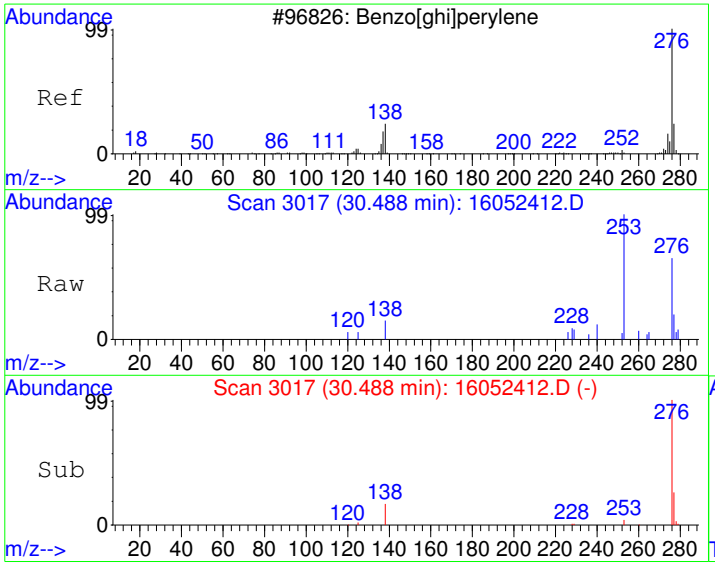


#27
Indeno[1,2,3-cd]pyrene
Concen: 8.23 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:276 Resp: 3326

Ion	Ratio	Lower	Upper
276	100		
138	22.5	6.7	46.7
277	25.2	5.8	45.8

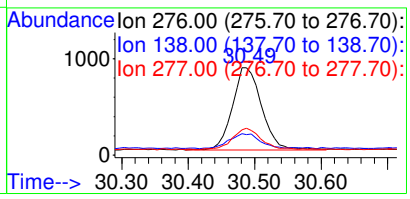




#28
Benzo[g,h,i]perylene
Concen: 8.32 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052412.D
Acq: 24 May 2016 5:10 pm

Tgt Ion:276 Resp: 2621

Ion	Ratio	Lower	Upper
276	100		
138	16.9	0.0	39.1
277	25.8	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052413.D Vial: 13
Acq On : 24 May 2016 5:50 pm Operator:
Sample : 1605135-24A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1234859	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	836662	4000.00 ug/kg	73
11) Phenanthrene-d10	15.34	188	1439779	4000.00 ug/kg	70
17) Chrysene-d12	21.05	240	1700584	4000.00 ug/kg	75
20) Perylene-d12	26.19	264	1546227	4000.00 ug/kg	75

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	19168	78.54 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.96%#	
16) 4-Terphenyl-d14	17.82	244	27535	73.92 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.85%#	

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	5907	15.60 ug/kg	98
14) Fluoranthene	17.31	202	14436	36.84 ug/kg	99
15) Pyrene	17.90	202	12801	31.45 ug/kg	99
18) Benzo[a]anthracene	20.87	228	9195	23.08 ug/kg	99
19) Chrysene	21.13	228	10763	27.96 ug/kg	99
21) Benzo[b]fluoranthene	24.43	252	11055	27.13 ug/kg	100
22) Benzo[k]fluoranthene	24.51	252	6727	17.60 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	3742	10.99 ug/kg	94
24) Benzo[e]pyrene	25.67	252	6207	17.01 ug/kg	96
25) Benzo[a]pyrene	25.84	252	10420	27.94 ug/kg	99
26) Dibenz[a,h]anthracene	29.41	278	3933	11.58 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.42	276	8543	21.08 ug/kg	94
28) Benzo[g,h,i]perylene	30.49	276	7321	23.17 ug/kg	99

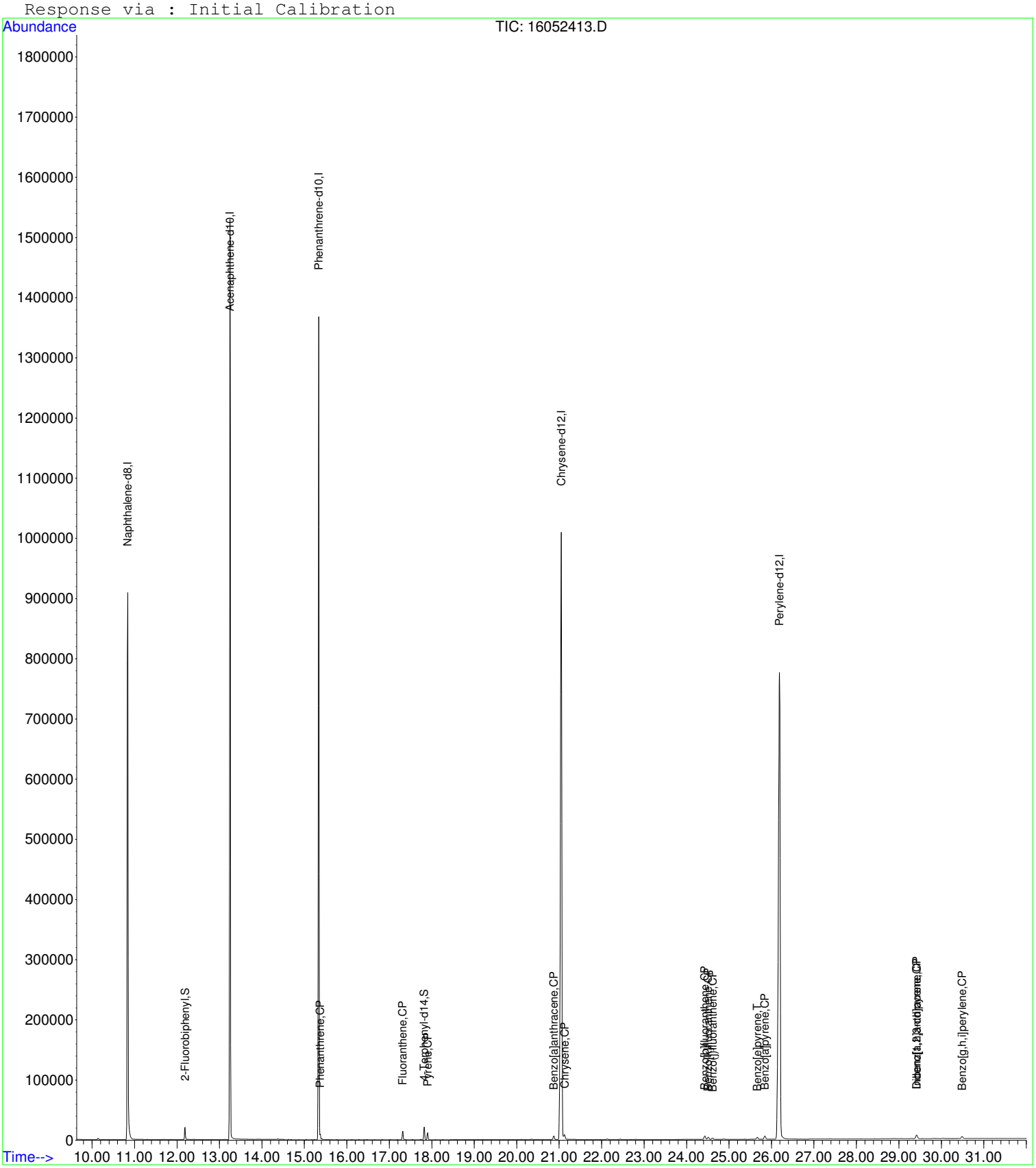
CONFIRMED
By Sherri Herschmann at 10:25:47 AM, 6/1/2016

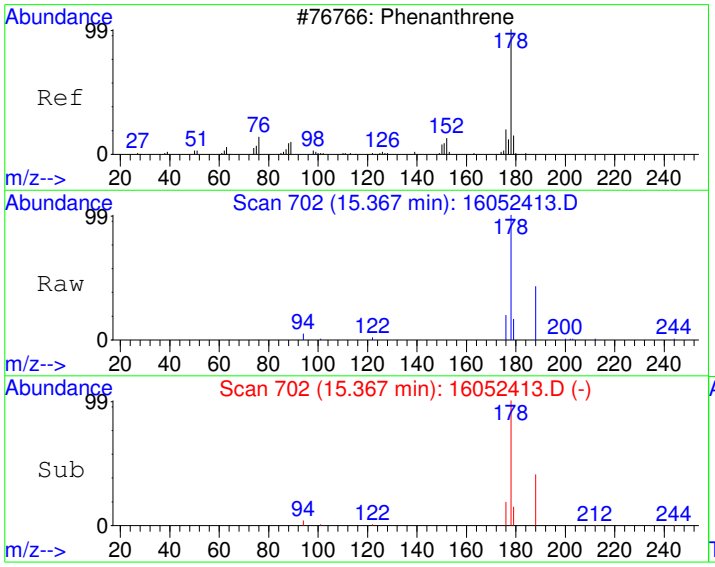
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052413.D Vial: 13
Acq On : 24 May 2016 5:50 pm Operator:
Sample : 1605135-24A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

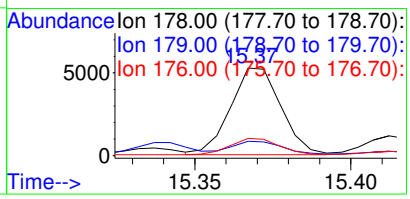


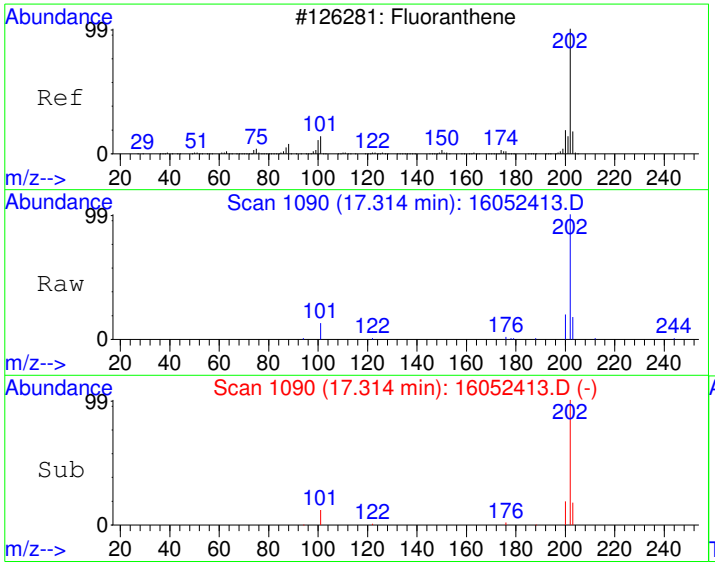


#12
Phenanthrene
Concen: 15.60 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:178 Resp: 5907

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	19.1	0.0	48.5

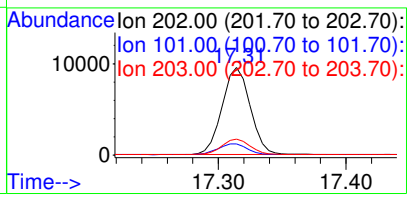


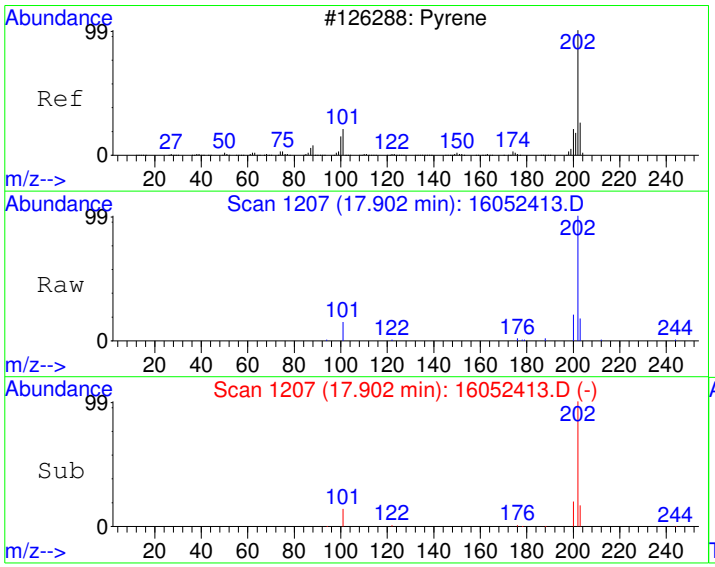


#14
Fluoranthene
Concen: 36.84 ug/kg
RT: 17.31 min Scan# 1090
Delta R.T. -0.03 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:202 Resp: 14436

Ion	Ratio	Lower	Upper
202	100		
101	12.2	0.0	43.0
203	17.7	0.0	47.9

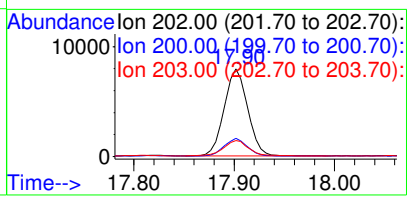


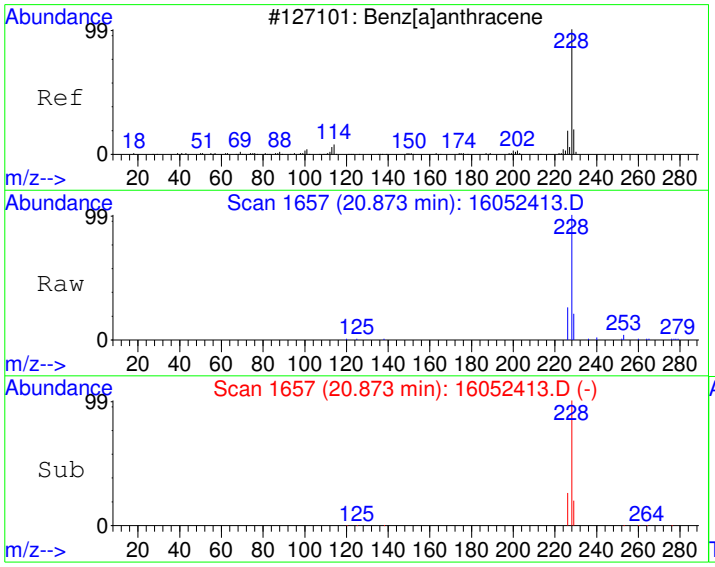


#15
Pyrene
Concen: 31.45 ug/kg
RT: 17.90 min Scan# 1207
Delta R.T. -0.03 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:202 Resp: 12801

Ion	Ratio	Lower	Upper
202	100		
200	20.1	0.0	50.0
203	17.5	0.0	48.0

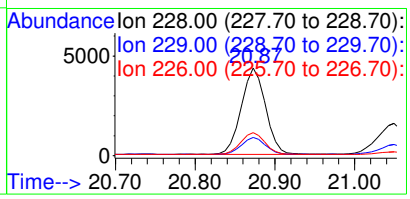


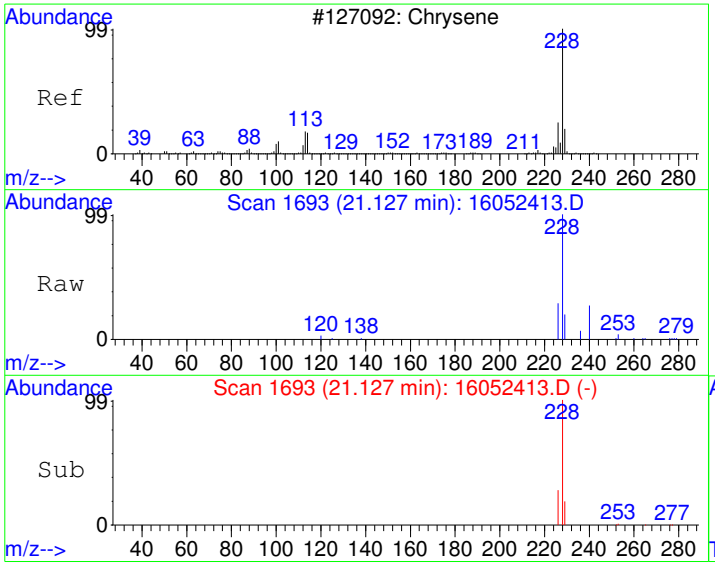


#18
Benzo[a]anthracene
Concen: 23.08 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:228 Resp: 9195

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	25.5	0.0	55.2

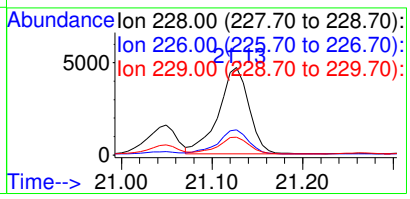


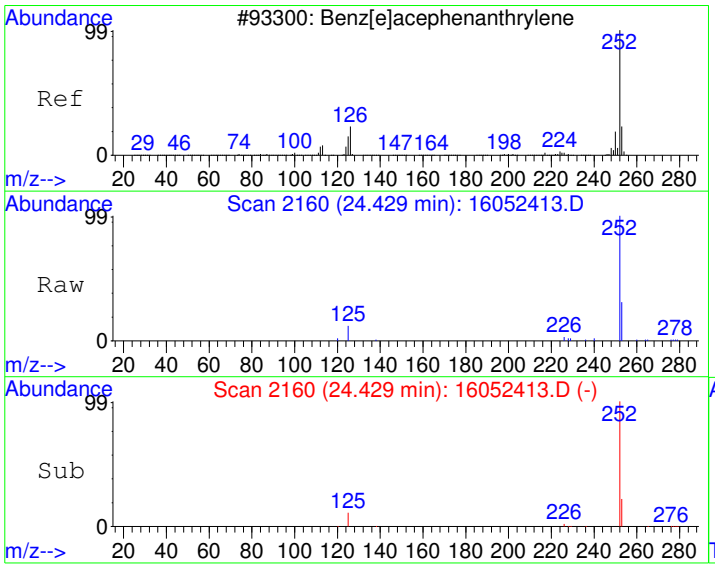


#19
Chrysene
Concen: 27.96 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:228 Resp: 10763

Ion	Ratio	Lower	Upper
228	100		
226	27.9	0.0	58.1
229	19.5	0.0	50.1

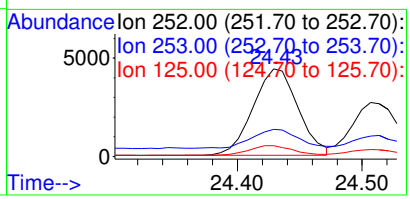


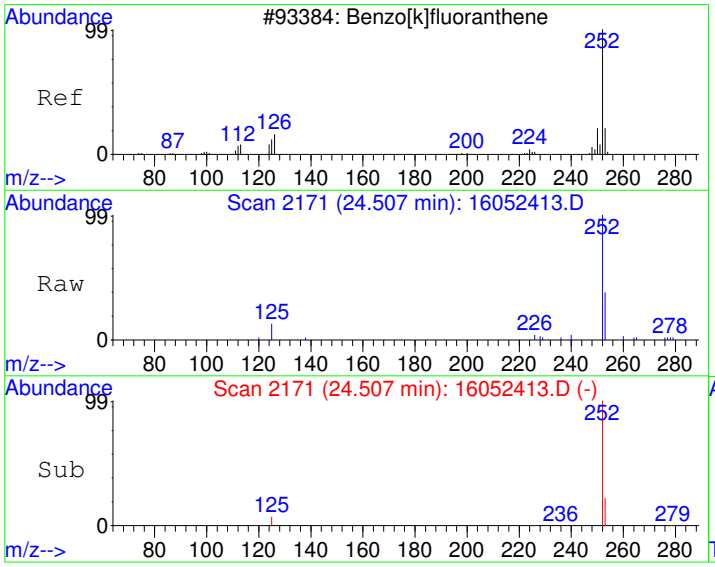


#21
Benzo[b]fluoranthene
Concen: 27.13 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:252 Resp: 11055

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	11.1	0.0	41.0

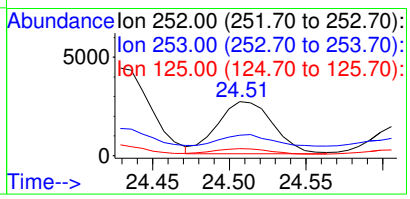


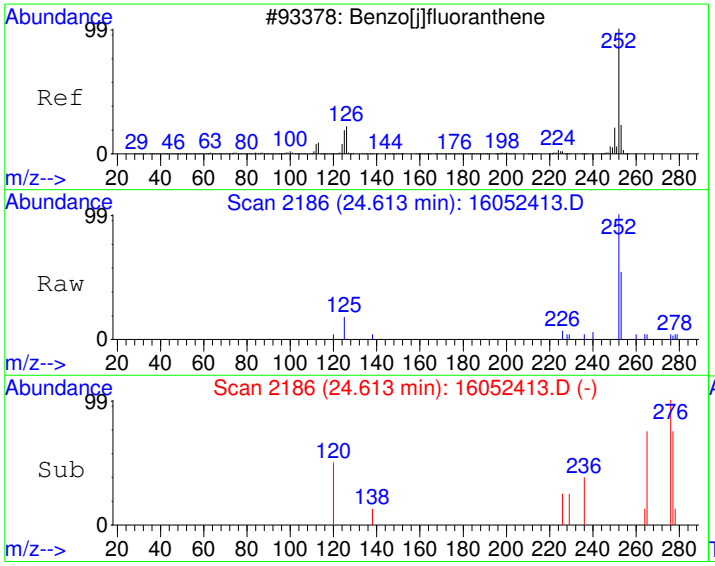


#22
Benzo[k]fluoranthene
Concen: 17.60 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:252 Resp: 6727

Ion	Ratio	Lower	Upper
252	100		
253	21.4	2.1	42.1
125	10.8	0.0	31.3

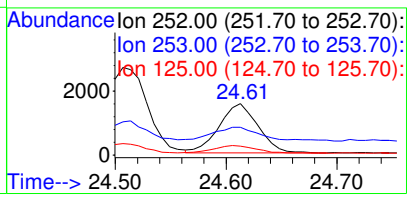


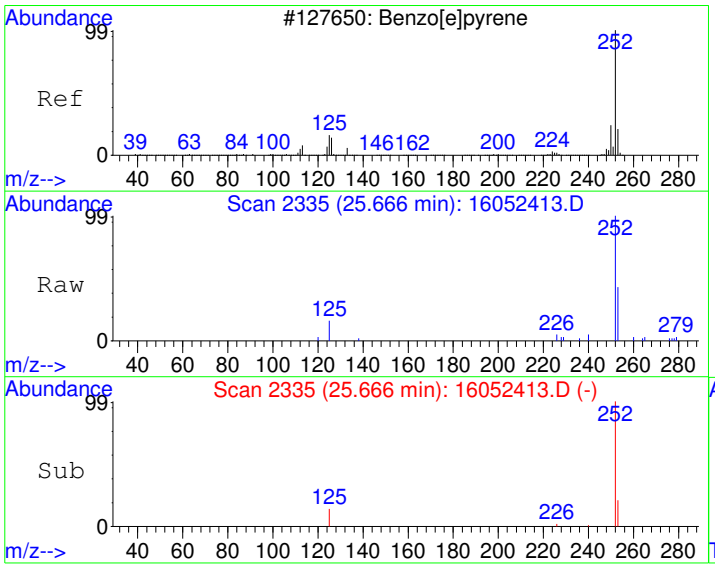


#23
Benzo(j)fluoranthene
Concen: 10.99 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:252 Resp: 3742

Ion	Ratio	Lower	Upper
252	100		
253	26.5	2.1	42.1
125	14.4	0.0	34.4

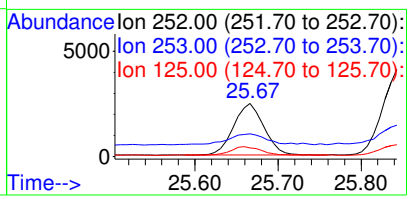


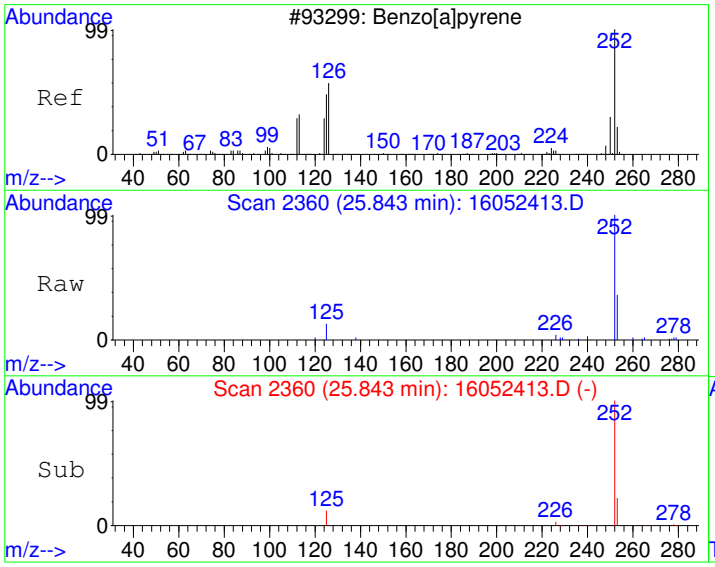


#24
Benzo[e]pyrene
Concen: 17.01 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:252 Resp: 6207

Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.2	42.2
125	13.9	0.0	36.1

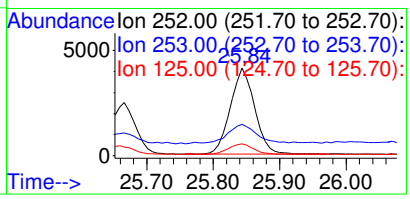


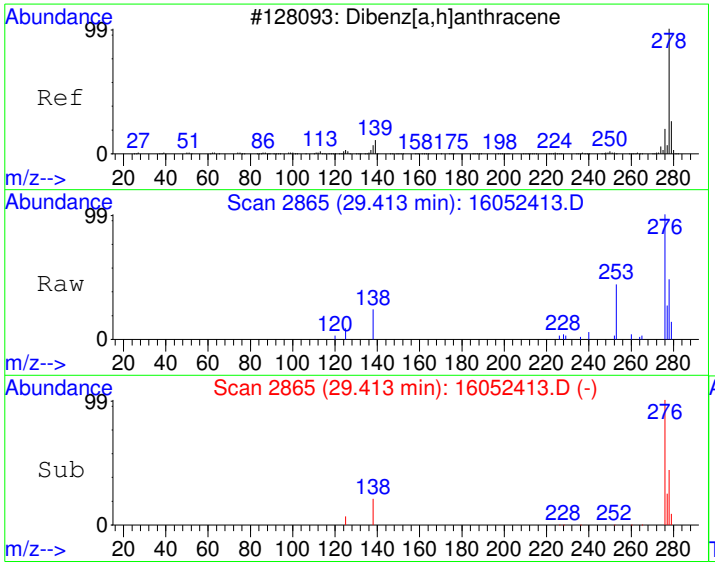


#25
Benzo[a]pyrene
Concen: 27.94 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:252 Resp: 10420

Ion	Ratio	Lower	Upper
252	100		
253	22.6	1.9	41.9
125	12.0	0.0	31.7

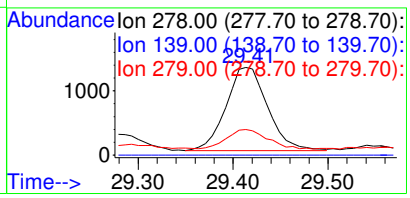


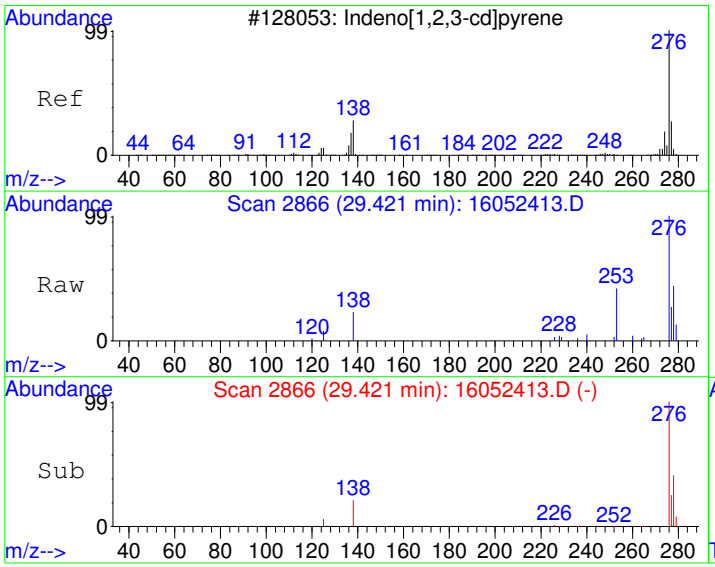


#26
Dibenz[a,h]anthracene
Concen: 11.58 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:278 Resp: 3933

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.7	4.2	44.2

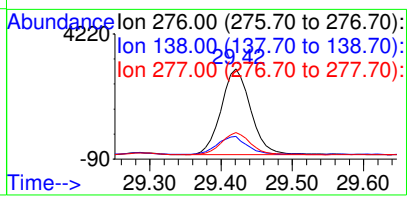


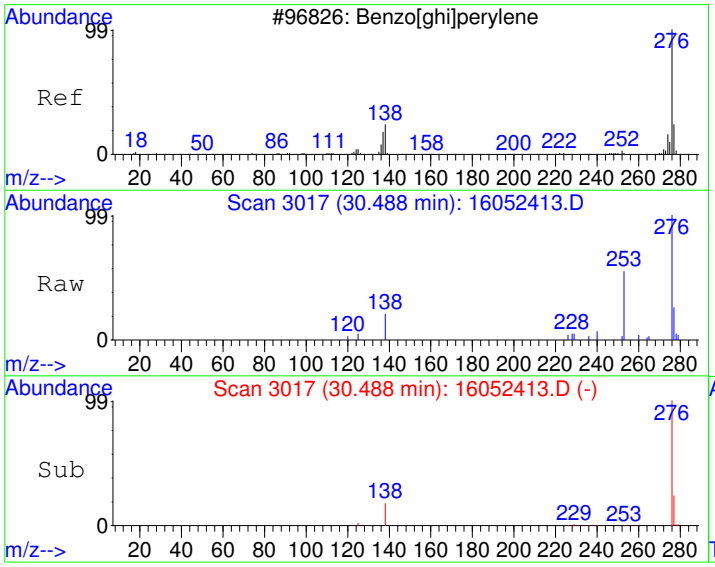


#27
Indeno[1,2,3-cd]pyrene
Concen: 21.08 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:276 Resp: 8543

Ion	Ratio	Lower	Upper
276	100		
138	20.9	6.7	46.7
277	26.0	5.8	45.8

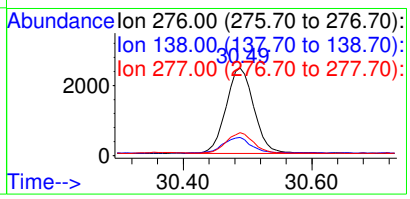




#28
Benzo[g,h,i]perylene
Concen: 23.17 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052413.D
Acq: 24 May 2016 5:50 pm

Tgt Ion:276 Resp: 7321

Ion	Ratio	Lower	Upper
276	100		
138	18.3	0.0	39.1
277	24.2	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052414.D Vial: 14
Acq On : 24 May 2016 6:30 pm Operator:
Sample : 1605135-25A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1160902	4000.00 ug/kg	100
5) Acenaphthene-d10	13.25	164	754862	4000.00 ug/kg	66
11) Phenanthrene-d10	15.34	188	1304378	4000.00 ug/kg	64
17) Chrysene-d12	21.05	240	1514336	4000.00 ug/kg	67
20) Perylene-d12	26.19	264	1376125	4000.00 ug/kg	67

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.19	172	16783	76.22 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.91%#	
16) 4-Terphenyl-d14	17.82	244	24187	71.67 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.79%#	

Target Compounds					Qvalue
18) Benzo[a]anthracene	20.87	228	1926	5.43 ug/kg	99
19) Chrysene	21.13	228	2105	6.14 ug/kg	99
21) Benzo[b]fluoranthene	24.43	252	2499	6.89 ug/kg	97
22) Benzo[k]fluoranthene	24.51	252	2255	6.63 ug/kg	97
23) Benzo(j)fluoranthene	24.62	252	231	0.76 ug/kg#	44
25) Benzo[a]pyrene	25.84	252	2572	7.75 ug/kg	86
26) Dibenz[a,h]anthracene	29.42	278	2163	7.16 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.42	276	2936	8.14 ug/kg	92
28) Benzo[g,h,i]perylene	30.48	276	2267	8.06 ug/kg	96

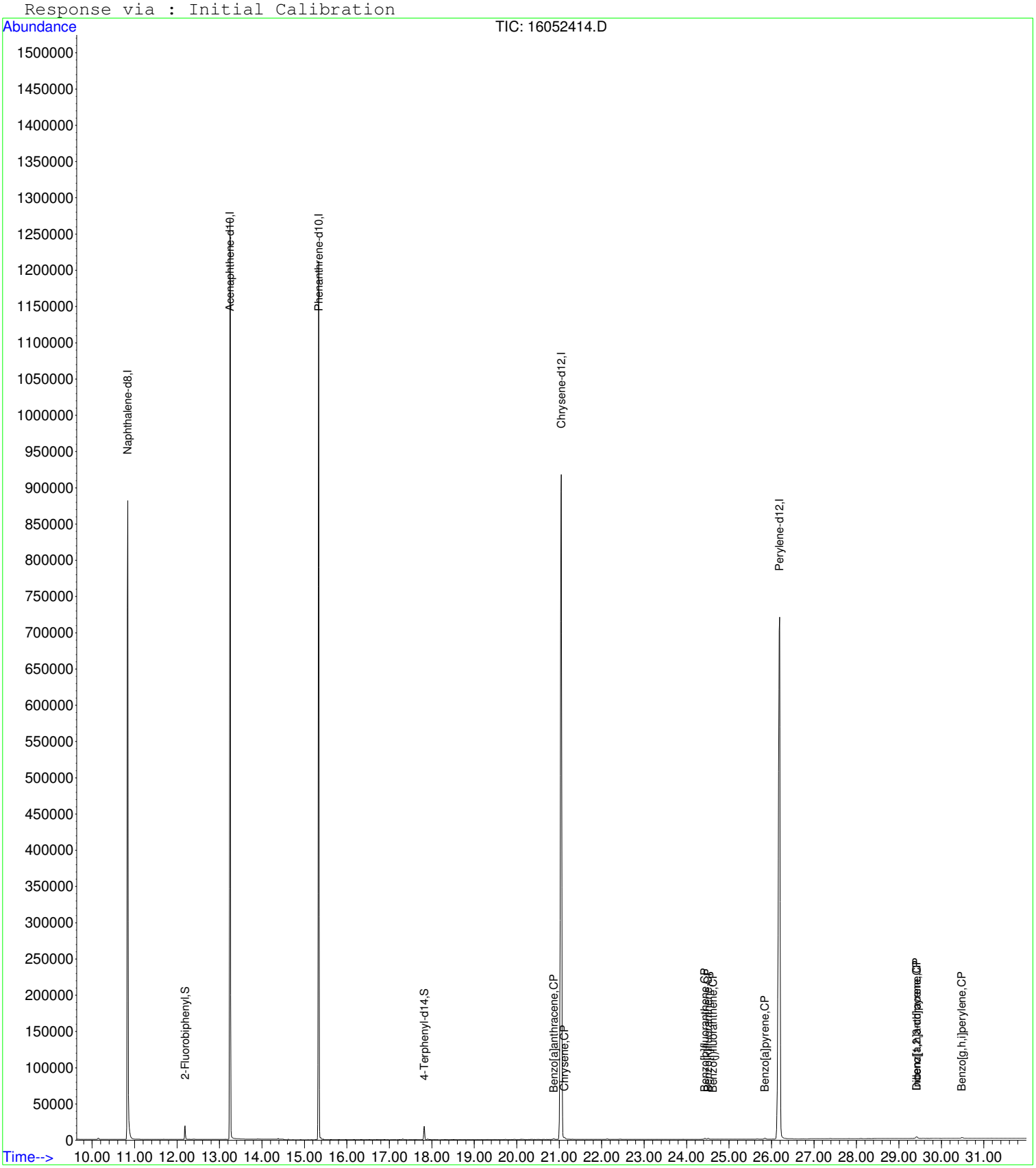
CONFIRMED
By Sherri Herschmann at 10:28:36 AM, 6/1/2016

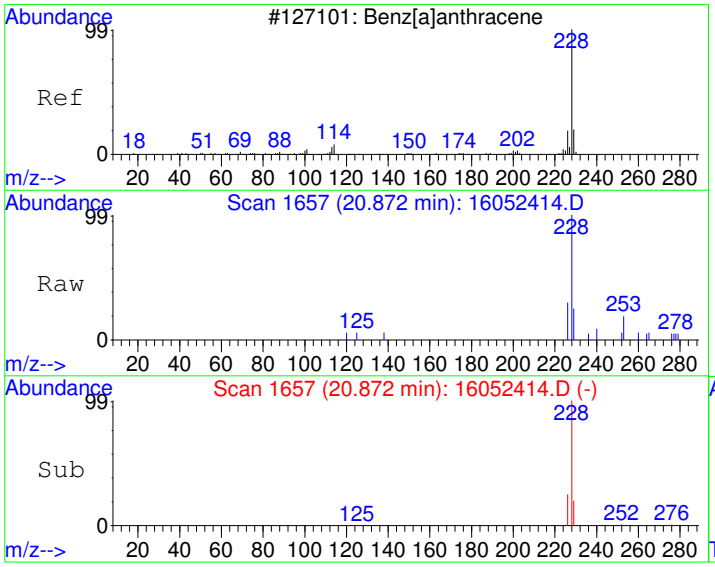
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052414.D Vial: 14
Acq On : 24 May 2016 6:30 pm Operator:
Sample : 1605135-25A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

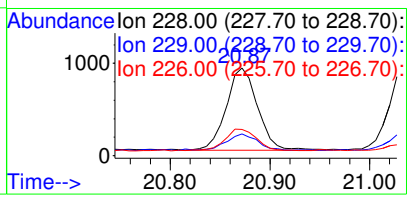


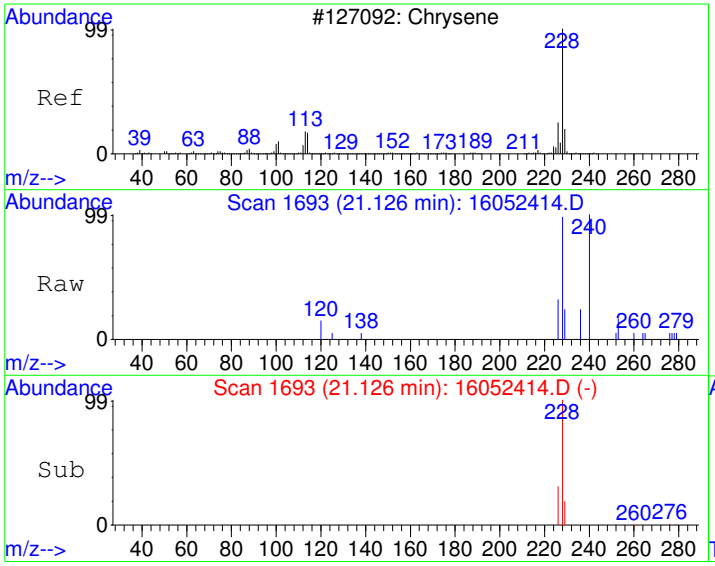


#18
Benzo[a]anthracene
Concen: 5.43 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:228 Resp: 1926

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	25.9	0.0	55.2

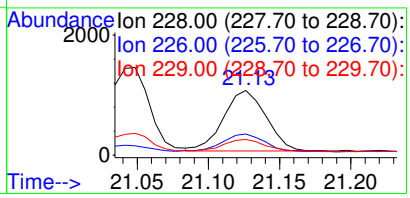


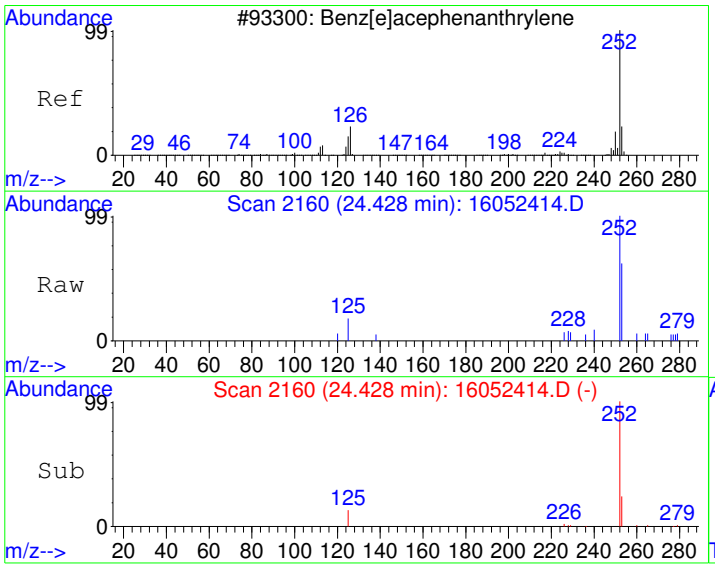


#19
Chrysene
Concen: 6.14 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:228 Resp: 2105

Ion	Ratio	Lower	Upper
228	100		
226	28.6	0.0	58.1
229	20.1	0.0	50.1

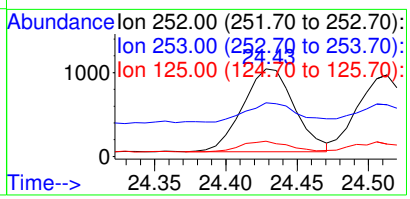


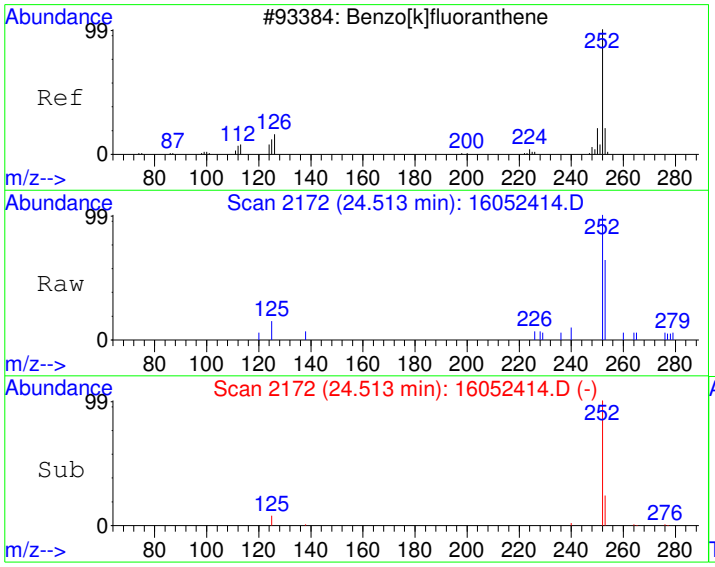


#21
Benzo[b]fluoranthene
Concen: 6.89 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 2499

Ion	Ratio	Lower	Upper
252	100		
253	23.0	0.0	52.2
125	12.9	0.0	41.0

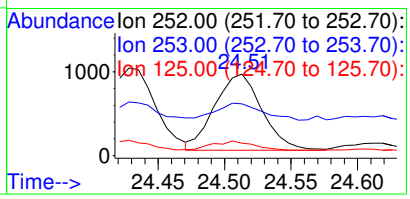


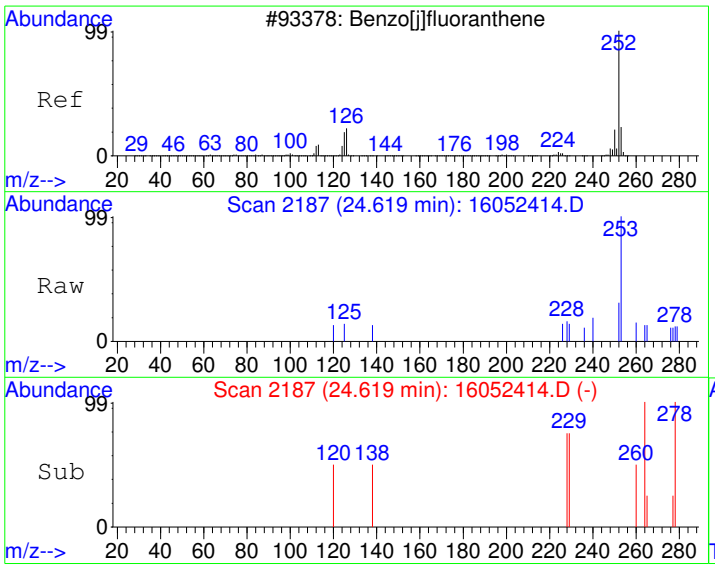


#22
Benzo[k]fluoranthene
Concen: 6.63 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 2255

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.1	42.1
125	8.7	0.0	31.3

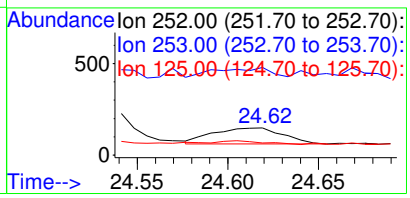


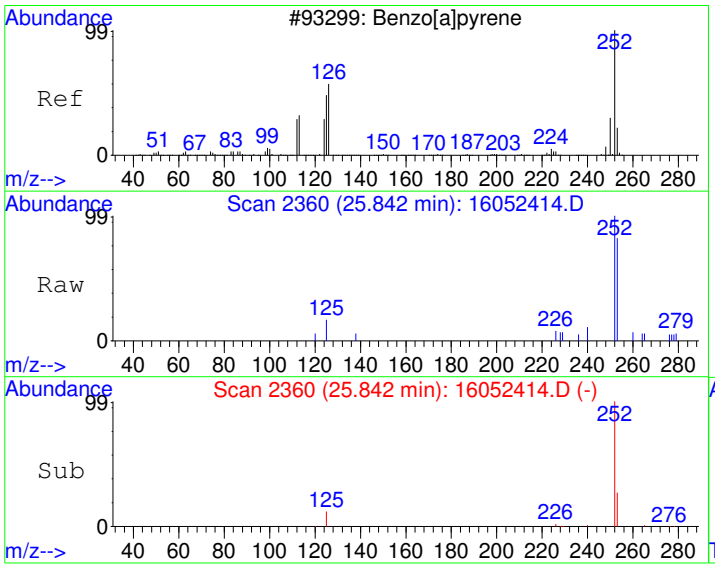


#23
Benzo(j)fluoranthene
Concen: 0.76 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 231

Ion	Ratio	Lower	Upper
252	100		
253	61.6	2.1	42.1#
125	8.1	0.0	34.4

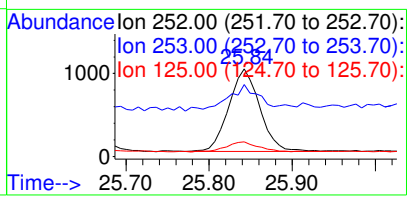


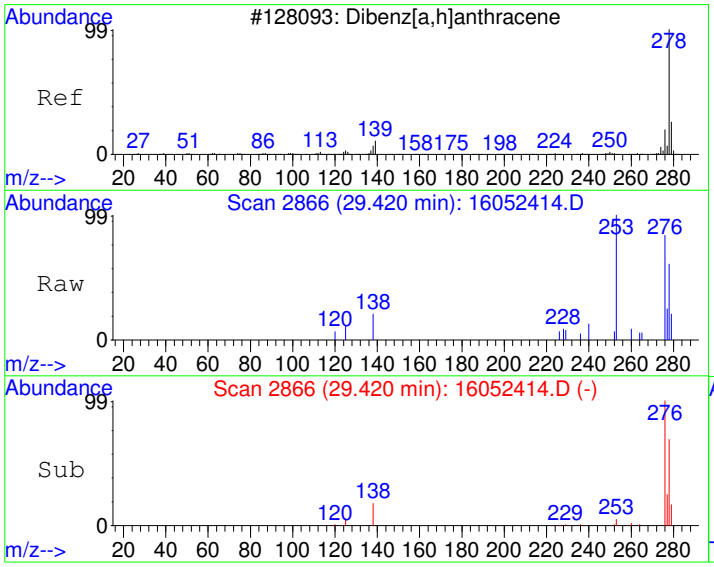


#25
Benzo[a]pyrene
Concen: 7.75 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 2572

Ion	Ratio	Lower	Upper
252	100		
253	32.1	1.9	41.9
125	11.9	0.0	31.7

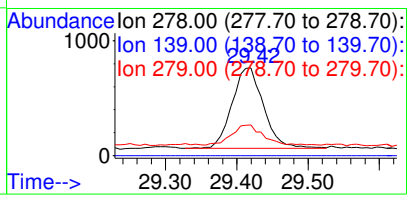


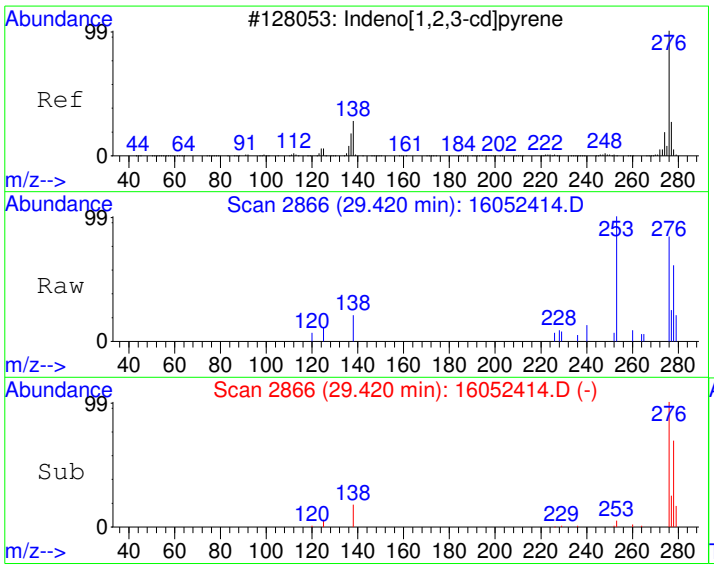


#26
Dibenz[a,h]anthracene
Concen: 7.16 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:278 Resp: 2163

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	23.9	4.2	44.2

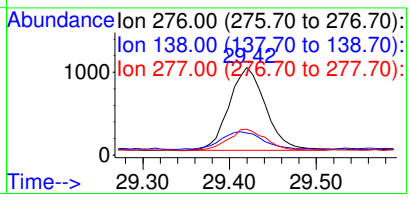


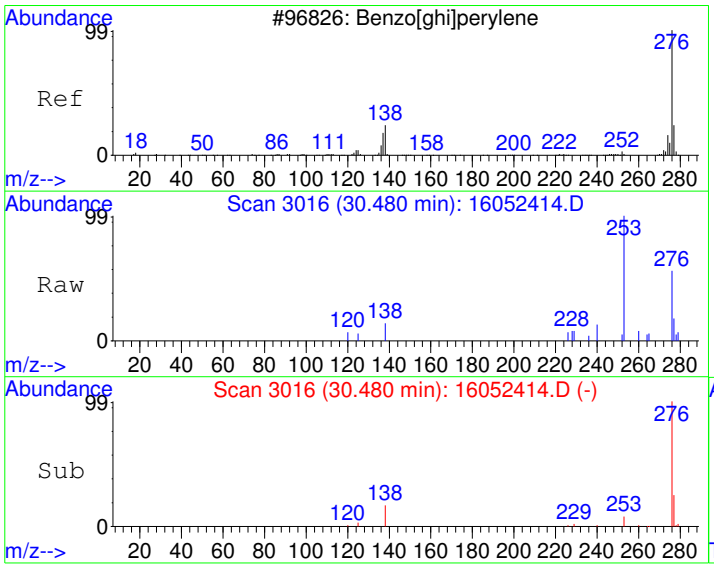


#27
Indeno[1,2,3-cd]pyrene
Concen: 8.14 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:276 Resp: 2936

Ion	Ratio	Lower	Upper
276	100		
138	19.1	6.7	46.7
277	25.8	5.8	45.8

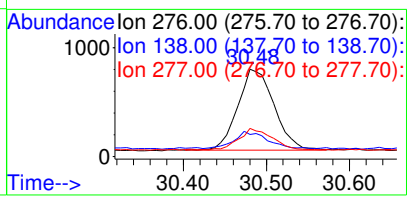




#28
Benzo[g,h,i]perylene
Concen: 8.06 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052414.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:276 Resp: 2267

Ion	Ratio	Lower	Upper
276	100		
138	17.0	0.0	39.1
277	25.9	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052415.D Vial: 15
Acq On : 24 May 2016 7:10 pm Operator:
Sample : 1605135-26A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1228216	4000.00 ug/kg	106
5) Acenaphthene-d10	13.25	164	796190	4000.00 ug/kg	69
11) Phenanthrene-d10	15.34	188	1401308	4000.00 ug/kg	69
17) Chrysene-d12	21.05	240	1642476	4000.00 ug/kg	72
20) Perylene-d12	26.19	264	1483975	4000.00 ug/kg	72

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	17688	76.16 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.90%#	
16) 4-Terphenyl-d14	17.82	244	26280	72.49 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.81%#	

Target Compounds

					Qvalue
19) Chrysene	21.13	228	1936	5.21 ug/kg	97
21) Benzo[b]fluoranthene	24.43	252	2186	5.59 ug/kg	93
22) Benzo[k]fluoranthene	24.51	252	1989	5.42 ug/kg	97
23) Benzo(j)fluoranthene	24.61	252	137	0.42 ug/kg	84
25) Benzo[a]pyrene	25.84	252	2100	5.87 ug/kg	98
26) Dibenz[a,h]anthracene	29.41	278	1802	5.53 ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.42	276	2400	6.17 ug/kg	96
28) Benzo[g,h,i]perylene	30.49	276	1829	6.03 ug/kg	98

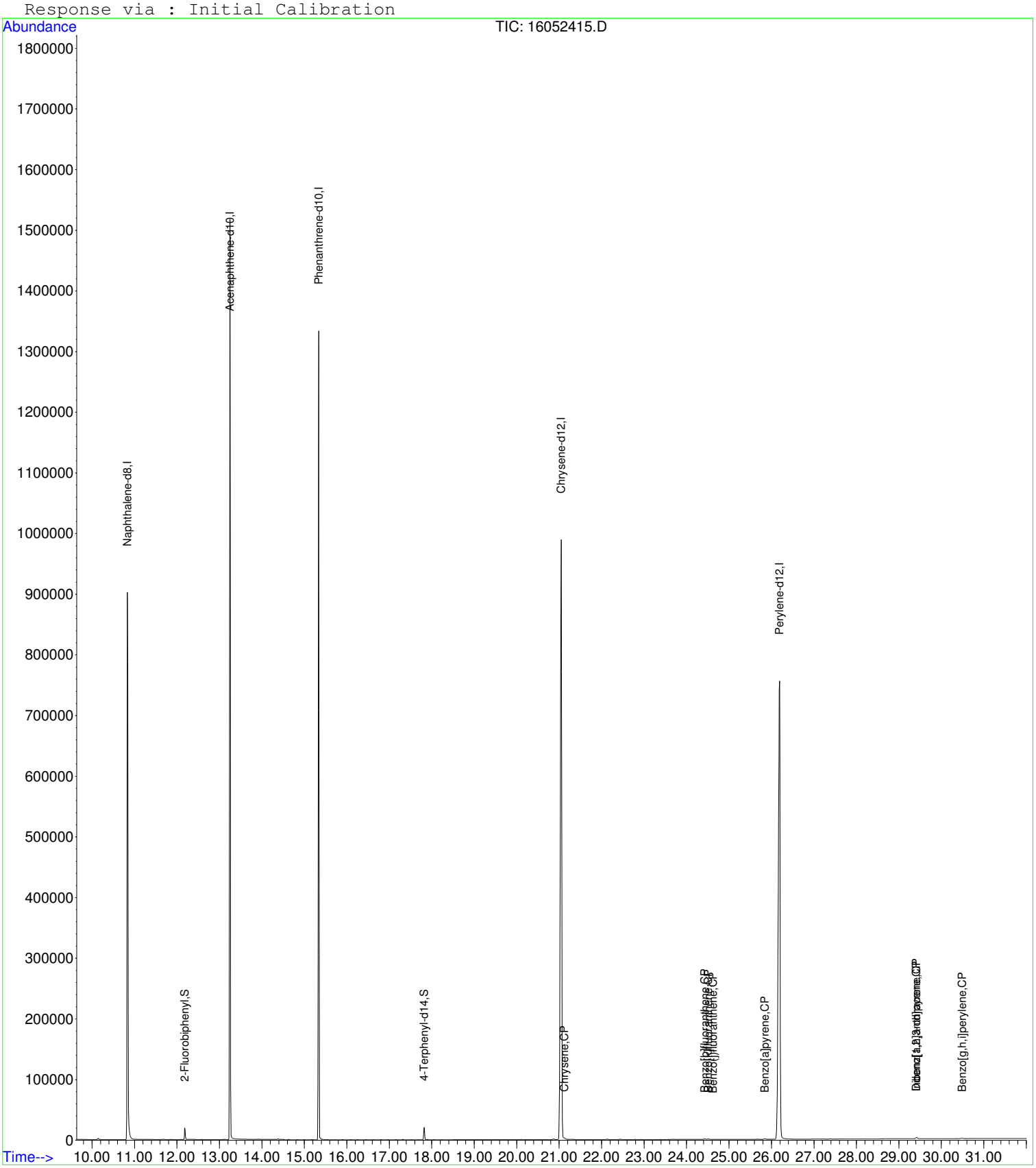
CONFIRMED
By Sherri Herschmann at 10:28:52 AM, 6/1/2016

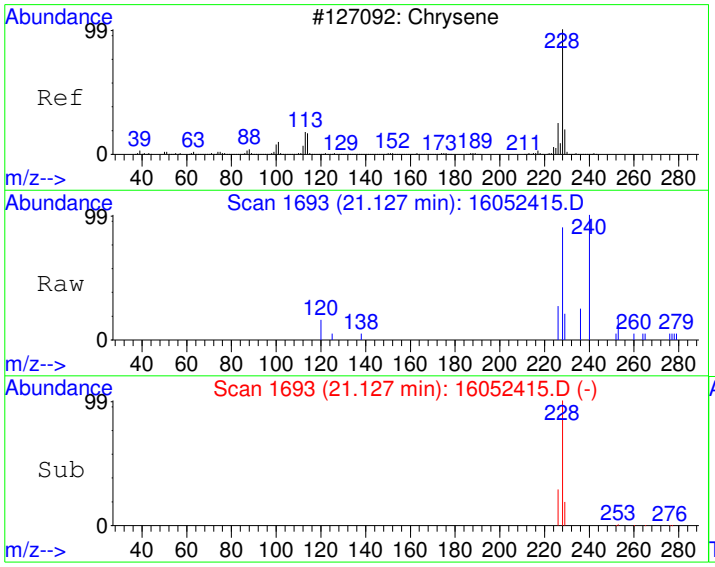
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052415.D Vial: 15
Acq On : 24 May 2016 7:10 pm Operator:
Sample : 1605135-26A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

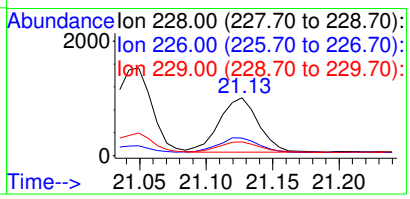


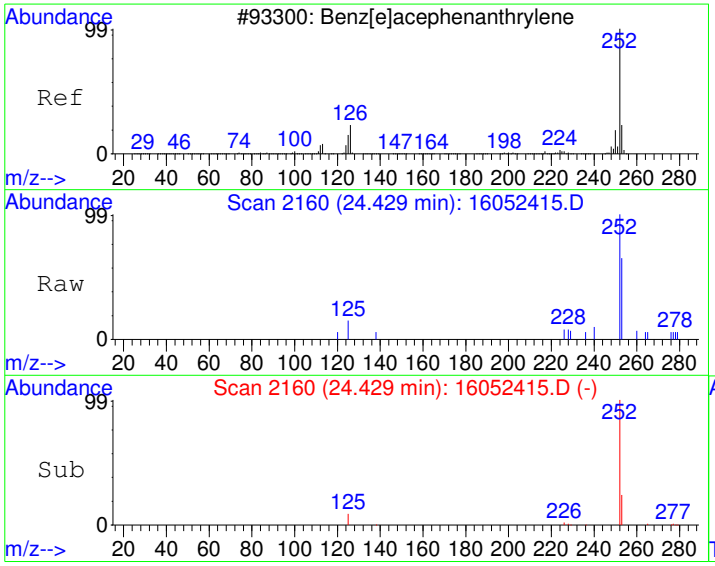


#19
Chrysene
Concen: 5.21 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:228 Resp: 1936

Ion	Ratio	Lower	Upper
228	100		
226	26.3	0.0	58.1
229	18.8	0.0	50.1

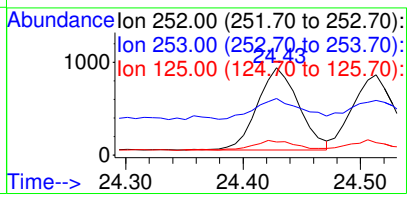


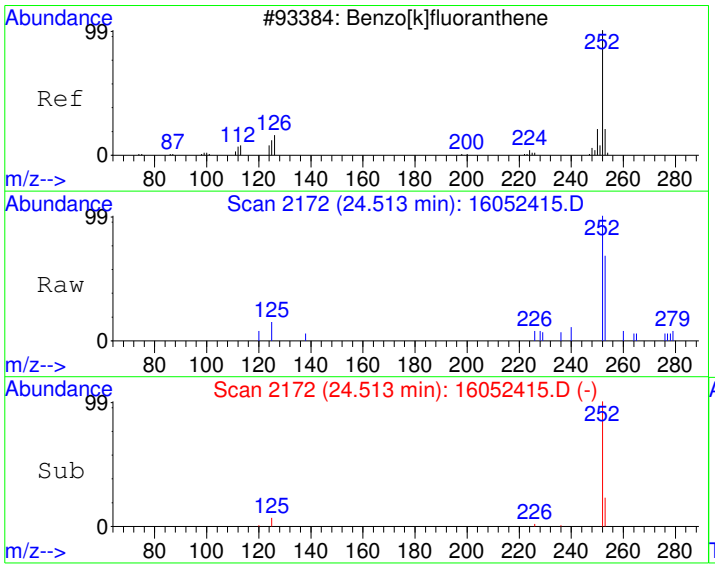


#21
Benzo[b]fluoranthene
Concen: 5.59 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:252 Resp: 2186

Ion	Ratio	Lower	Upper
252	100		
253	25.8	0.0	52.2
125	9.3	0.0	41.0

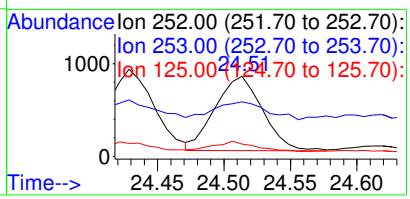


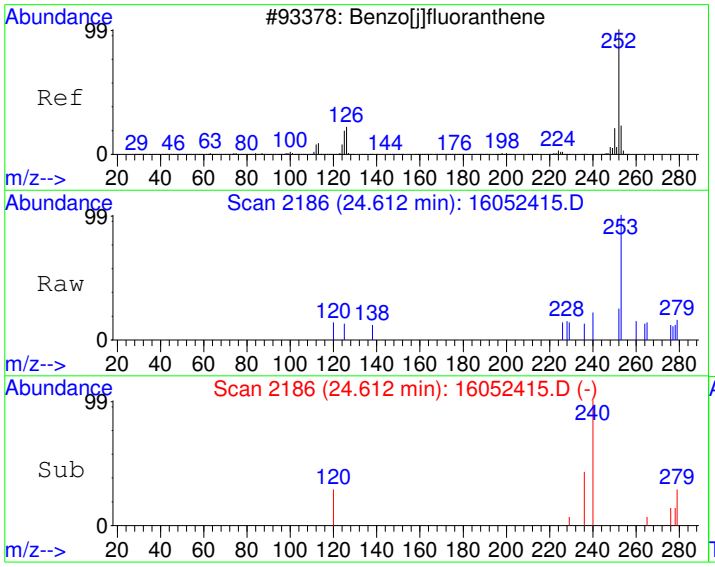


#22
Benzo[k]fluoranthene
Concen: 5.42 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:252 Resp: 1989

Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.1	42.1
125	9.6	0.0	31.3

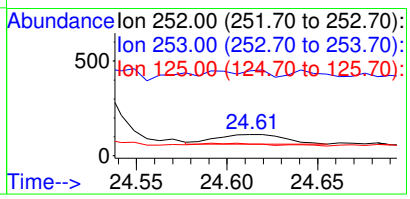


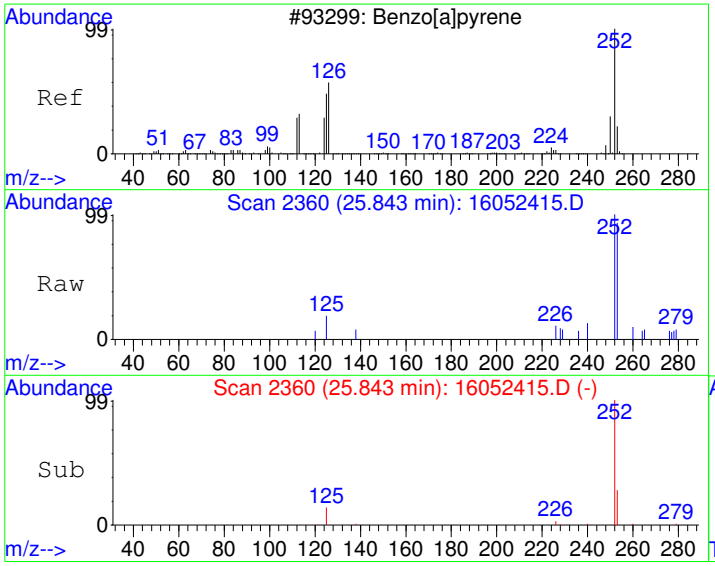


#23
Benzo(j)fluoranthene
Concen: 0.42 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:252 Resp: 137

Ion	Ratio	Lower	Upper
252	100		
253	32.7	2.1	42.1
125	17.3	0.0	34.4

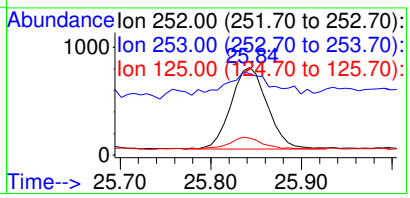


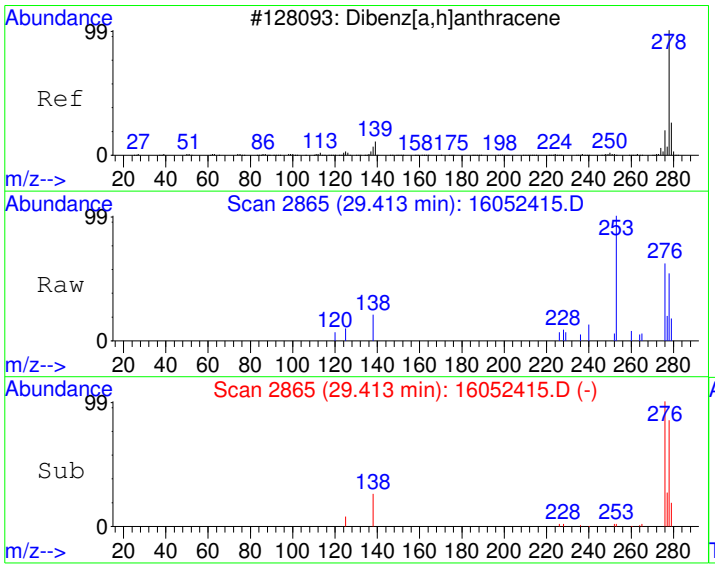


#25
Benzo[a]pyrene
Concen: 5.87 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:252 Resp: 2100

Ion	Ratio	Lower	Upper
252	100		
253	22.6	1.9	41.9
125	13.4	0.0	31.7

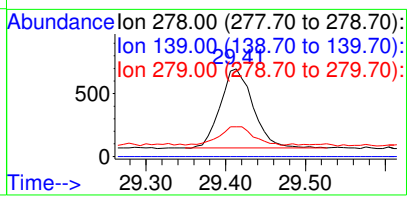


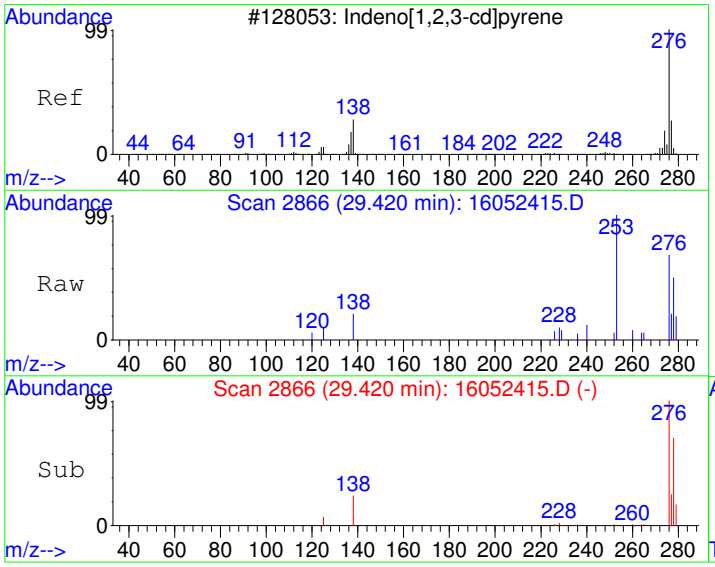


#26
Dibenz[a,h]anthracene
Concen: 5.53 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:278 Resp: 1802

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	23.4	4.2	44.2

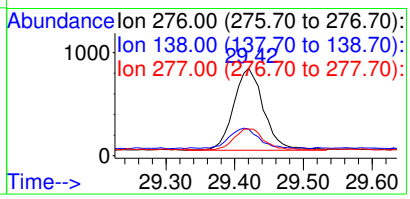


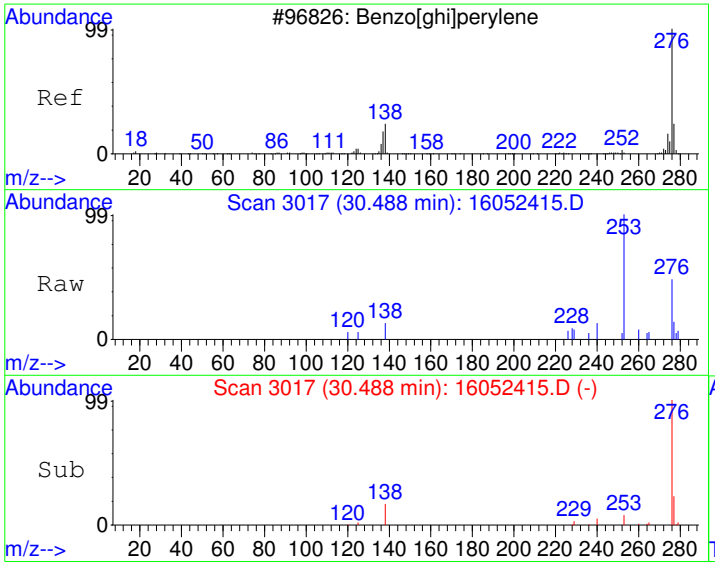


#27
Indeno[1,2,3-cd]pyrene
Concen: 6.17 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:276 Resp: 2400

Ion	Ratio	Lower	Upper
276	100		
138	24.0	6.7	46.7
277	24.3	5.8	45.8

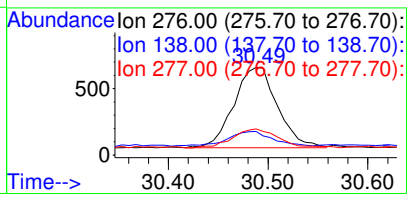




#28
Benzo[g,h,i]perylene
Concen: 6.03 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052415.D
Acq: 24 May 2016 7:10 pm

Tgt Ion:276 Resp: 1829

Ion	Ratio	Lower	Upper
276	100		
138	17.4	0.0	39.1
277	23.9	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052416.D Vial: 16
Acq On : 24 May 2016 7:50 pm Operator:
Sample : 1605135-27A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:50 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1301036	4000.00 ug/kg	112
5) Acenaphthene-d10	13.25	164	872794	4000.00 ug/kg	76
11) Phenanthrene-d10	15.34	188	1513024	4000.00 ug/kg	74
17) Chrysene-d12	21.05	240	1795730	4000.00 ug/kg	79
20) Perylene-d12	26.19	264	1619344	4000.00 ug/kg	79

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.19	172	18284	71.81 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.80%#		
16) 4-Terphenyl-d14	17.82	244	26908	68.74 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.72%#		

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.51	252	1840	~~5.16 ug/kg~~	~~94~~
26) Dibenz[a,h]anthracene	29.41	278	1935	5.44 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.41	276	2276	5.36 ug/kg	94
28) Benzo[g,h,i]perylene	30.49	276	1710	5.17 ug/kg	98

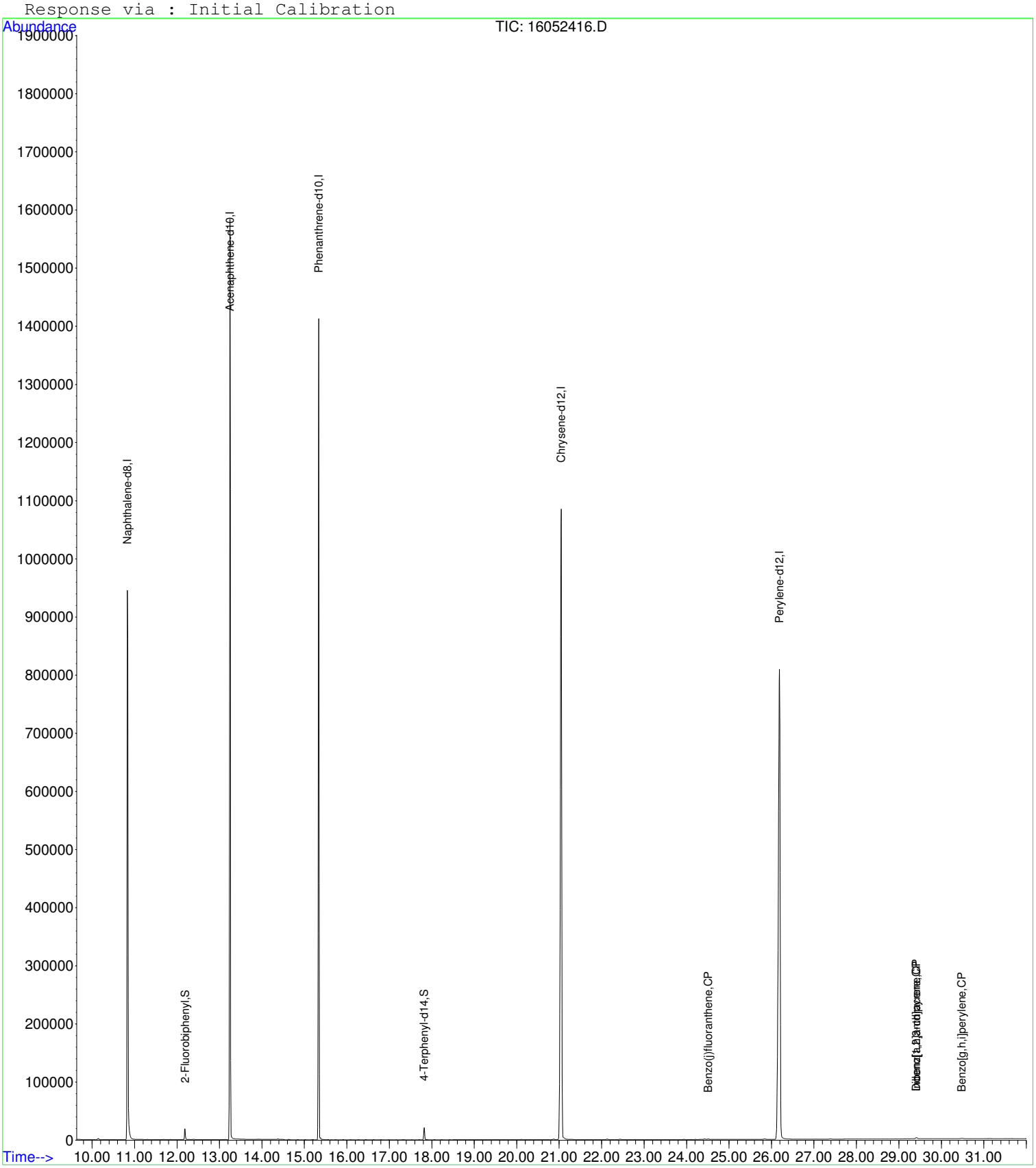
CONFIRMED
By Sherri Herschmann at 10:29:17 AM, 6/1/2016

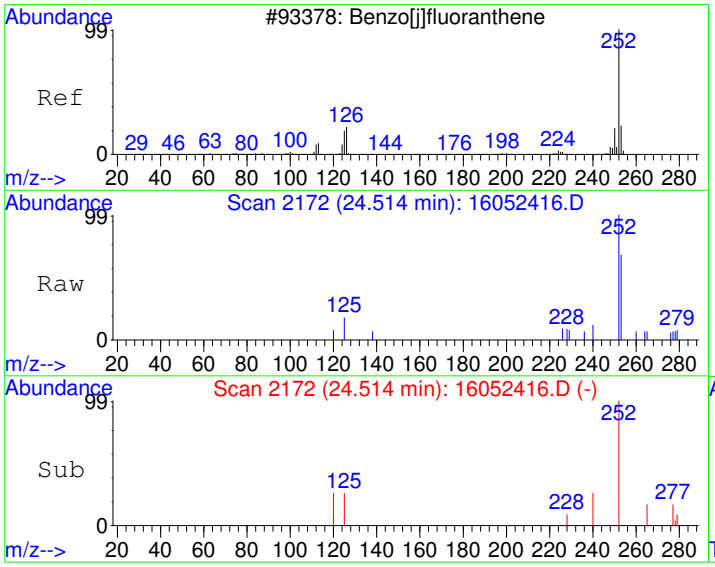
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052416.D Vial: 16
Acq On : 24 May 2016 7:50 pm Operator:
Sample : 1605135-27A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:50 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

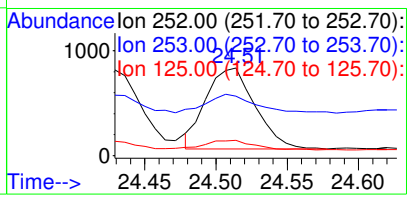


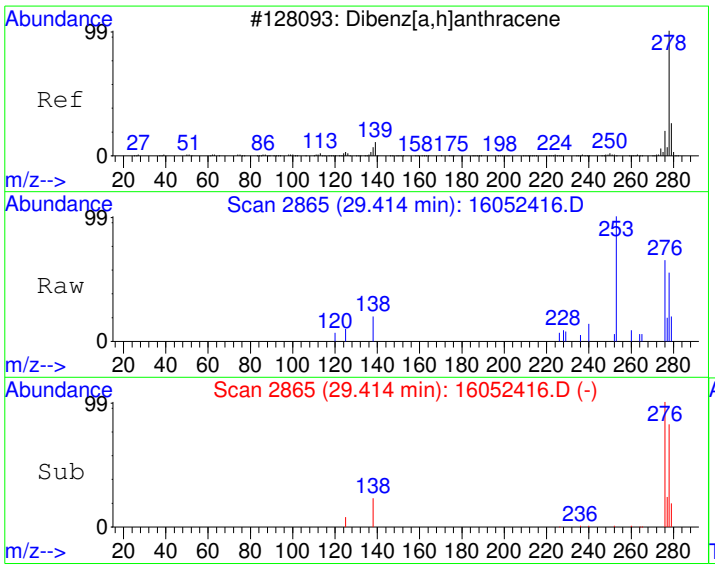


#23
Benzo(j)fluoranthene
Concen: 5.16 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.16 min
Lab File: 16052416.D
Acq: 24 May 2016 7:50 pm

Tgt Ion:252 Resp: 1840

Ion	Ratio	Lower	Upper
252	100		
253	19.4	2.1	42.1
125	11.6	0.0	34.4

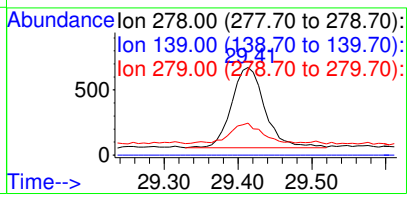


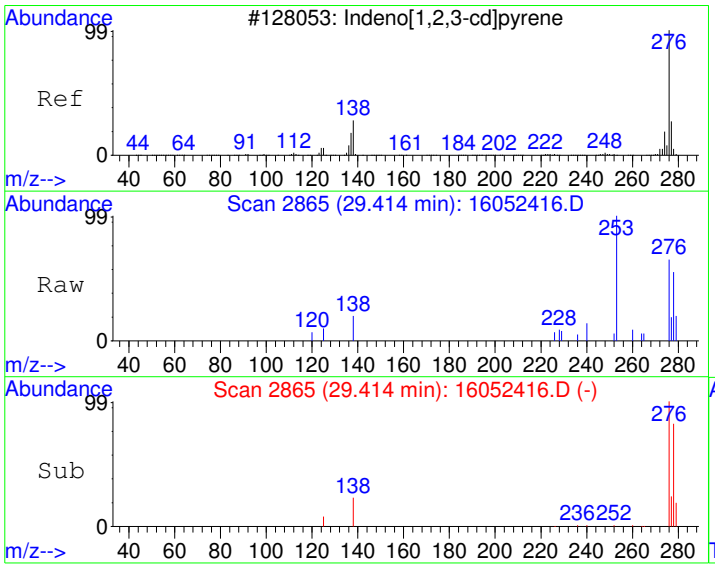


#26
Dibenz[a,h]anthracene
Concen: 5.44 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052416.D
Acq: 24 May 2016 7:50 pm

Tgt Ion:278 Resp: 1935

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	26.1	4.2	44.2

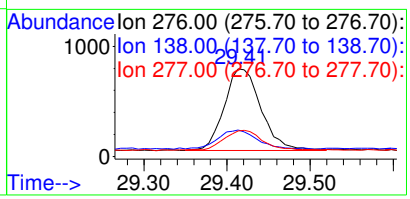


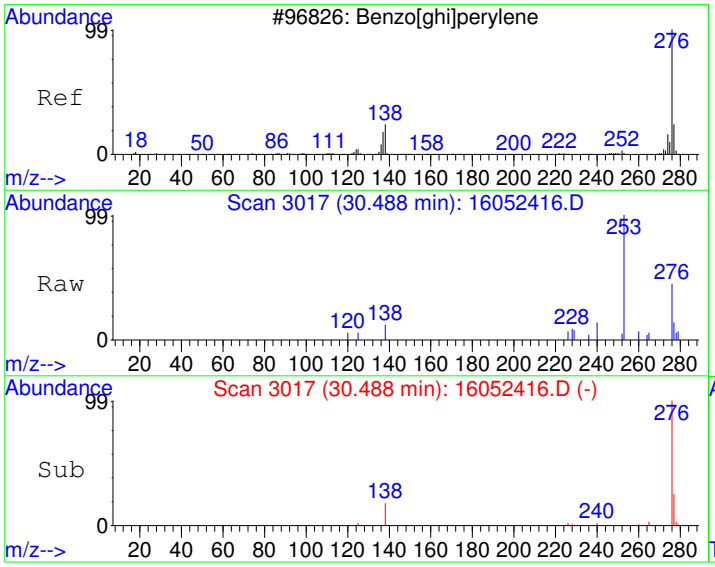


#27
Indeno[1,2,3-cd]pyrene
Concen: 5.36 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052416.D
Acq: 24 May 2016 7:50 pm

Tgt Ion:276 Resp: 2276

Ion	Ratio	Lower	Upper
276	100		
138	23.2	6.7	46.7
277	23.2	5.8	45.8

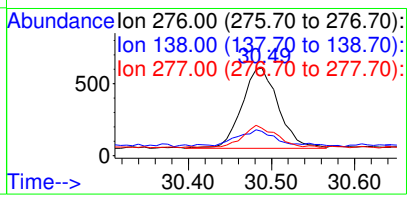




#28
Benzo[g,h,i]perylene
Concen: 5.17 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052416.D
Acq: 24 May 2016 7:50 pm

Tgt Ion:276 Resp: 1710

Ion	Ratio	Lower	Upper
276	100		
138	17.6	0.0	39.1
277	23.5	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052417.D Vial: 17
Acq On : 24 May 2016 8:30 pm Operator:
Sample : 1605135-16AMS Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:50 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1176356	4000.00 ug/kg	101
5) Acenaphthene-d10	13.25	164	806267	4000.00 ug/kg	70
11) Phenanthrene-d10	15.33	188	1377673	4000.00 ug/kg	67
17) Chrysene-d12	21.05	240	1645169	4000.00 ug/kg	72
20) Perylene-d12	26.19	264	1495186	4000.00 ug/kg	73

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18084	76.89 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.92%#	
16) 4-Terphenyl-d14	17.82	244	25447	71.39 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	

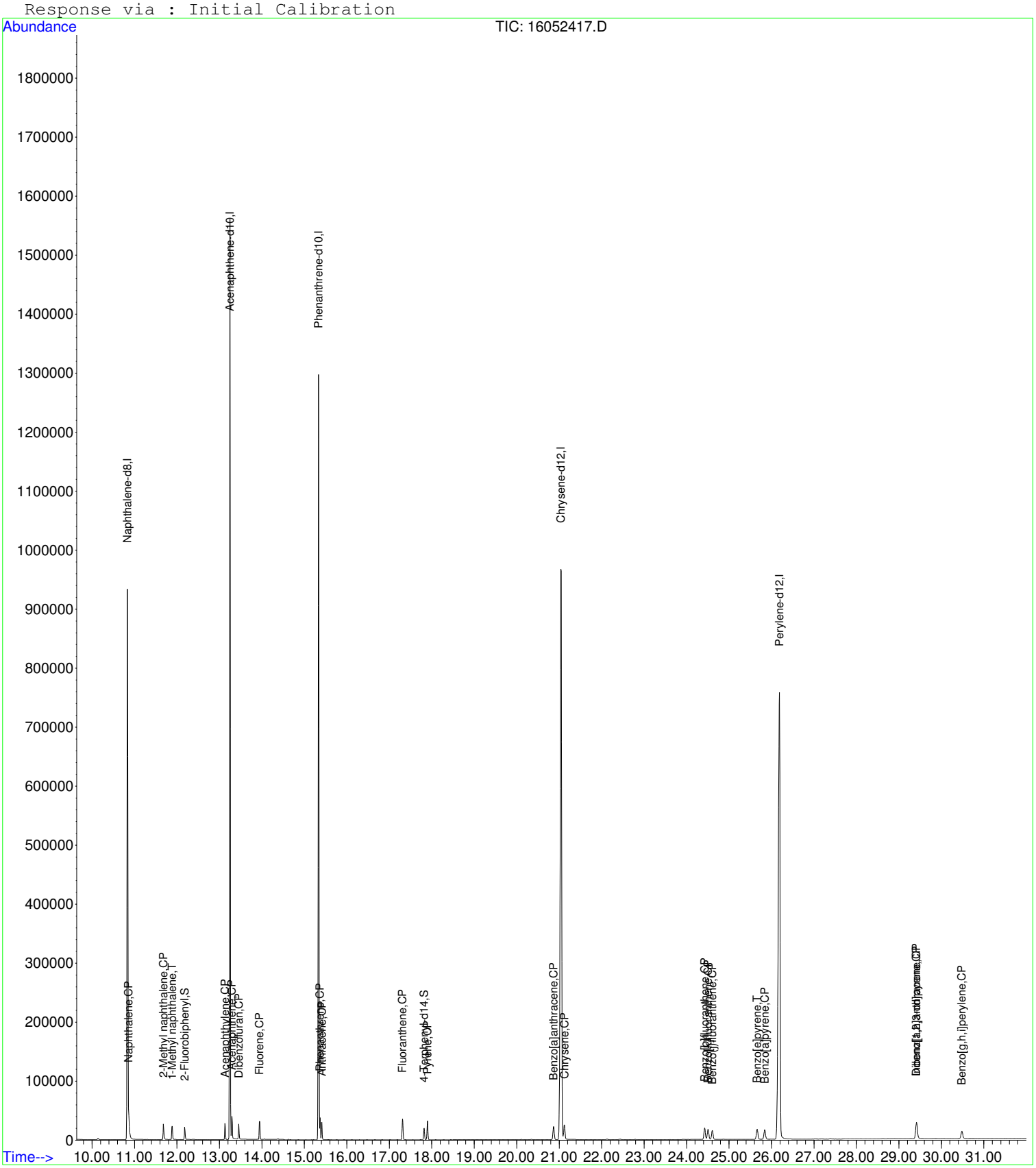
Target Compounds					Qvalue
2) Naphthalene	10.87	128	20245	68.80 ug/kg	100
3) 2-Methyl naphthalene	11.68	142	15973	61.45 ug/kg	97
4) 1-Methyl naphthalene	11.89	142	14933	62.73 ug/kg	99
6) Dibenzofuran	13.46	168	22599	74.79 ug/kg	100
8) Acenaphthylene	13.13	152	24867	71.62 ug/kg	99
9) Acenaphthene	13.29	154	15208	70.56 ug/kg	97
10) Fluorene	13.95	166	17942	68.55 ug/kg	98
12) Phenanthrene	15.37	178	27330	75.43 ug/kg	99
13) Anthracene	15.41	178	25548	74.50 ug/kg	98
14) Fluoranthene	17.31	202	35258	94.04 ug/kg	99
15) Pyrene	17.90	202	35547	91.27 ug/kg	99
18) Benzo[a]anthracene	20.86	228	33260	86.29 ug/kg	99
19) Chrysene	21.13	228	32572	87.47 ug/kg	99
21) Benzo[b]fluoranthene	24.43	252	34643	87.91 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	31343	84.78 ug/kg	99
23) Benzo(j)fluoranthene	24.60	252	27514	83.55 ug/kg	98
24) Benzo[e]pyrene	25.67	252	32090	90.93 ug/kg	99
25) Benzo[a]pyrene	25.84	252	31273	86.71 ug/kg	100
26) Dibenz[a,h]anthracene	29.41	278	25580	77.88 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.42	276	32579	83.15 ug/kg	95
28) Benzo[g,h,i]perylene	30.48	276	25177	82.40 ug/kg	98

(#) = qualifier out of range (m) = manual integration

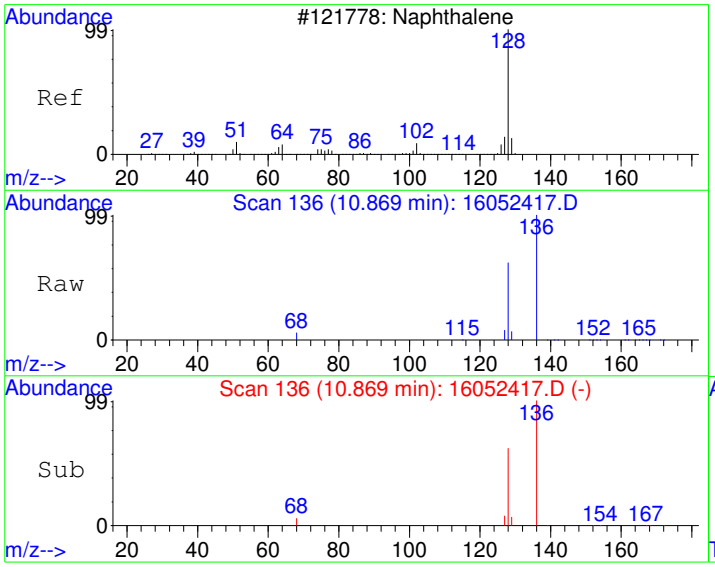
Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052417.D Vial: 17
Acq On : 24 May 2016 8:30 pm Operator:
Sample : 1605135-16AMS Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:50 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



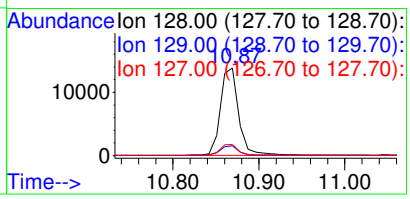
16052417.D PP160421.M Wed May 25 08:50:12 2016 Page 2

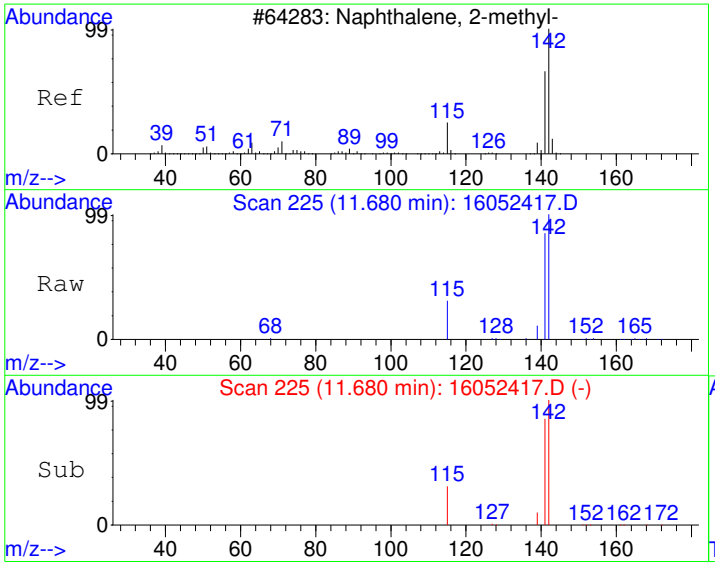


#2
Naphthalene
Concen: 68.80 ug/kg
RT: 10.87 min Scan# 136
Delta R.T. -0.01 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:128 Resp: 20245

Ion	Ratio	Lower	Upper
128	100		
129	11.0	0.0	41.1
127	12.2	0.0	42.4

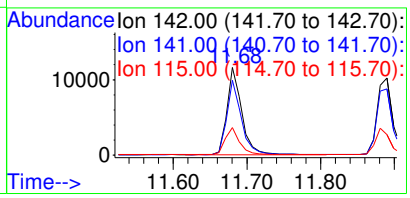


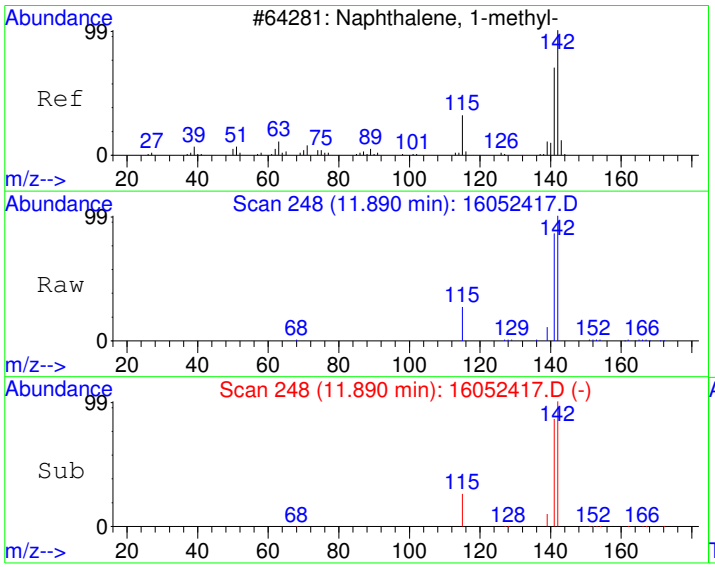


#3
2-Methyl naphthalene
Concen: 61.45 ug/kg
RT: 11.68 min Scan# 225
Delta R.T. -0.02 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:142 Resp: 15973

Ion	Ratio	Lower	Upper
142	100		
141	85.3	54.4	114.4
115	31.0	0.0	56.0

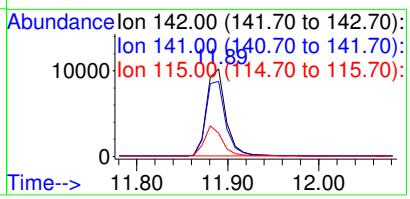


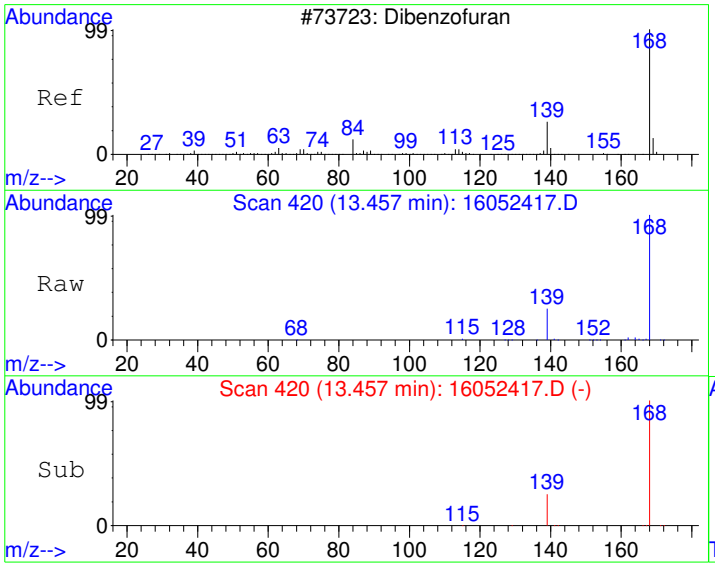


#4
1-Methyl naphthalene
Concen: 62.73 ug/kg
RT: 11.89 min Scan# 248
Delta R.T. -0.01 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:142 Resp: 14933

Ion	Ratio	Lower	Upper
142	100		
141	85.8	56.5	116.5
115	26.1	0.0	55.0

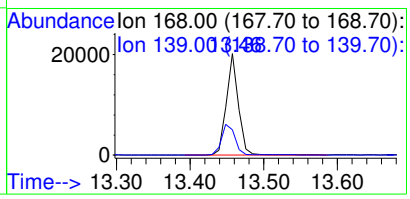


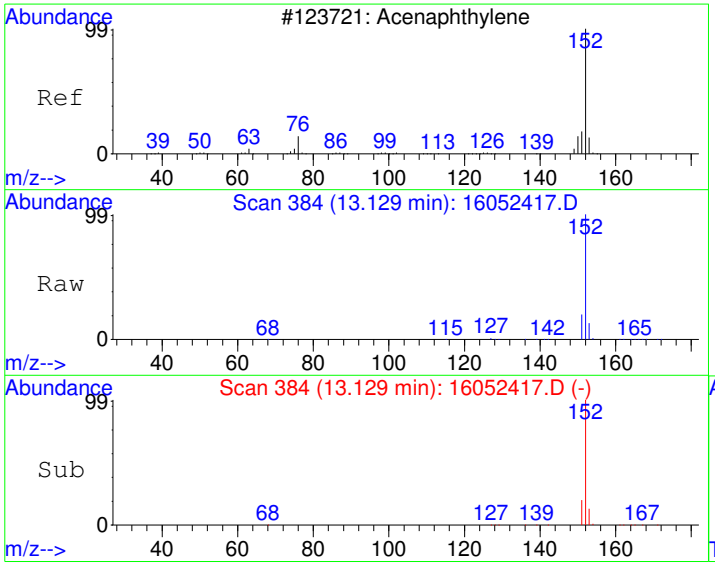


#6
Dibenzofuran
Concen: 74.79 ug/kg
RT: 13.46 min Scan# 420
Delta R.T. -0.02 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:168 Resp: 22599

Ion	Ratio	Lower	Upper
168	100		
139	34.0	27.0	40.4

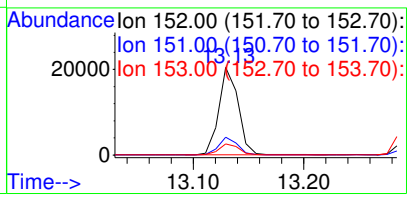


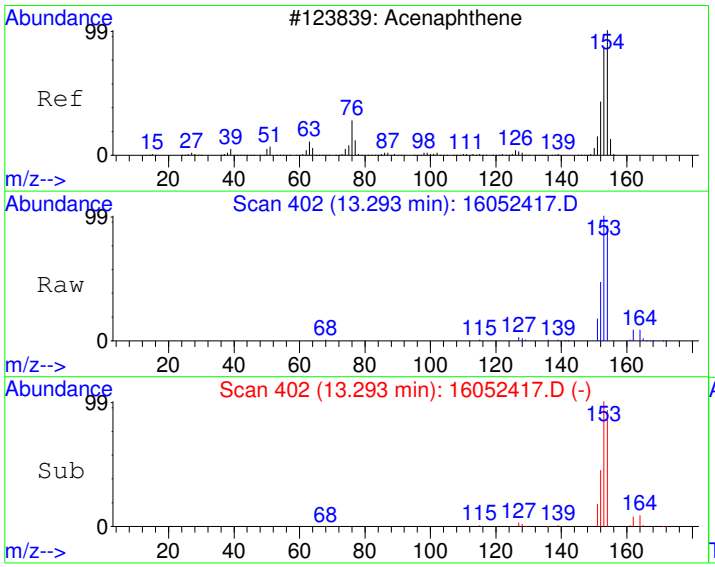


#8
Acenaphthylene
Concen: 71.62 ug/kg
RT: 13.13 min Scan# 384
Delta R.T. -0.02 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:152 Resp: 24867

Ion	Ratio	Lower	Upper
152	100		
151	20.1	0.0	49.7
153	12.6	0.0	43.5

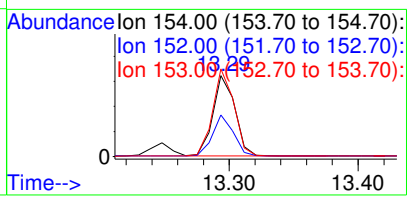


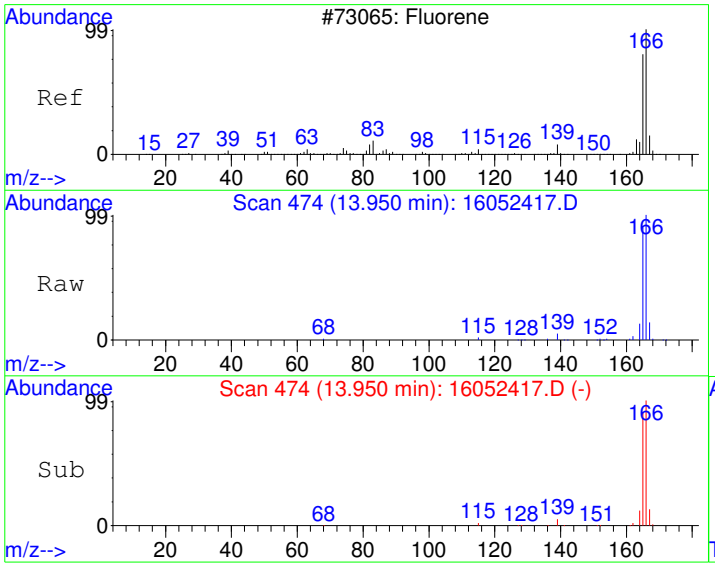


#9
Acenaphthene
Concen: 70.56 ug/kg
RT: 13.29 min Scan# 402
Delta R.T. -0.03 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:154 Resp: 15208

Ion	Ratio	Lower	Upper
154	100		
152	51.0	18.9	78.9
153	108.4	75.2	135.2

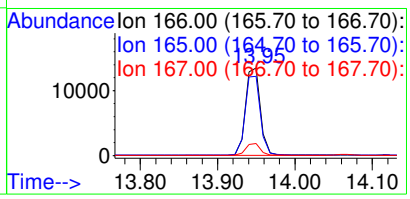


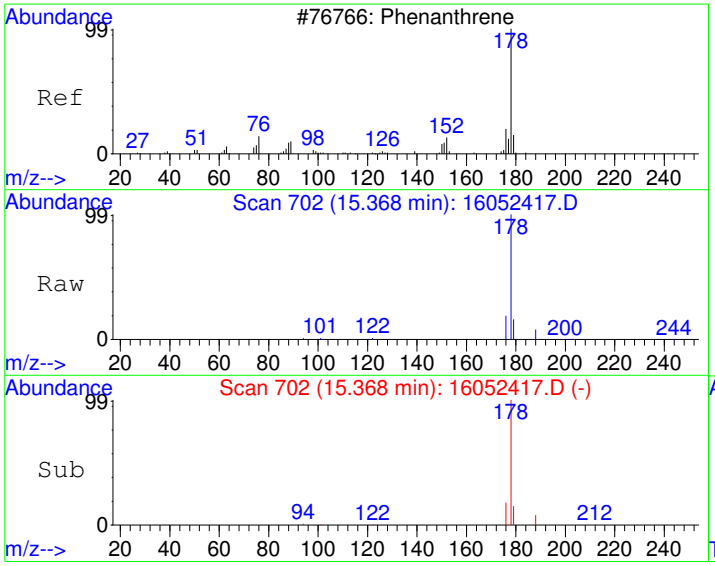


#10
Fluorene
Concen: 68.55 ug/kg
RT: 13.95 min Scan# 474
Delta R.T. -0.02 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:166 Resp: 17942

Ion	Ratio	Lower	Upper
166	100		
165	90.1	61.8	121.8
167	13.4	0.0	43.6

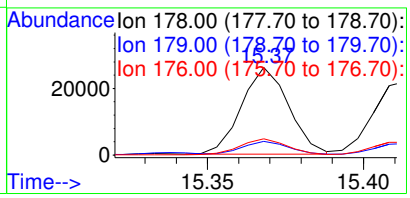


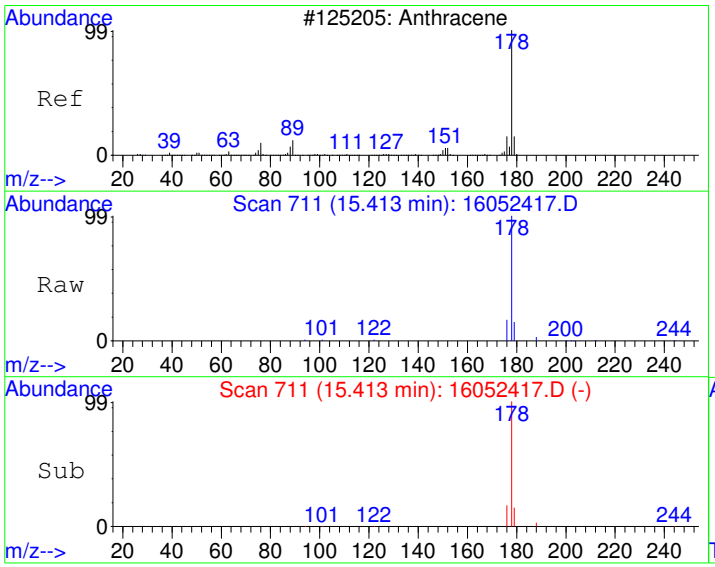


#12
Phenanthrene
Concen: 75.43 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:178 Resp: 27330

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	45.9
176	18.5	0.0	48.5

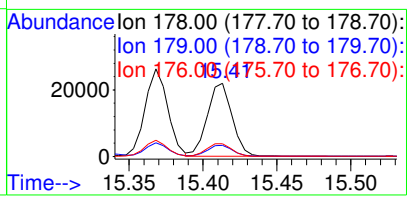


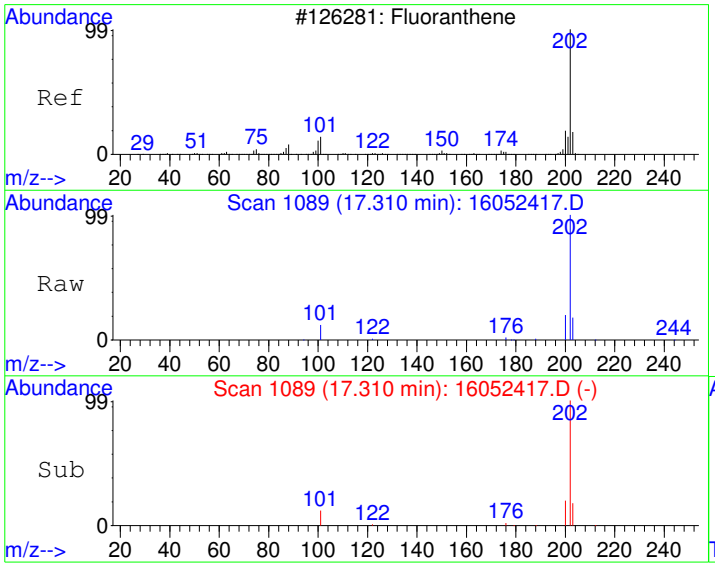


#13
Anthracene
Concen: 74.50 ug/kg
RT: 15.41 min Scan# 711
Delta R.T. -0.02 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:178 Resp: 25548

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	17.3	0.0	48.2

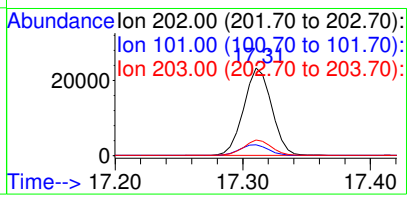


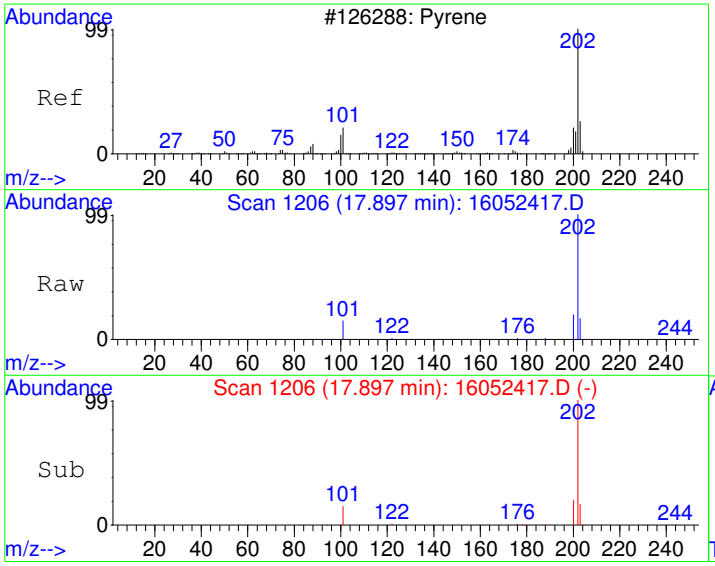


#14
Fluoranthene
Concen: 94.04 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:202 Resp: 35258

Ion	Ratio	Lower	Upper
202	100		
101	12.3	0.0	43.0
203	17.5	0.0	47.9

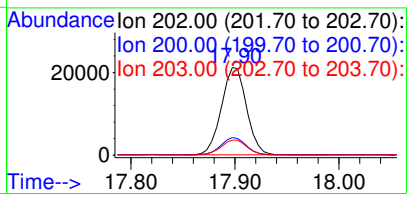


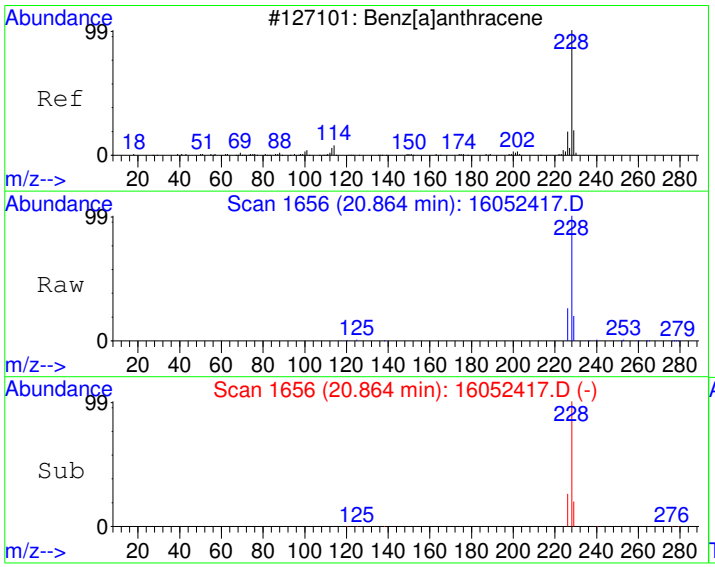


#15
Pyrene
Concen: 91.27 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:202 Resp: 35547

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	17.0	0.0	48.0

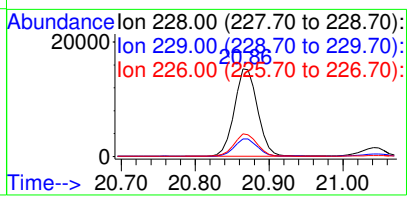


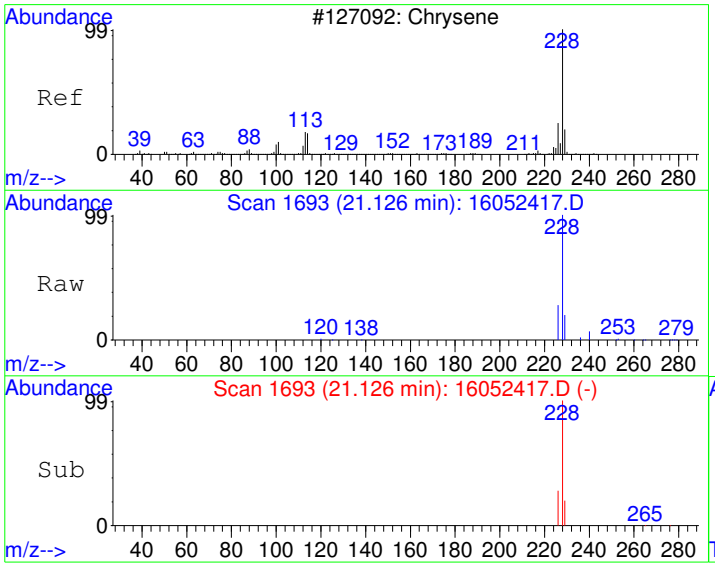


#18
Benzo[a]anthracene
Concen: 86.29 ug/kg
RT: 20.86 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:228 Resp: 33260

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.5	0.0	55.2

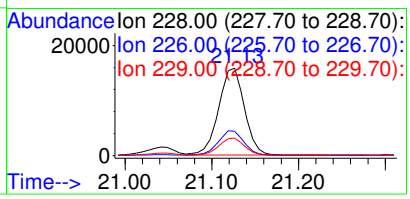


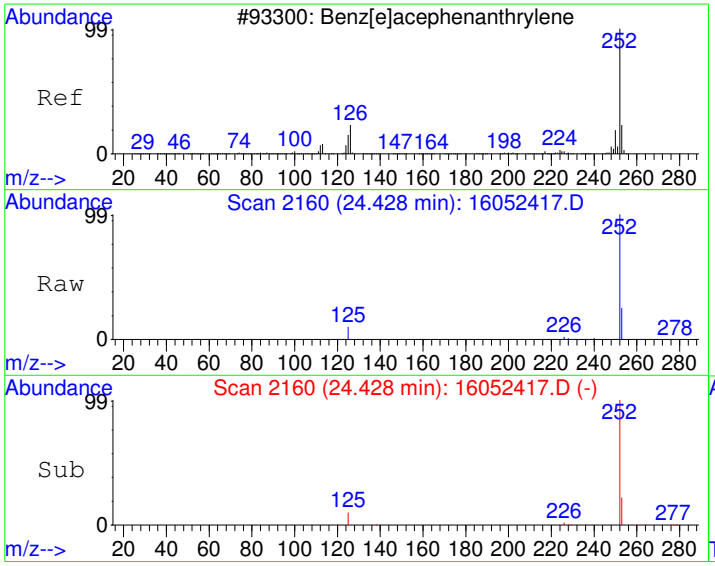


#19
Chrysene
Concen: 87.47 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:228 Resp: 32572

Ion	Ratio	Lower	Upper
228	100		
226	27.3	0.0	58.1
229	19.6	0.0	50.1

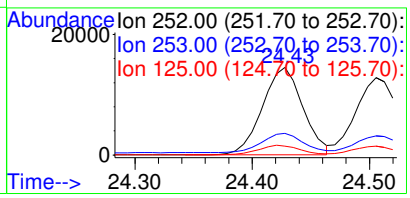


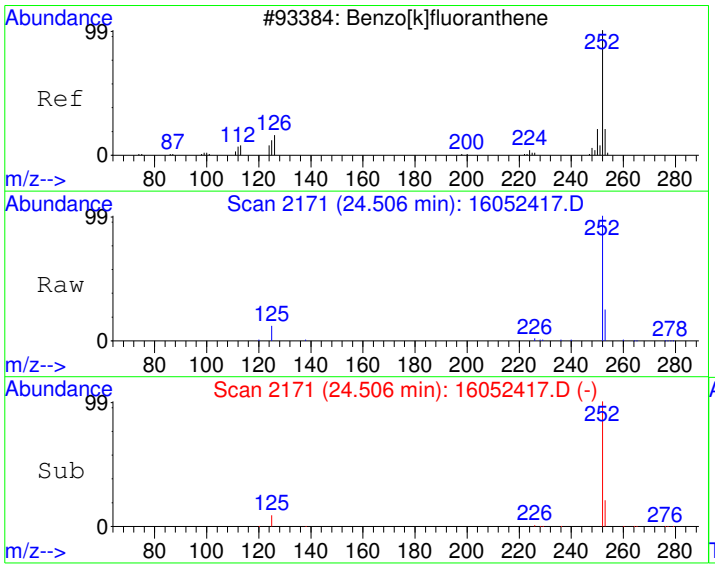


#21
Benzo[b]fluoranthene
Concen: 87.91 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:252 Resp: 34643

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	9.9	0.0	41.0

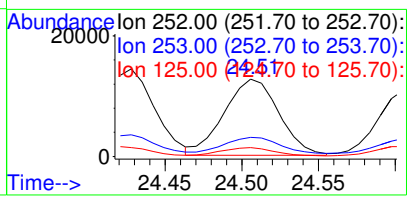


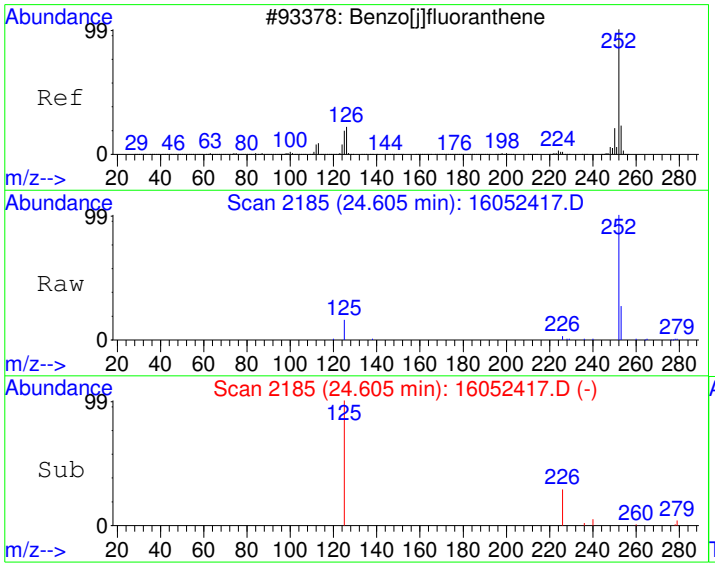


#22
Benzo[k]fluoranthene
Concen: 84.78 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:252 Resp: 31343

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.1	42.1
125	11.1	0.0	31.3

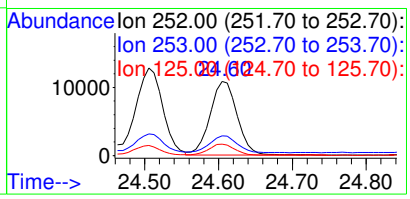


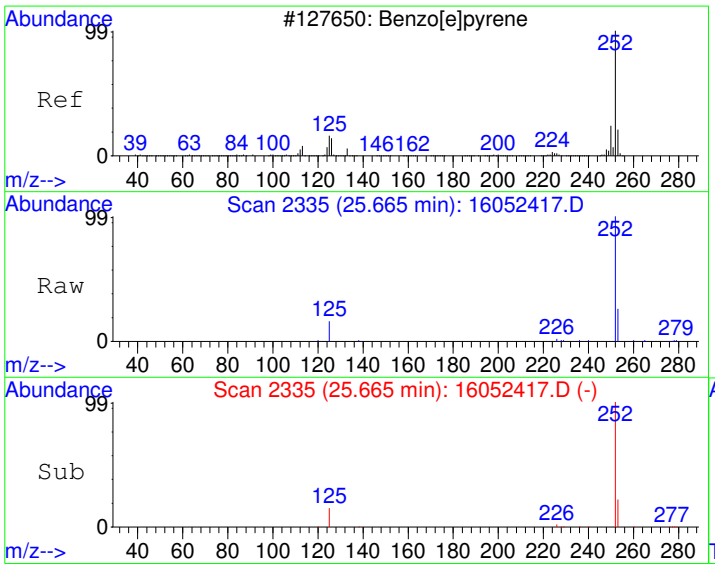


#23
Benzo(j)fluoranthene
Concen: 83.55 ug/kg
RT: 24.60 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:252 Resp: 27514

Ion	Ratio	Lower	Upper
252	100		
253	22.8	2.1	42.1
125	15.2	0.0	34.4

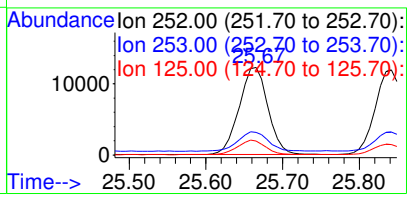


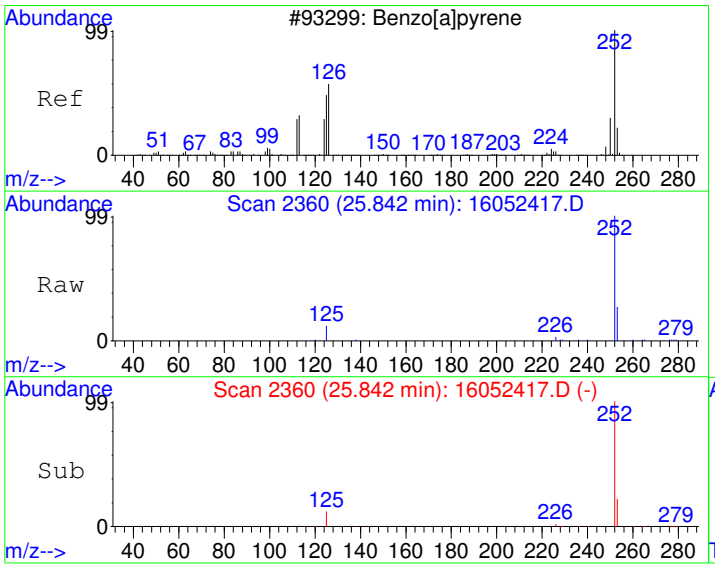


#24
Benzo[e]pyrene
Concen: 90.93 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:252 Resp: 32090

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.2	42.2
125	15.4	0.0	36.1

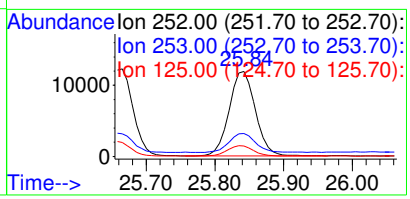


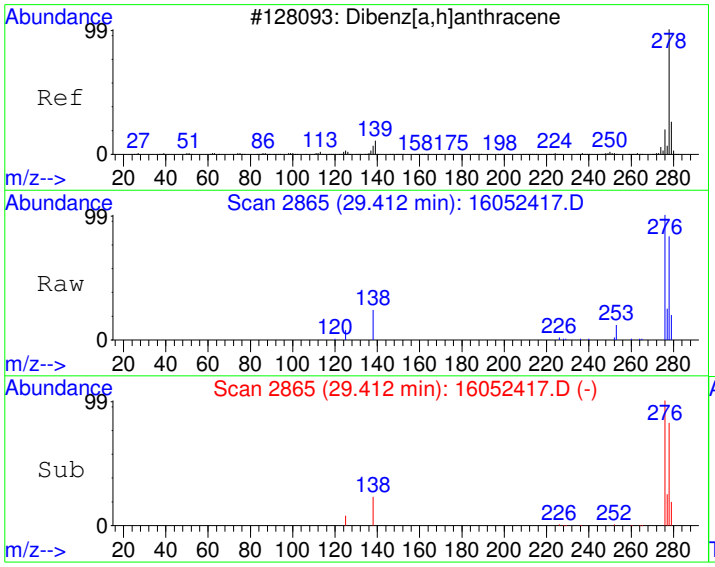


#25
Benzo[a]pyrene
Concen: 86.71 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:252 Resp: 31273

Ion	Ratio	Lower	Upper
252	100		
253	22.0	1.9	41.9
125	11.8	0.0	31.7

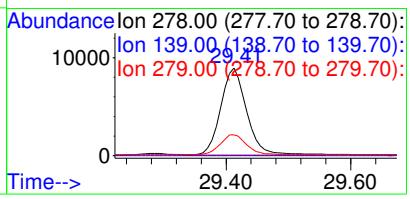


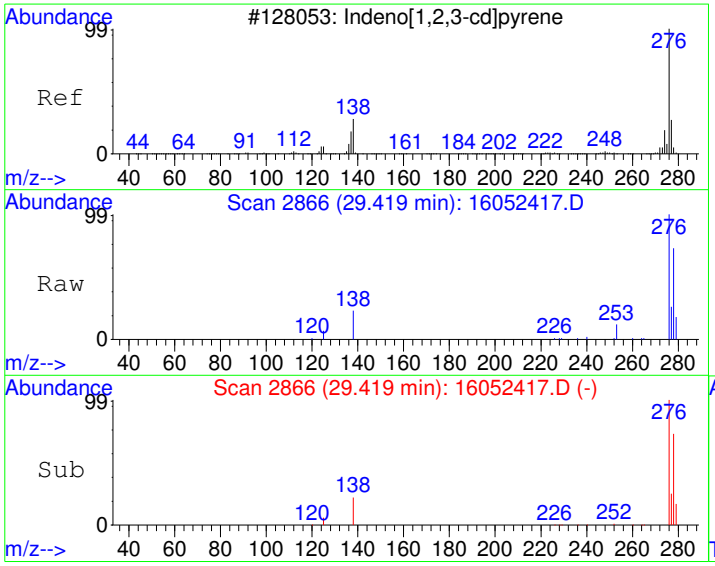


#26
Dibenz[a,h]anthracene
Concen: 77.88 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:278 Resp: 25580

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.8	4.2	44.2

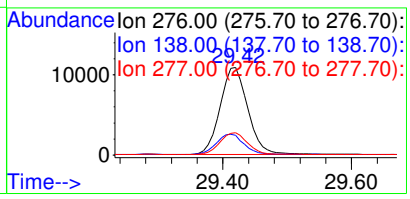


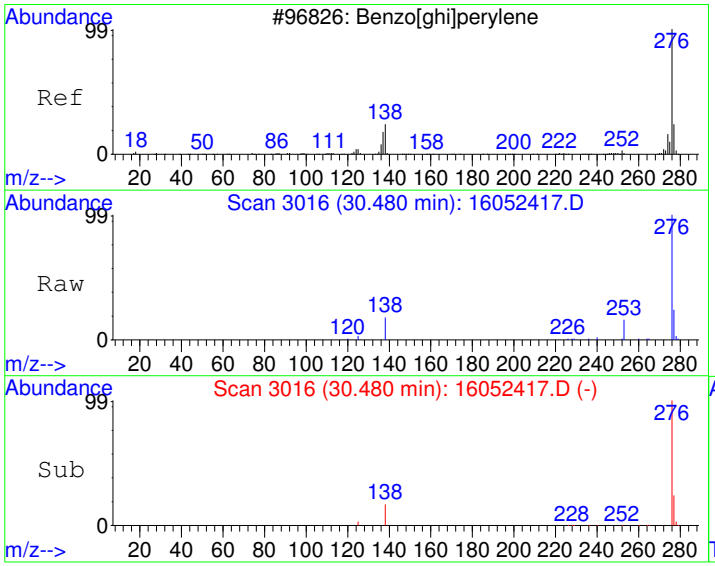


#27
Indeno[1,2,3-cd]pyrene
Concen: 83.15 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:276 Resp: 32579

Ion	Ratio	Lower	Upper
276	100		
138	22.1	6.7	46.7
277	25.1	5.8	45.8

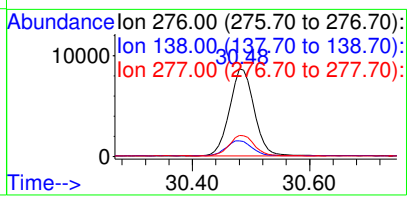




#28
Benzo[g,h,i]perylene
Concen: 82.40 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052417.D
Acq: 24 May 2016 8:30 pm

Tgt Ion:276 Resp: 25177

Ion	Ratio	Lower	Upper
276	100		
138	17.2	0.0	39.1
277	23.6	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052418.D Vial: 18
Acq On : 24 May 2016 9:10 pm Operator:
Sample : 1605135-16AMSD Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:50 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1163588	4000.00 ug/kg	100
5) Acenaphthene-d10	13.25	164	777973	4000.00 ug/kg	68
11) Phenanthrene-d10	15.33	188	1340530	4000.00 ug/kg	66
17) Chrysene-d12	21.04	240	1598052	4000.00 ug/kg	70
20) Perylene-d12	26.18	264	1440913	4000.00 ug/kg	70

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.19	172	18151	79.98 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.00%#		
16) 4-Terphenyl-d14	17.82	244	25953	74.83 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.87%#		

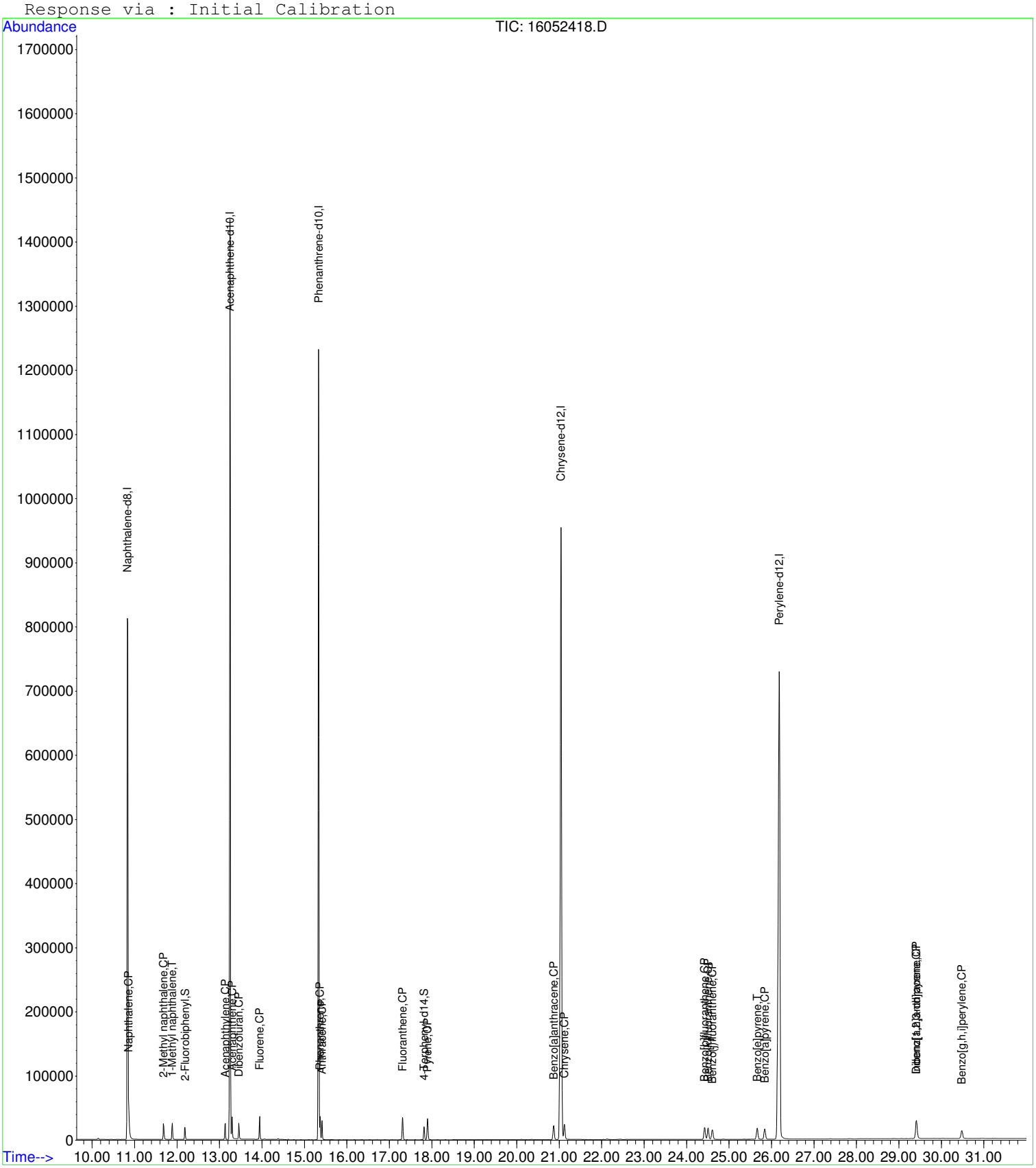
Target Compounds					Qvalue
2) Naphthalene	10.87	128	20524	70.52 ug/kg	100
3) 2-Methyl naphthalene	11.68	142	15995	62.21 ug/kg	94
4) 1-Methyl naphthalene	11.89	142	14709	62.47 ug/kg	97
6) Dibenzofuran	13.45	168	22232	76.25 ug/kg	99
8) Acenaphthylene	13.14	152	24947	74.46 ug/kg	98
9) Acenaphthene	13.30	154	15024	72.25 ug/kg	99
10) Fluorene	13.95	166	18088	71.62 ug/kg	98
12) Phenanthrene	15.37	178	28254	80.14 ug/kg	99
13) Anthracene	15.41	178	25856	77.49 ug/kg	98
14) Fluoranthene	17.31	202	34881	95.61 ug/kg	99
15) Pyrene	17.90	202	35359	93.30 ug/kg	99
18) Benzo[a]anthracene	20.87	228	32566	86.99 ug/kg	99
19) Chrysene	21.13	228	31906	88.20 ug/kg	98
21) Benzo[b]fluoranthene	24.43	252	33572	88.40 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	31066	87.20 ug/kg	99
23) Benzo(j)fluoranthene	24.60	252	27115	85.44 ug/kg	100
24) Benzo[e]pyrene	25.67	252	31537	92.73 ug/kg	98
25) Benzo[a]pyrene	25.84	252	30631	88.13 ug/kg	100
26) Dibenz[a,h]anthracene	29.41	278	25542	80.69 ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.41	276	32035	84.84 ug/kg	95
28) Benzo[g,h,i]perylene	30.48	276	24625	83.63 ug/kg	99

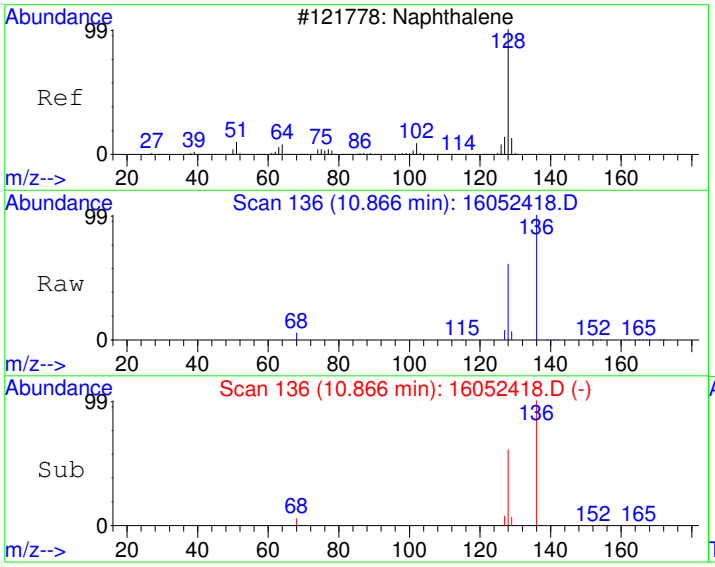
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052418.D Vial: 18
Acq On : 24 May 2016 9:10 pm Operator:
Sample : 1605135-16AMSD Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:50 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

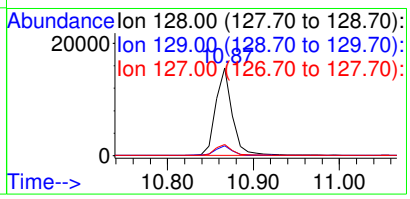


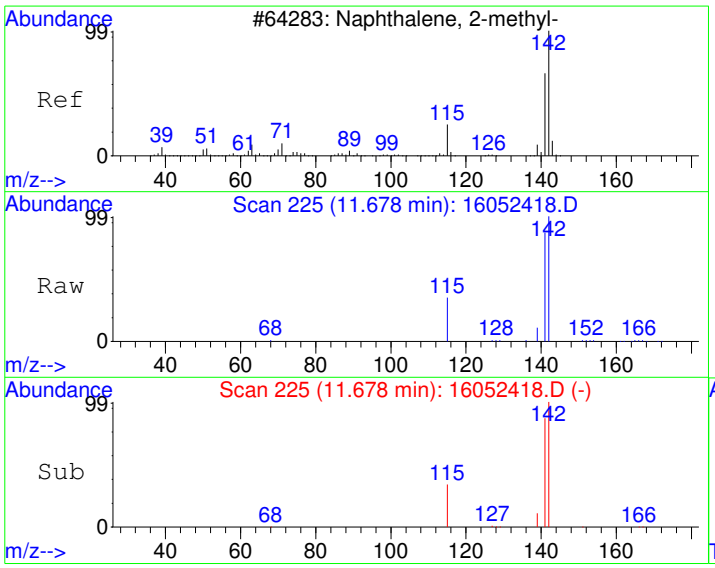


#2
Naphthalene
Concen: 70.52 ug/kg
RT: 10.87 min Scan# 136
Delta R.T. -0.01 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:128 Resp: 20524

Ion	Ratio	Lower	Upper
128	100		
129	10.8	0.0	41.1
127	12.3	0.0	42.4

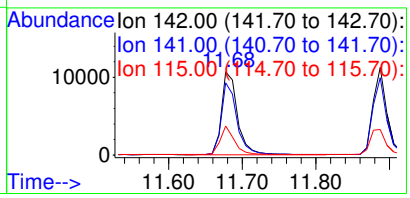


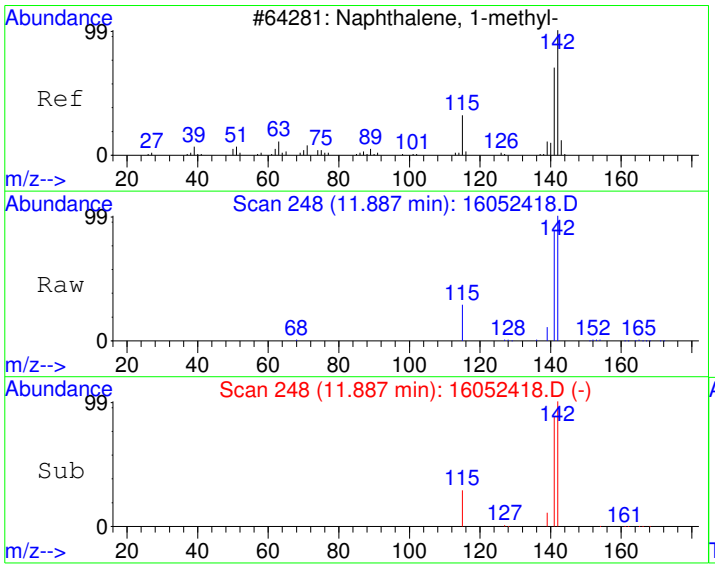


#3
2-Methyl naphthalene
Concen: 62.21 ug/kg
RT: 11.68 min Scan# 225
Delta R.T. -0.02 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:142 Resp: 15995

Ion	Ratio	Lower	Upper
142	100		
141	87.0	54.4	114.4
115	34.5	0.0	56.0

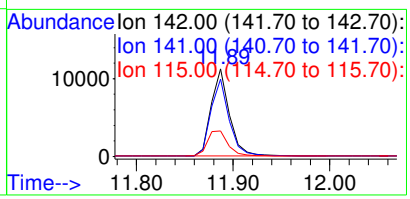


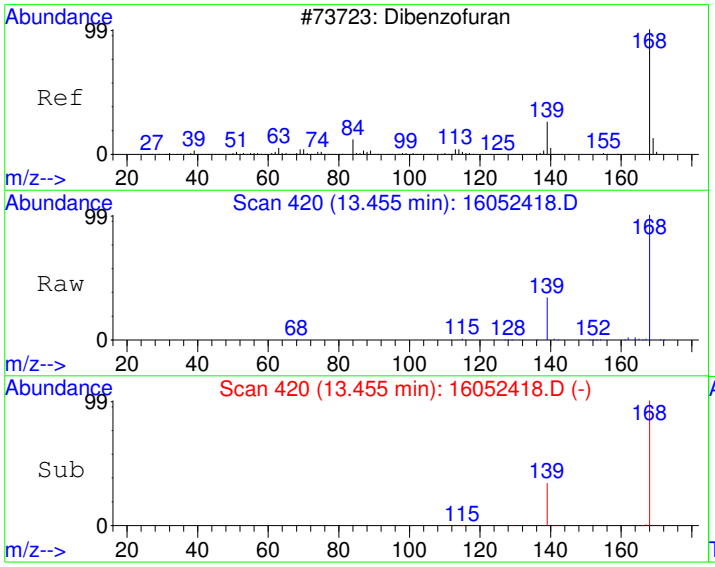


#4
1-Methyl naphthalene
Concen: 62.47 ug/kg
RT: 11.89 min Scan# 248
Delta R.T. -0.01 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:142 Resp: 14709

Ion	Ratio	Lower	Upper
142	100		
141	88.2	56.5	116.5
115	28.8	0.0	55.0

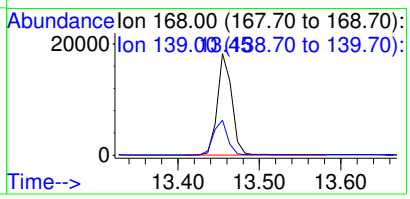


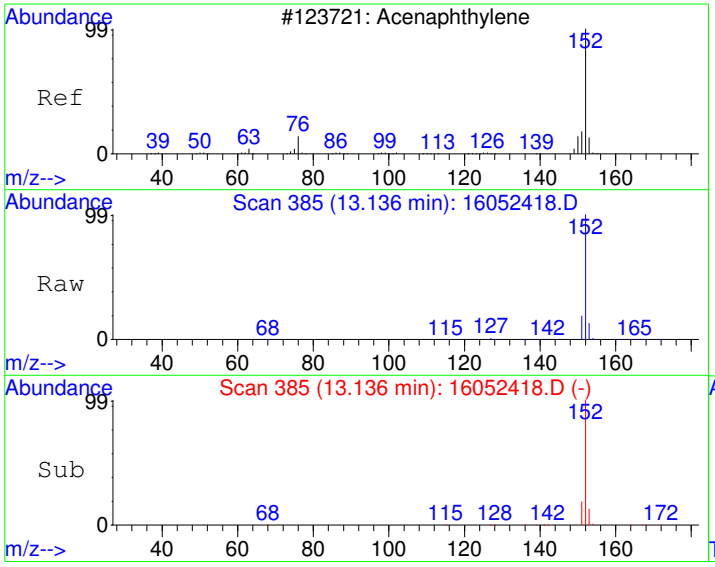


#6
Dibenzofuran
Concen: 76.25 ug/kg
RT: 13.45 min Scan# 420
Delta R.T. -0.02 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:168 Resp: 22232

Ion	Ratio	Lower	Upper
168	100		
139	34.4	27.0	40.4

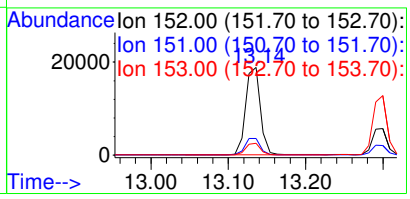


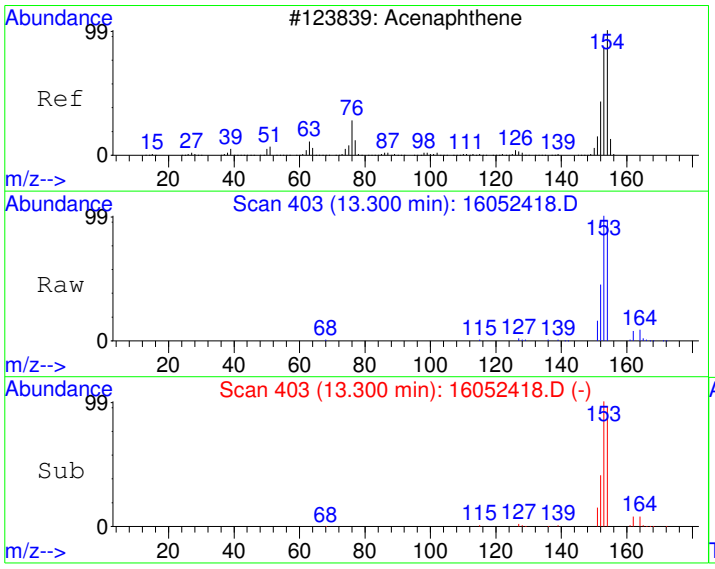


#8
Acenaphthylene
Concen: 74.46 ug/kg
RT: 13.14 min Scan# 385
Delta R.T. -0.01 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:152 Resp: 24947

Ion	Ratio	Lower	Upper
152	100		
151	18.6	0.0	49.7
153	13.1	0.0	43.5

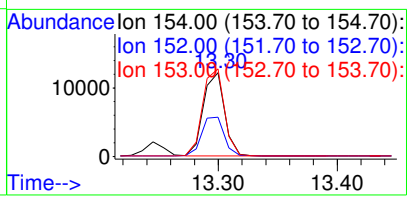


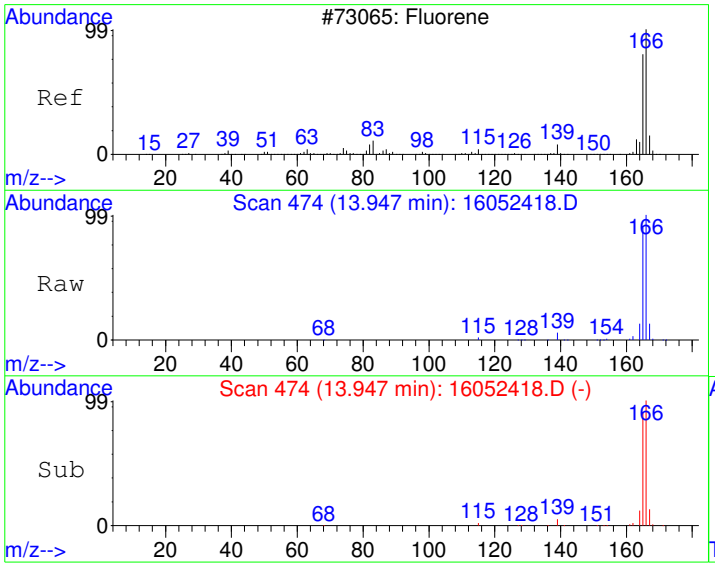


#9
Acenaphthene
Concen: 72.25 ug/kg
RT: 13.30 min Scan# 403
Delta R.T. -0.02 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:154 Resp: 15024

Ion	Ratio	Lower	Upper
154	100		
152	46.6	18.9	78.9
153	104.6	75.2	135.2

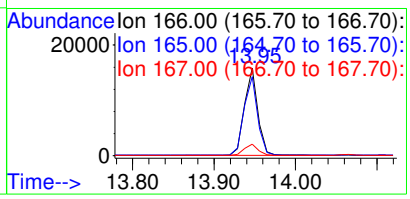


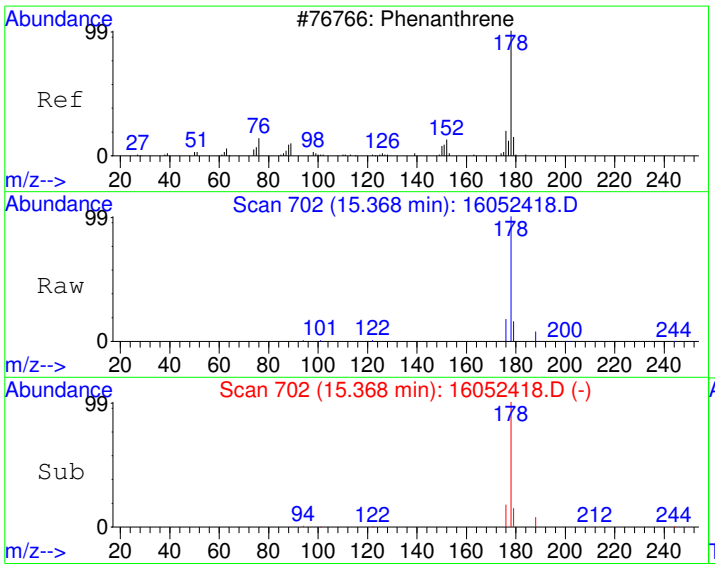


#10
Fluorene
Concen: 71.62 ug/kg
RT: 13.95 min Scan# 474
Delta R.T. -0.02 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:166 Resp: 18088

Ion	Ratio	Lower	Upper
166	100		
165	90.1	61.8	121.8
167	13.0	0.0	43.6

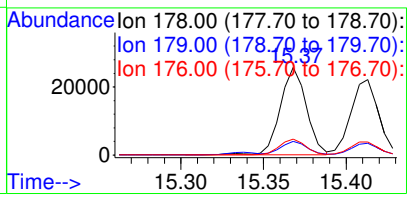


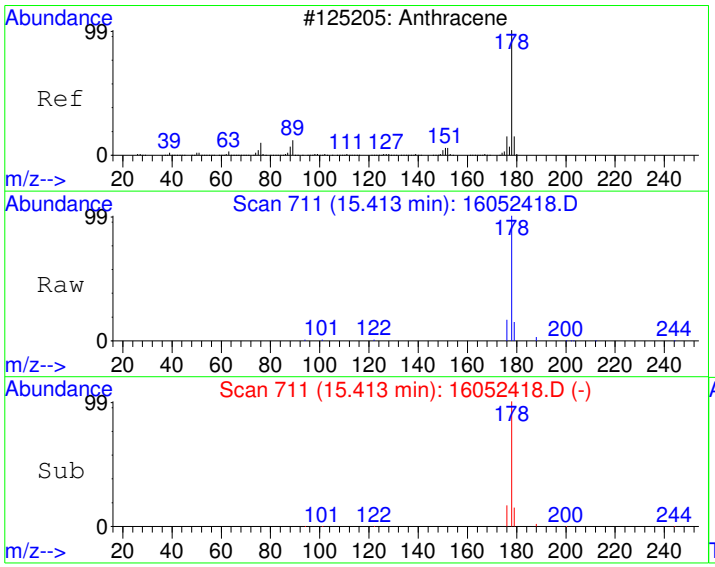


#12
Phenanthrene
Concen: 80.14 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:178 Resp: 28254

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	45.9
176	18.2	0.0	48.5

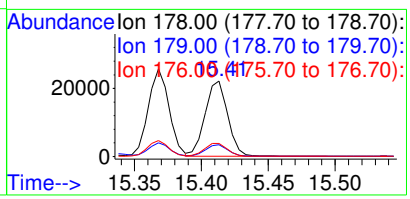


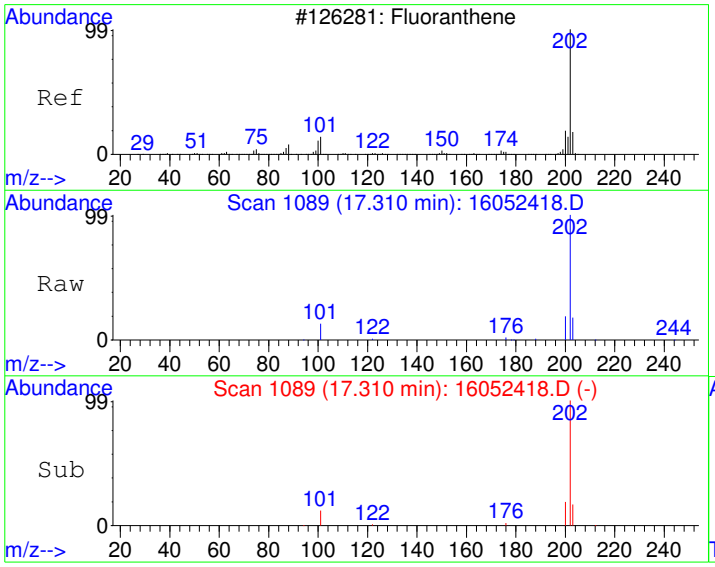


#13
Anthracene
Concen: 77.49 ug/kg
RT: 15.41 min Scan# 711
Delta R.T. -0.02 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:178 Resp: 25856

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	17.2	0.0	48.2

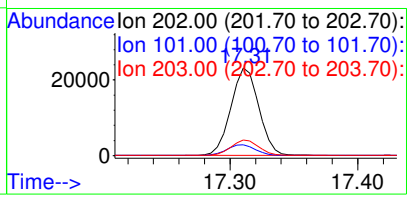


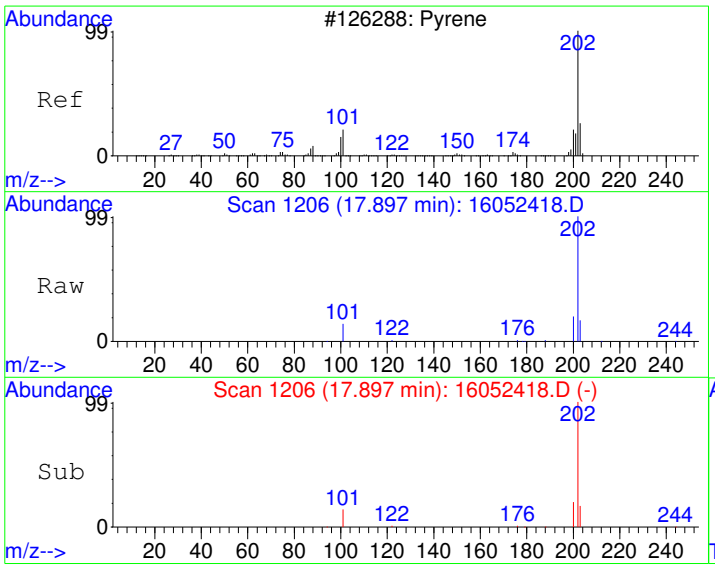


#14
Fluoranthene
Concen: 95.61 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:202 Resp: 34881

Ion	Ratio	Lower	Upper
202	100		
101	12.3	0.0	43.0
203	17.5	0.0	47.9

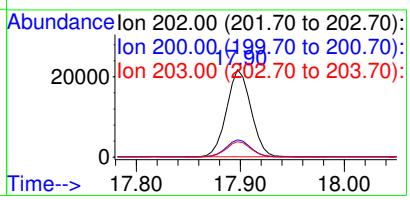


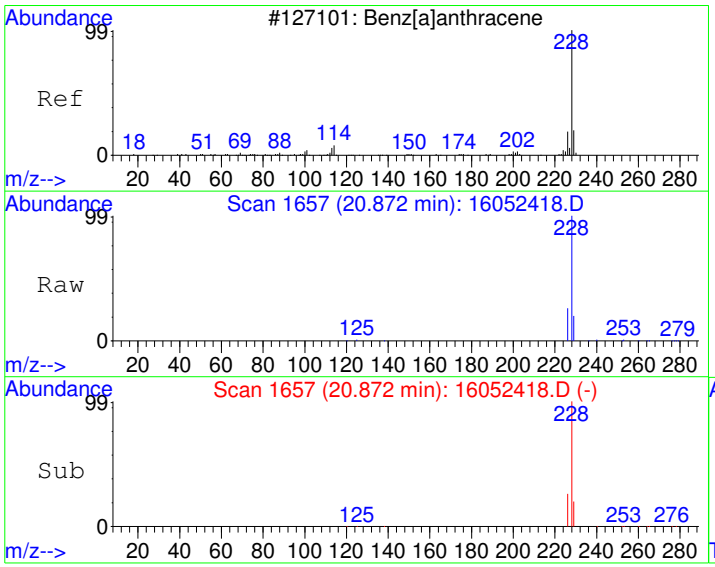


#15
Pyrene
Concen: 93.30 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:202 Resp: 35359

Ion	Ratio	Lower	Upper
202	100		
200	19.5	0.0	50.0
203	17.3	0.0	48.0

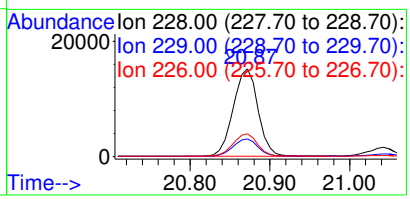


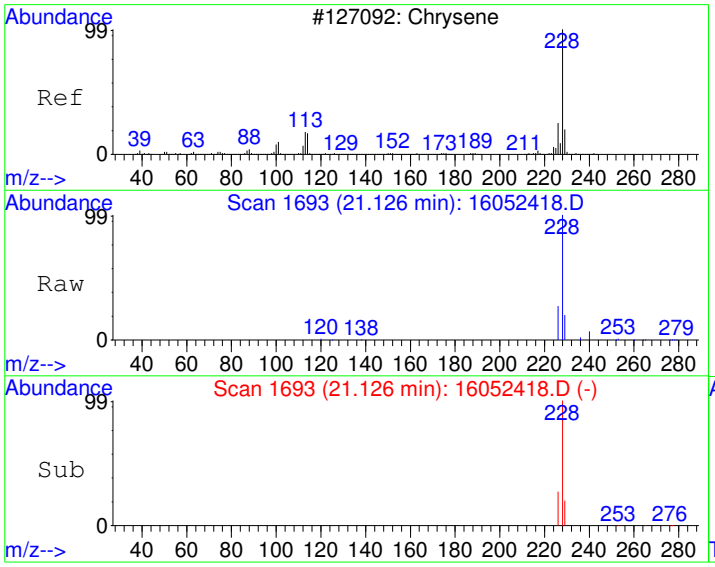


#18
Benzo[a]anthracene
Concen: 86.99 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:228 Resp: 32566

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	25.7	0.0	55.2

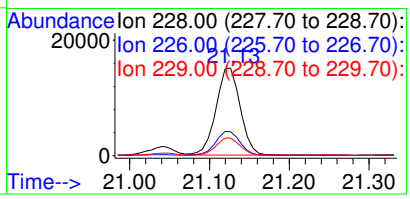


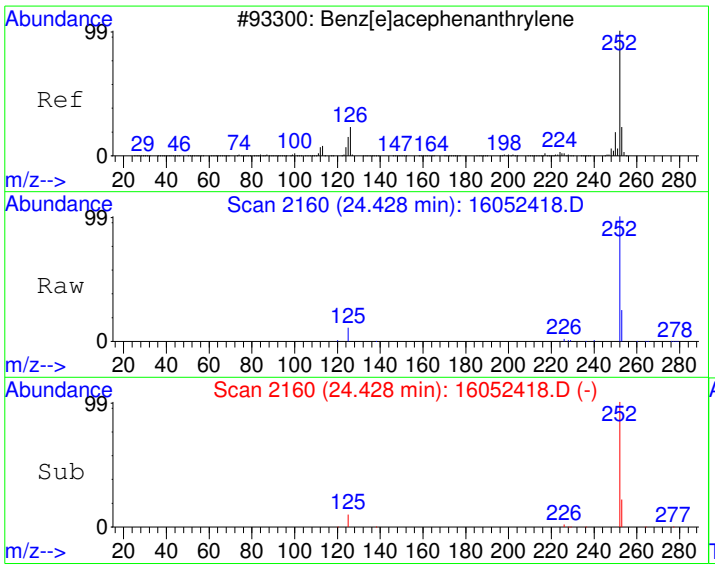


#19
Chrysene
Concen: 88.20 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:228 Resp: 31906

Ion	Ratio	Lower	Upper
228	100		
226	27.2	0.0	58.1
229	19.5	0.0	50.1

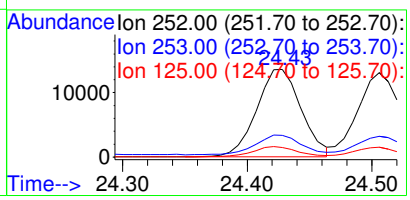


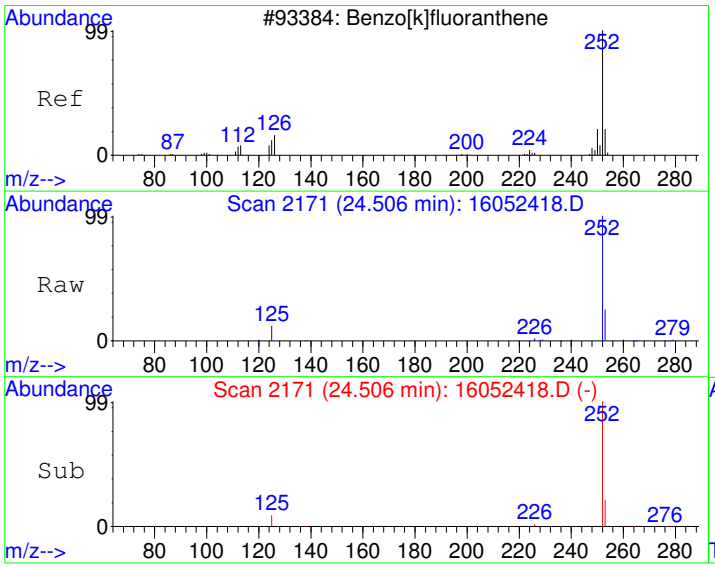


#21
Benzo[b]fluoranthene
Concen: 88.40 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:252 Resp: 33572

Ion	Ratio	Lower	Upper
252	100		
253	22.3	0.0	52.2
125	10.4	0.0	41.0

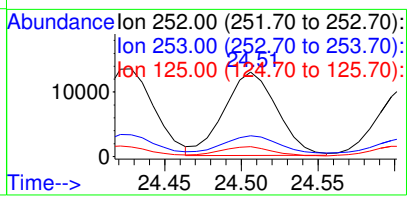


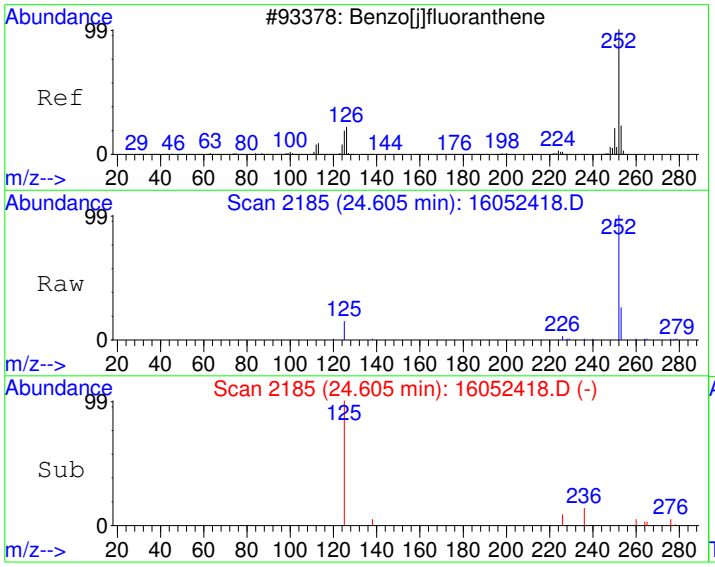


#22
Benzo[k]fluoranthene
Concen: 87.20 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:252 Resp: 31066

Ion	Ratio	Lower	Upper
252	100		
253	21.5	2.1	42.1
125	11.4	0.0	31.3

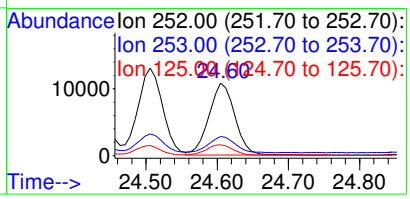


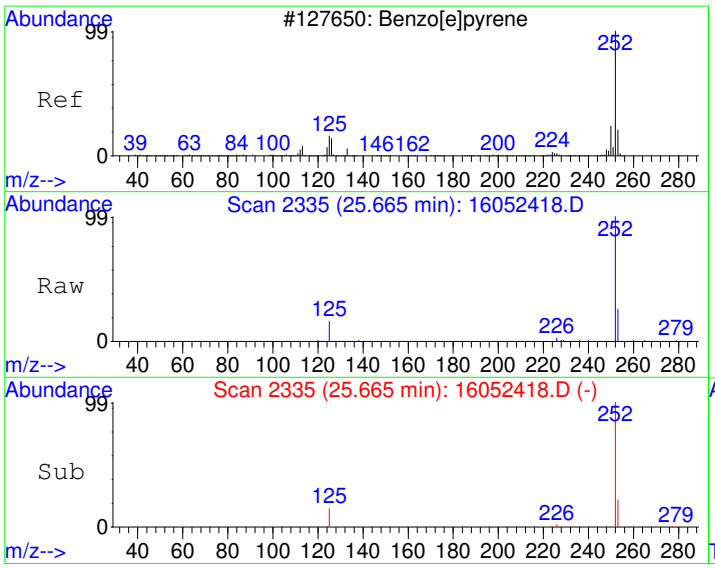


#23
Benzo(j)fluoranthene
Concen: 85.44 ug/kg
RT: 24.60 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:252 Resp: 27115

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.1	42.1
125	14.4	0.0	34.4

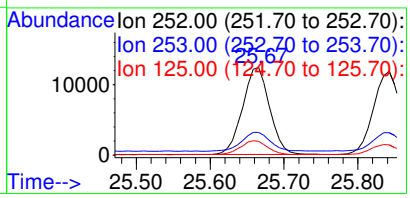


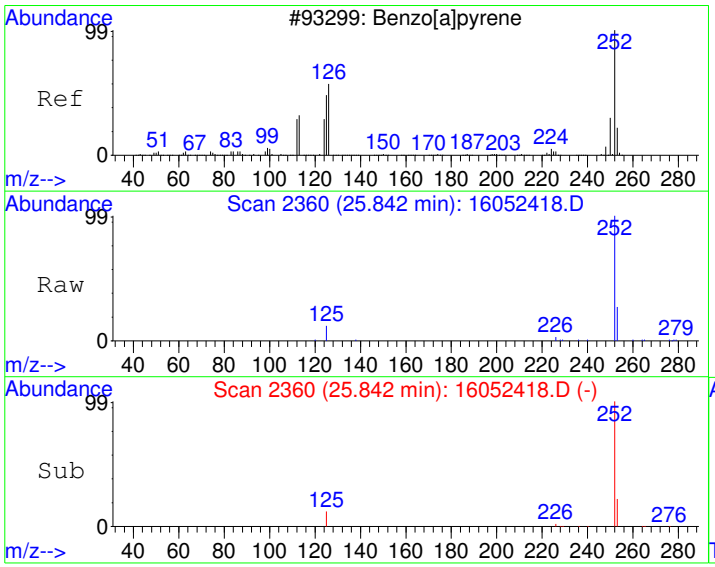


#24
Benzo[e]pyrene
Concen: 92.73 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:252 Resp: 31537

Ion	Ratio	Lower	Upper
252	100		
253	21.5	2.2	42.2
125	15.2	0.0	36.1

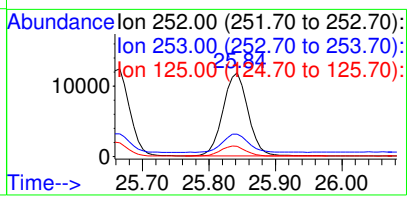


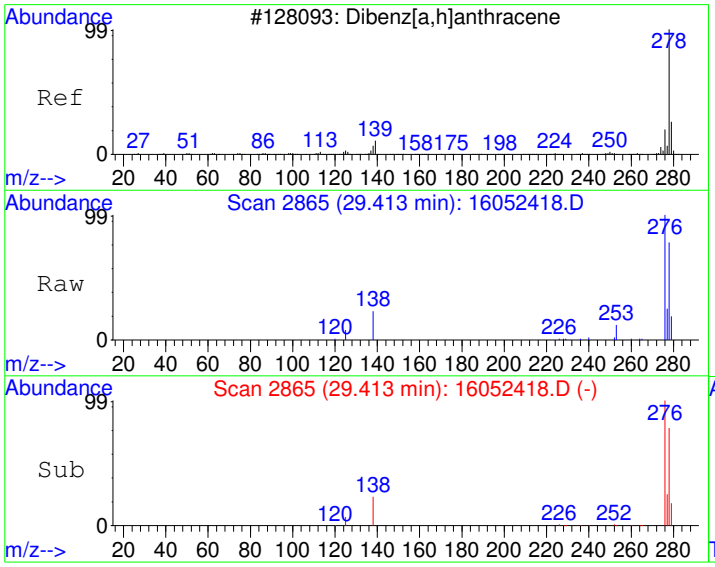


#25
Benzo[a]pyrene
Concen: 88.13 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:252 Resp: 30631

Ion	Ratio	Lower	Upper
252	100		
253	21.8	1.9	41.9
125	11.7	0.0	31.7

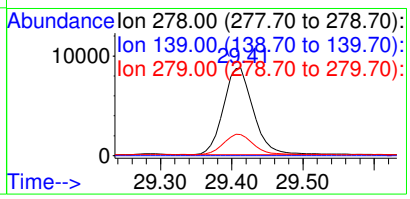


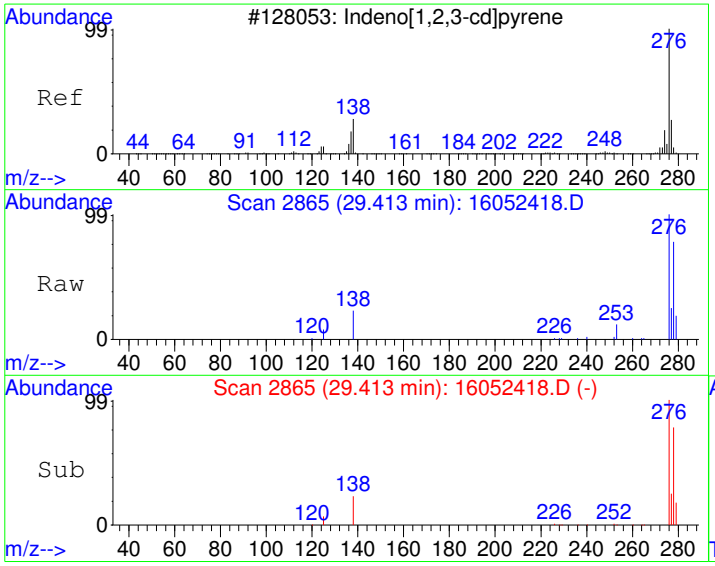


#26
Dibenz[a,h]anthracene
Concen: 80.69 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:278 Resp: 25542

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	23.0	4.2	44.2

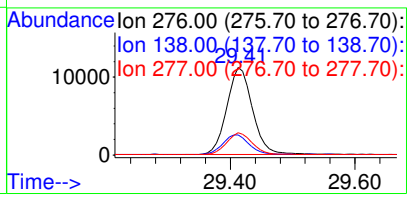


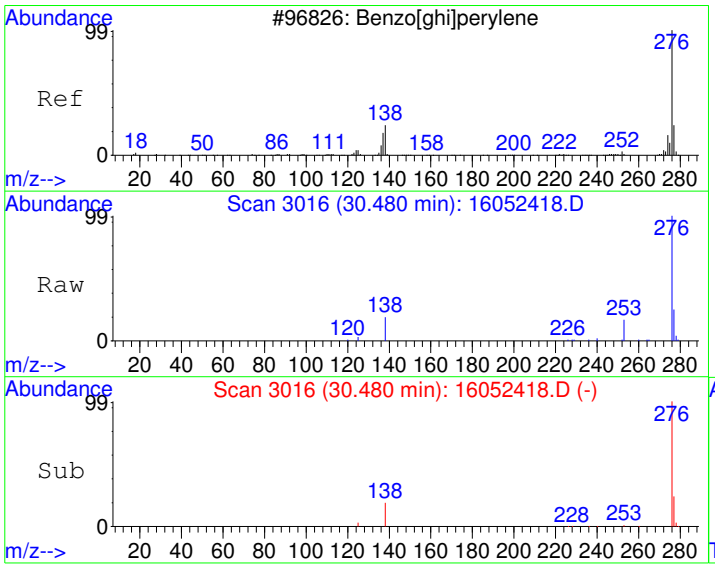


#27
Indeno[1,2,3-cd]pyrene
Concen: 84.84 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:276 Resp: 32035

Ion	Ratio	Lower	Upper
276	100		
138	22.5	6.7	46.7
277	25.0	5.8	45.8

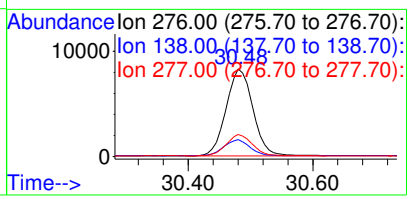




#28
Benzo[g,h,i]perylene
Concen: 83.63 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052418.D
Acq: 24 May 2016 9:10 pm

Tgt Ion:276 Resp: 24625

Ion	Ratio	Lower	Upper
276	100		
138	18.5	0.0	39.1
277	24.4	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052420.D Vial: 20
Acq On : 24 May 2016 10:27 pm Operator:
Sample : ICV2-160524 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1476711	4000.00	ug/kg	127
5) Acenaphthene-d10	13.25	164	1282349	4000.00	ug/kg	111
11) Phenanthrene-d10	15.34	188	2247679	4000.00	ug/kg	110
17) Chrysene-d12	21.06	240	2511323	4000.00	ug/kg	111
20) Perylene-d12	26.20	264	2251713	4000.00	ug/kg	109

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	721942	1929.96	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.25%			
16) 4-Terphenyl-d14	17.83	244	1027067	1766.19	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 44.15%			

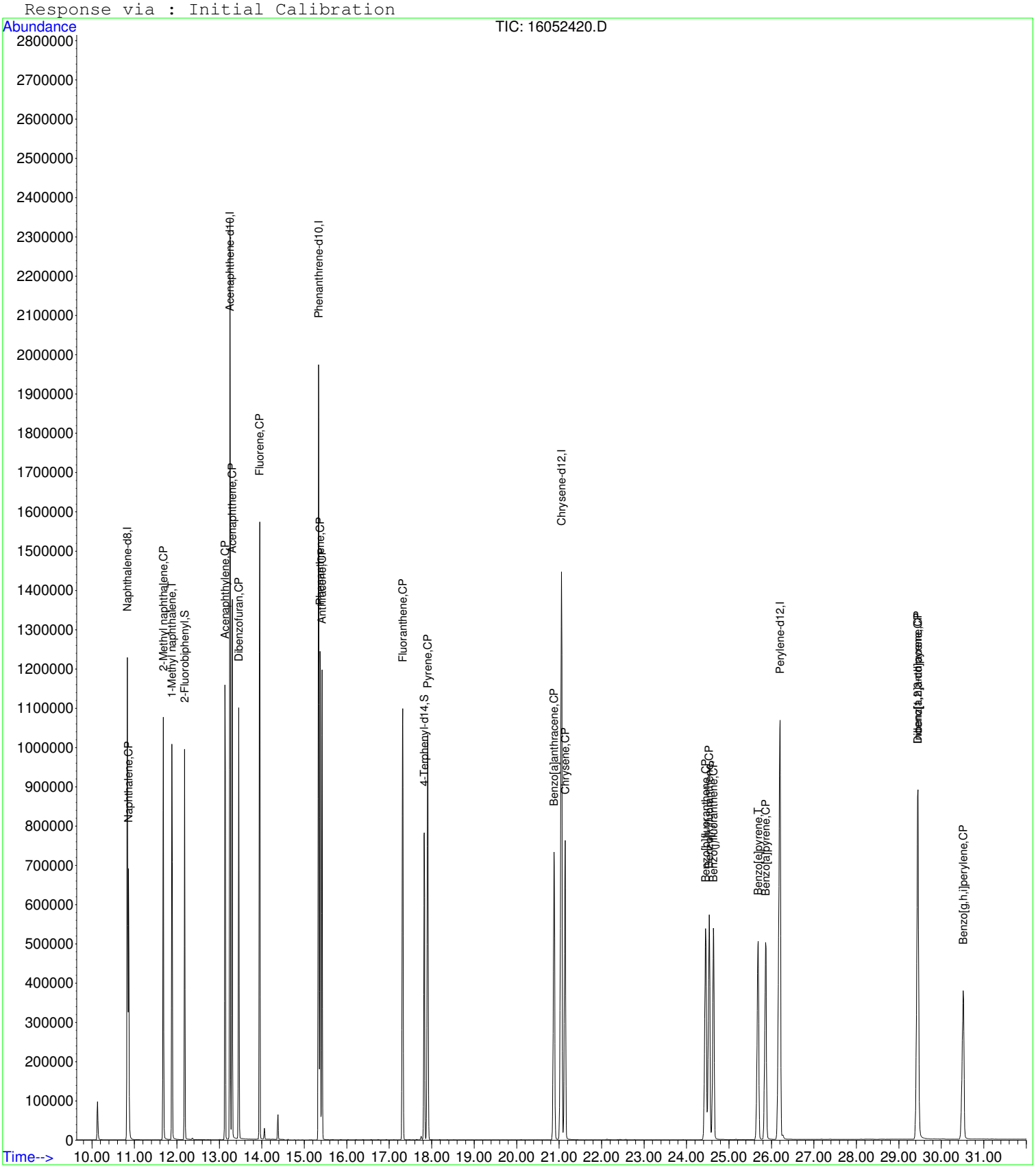
Target Compounds						Qvalue
2) Naphthalene	10.86	128	681363	1844.61	ug/kg	99
3) 2-Methyl naphthalene	11.68	142	580491	1779.11	ug/kg	98
4) 1-Methyl naphthalene	11.88	142	518325	1734.51	ug/kg	93
6) Dibenzofuran	13.46	168	935813	1947.13	ug/kg	98
8) Acenaphthylene	13.13	152	1078624	1953.12	ug/kg	99
9) Acenaphthene	13.30	154	640279	1867.91	ug/kg	96
10) Fluorene	13.95	166	817887	1964.71	ug/kg	97
12) Phenanthrene	15.37	178	1050485	1777.16	ug/kg	99
13) Anthracene	15.42	178	975941	1744.36	ug/kg	100
14) Fluoranthene	17.32	202	1121039	1832.69	ug/kg	99
15) Pyrene	17.91	202	1115234	1755.13	ug/kg	99
18) Benzo[a]anthracene	20.88	228	1128620	1918.31	ug/kg	99
19) Chrysene	21.14	228	1025403	1803.84	ug/kg	100
21) Benzo[b]fluoranthene	24.45	252	1113215	1875.76	ug/kg	99
22) Benzo[k]fluoranthene	24.53	252	1040263	1868.51	ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	932051	1879.39	ug/kg	99
24) Benzo[e]pyrene	25.69	252	985585	1854.38	ug/kg	100
25) Benzo[a]pyrene	25.86	252	995843	1833.56	ug/kg	99
26) Dibenz[a,h]anthracene	29.45	278	884166	1787.52	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.45	276	1024025	1735.40	ug/kg	97
28) Benzo[g,h,i]perylene	30.52	276	801498	1741.90	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052420.D Vial: 20
Acq On : 24 May 2016 10:27 pm Operator:
Sample : ICV2-160524 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: PP160421.RES

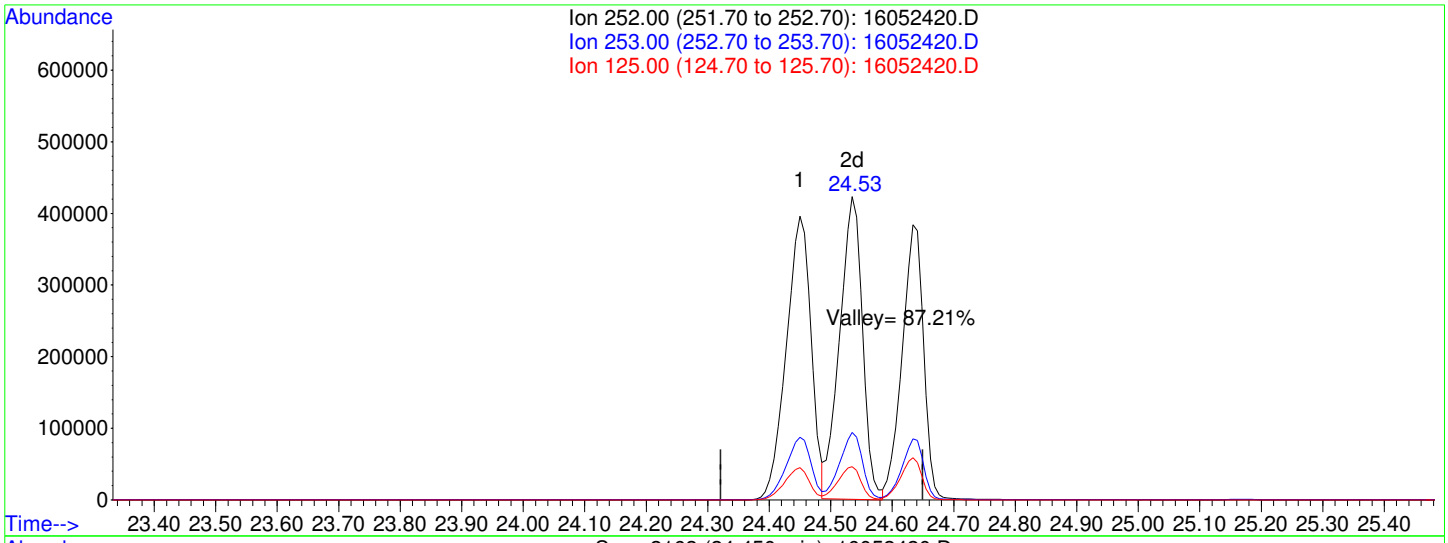
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

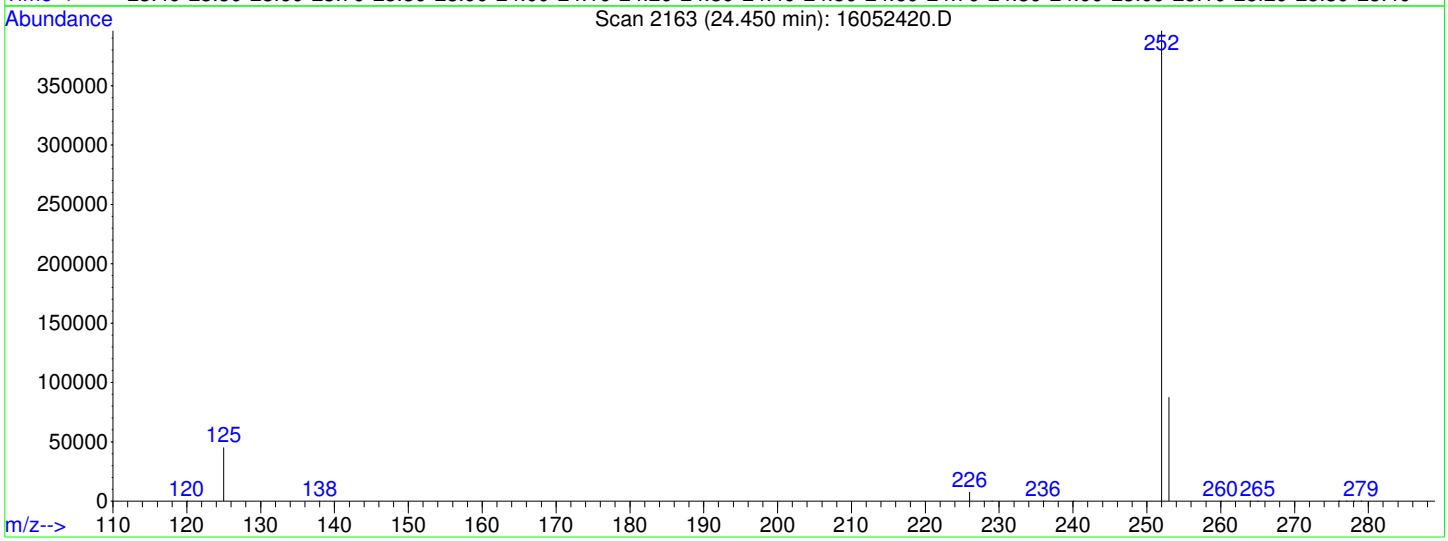


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160524\16052420.D Vial: 20
Acq On : 24 May 2016 10:27 pm Operator:
Sample : ICV2-160524 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Multiple Level Calibration





TIC: 16052420.D

(21) Benzo[b]fluoranthene (CP)

24.45min 1875.76ug/kg

response 1113215

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.04
125.00	11.00	11.43
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052422.D Vial: 22
Acq On : 24 May 2016 11:47 pm Operator:
Sample : SB-160524 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1320289	4000.00 ug/kg	114
5) Acenaphthene-d10	13.25	164	831898	4000.00 ug/kg	72
11) Phenanthrene-d10	15.33	188	1472910	4000.00 ug/kg	72
17) Chrysene-d12	21.04	240	1737577	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1571356	4000.00 ug/kg	76

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.19	172	66	0.27 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#	
16) 4-Terphenyl-d14	17.82	244	114	0.30 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#	

Target Compounds

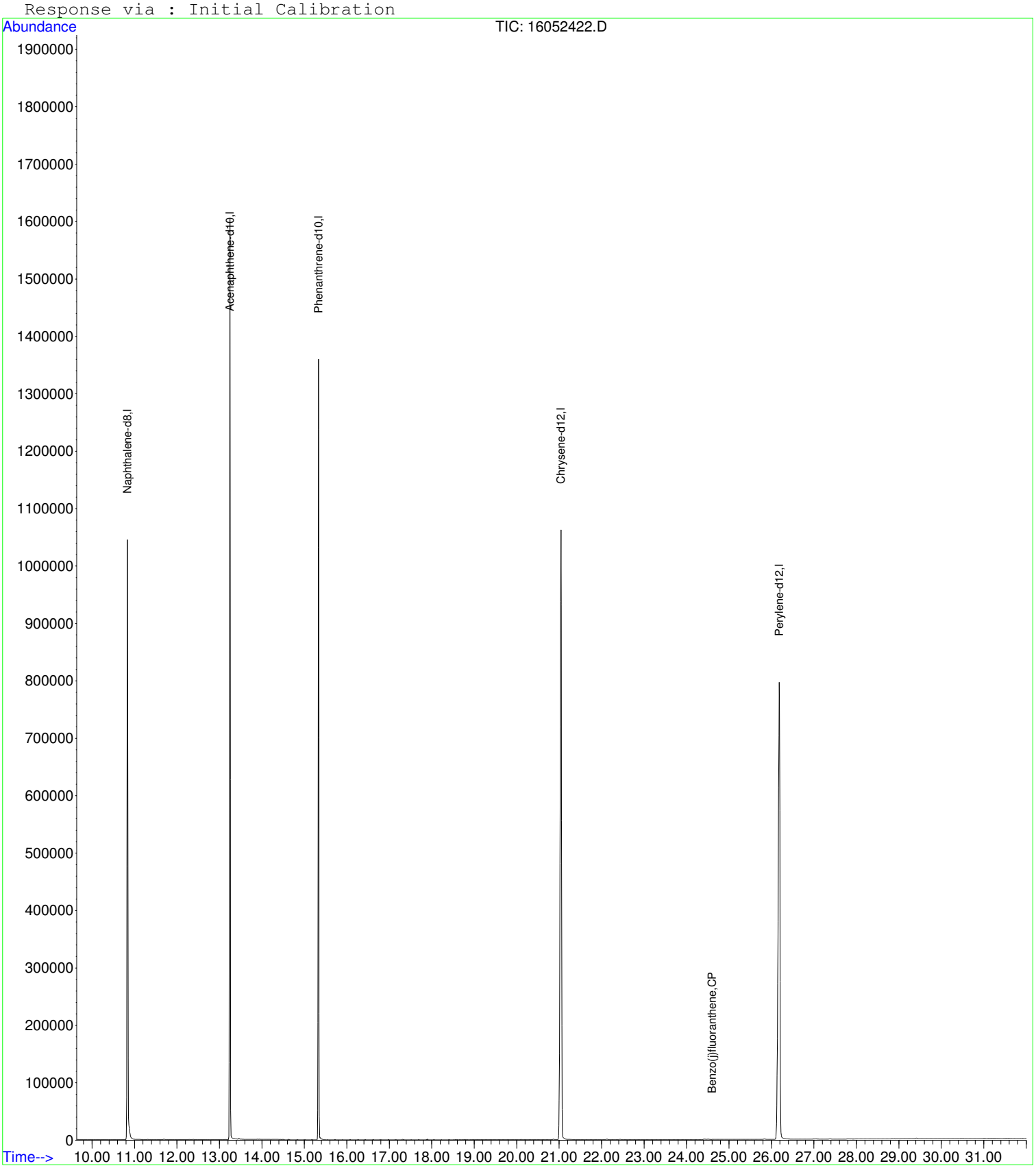
					Qvalue
23) Benzo(j)fluoranthene	24.61	252	58	0.17 ug/kg#	16

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052422.D Vial: 22
Acq On : 24 May 2016 11:47 pm Operator:
Sample : SB-160524 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052423.D Vial: 23
Acq On : 25 May 2016 12:27 am Operator:
Sample : 1605135-28A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1241762	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	857210	4000.00 ug/kg	74
11) Phenanthrene-d10	15.33	188	1458726	4000.00 ug/kg	71
17) Chrysene-d12	21.04	240	1723684	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1550567	4000.00 ug/kg	75

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	17654	70.60 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#	
16) 4-Terphenyl-d14	17.82	244	25046	66.36 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.66%#	

Target Compounds					Qvalue
9) Acenaphthene	13.29	154	1328	5.80 ug/kg	99
12) Phenanthrene	15.37	178	38769	101.06 ug/kg	99
13) Anthracene	15.41	178	7790	21.45 ug/kg	99
14) Fluoranthene	17.31	202	113935	287.00 ug/kg	99
15) Pyrene	17.90	202	103077	249.96 ug/kg	99
18) Benzo[a]anthracene	20.86	228	67384	166.87 ug/kg	99
19) Chrysene	21.12	228	77881	199.61 ug/kg	99
21) Benzo[b]fluoranthene	24.42	252	82376	201.57 ug/kg	100
22) Benzo[k]fluoranthene	24.51	252	41695	108.76 ug/kg	97
23) Benzo(j)fluoranthene	24.60	252	36030	105.50 ug/kg	92
24) Benzo[e]pyrene	25.66	252	58666	160.29 ug/kg	100
25) Benzo[a]pyrene	25.84	252	79692	213.08 ug/kg	99
26) Dibenz[a,h]anthracene	29.41	278	13000	38.17 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.41	276	53292	131.15 ug/kg	90
28) Benzo[g,h,i]perylene	30.48	276	48351	152.60 ug/kg	98

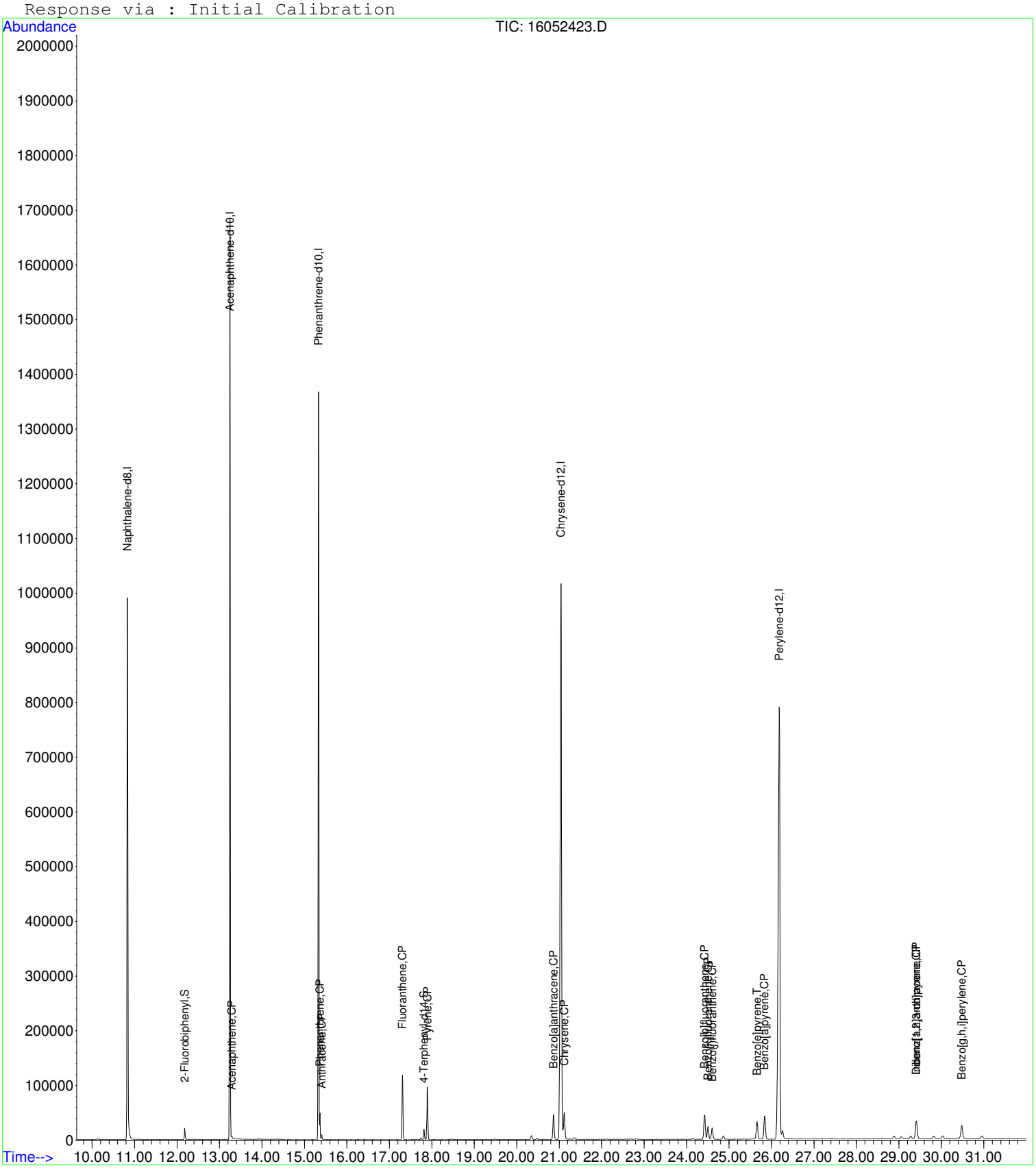
CONFIRMED
By Sherri Herschmann at 10:31:11 AM, 6/1/2016

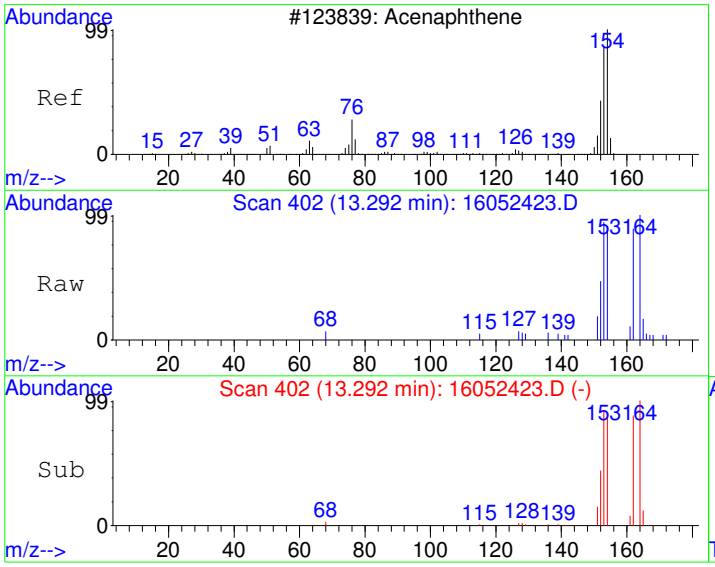
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052423.D Vial: 23
Acq On : 25 May 2016 12:27 am Operator:
Sample : 1605135-28A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

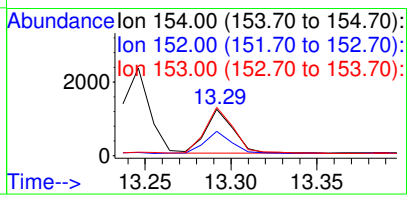


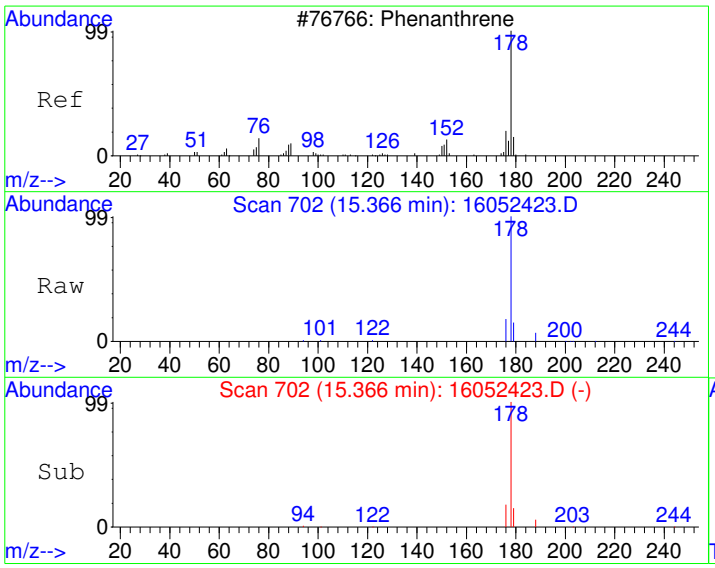


#9
Acenaphthene
Concen: 5.80 ug/kg
RT: 13.29 min Scan# 402
Delta R.T. -0.03 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:154 Resp: 1328

Ion	Ratio	Lower	Upper
154	100		
152	50.0	18.9	78.9
153	105.0	75.2	135.2

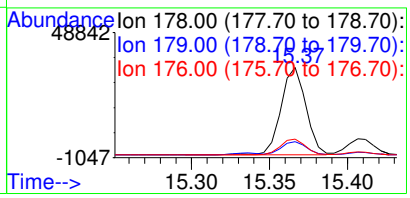


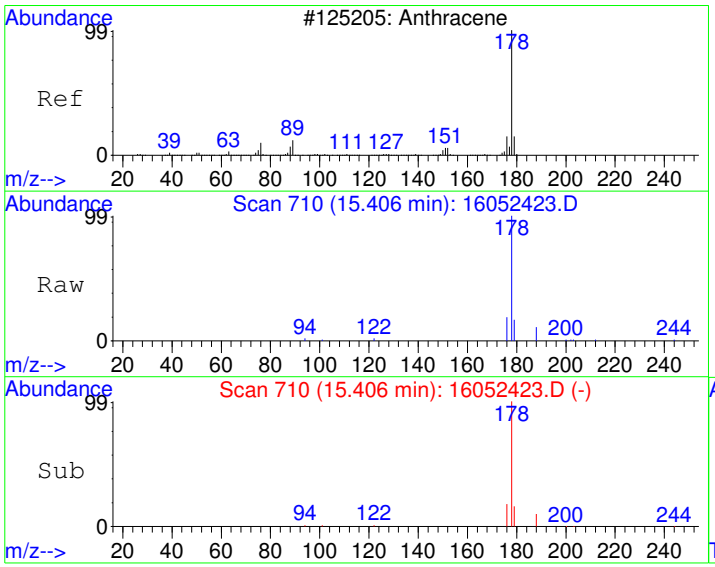


#12
Phenanthrene
Concen: 101.06 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:178 Resp: 38769

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	18.1	0.0	48.5

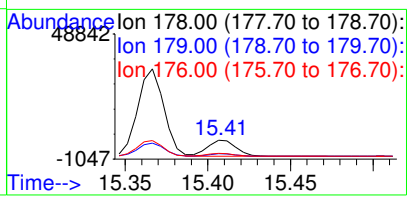


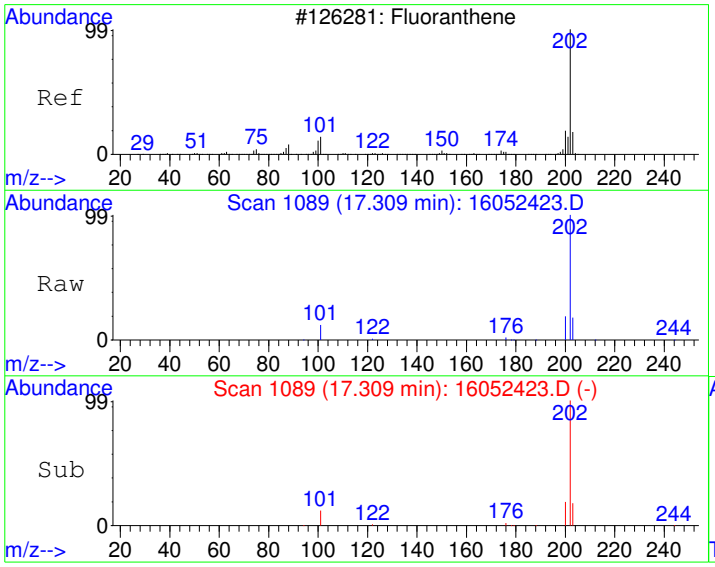


#13
Anthracene
Concen: 21.45 ug/kg
RT: 15.41 min Scan# 710
Delta R.T. -0.03 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:178 Resp: 7790

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	45.9
176	17.8	0.0	48.2

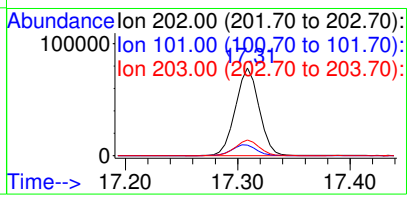


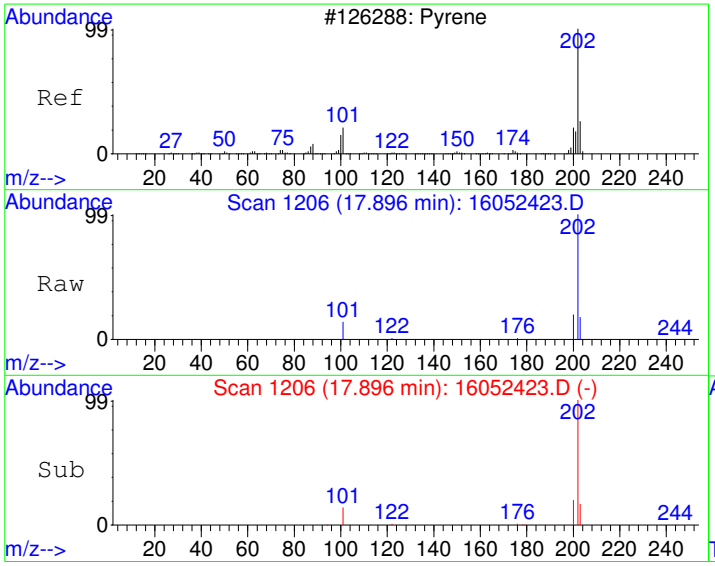


#14
Fluoranthene
Concen: 287.00 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:202 Resp: 113935

Ion	Ratio	Lower	Upper
202	100		
101	11.9	0.0	43.0
203	17.7	0.0	47.9

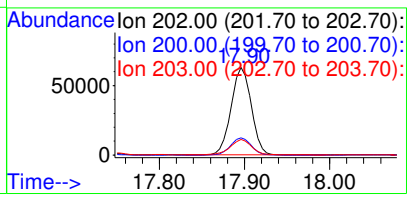


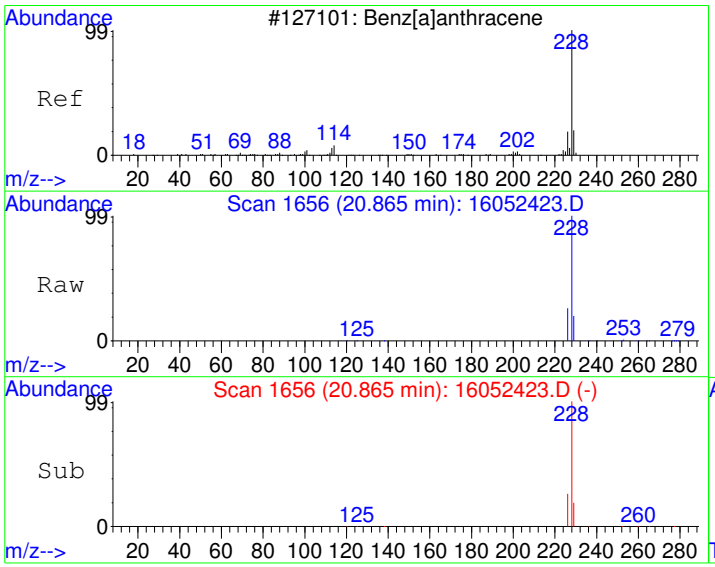


#15
Pyrene
Concen: 249.96 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:202 Resp: 103077

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.7	0.0	48.0

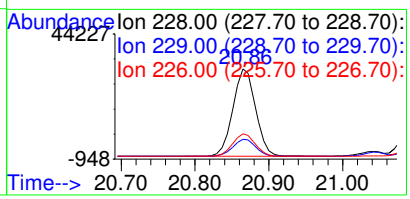


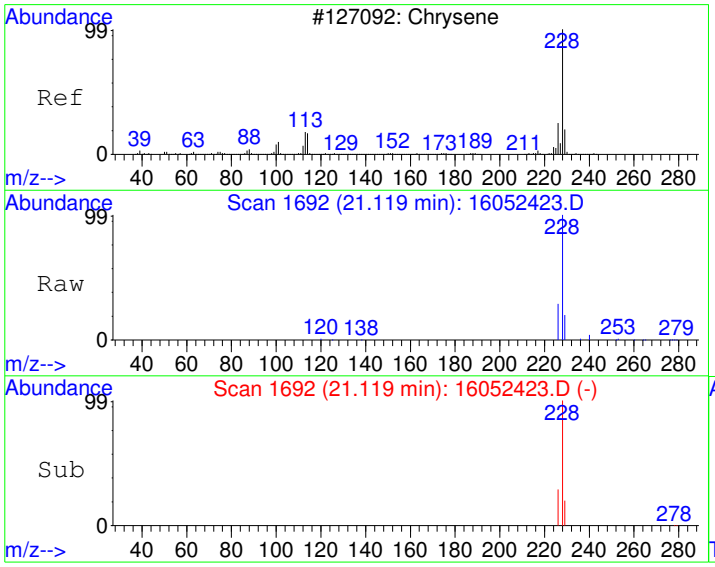


#18
Benzo[a]anthracene
Concen: 166.87 ug/kg
RT: 20.86 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:228 Resp: 67384

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	25.8	0.0	55.2

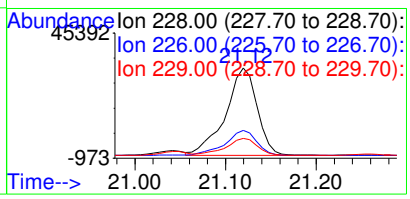


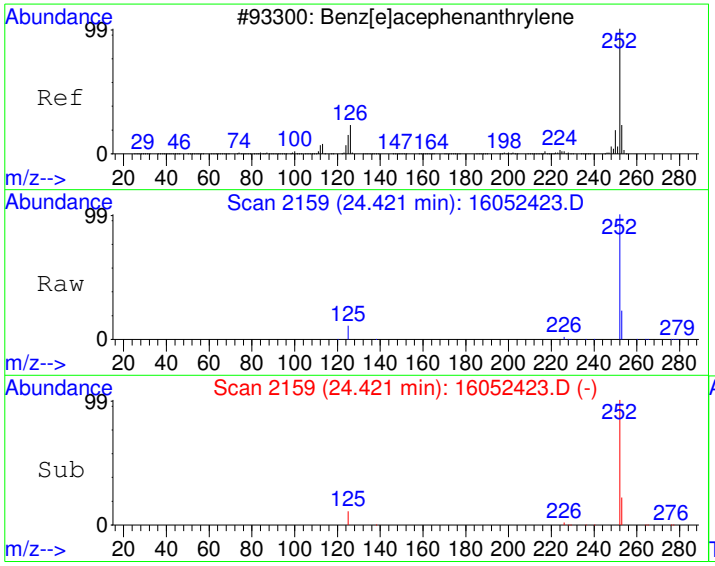


#19
Chrysene
Concen: 199.61 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:228 Resp: 77881

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.1
229	19.6	0.0	50.1

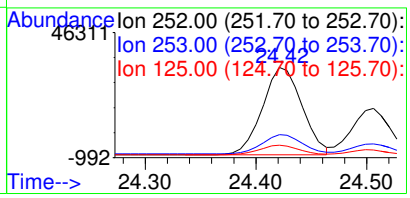


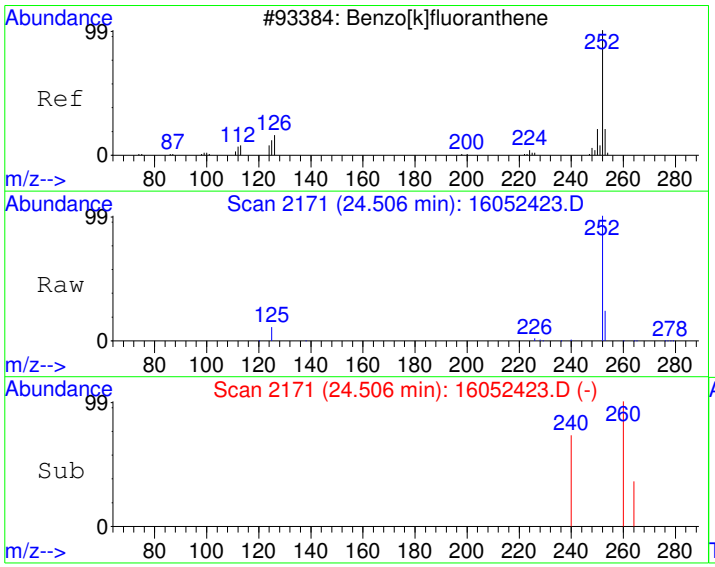


#21
Benzo[b]fluoranthene
Concen: 201.57 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.06 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:252 Resp: 82376

Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	52.2
125	11.0	0.0	41.0

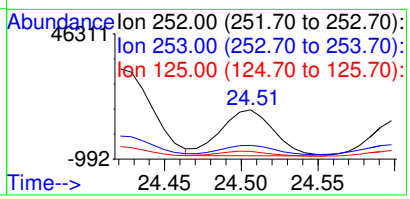


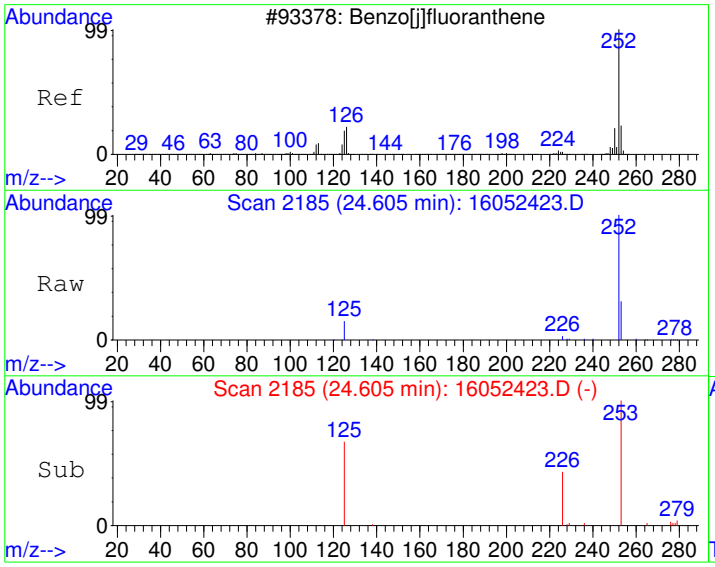


#22
Benzo[k]fluoranthene
Concen: 108.76 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:252 Resp: 41695

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.1	42.1
125	10.6	0.0	31.3

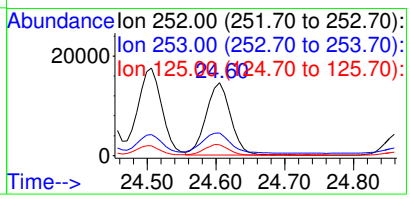


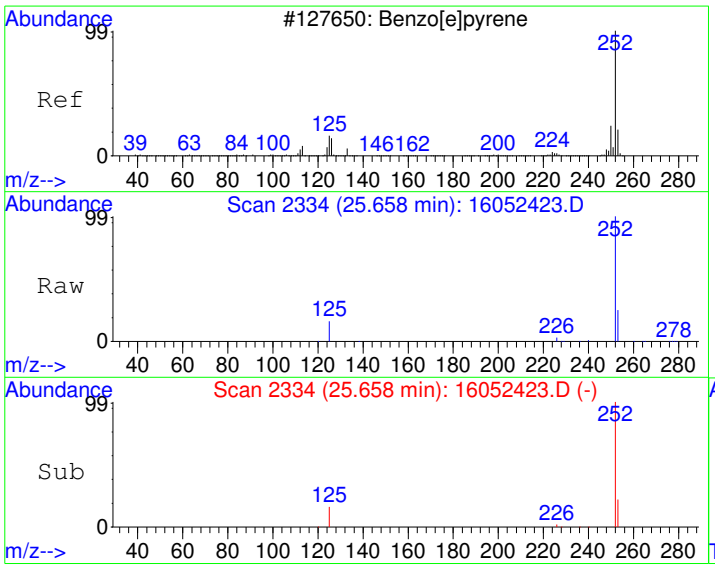


#23
Benzo(j)fluoranthene
Concen: 105.50 ug/kg
RT: 24.60 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:252 Resp: 36030

Ion	Ratio	Lower	Upper
252	100		
253	28.1	2.1	42.1
125	14.3	0.0	34.4

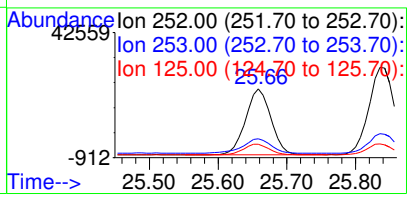


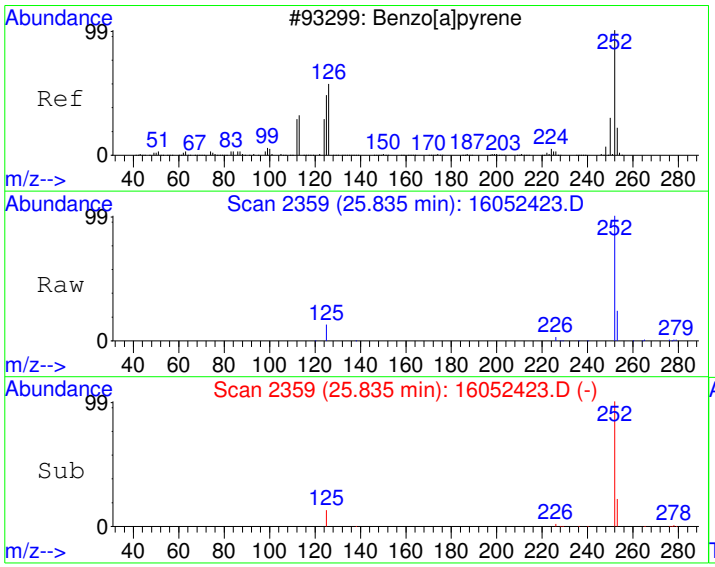


#24
Benzo[e]pyrene
Concen: 160.29 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.06 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:252 Resp: 58666

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.2	42.2
125	15.9	0.0	36.1

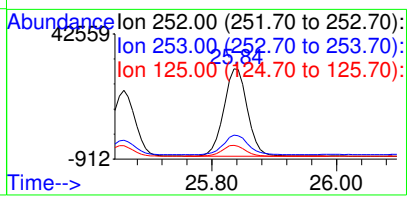


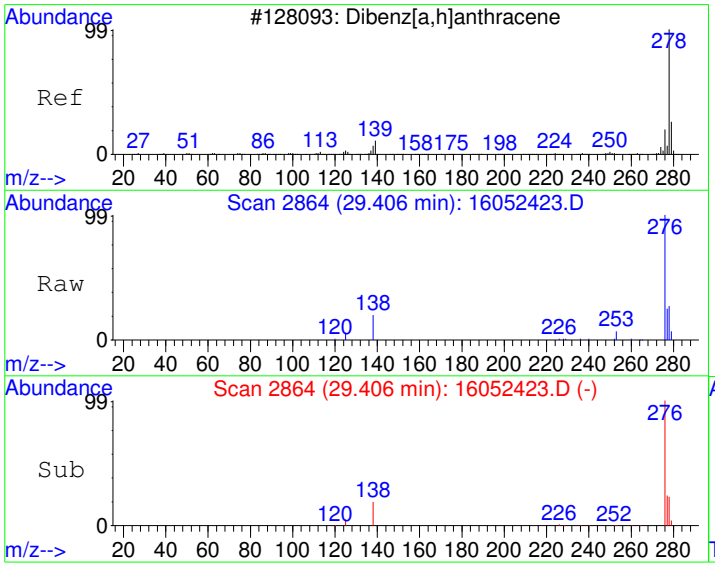


#25
Benzo[a]pyrene
Concen: 213.08 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:252 Resp: 79692

Ion	Ratio	Lower	Upper
252	100		
253	22.3	1.9	41.9
125	12.6	0.0	31.7

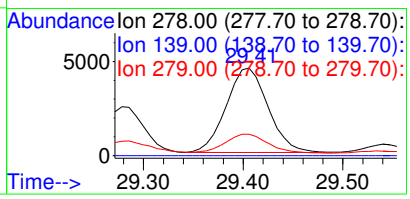


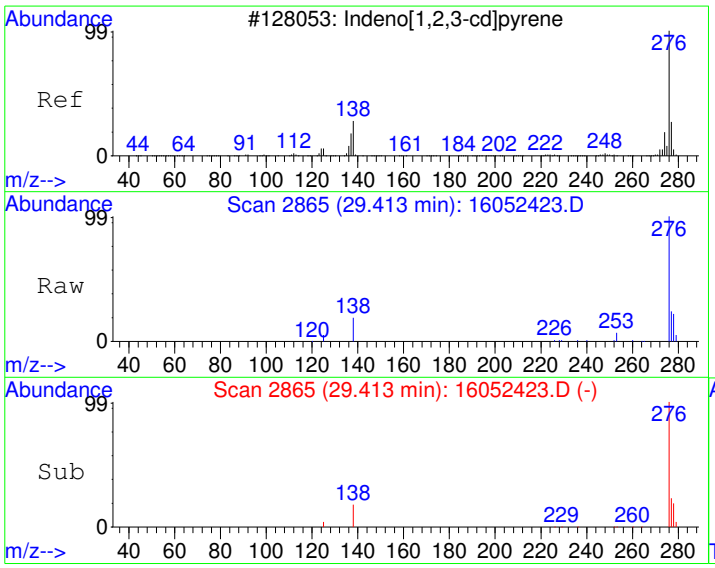


#26
Dibenz[a,h]anthracene
Concen: 38.17 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.07 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:278 Resp: 13000

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.4	4.2	44.2

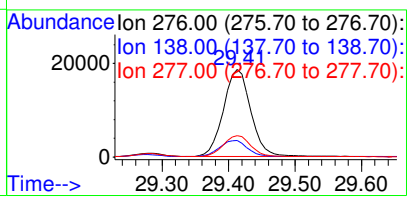


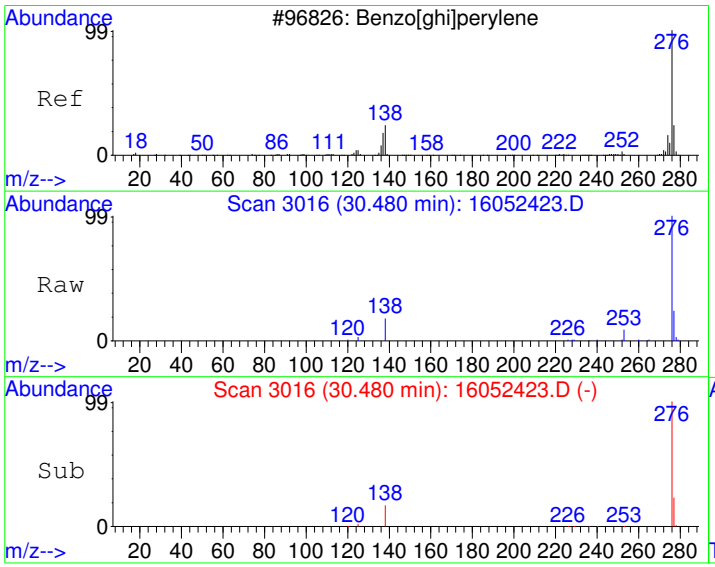


#27
Indeno[1,2,3-cd]pyrene
Concen: 131.15 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:276 Resp: 53292

Ion	Ratio	Lower	Upper
276	100		
138	18.4	6.7	46.7
277	24.0	5.8	45.8

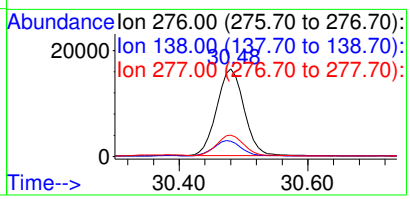




#28
Benzo[g,h,i]perylene
Concen: 152.60 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052423.D
Acq: 25 May 2016 12:27 am

Tgt Ion:276 Resp: 48351

Ion	Ratio	Lower	Upper
276	100		
138	17.1	0.0	39.1
277	23.9	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052424.D Vial: 24
Acq On : 25 May 2016 1:07 am Operator:
Sample : 1605135-29A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1227954	4000.00 ug/kg	106
5) Acenaphthene-d10	13.25	164	850898	4000.00 ug/kg	74
11) Phenanthrene-d10	15.33	188	1453640	4000.00 ug/kg	71
17) Chrysene-d12	21.04	240	1758195	4000.00 ug/kg	77
20) Perylene-d12	26.18	264	1597184	4000.00 ug/kg	78

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	17605	70.93 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.77%#	
16) 4-Terphenyl-d14	17.82	244	24960	66.37 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.66%#	

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	2894	7.57 ug/kg	98
14) Fluoranthene	17.31	202	8003	20.23 ug/kg	97
15) Pyrene	17.90	202	7264	17.68 ug/kg	98
18) Benzo[a]anthracene	20.87	228	5741	13.94 ug/kg	98
19) Chrysene	21.12	228	6584	16.54 ug/kg	98
21) Benzo[b]fluoranthene	24.42	252	6953	16.52 ug/kg	97
22) Benzo[k]fluoranthene	24.50	252	4307	10.91 ug/kg	98
23) Benzo(j)fluoranthene	24.61	252	2237	6.36 ug/kg	94
24) Benzo[e]pyrene	25.66	252	3755	9.96 ug/kg	97
25) Benzo[a]pyrene	25.84	252	6674	17.32 ug/kg	98
26) Dibenz[a,h]anthracene	29.40	278	2543	7.25 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.41	276	5488	13.11 ug/kg	91
28) Benzo[g,h,i]perylene	30.48	276	4635	14.20 ug/kg	99

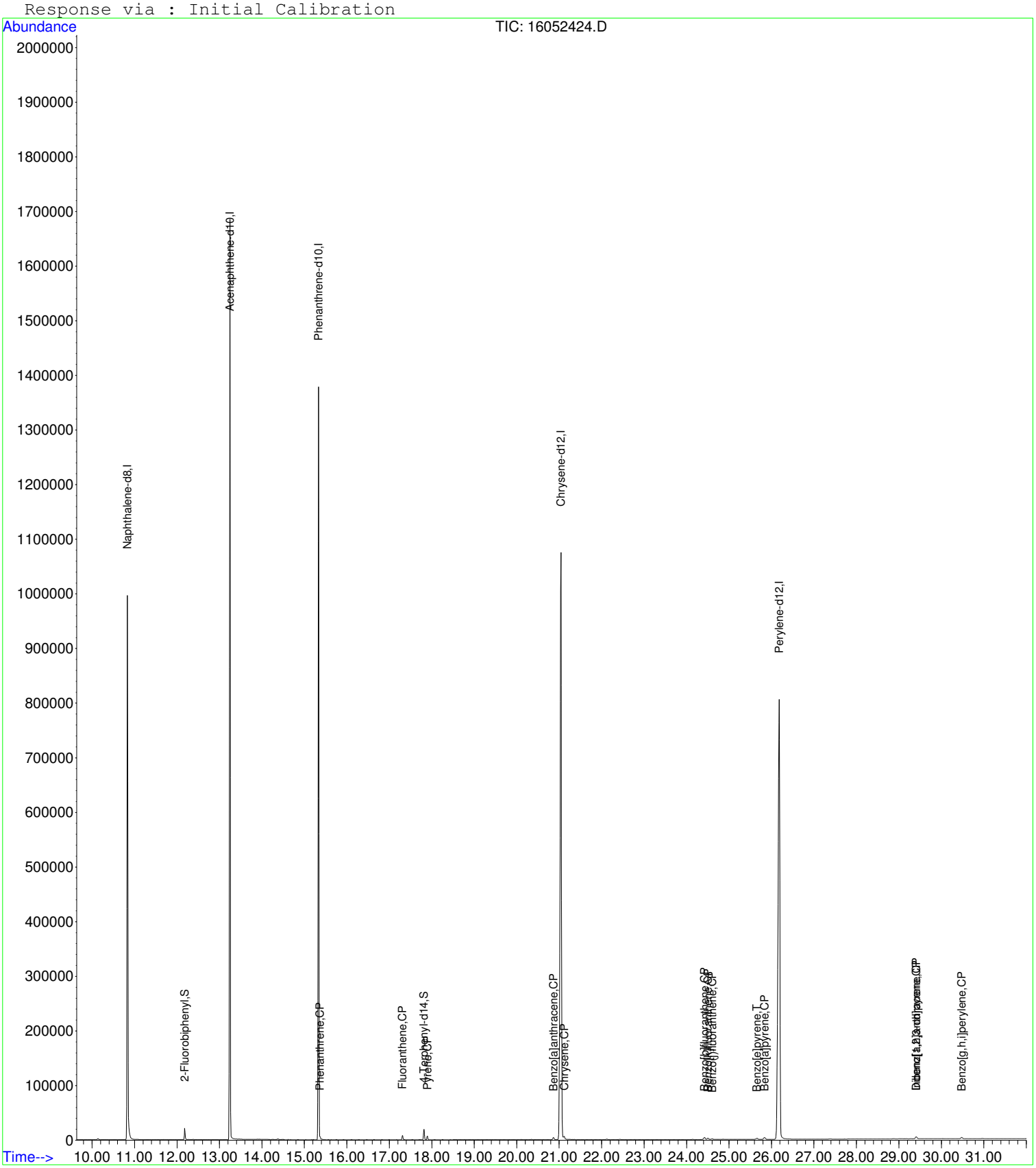
CONFIRMED
By Sherri Herschmann at 10:32:32 AM, 6/1/2016

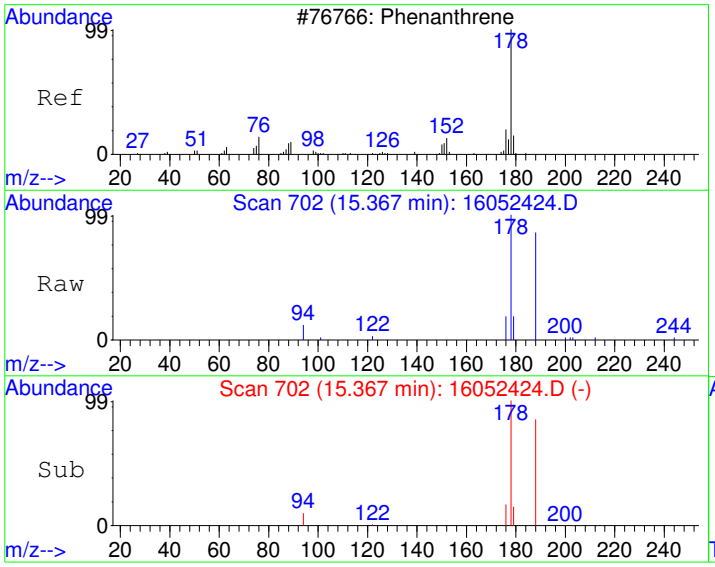
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052424.D Vial: 24
Acq On : 25 May 2016 1:07 am Operator:
Sample : 1605135-29A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

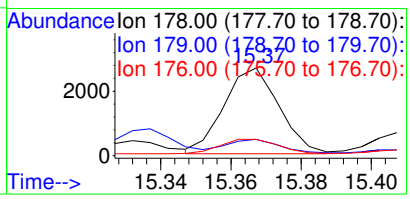


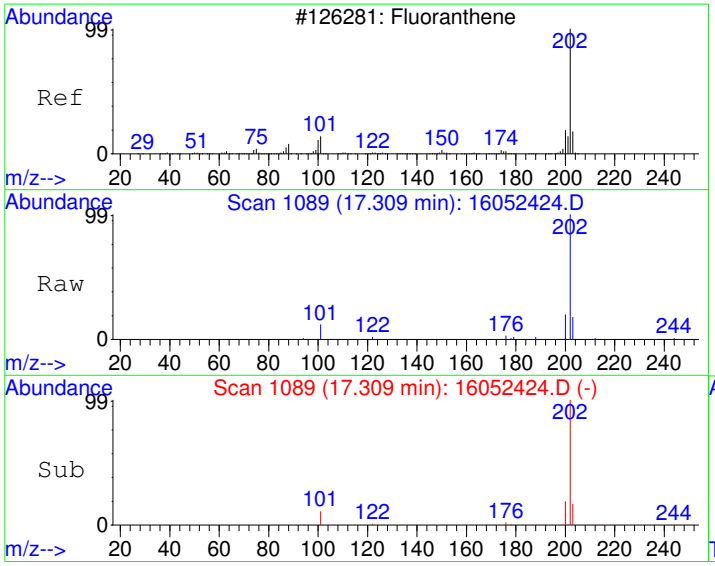


#12
Phenanthrene
Concen: 7.57 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:178 Resp: 2894

Ion	Ratio	Lower	Upper
178	100		
179	16.0	0.0	45.9
176	17.1	0.0	48.5

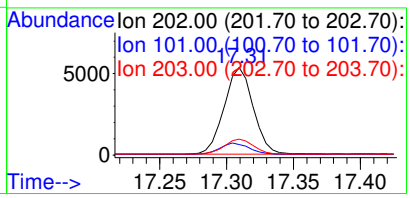


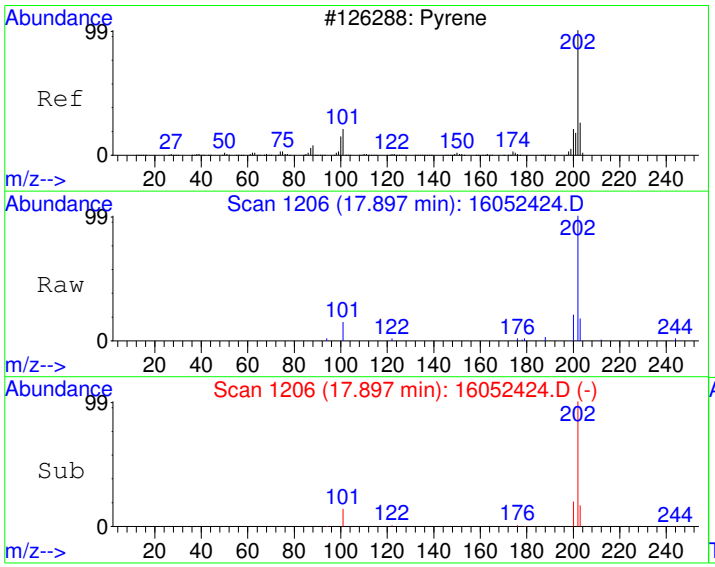


#14
Fluoranthene
Concen: 20.23 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:202 Resp: 8003

Ion	Ratio	Lower	Upper
202	100		
101	11.2	0.0	43.0
203	17.4	0.0	47.9

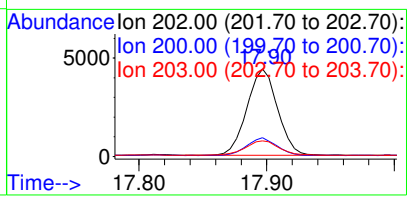


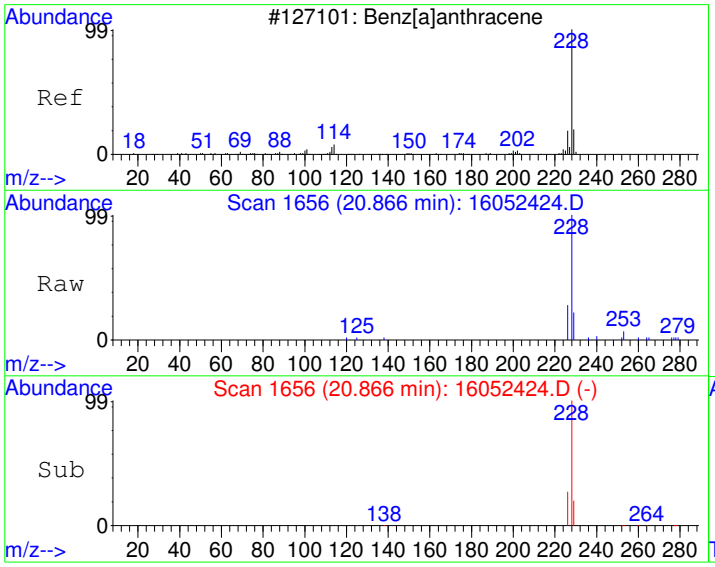


#15
Pyrene
Concen: 17.68 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:202 Resp: 7264

Ion	Ratio	Lower	Upper
202	100		
200	20.5	0.0	50.0
203	16.9	0.0	48.0

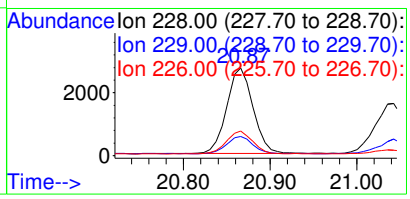


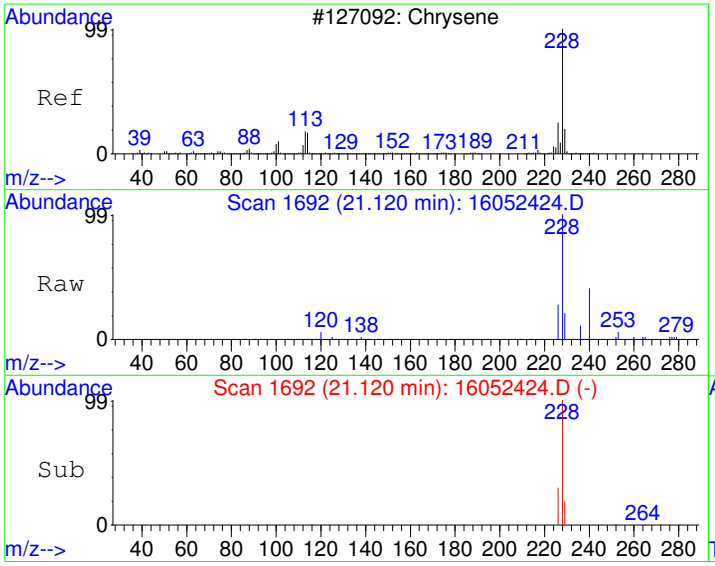


#18
Benzo[a]anthracene
Concen: 13.94 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:228 Resp: 5741

Ion	Ratio	Lower	Upper
228	100		
229	20.1	0.0	50.1
226	26.6	0.0	55.2

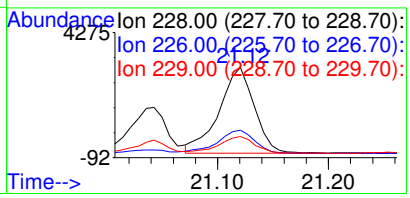


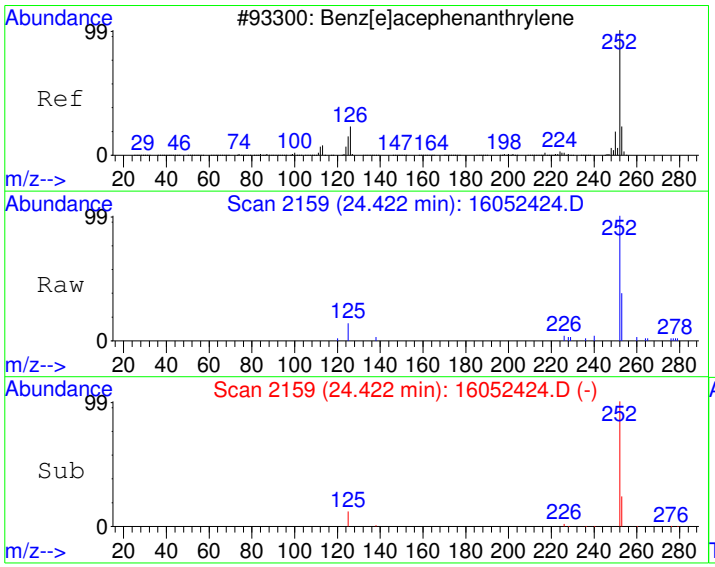


#19
Chrysene
Concen: 16.54 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:228 Resp: 6584

Ion	Ratio	Lower	Upper
228	100		
226	27.3	0.0	58.1
229	19.3	0.0	50.1

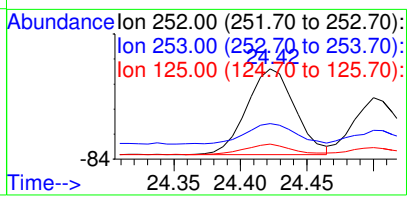


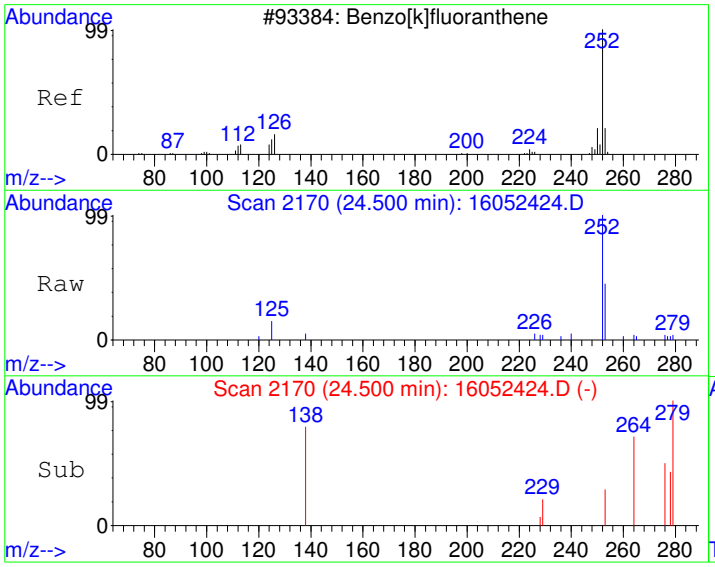


#21
Benzo[b]fluoranthene
Concen: 16.52 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.06 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:252 Resp: 6953

Ion	Ratio	Lower	Upper
252	100		
253	23.3	0.0	52.2
125	12.3	0.0	41.0

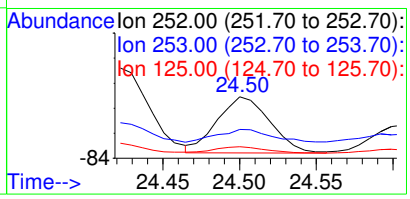


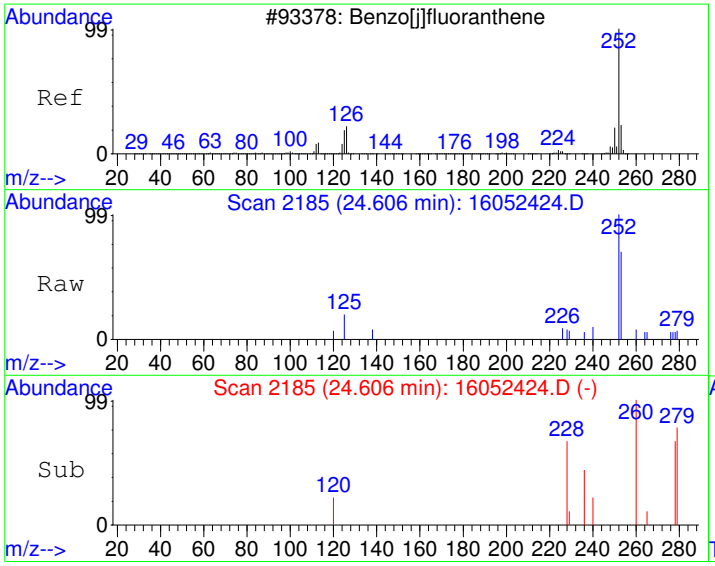


#22
Benzo[k]fluoranthene
Concen: 10.91 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.07 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:252 Resp: 4307

Ion	Ratio	Lower	Upper
252	100		
253	23.2	2.1	42.1
125	11.7	0.0	31.3

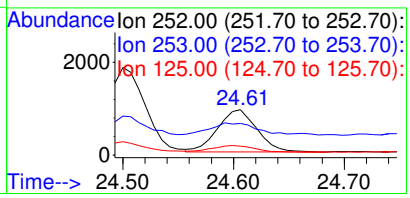


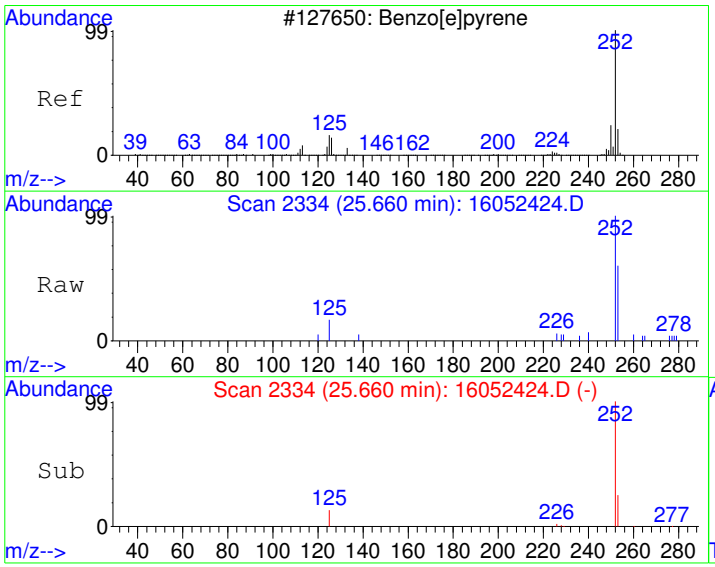


#23
Benzo(j)fluoranthene
Concen: 6.36 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:252 Resp: 2237

Ion	Ratio	Lower	Upper
252	100		
253	27.0	2.1	42.1
125	14.7	0.0	34.4

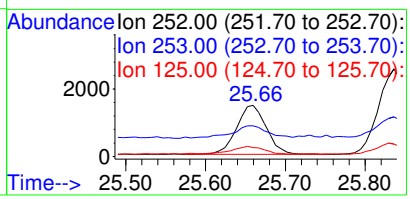


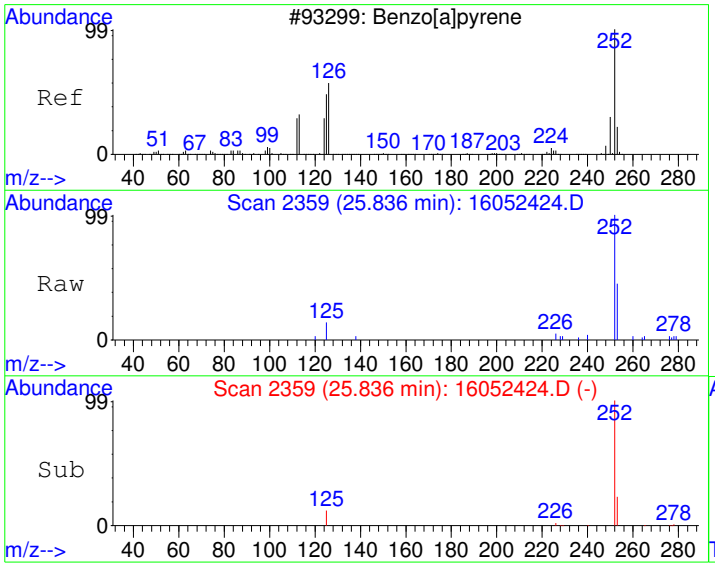


#24
Benzo[e]pyrene
Concen: 9.96 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.06 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:252 Resp: 3755

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.2	42.2
125	13.4	0.0	36.1

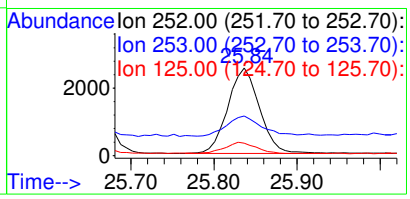


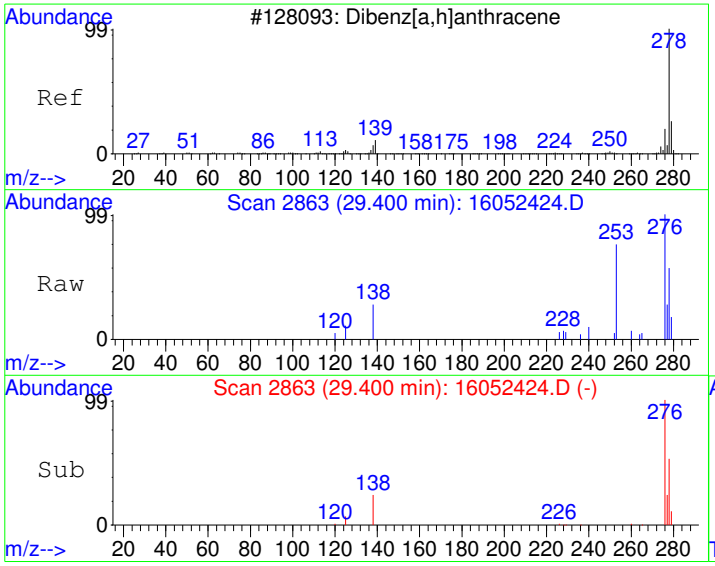


#25
Benzo[a]pyrene
Concen: 17.32 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:252 Resp: 6674

Ion	Ratio	Lower	Upper
252	100		
253	22.7	1.9	41.9
125	12.1	0.0	31.7

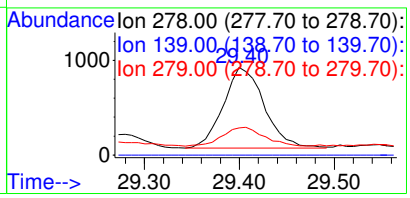


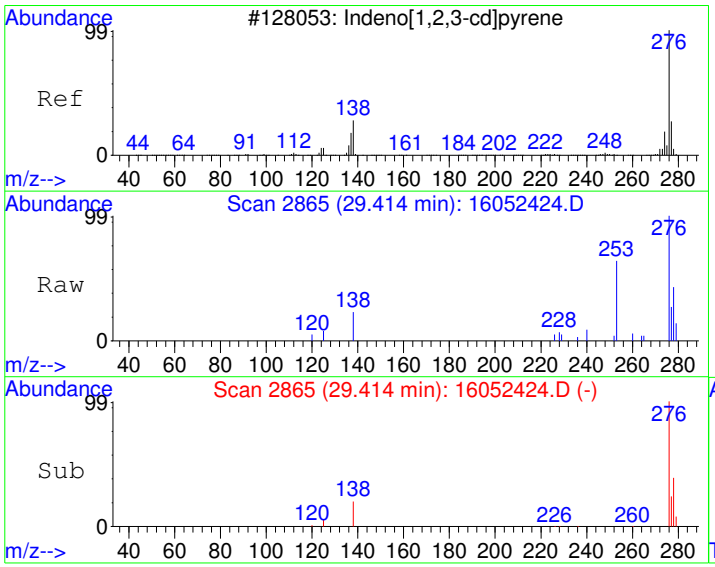


#26
Dibenz[a,h]anthracene
Concen: 7.25 ug/kg
RT: 29.40 min Scan# 2863
Delta R.T. -0.08 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:278 Resp: 2543

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.6	4.2	44.2

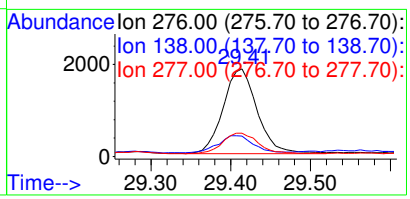


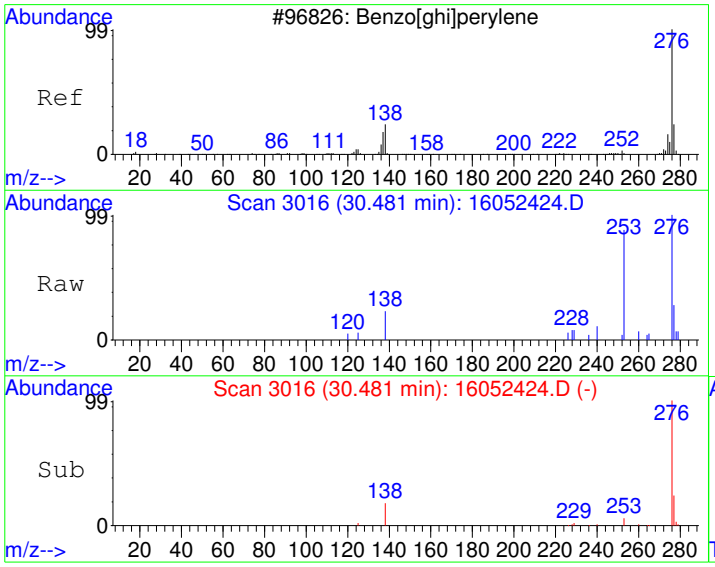


#27
Indeno[1,2,3-cd]pyrene
Concen: 13.11 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:276 Resp: 5488

Ion	Ratio	Lower	Upper
276	100		
138	19.6	6.7	46.7
277	24.2	5.8	45.8

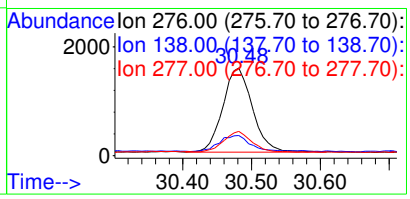




#28
Benzo[g,h,i]perylene
Concen: 14.20 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052424.D
Acq: 25 May 2016 1:07 am

Tgt Ion:276 Resp: 4635

Ion	Ratio	Lower	Upper
276	100		
138	18.7	0.0	39.1
277	24.4	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052425.D Vial: 25
Acq On : 25 May 2016 1:46 am Operator:
Sample : 1605135-30A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1220641	4000.00 ug/kg	105
5) Acenaphthene-d10	13.25	164	821083	4000.00 ug/kg	71
11) Phenanthrene-d10	15.33	188	1423556	4000.00 ug/kg	70
17) Chrysene-d12	21.04	240	1713000	4000.00 ug/kg	75
20) Perylene-d12	26.18	264	1543587	4000.00 ug/kg	75

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18136	75.72 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.89%#	
16) 4-Terphenyl-d14	17.82	244	26217	71.18 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	2275	6.08 ug/kg	98
14) Fluoranthene	17.31	202	5037	13.00 ug/kg	97
15) Pyrene	17.90	202	4603	11.44 ug/kg	98
18) Benzo[a]anthracene	20.86	228	4017	10.01 ug/kg	98
19) Chrysene	21.12	228	4535	11.70 ug/kg	98
21) Benzo[b]fluoranthene	24.42	252	4566	11.22 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	3262	8.55 ug/kg	97
23) Benzo(j)fluoranthene	24.60	252	1296	3.81 ug/kg	97
24) Benzo[e]pyrene	25.66	252	2020	5.54 ug/kg	96
25) Benzo[a]pyrene	25.84	252	4375	11.75 ug/kg	94
26) Dibenz[a,h]anthracene	29.41	278	2242	6.61 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.41	276	3940	9.74 ug/kg	92
28) Benzo[g,h,i]perylene	30.48	276	3199	10.14 ug/kg	96

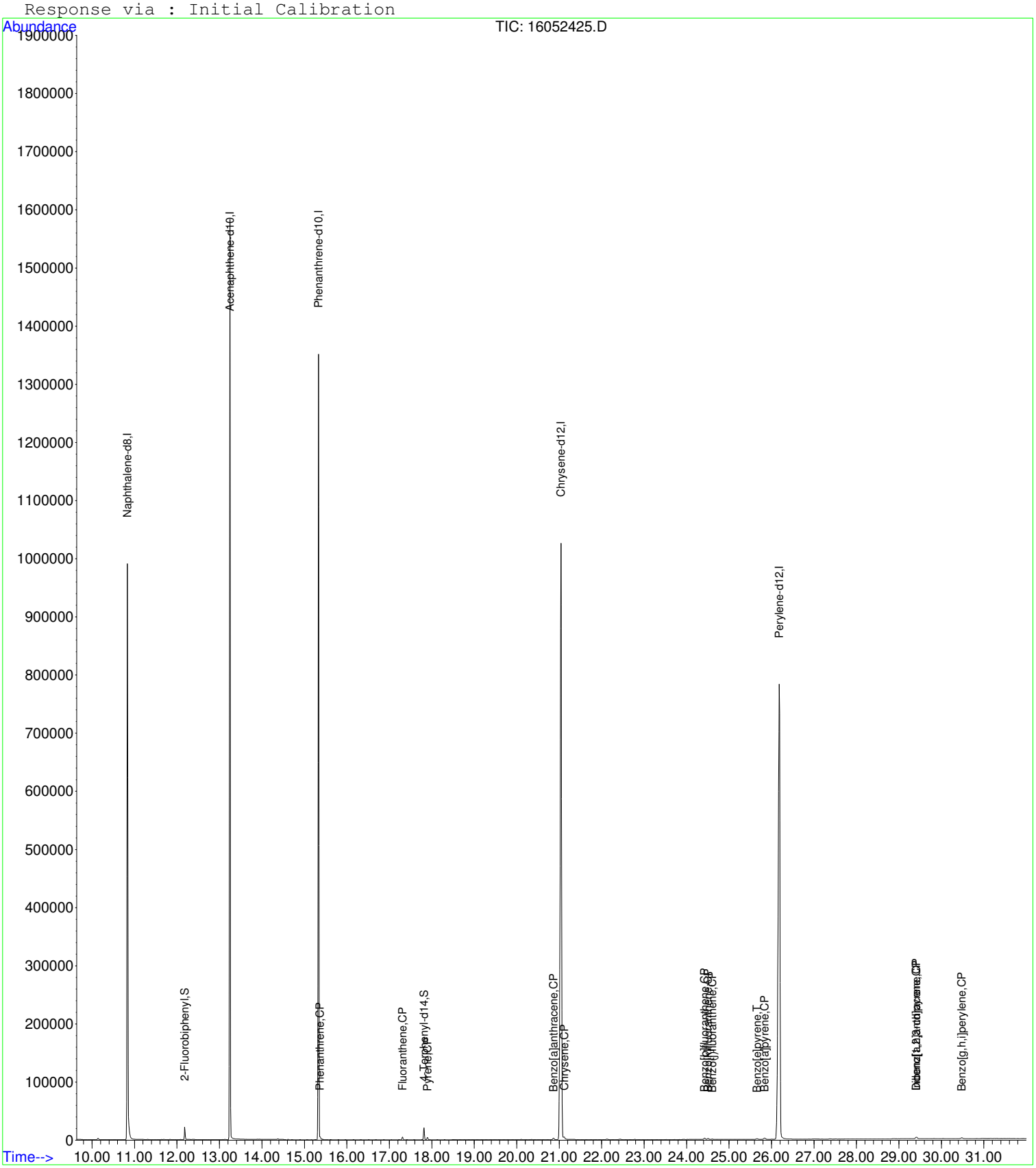
CONFIRMED
By Sherri Herschmann at 10:33:35 AM, 6/1/2016

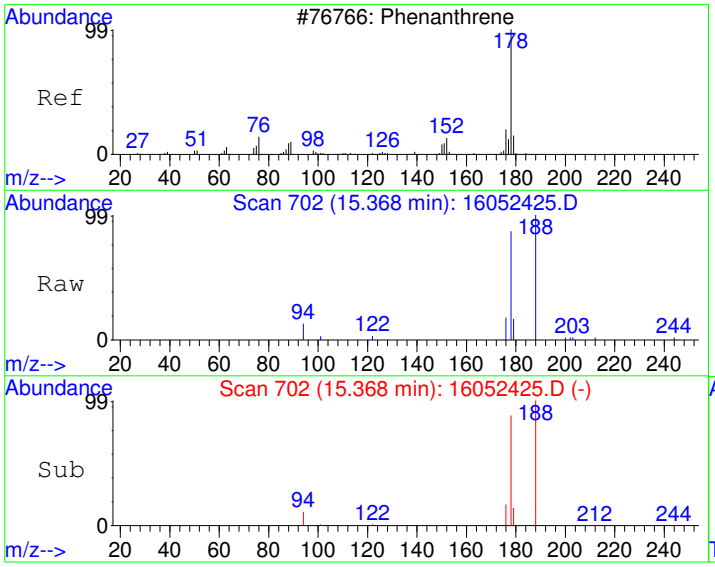
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052425.D Vial: 25
Acq On : 25 May 2016 1:46 am Operator:
Sample : 1605135-30A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

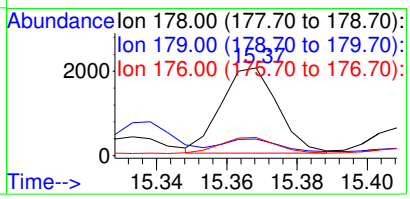


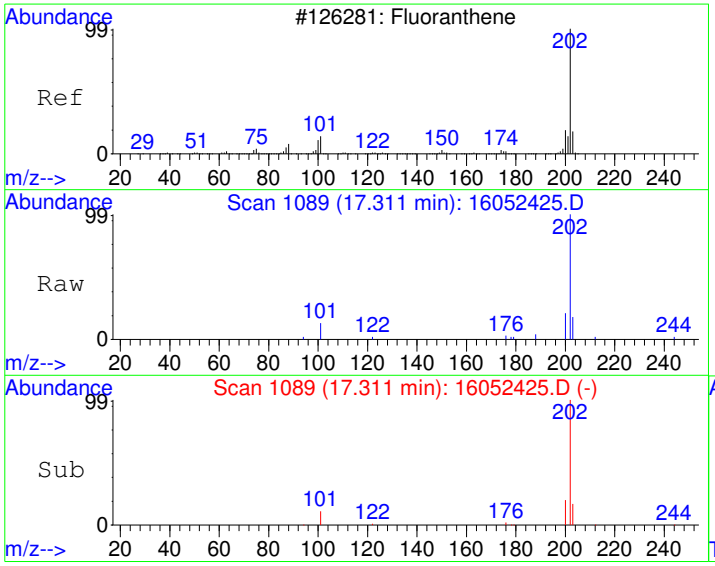


#12
Phenanthrene
Concen: 6.08 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:178 Resp: 2275

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	19.1	0.0	48.5

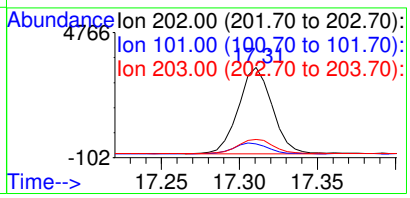


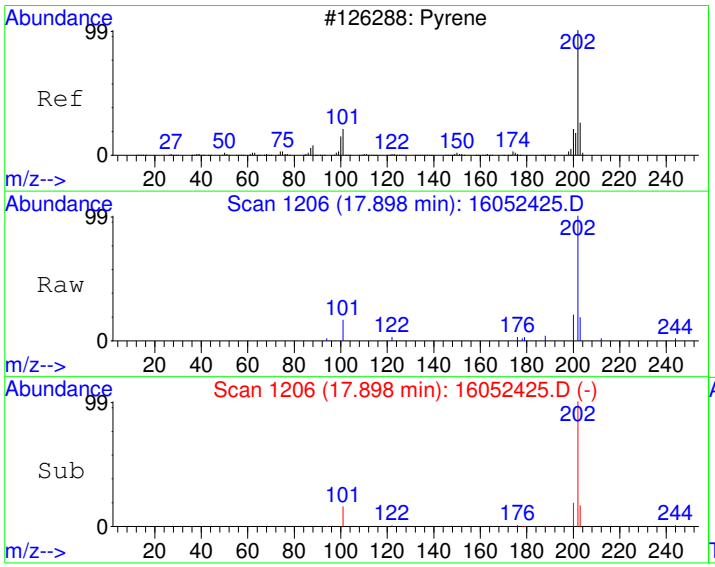


#14
Fluoranthene
Concen: 13.00 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:202 Resp: 5037

Ion	Ratio	Lower	Upper
202	100		
101	11.4	0.0	43.0
203	16.6	0.0	47.9

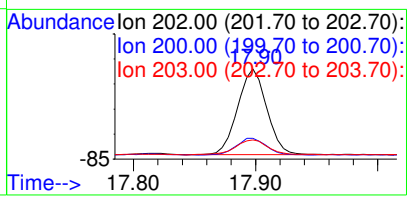


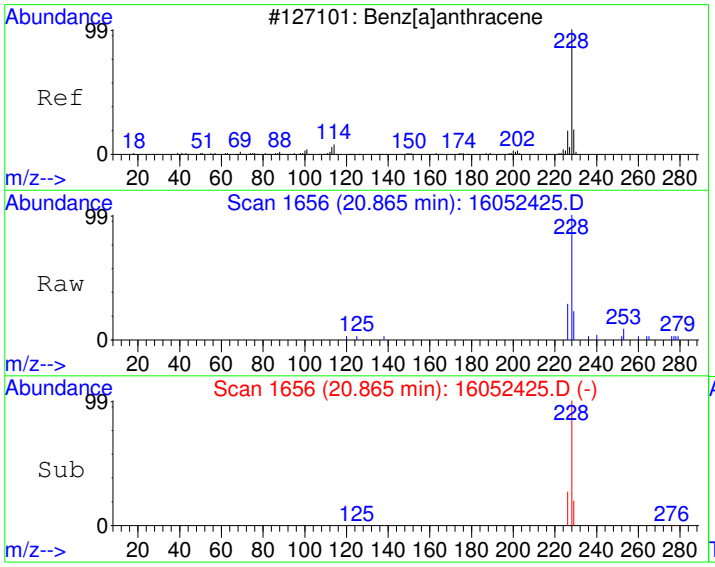


#15
Pyrene
Concen: 11.44 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:202 Resp: 4603

Ion	Ratio	Lower	Upper
202	100		
200	19.1	0.0	50.0
203	17.3	0.0	48.0

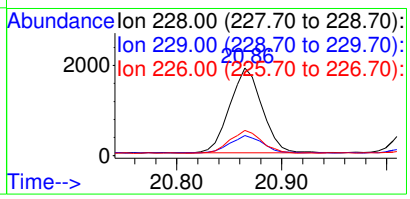


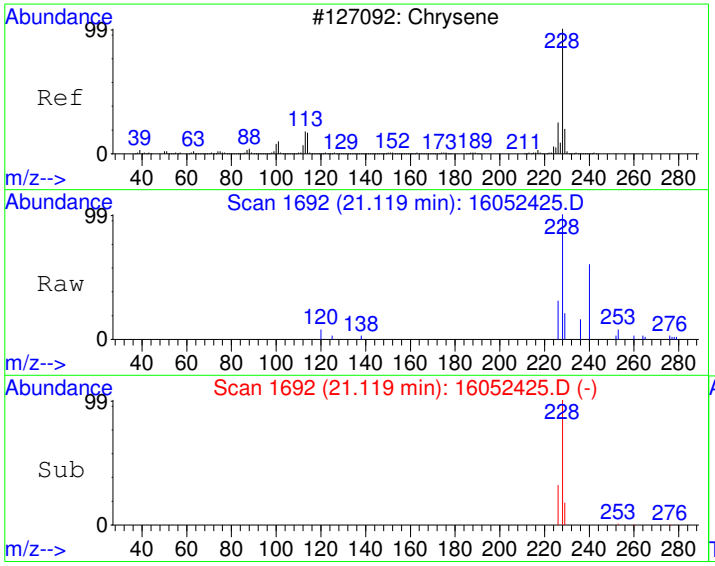


#18
Benzo[a]anthracene
Concen: 10.01 ug/kg
RT: 20.86 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:228 Resp: 4017

Ion	Ratio	Lower	Upper
228	100		
229	20.3	0.0	50.1
226	26.9	0.0	55.2

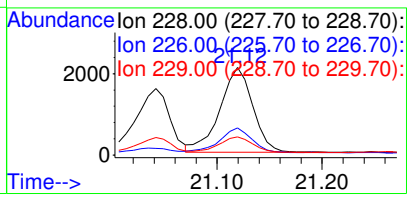


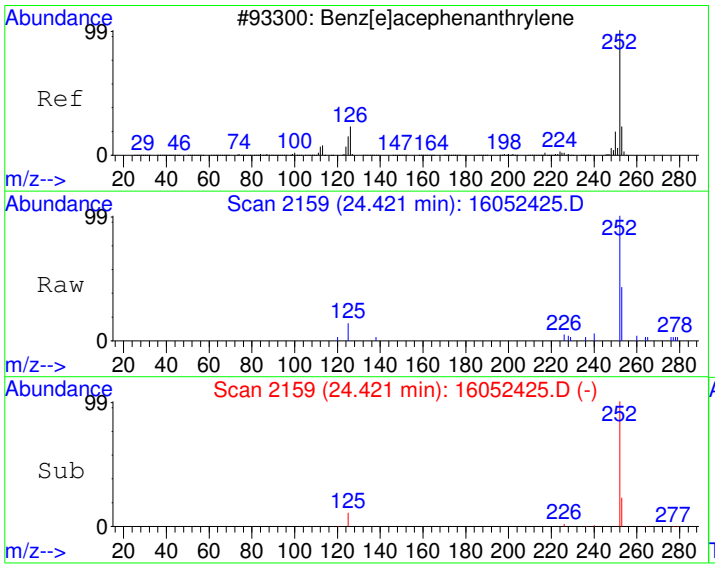


#19
Chrysene
Concen: 11.70 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:228 Resp: 4535

Ion	Ratio	Lower	Upper
228	100		
226	28.8	0.0	58.1
229	18.5	0.0	50.1

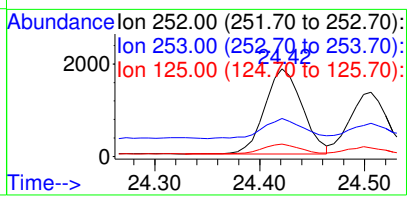


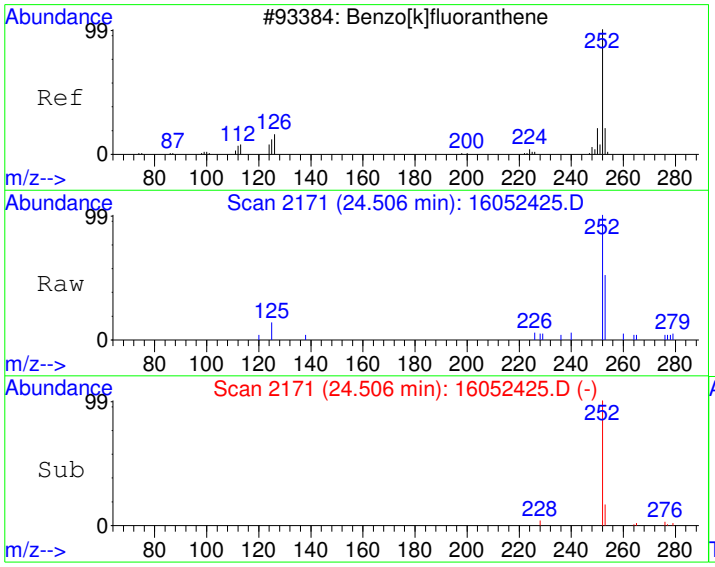


#21
Benzo[b]fluoranthene
Concen: 11.22 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.06 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:252 Resp: 4566

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	52.2
125	11.7	0.0	41.0

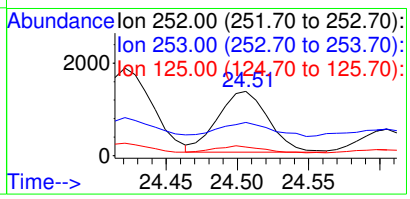


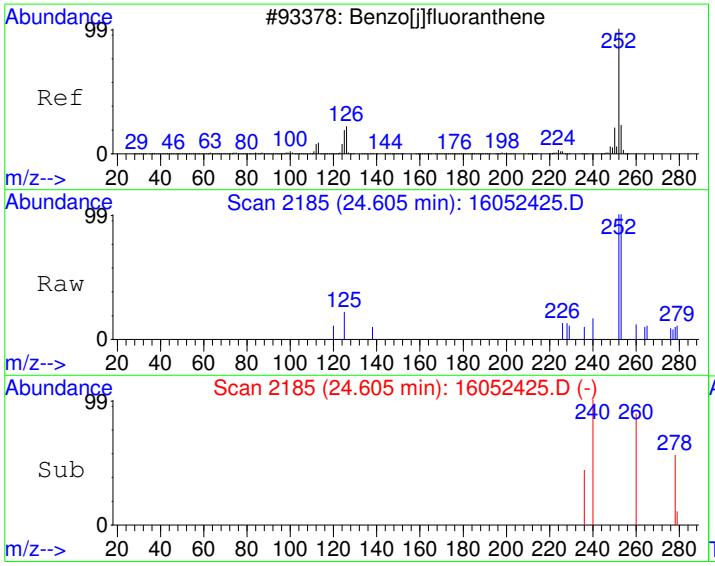


#22
Benzo[k]fluoranthene
Concen: 8.55 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:252 Resp: 3262

Ion	Ratio	Lower	Upper
252	100		
253	20.6	2.1	42.1
125	9.7	0.0	31.3

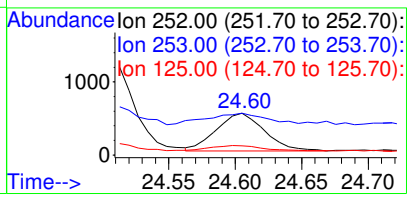


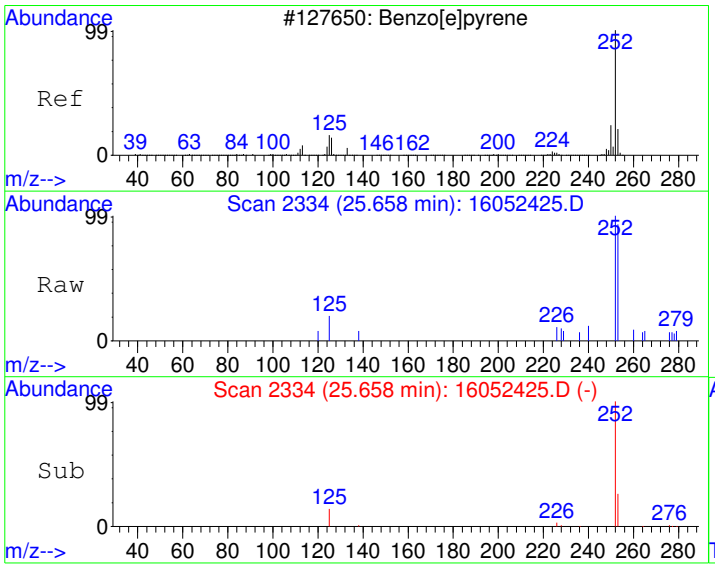


#23
Benzo(j)fluoranthene
Concen: 3.81 ug/kg
RT: 24.60 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:252 Resp: 1296

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.1	42.1
125	12.6	0.0	34.4

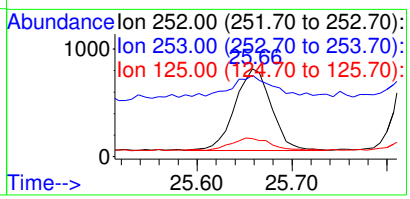


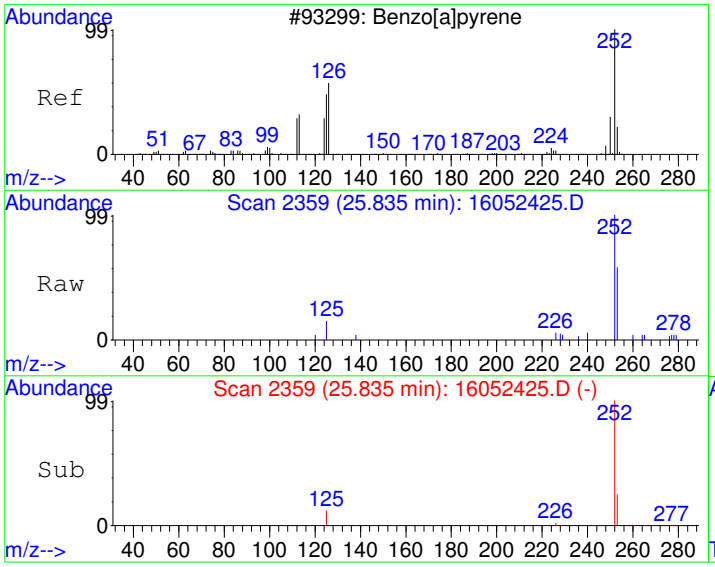


#24
Benzo[e]pyrene
Concen: 5.54 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.06 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:252 Resp: 2020

Ion	Ratio	Lower	Upper
252	100		
253	23.9	2.2	42.2
125	14.0	0.0	36.1

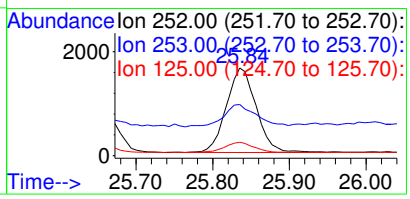


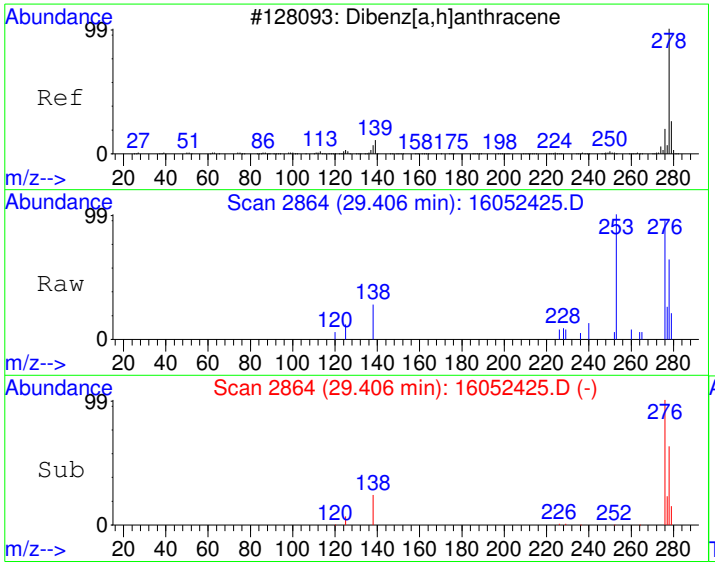


#25
Benzo[a]pyrene
Concen: 11.75 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:252 Resp: 4375

Ion	Ratio	Lower	Upper
252	100		
253	26.4	1.9	41.9
125	12.1	0.0	31.7

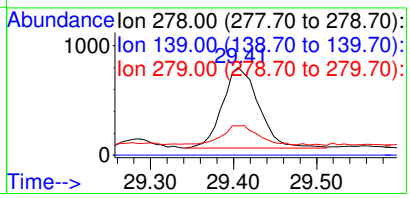


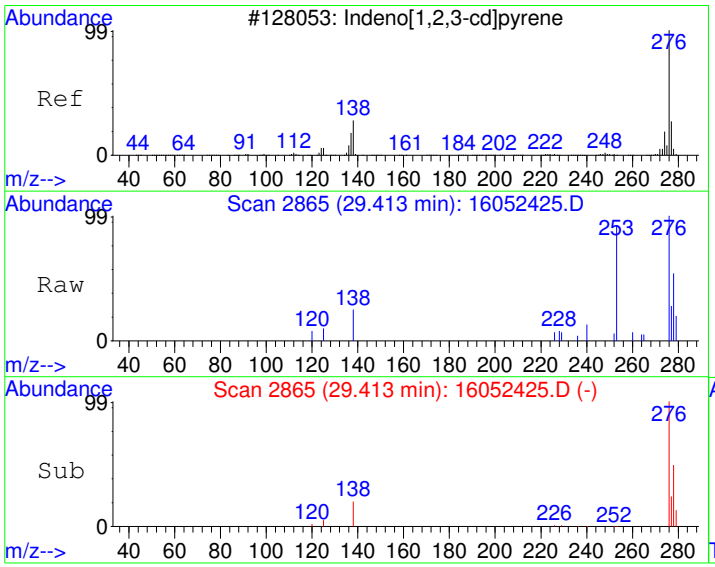


#26
Dibenz[a,h]anthracene
Concen: 6.61 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.07 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:278 Resp: 2242

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	24.4	4.2	44.2

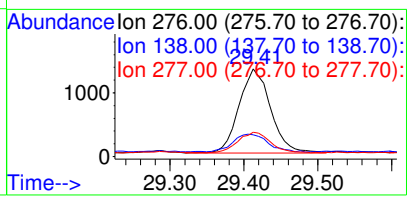


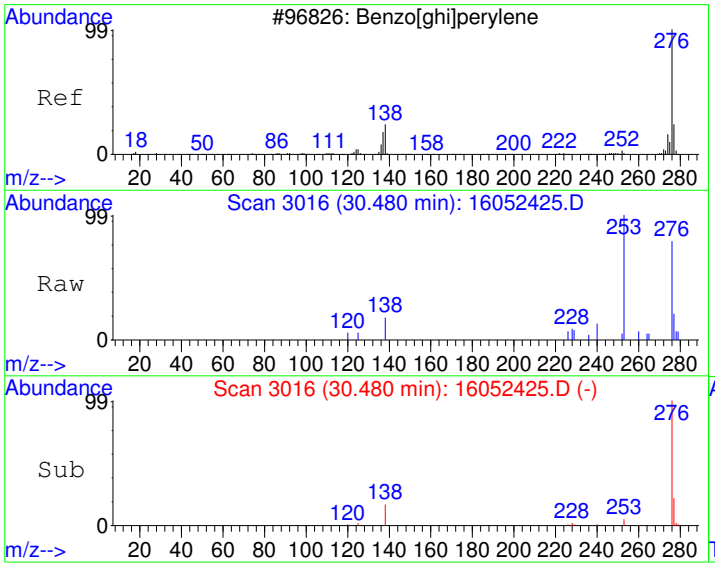


#27
Indeno[1,2,3-cd]pyrene
Concen: 9.74 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:276 Resp: 3940

Ion	Ratio	Lower	Upper
276	100		
138	20.0	6.7	46.7
277	24.2	5.8	45.8

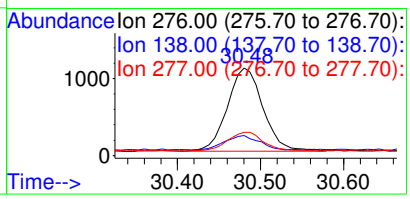




#28
Benzo[g,h,i]perylene
Concen: 10.14 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052425.D
Acq: 25 May 2016 1:46 am

Tgt Ion:276 Resp: 3199

Ion	Ratio	Lower	Upper
276	100		
138	17.1	0.0	39.1
277	22.3	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052426.D Vial: 26
Acq On : 25 May 2016 2:26 am Operator:
Sample : 1605135-31A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1247859	4000.00 ug/kg	108
5) Acenaphthene-d10	13.25	164	834341	4000.00 ug/kg	72
11) Phenanthrene-d10	15.33	188	1464698	4000.00 ug/kg	72
17) Chrysene-d12	21.04	240	1737267	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1570858	4000.00 ug/kg	76

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	18511	76.06 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.90%#	
16) 4-Terphenyl-d14	17.82	244	26915	71.03 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	

Target Compounds

					Qvalue
21) Benzo[b]fluoranthene	24.42	252	2128	5.14 ug/kg	98
22) Benzo[k]fluoranthene	24.51	252	2057	5.30 ug/kg	97
23) Benzo(j)fluoranthene	24.60	252	104	0.30 ug/kg#	21
25) Benzo[a]pyrene	25.84	252	2110	5.57 ug/kg	98
26) Dibenz[a,h]anthracene	29.41	278	1926	5.58 ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.41	276	2412	5.86 ug/kg	92
28) Benzo[g,h,i]perylene	30.48	276	1796	5.60 ug/kg	97

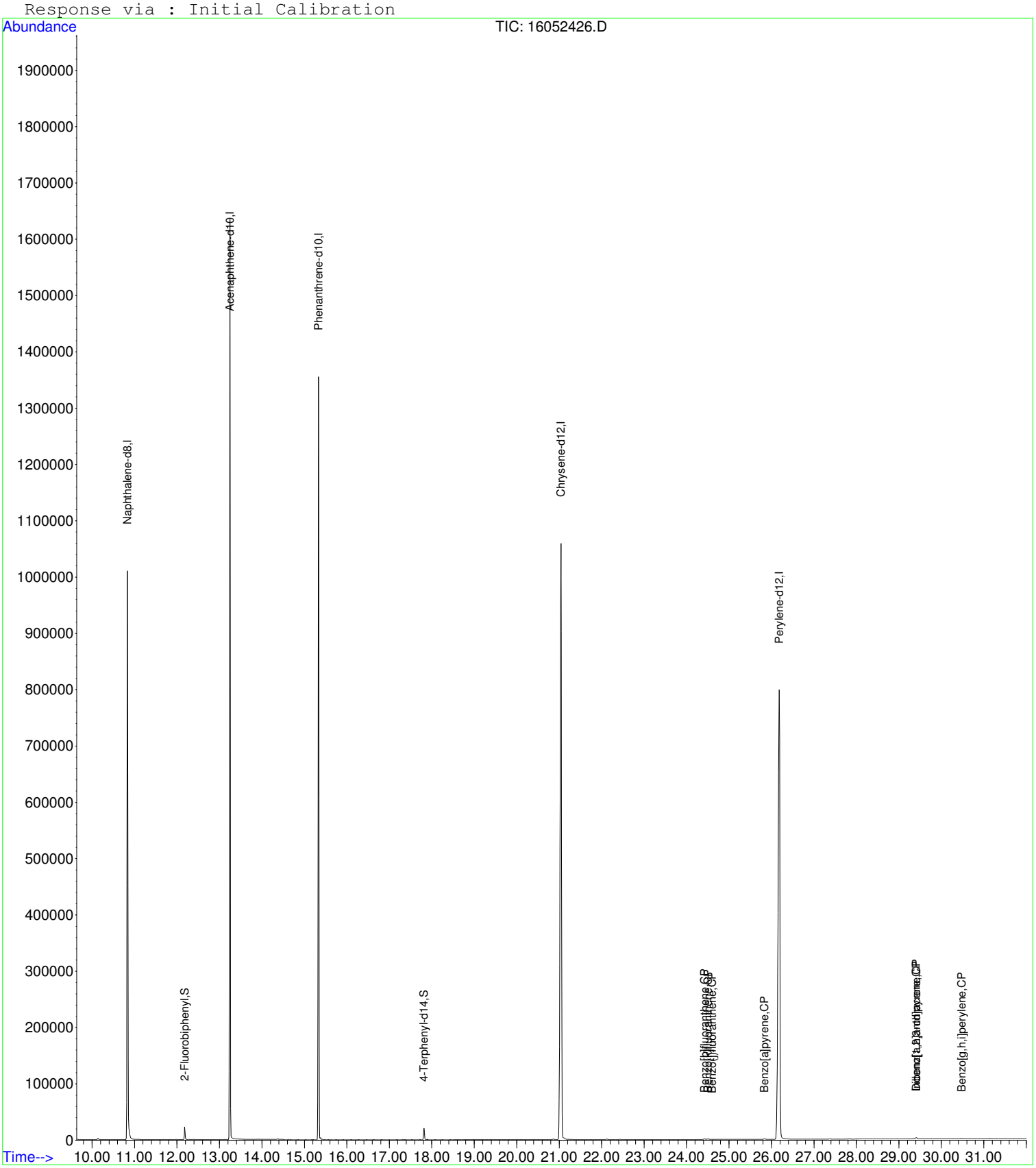
CONFIRMED
By Sherri Herschmann at 10:33:53 AM, 6/1/2016

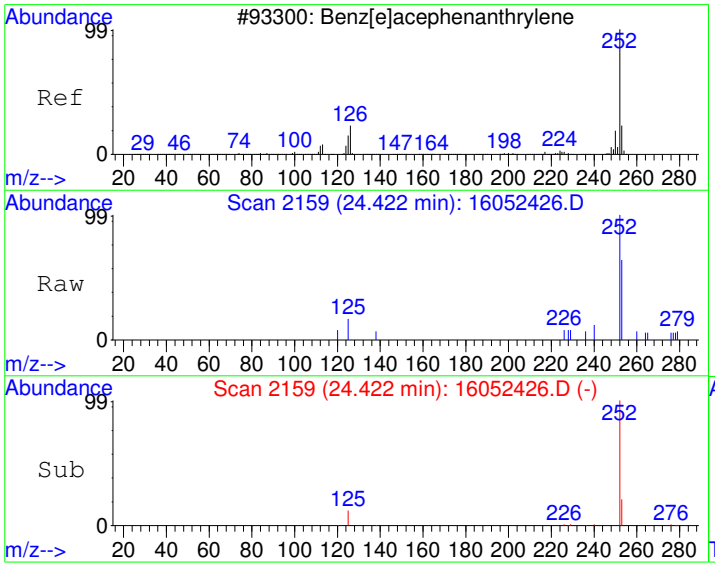
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052426.D Vial: 26
Acq On : 25 May 2016 2:26 am Operator:
Sample : 1605135-31A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

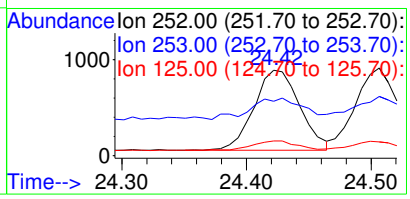


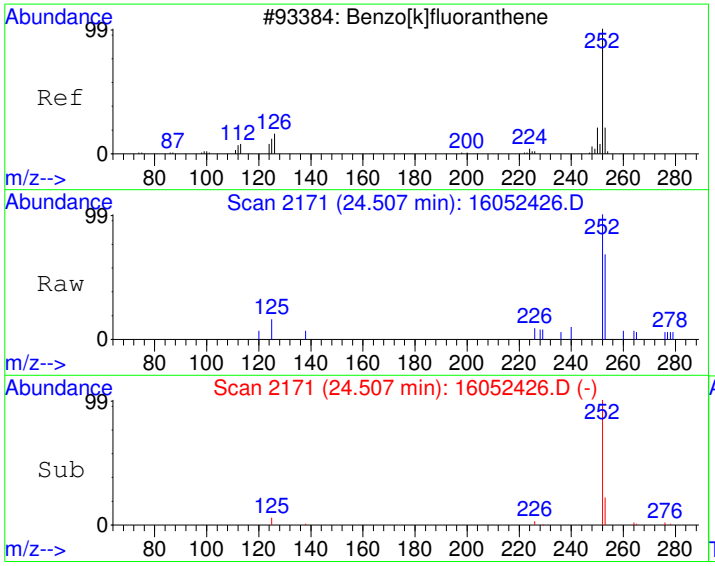


#21
Benzo[b]fluoranthene
Concen: 5.14 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.06 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:252 Resp: 2128

Ion	Ratio	Lower	Upper
252	100		
253	21.4	0.0	52.2
125	11.9	0.0	41.0

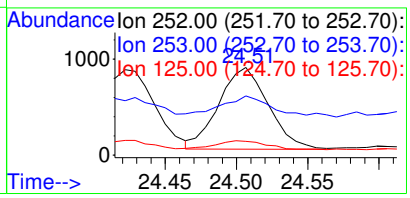


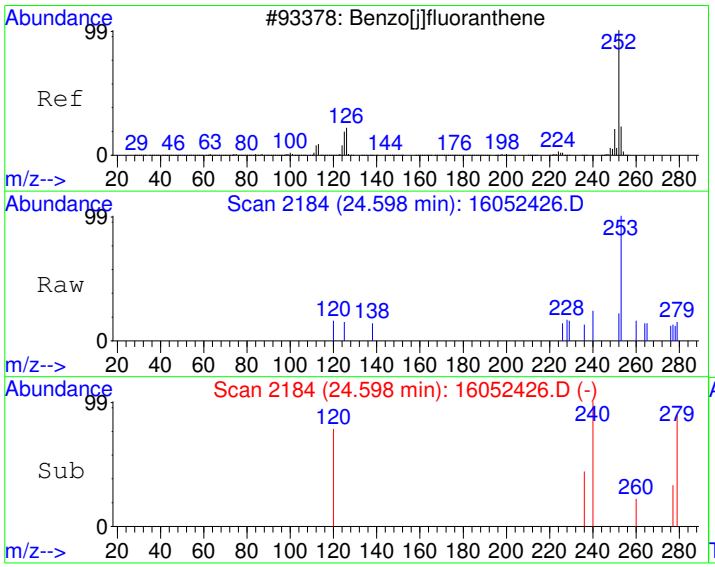


#22
Benzo[k]fluoranthene
Concen: 5.30 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:252 Resp: 2057

Ion	Ratio	Lower	Upper
252	100		
253	23.6	2.1	42.1
125	10.2	0.0	31.3

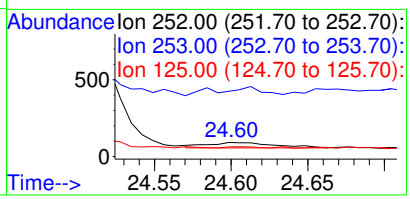


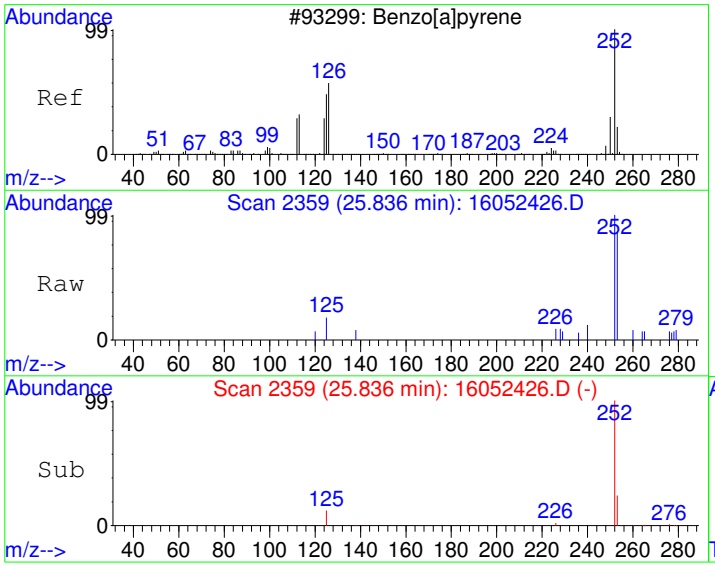


#23
Benzo(j)fluoranthene
Concen: 0.30 ug/kg
RT: 24.60 min Scan# 2184
Delta R.T. -0.07 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:252 Resp: 104

Ion	Ratio	Lower	Upper
252	100		
253	80.0	2.1	42.1#
125	8.6	0.0	34.4

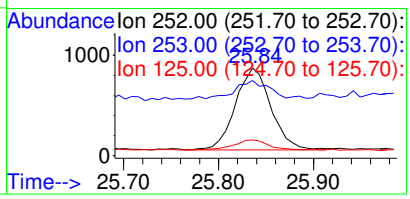


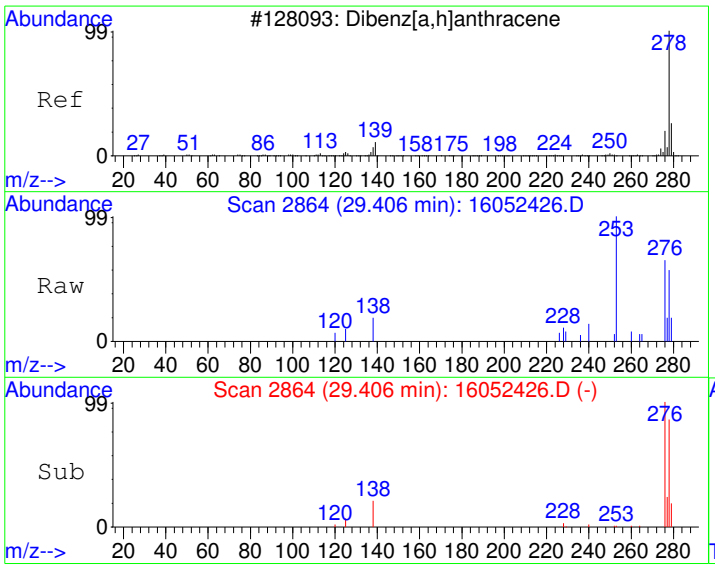


#25
Benzo[a]pyrene
Concen: 5.57 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:252 Resp: 2110

Ion	Ratio	Lower	Upper
252	100		
253	23.0	1.9	41.9
125	11.9	0.0	31.7

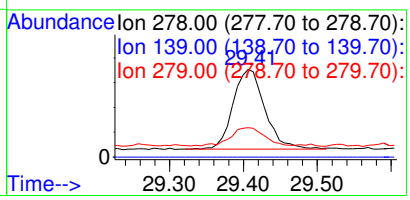


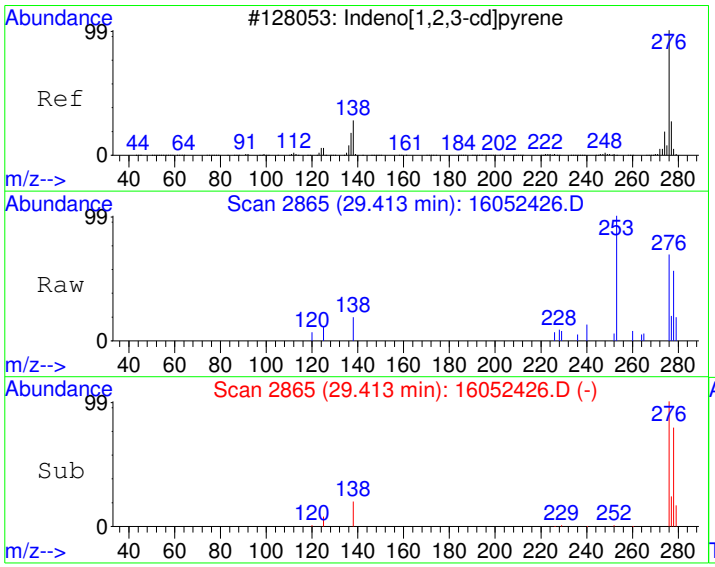


#26
Dibenz[a,h]anthracene
Concen: 5.58 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.07 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:278 Resp: 1926

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	23.4	4.2	44.2

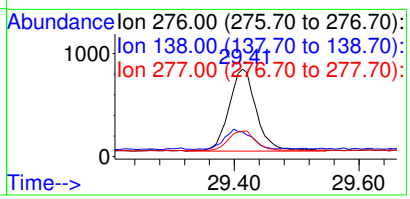


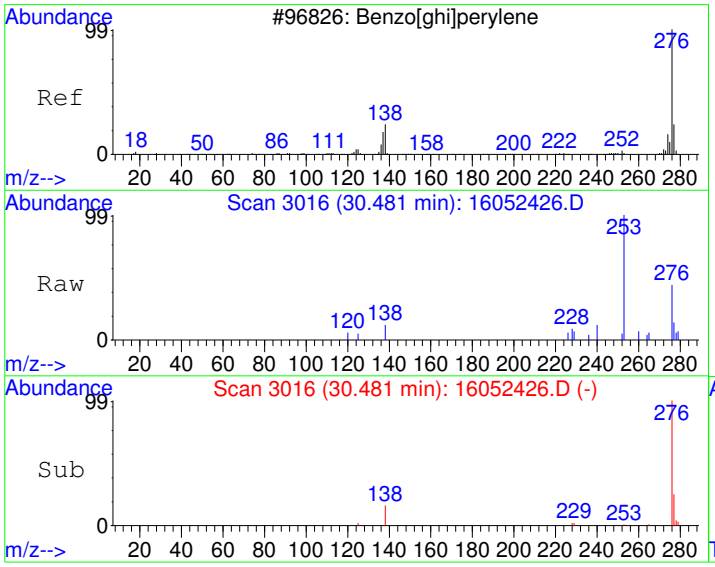


#27
Indeno[1,2,3-cd]pyrene
Concen: 5.86 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:276 Resp: 2412

Ion	Ratio	Lower	Upper
276	100		
138	20.9	6.7	46.7
277	23.4	5.8	45.8

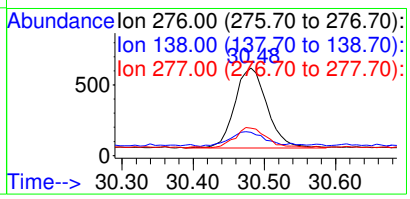




#28
Benzo[g,h,i]perylene
Concen: 5.60 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052426.D
Acq: 25 May 2016 2:26 am

Tgt Ion:276 Resp: 1796

Ion	Ratio	Lower	Upper
276	100		
138	16.8	0.0	39.1
277	24.7	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052427.D Vial: 27
Acq On : 25 May 2016 3:05 am Operator:
Sample : 1605135-32A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1243611	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	823818	4000.00 ug/kg	72
11) Phenanthrene-d10	15.33	188	1430236	4000.00 ug/kg	70
17) Chrysene-d12	21.04	240	1718086	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1560591	4000.00 ug/kg	76

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	18197	75.72 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.89%#	
16) 4-Terphenyl-d14	17.82	244	26431	71.43 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.79%#	

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.51	252	1818	~~5.29 ug/kg~~	~~96~~
26) Dibenz[a,h]anthracene	29.41	278	1854	5.41 ug/kg	93
27) Indeno[1,2,3-cd]pyrene	29.41	276	2200	5.38 ug/kg	99

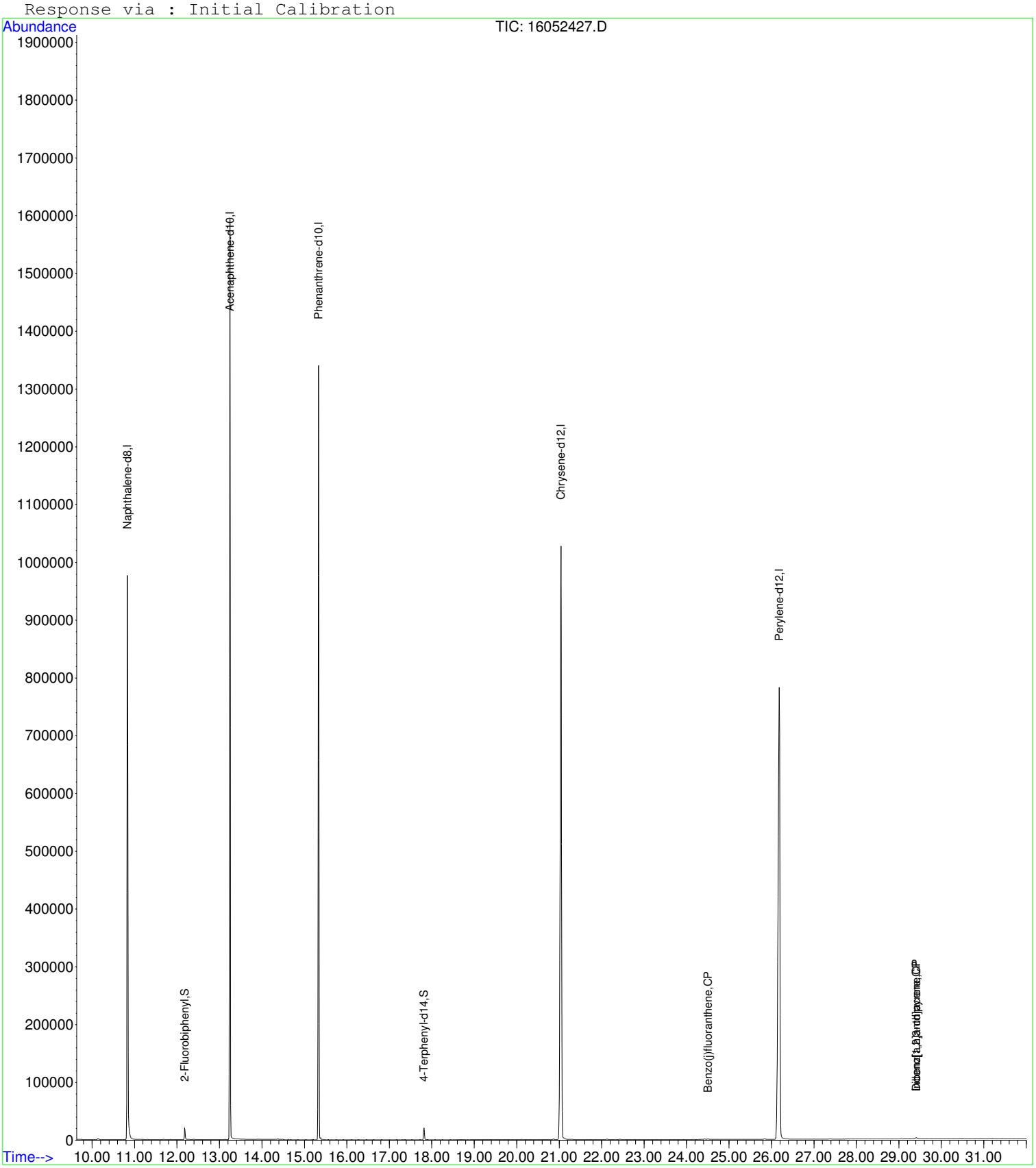
CONFIRMED
By Sherri Herschmann at 10:34:35 AM, 6/1/2016

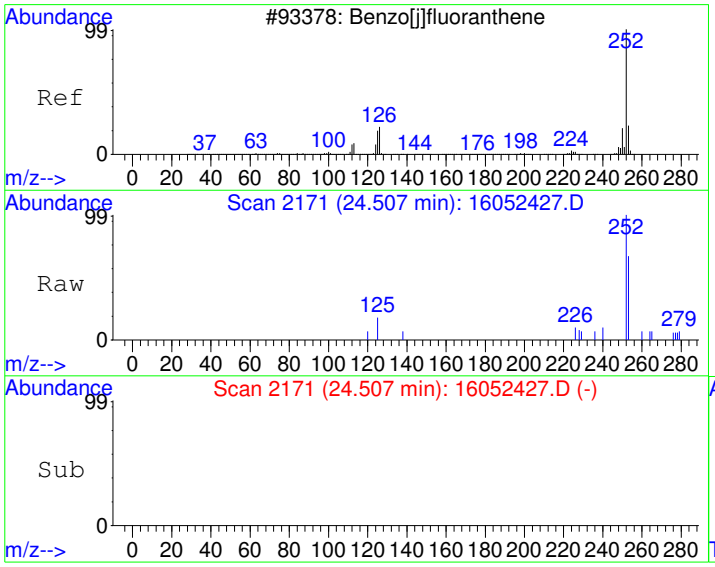
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052427.D Vial: 27
Acq On : 25 May 2016 3:05 am Operator:
Sample : 1605135-32A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

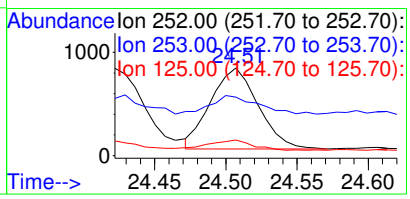


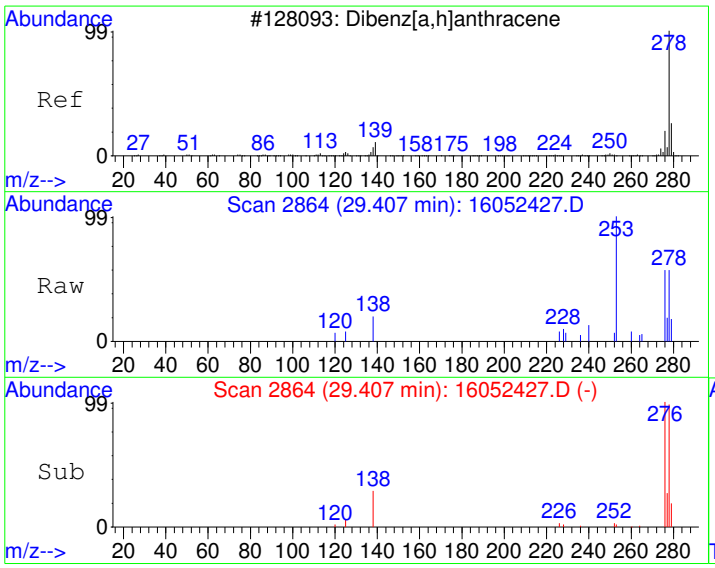


#23
Benzo(j)fluoranthene
Concen: 5.29 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.16 min
Lab File: 16052427.D
Acq: 25 May 2016 3:05 am

Tgt Ion:252 Resp: 1818

Ion	Ratio	Lower	Upper
252	100		
253	20.1	2.1	42.1
125	12.9	0.0	34.4

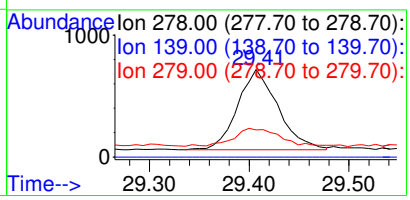


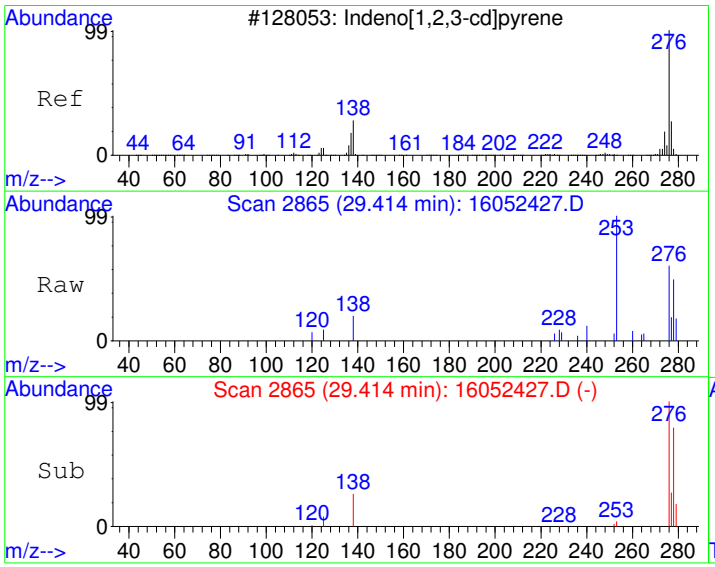


#26
Dibenz[a,h]anthracene
Concen: 5.41 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.07 min
Lab File: 16052427.D
Acq: 25 May 2016 3:05 am

Tgt Ion:278 Resp: 1854

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	20.5	4.2	44.2

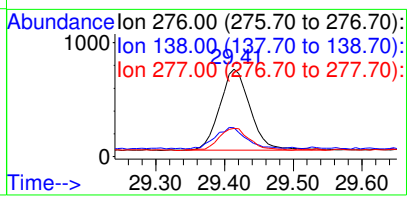




#27
Indeno[1,2,3-cd]pyrene
Concen: 5.38 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052427.D
Acq: 25 May 2016 3:05 am

Tgt Ion:276 Resp: 2200

Ion	Ratio	Lower	Upper
276	100		
138	26.3	6.7	46.7
277	26.6	5.8	45.8



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052428.D Vial: 28
Acq On : 25 May 2016 3:45 am Operator:
Sample : 1605135-33A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1268200	4000.00 ug/kg	109
5) Acenaphthene-d10	13.25	164	898362	4000.00 ug/kg	78
11) Phenanthrene-d10	15.33	188	1491335	4000.00 ug/kg	73
17) Chrysene-d12	21.04	240	1769447	4000.00 ug/kg	78
20) Perylene-d12	26.18	264	1610174	4000.00 ug/kg	78

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	19002	72.51 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.81%#	
16) 4-Terphenyl-d14	17.82	244	25872	67.05 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.68%#	

Target Compounds					Qvalue
2) Naphthalene	10.86	128	2708	8.54 ug/kg	99
9) Acenaphthene	13.29	154	2797	11.65 ug/kg	99
12) Phenanthrene	15.37	178	66676	170.01 ug/kg	99
13) Anthracene	15.41	178	12326	33.20 ug/kg	99
14) Fluoranthene	17.31	202	213436	525.89 ug/kg	98
15) Pyrene	17.90	202	195215	463.04 ug/kg	99
18) Benzo[a]anthracene	20.87	228	127940	308.63 ug/kg	100
19) Chrysene	21.12	228	148743	371.37 ug/kg	99
21) Benzo[b]fluoranthene	24.43	252	159022	374.71 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	76415	191.94 ug/kg	97
23) Benzo(j)fluoranthene	24.61	252	68567	193.34 ug/kg	93
24) Benzo[e]pyrene	25.66	252	114211	300.51 ug/kg	99
25) Benzo[a]pyrene	25.84	252	154348	397.42 ug/kg	98
26) Dibenz[a,h]anthracene	29.41	278	24001	67.86 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.41	276	103479	245.23 ug/kg	91
28) Benzo[g,h,i]perylene	30.48	276	93084	282.90 ug/kg	99

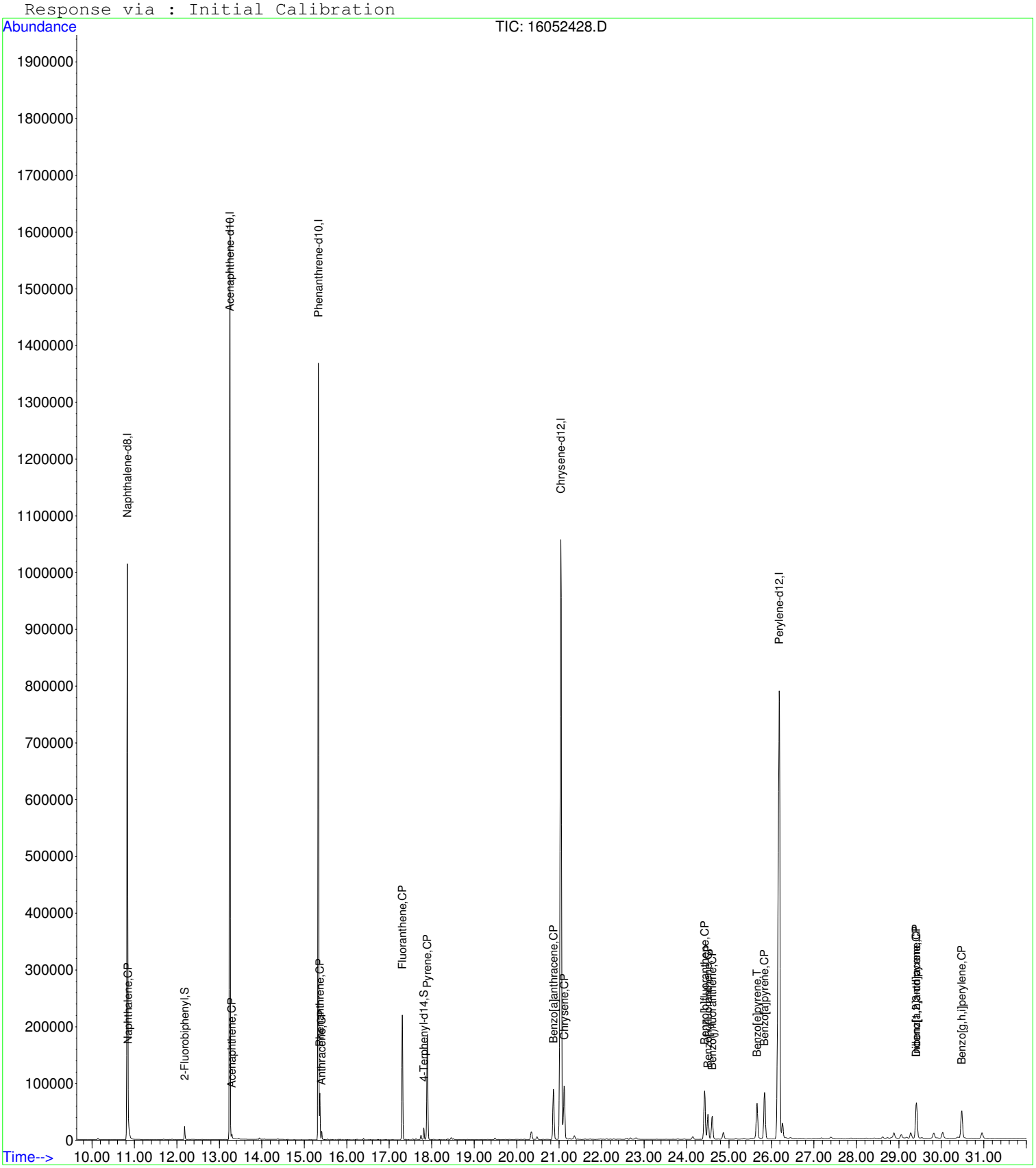
CONFIRMED
By Sherri Herschmann at 10:34:43 AM, 6/1/2016

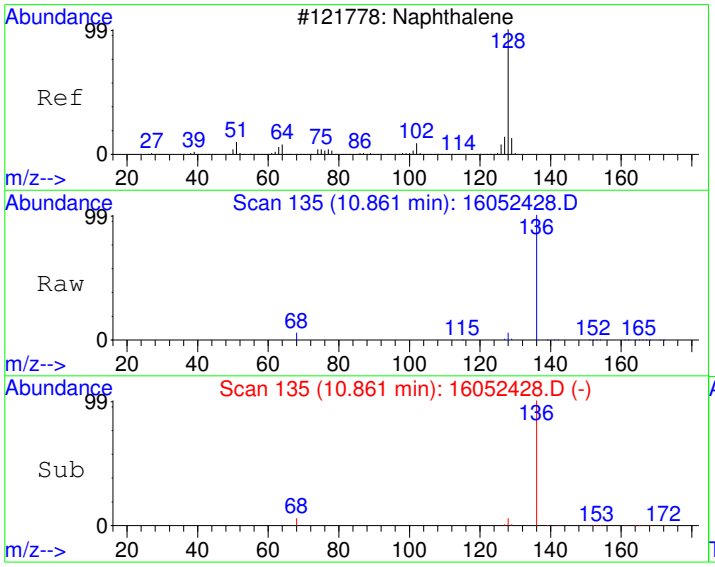
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052428.D Vial: 28
Acq On : 25 May 2016 3:45 am Operator:
Sample : 1605135-33A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

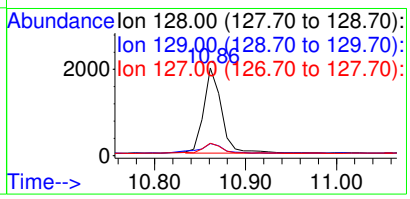


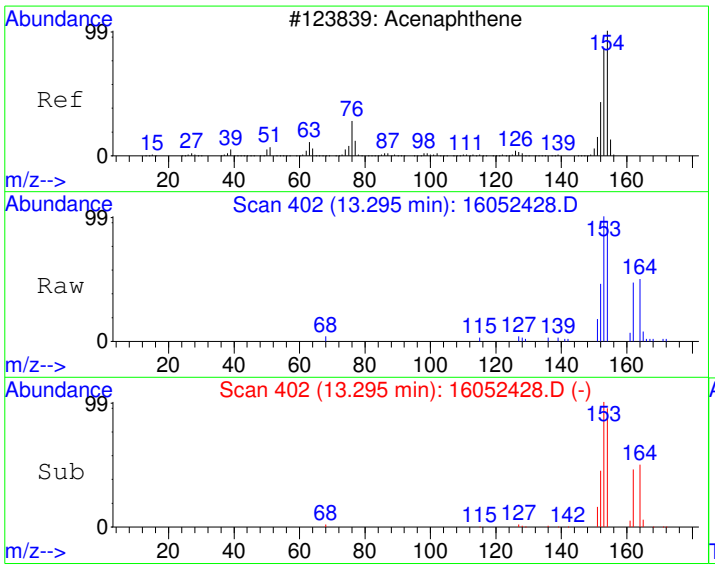


#2
Naphthalene
Concen: 8.54 ug/kg
RT: 10.86 min Scan# 135
Delta R.T. -0.02 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:128 Resp: 2708

Ion	Ratio	Lower	Upper
128	100		
129	11.3	0.0	41.1
127	12.1	0.0	42.4

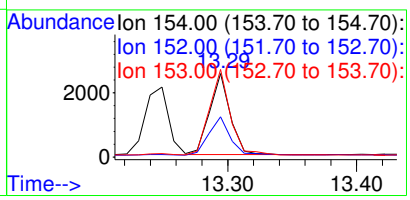


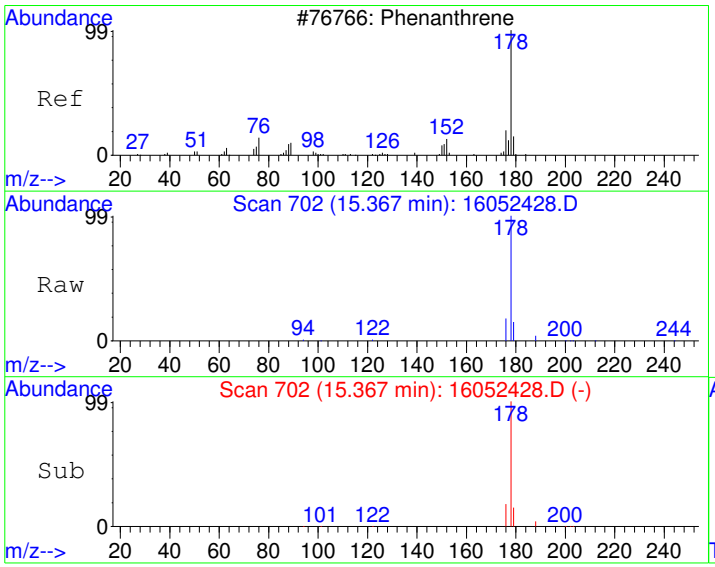


#9
Acenaphthene
Concen: 11.65 ug/kg
RT: 13.29 min Scan# 402
Delta R.T. -0.03 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:154 Resp: 2797

Ion	Ratio	Lower	Upper
154	100		
152	47.4	18.9	78.9
153	105.2	75.2	135.2

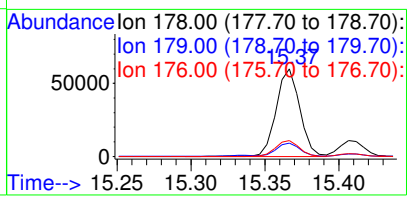


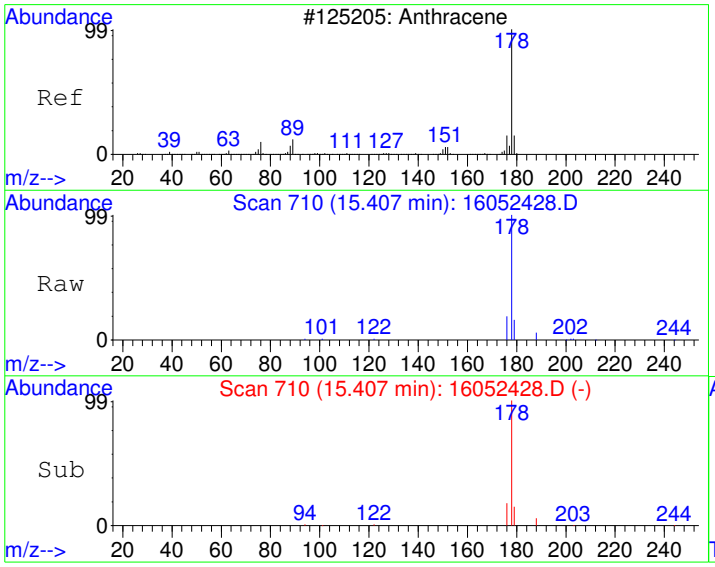


#12
Phenanthrene
Concen: 170.01 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:178 Resp: 66676

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	18.1	0.0	48.5

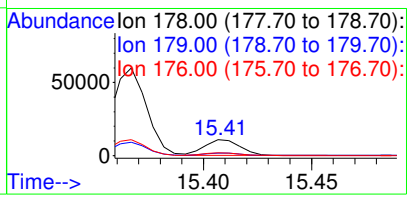


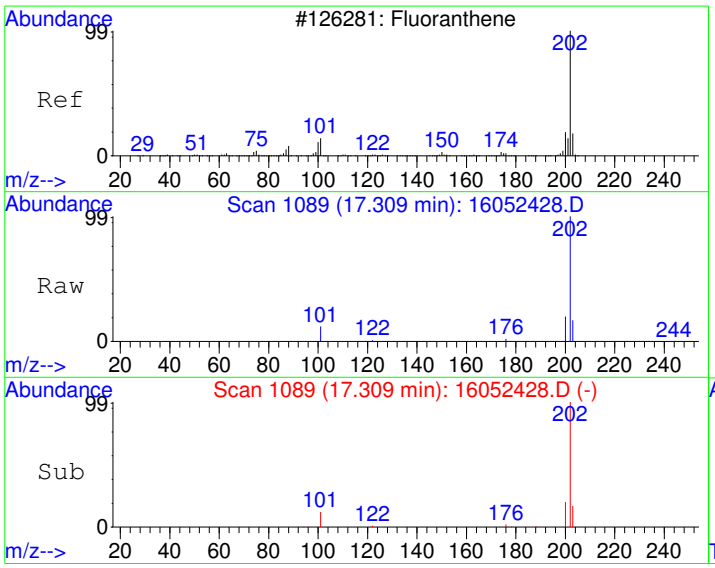


#13
Anthracene
Concen: 33.20 ug/kg
RT: 15.41 min Scan# 710
Delta R.T. -0.03 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:178 Resp: 12326

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	45.9
176	18.3	0.0	48.2

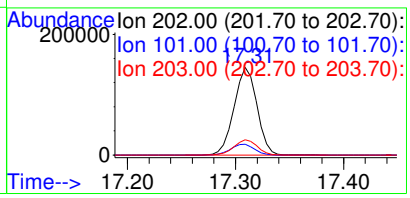


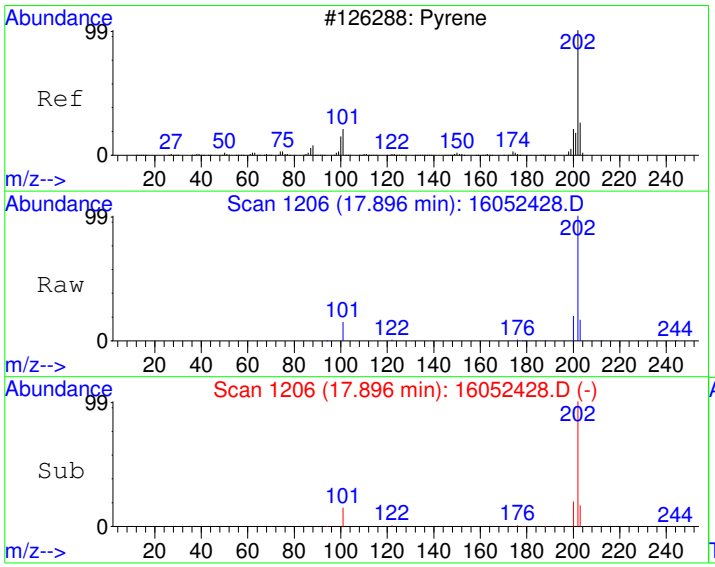


#14
Fluoranthene
Concen: 525.89 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:202 Resp: 213436

Ion	Ratio	Lower	Upper
202	100		
101	12.3	0.0	43.0
203	17.3	0.0	47.9

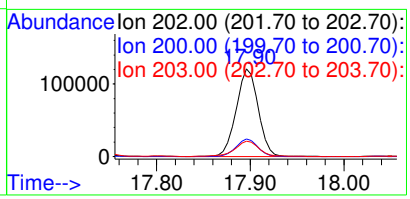


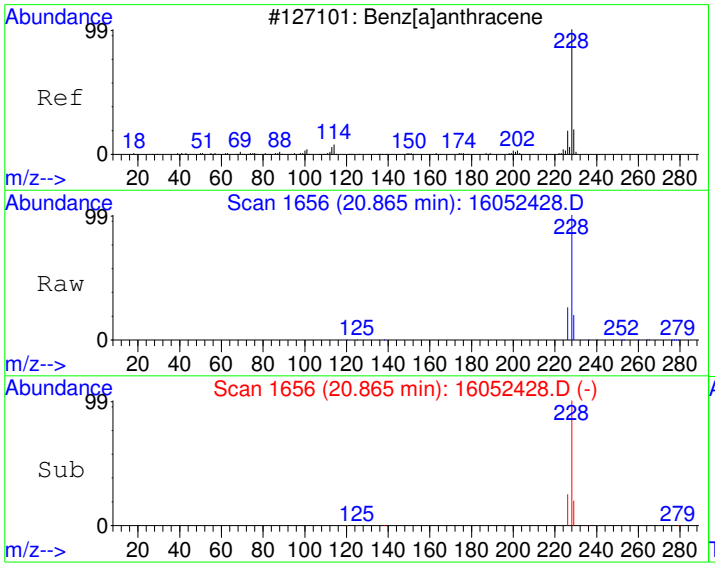


#15
Pyrene
Concen: 463.04 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:202 Resp: 195215

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	17.4	0.0	48.0

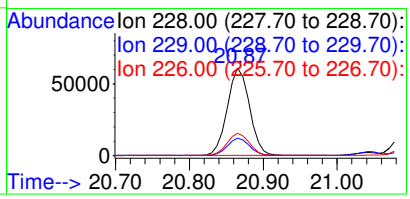


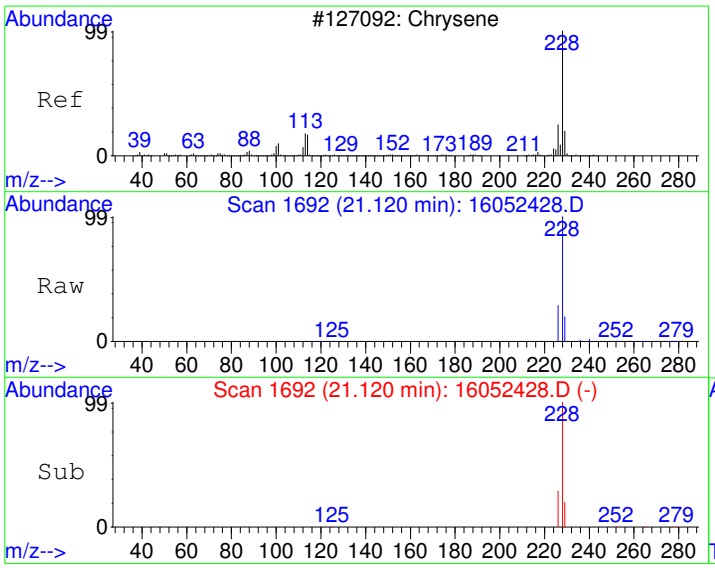


#18
Benzo[a]anthracene
Concen: 308.63 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:228 Resp: 127940

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.4	0.0	55.2

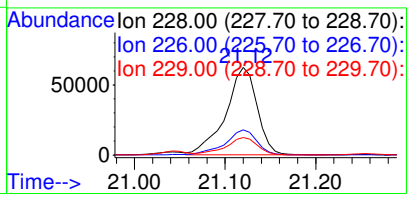


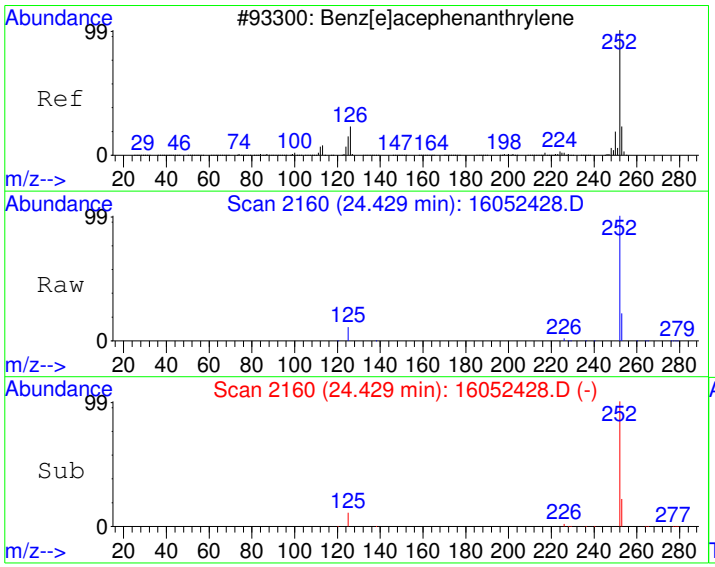


#19
Chrysene
Concen: 371.37 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:228 Resp: 148743

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	58.1
229	20.0	0.0	50.1

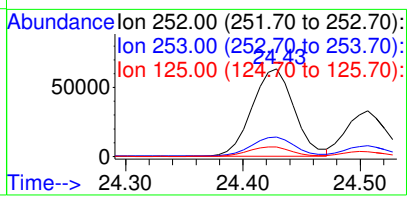


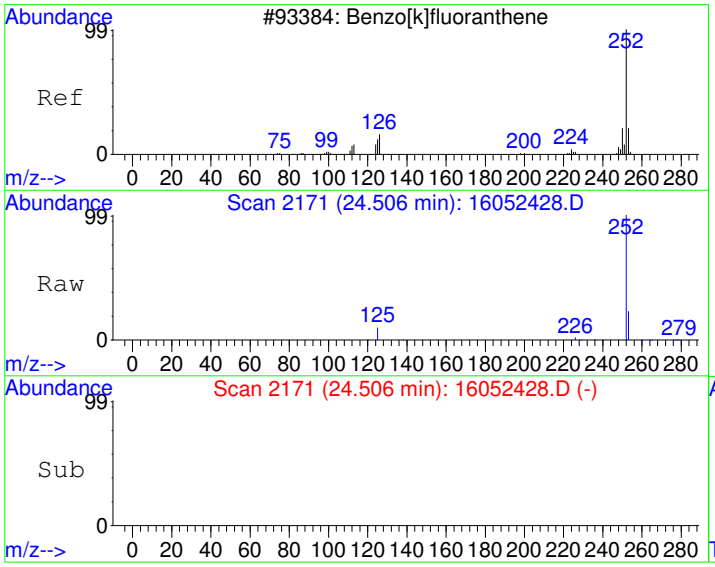


#21
Benzo[b]fluoranthene
Concen: 374.71 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:252 Resp: 159022

Ion	Ratio	Lower	Upper
252	100		
253	21.7	0.0	52.2
125	10.7	0.0	41.0

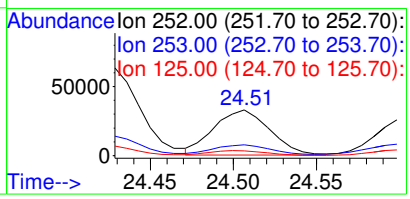


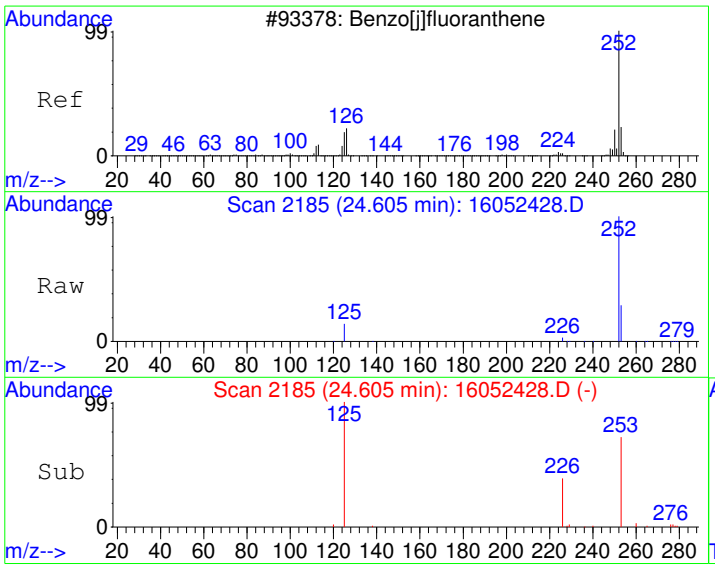


#22
Benzo[k]fluoranthene
Concen: 191.94 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:252 Resp: 76415

Ion	Ratio	Lower	Upper
252	100		
253	20.7	2.1	42.1
125	10.1	0.0	31.3

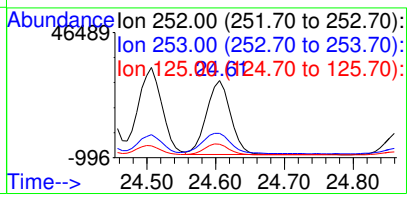


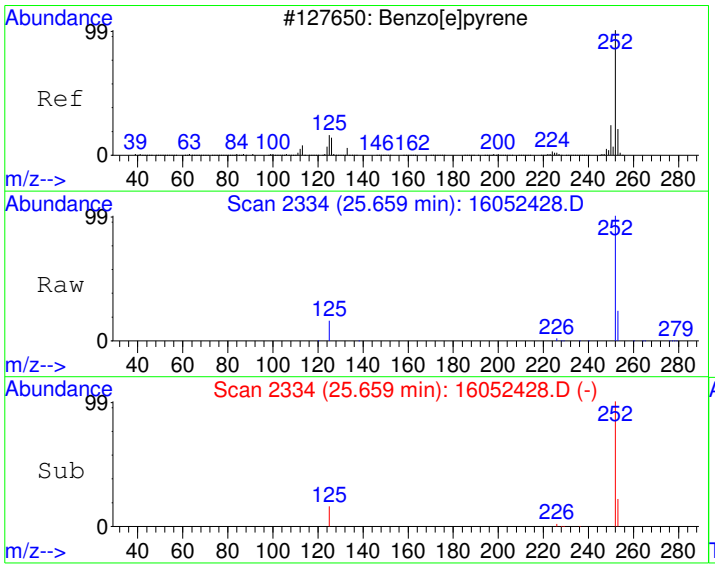


#23
Benzo(j)fluoranthene
Concen: 193.34 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:252 Resp: 68567

Ion	Ratio	Lower	Upper
252	100		
253	27.5	2.1	42.1
125	14.2	0.0	34.4

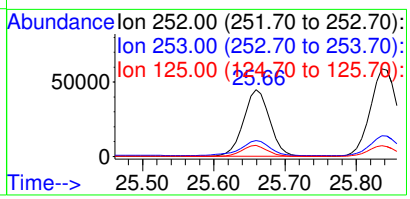


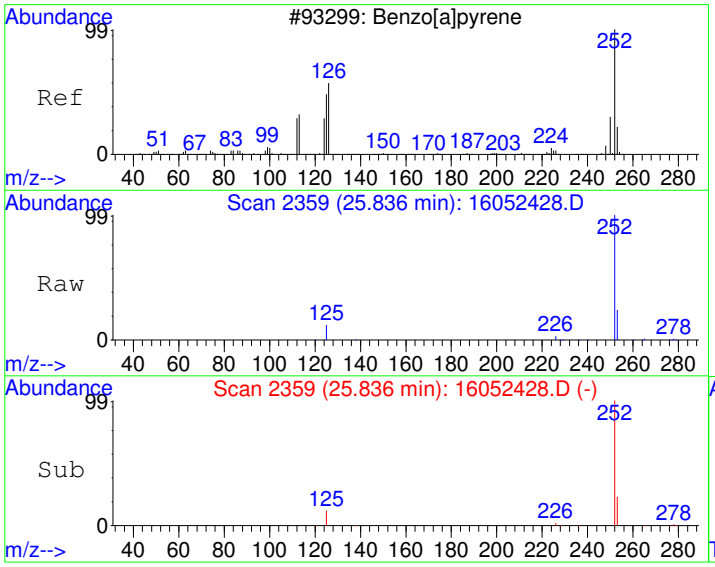


#24
Benzo[e]pyrene
Concen: 300.51 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.06 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:252 Resp: 114211

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.2	42.2
125	16.3	0.0	36.1

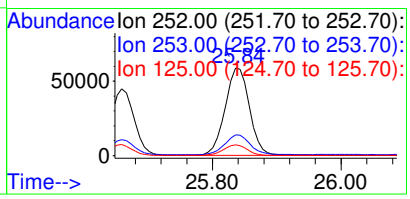


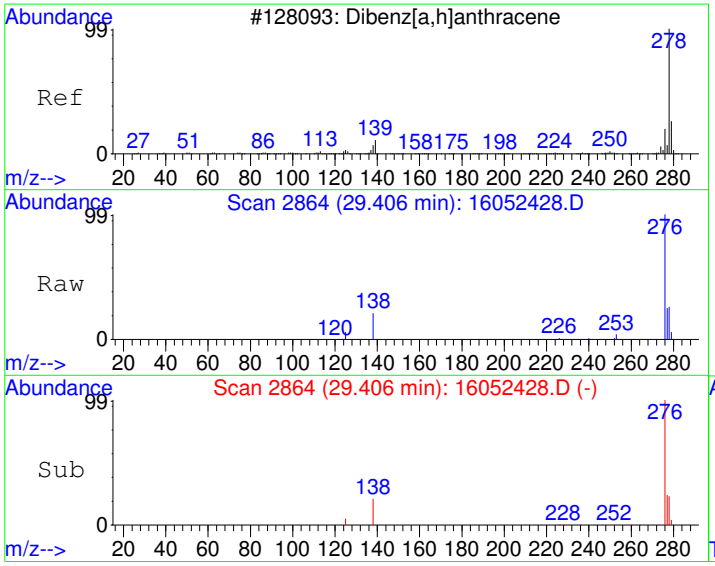


#25
Benzo[a]pyrene
Concen: 397.42 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:252 Resp: 154348

Ion	Ratio	Lower	Upper
252	100		
253	22.6	1.9	41.9
125	12.4	0.0	31.7

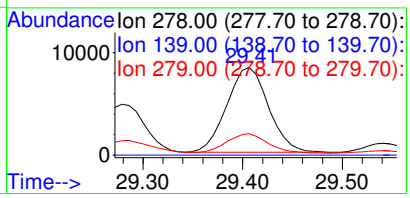


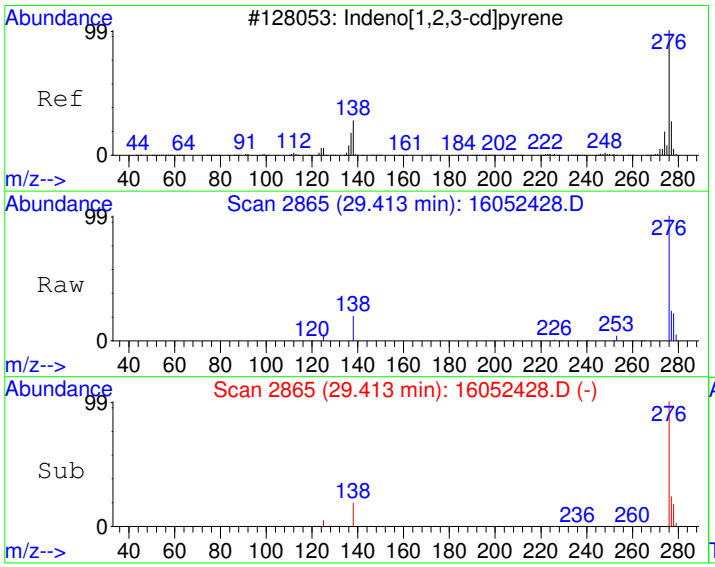


#26
Dibenz[a,h]anthracene
Concen: 67.86 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.07 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:278 Resp: 24001

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.9	4.2	44.2

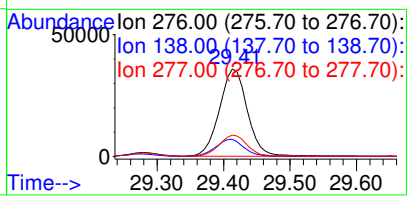


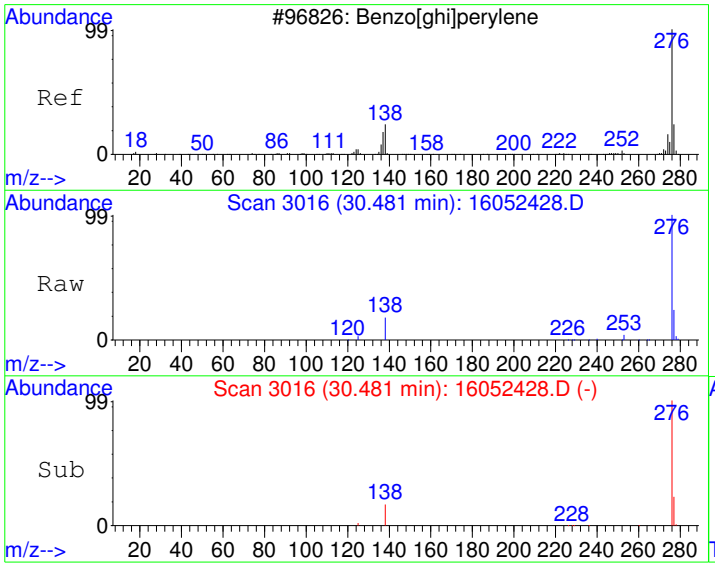


#27
Indeno[1,2,3-cd]pyrene
Concen: 245.23 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:276 Resp: 103479

Ion	Ratio	Lower	Upper
276	100		
138	19.5	6.7	46.7
277	24.2	5.8	45.8

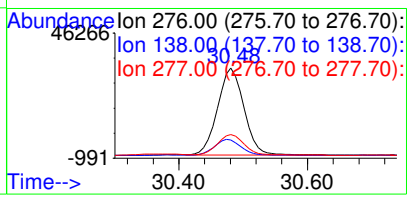




#28
Benzo[g,h,i]perylene
Concen: 282.90 ug/kg
RT: 30.48 min Scan# 3016
Delta R.T. -0.07 min
Lab File: 16052428.D
Acq: 25 May 2016 3:45 am

Tgt Ion:276 Resp: 93084

Ion	Ratio	Lower	Upper
276	100		
138	17.7	0.0	39.1
277	24.0	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052429.D Vial: 29
Acq On : 25 May 2016 4:25 am Operator:
Sample : 1605135-34A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1218313	4000.00 ug/kg	105
5) Acenaphthene-d10	13.25	164	826983	4000.00 ug/kg	72
11) Phenanthrene-d10	15.33	188	1407232	4000.00 ug/kg	69
17) Chrysene-d12	21.04	240	1666420	4000.00 ug/kg	73
20) Perylene-d12	26.18	264	1516218	4000.00 ug/kg	74

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18491	76.65 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.92%#	
16) 4-Terphenyl-d14	17.82	244	25761	70.76 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.77%#	

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	23007	62.17 ug/kg	98
13) Anthracene	15.41	178	4601	13.14 ug/kg	98
14) Fluoranthene	17.31	202	70264	183.47 ug/kg	99
15) Pyrene	17.90	202	64948	163.26 ug/kg	100
18) Benzo[a]anthracene	20.87	228	45432	116.37 ug/kg	99
19) Chrysene	21.12	228	54498	144.48 ug/kg	99
21) Benzo[b]fluoranthene	24.42	252	60654	151.78 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	30259	80.72 ug/kg	97
23) Benzo(j)fluoranthene	24.61	252	25196	75.45 ug/kg	92
24) Benzo[e]pyrene	25.66	252	43436	121.37 ug/kg	99
25) Benzo[a]pyrene	25.84	252	58636	160.33 ug/kg	100
26) Dibenz[a,h]anthracene	29.40	278	10989	32.99 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.41	276	42236	106.30 ug/kg	91
28) Benzo[g,h,i]perylene	30.47	276	38024	122.72 ug/kg	99

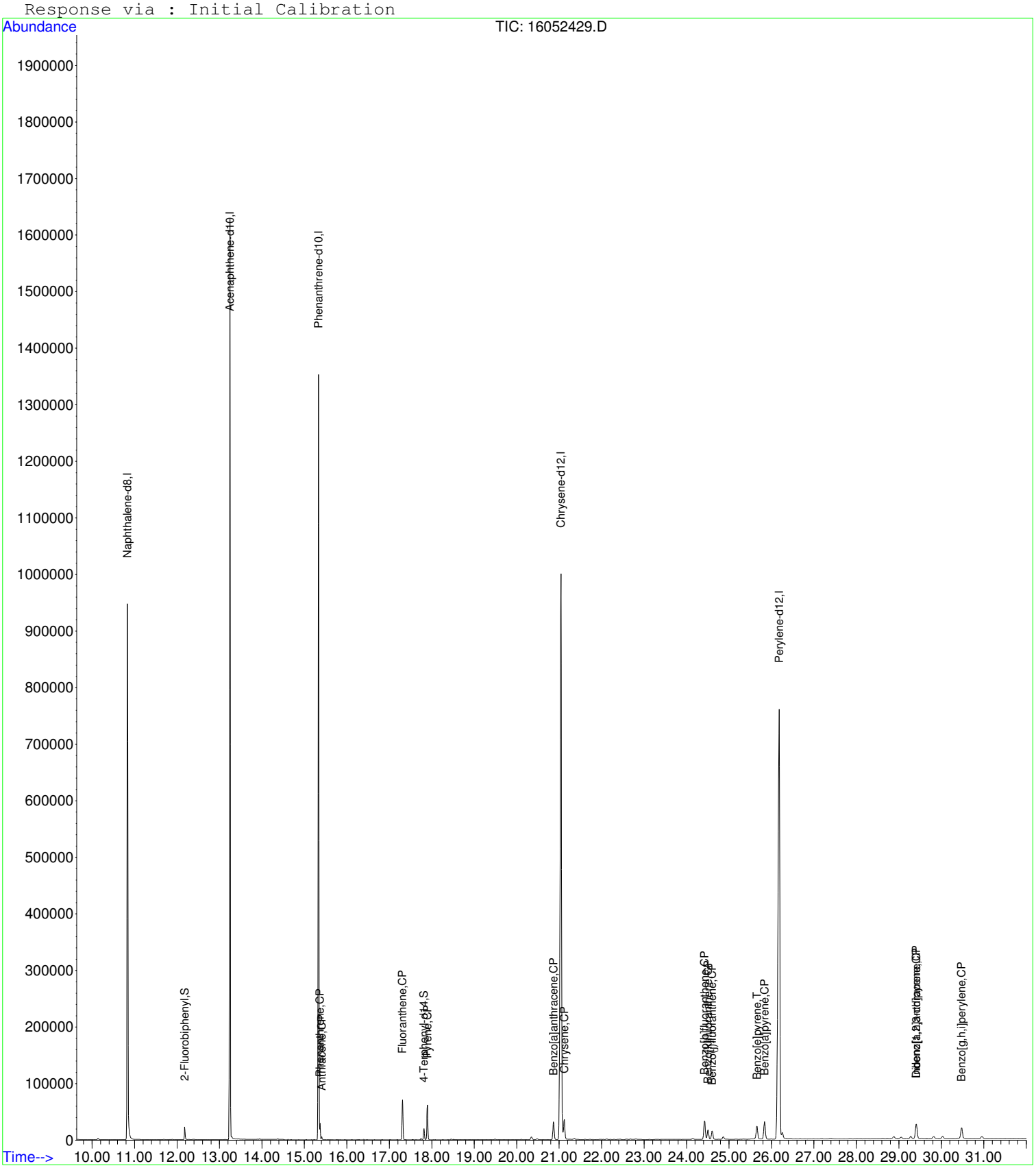
CONFIRMED
By Sherri Herschmann at 10:34:58 AM, 6/1/2016

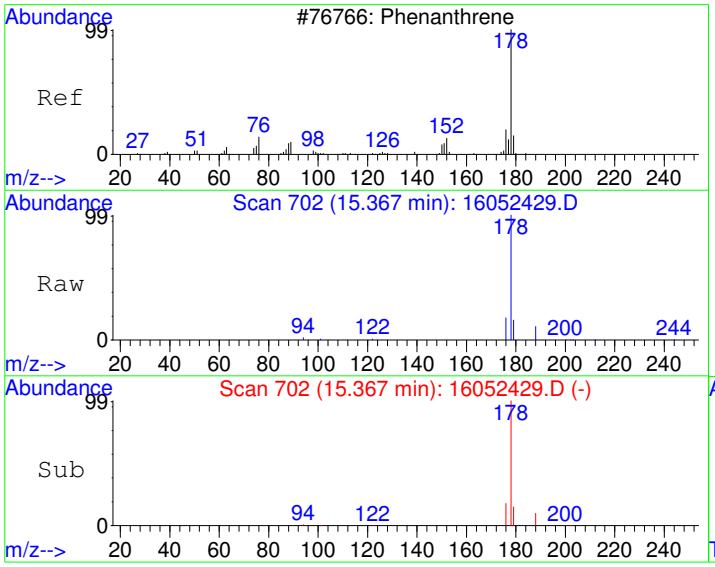
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052429.D Vial: 29
Acq On : 25 May 2016 4:25 am Operator:
Sample : 1605135-34A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

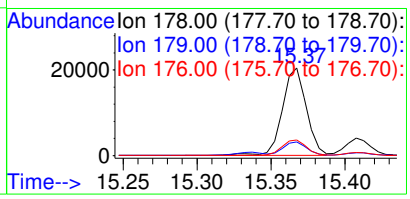


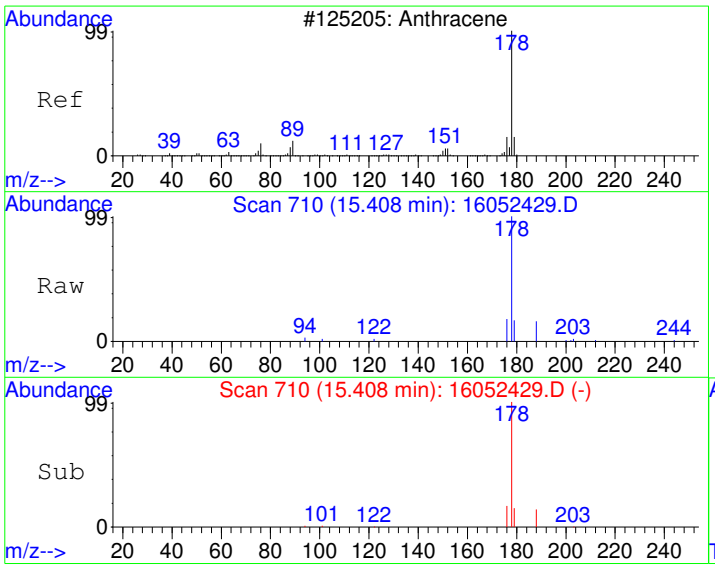


#12
Phenanthrene
Concen: 62.17 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:178 Resp: 23007

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	17.7	0.0	48.5

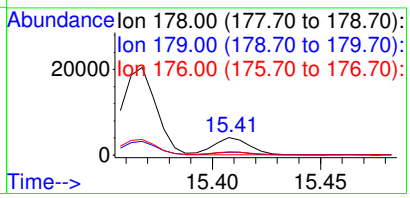


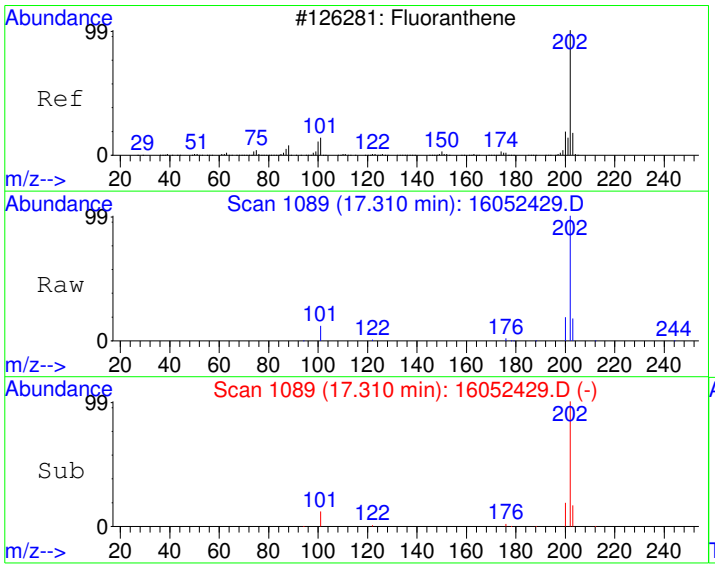


#13
Anthracene
Concen: 13.14 ug/kg
RT: 15.41 min Scan# 710
Delta R.T. -0.03 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:178 Resp: 4601

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	45.9
176	17.3	0.0	48.2

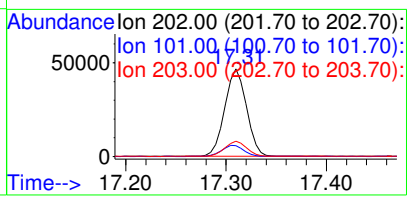


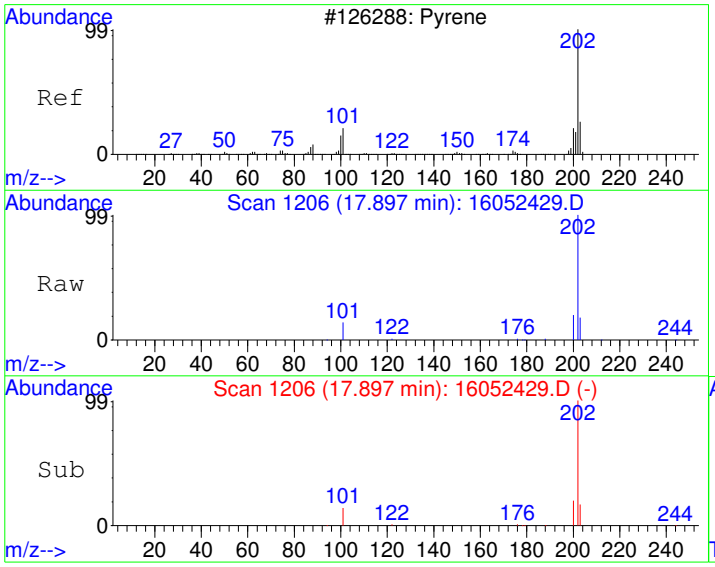


#14
Fluoranthene
Concen: 183.47 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:202 Resp: 70264

Ion	Ratio	Lower	Upper
202	100		
101	12.1	0.0	43.0
203	17.5	0.0	47.9

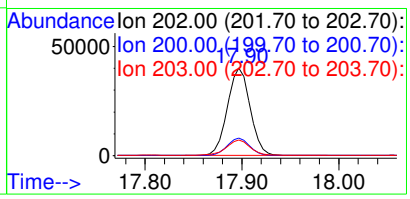


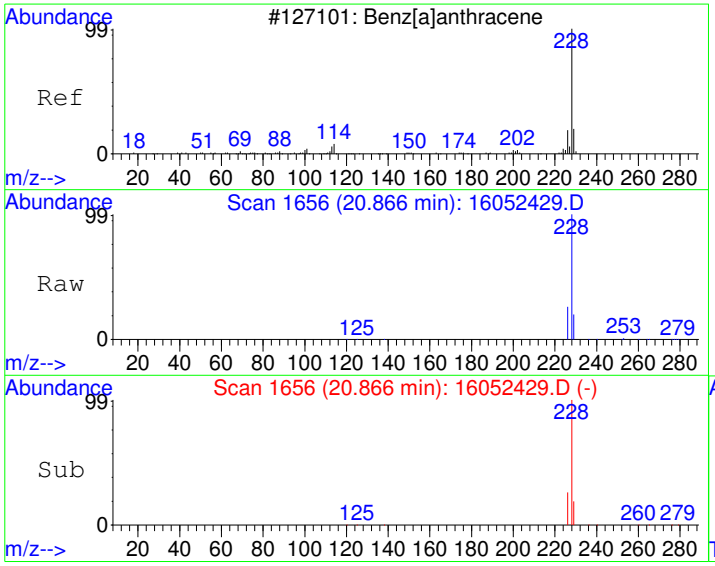


#15
Pyrene
Concen: 163.26 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:202 Resp: 64948

Ion	Ratio	Lower	Upper
202	100		
200	20.0	0.0	50.0
203	17.7	0.0	48.0

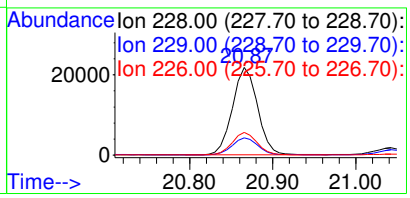


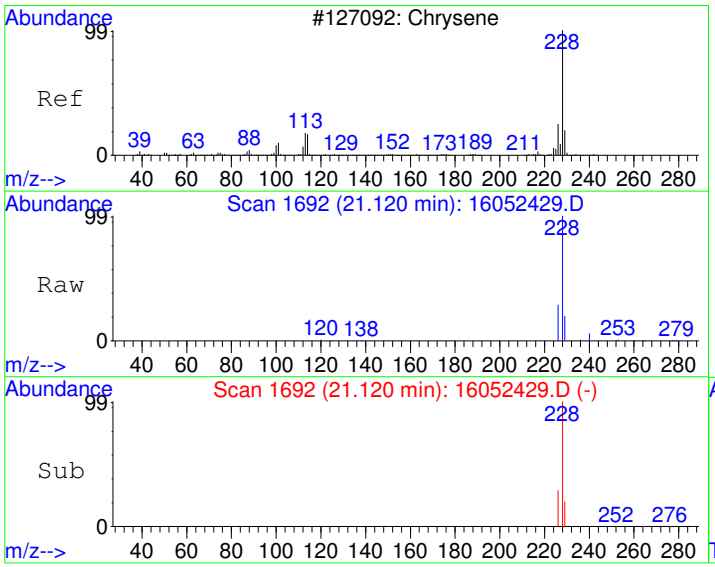


#18
Benzo[a]anthracene
Concen: 116.37 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:228 Resp: 45432

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.0	50.1
226	25.6	0.0	55.2

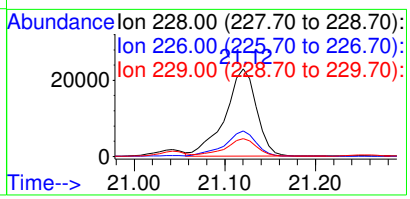


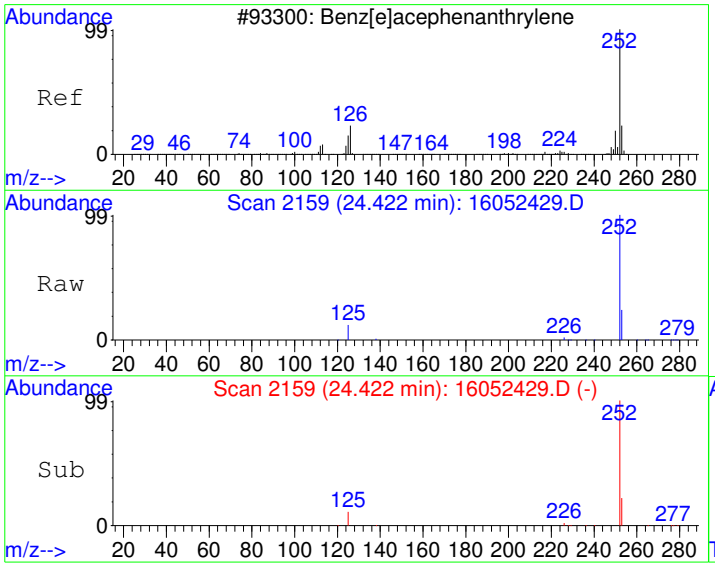


#19
Chrysene
Concen: 144.48 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:228 Resp: 54498

Ion	Ratio	Lower	Upper
228	100		
226	28.9	0.0	58.1
229	20.0	0.0	50.1

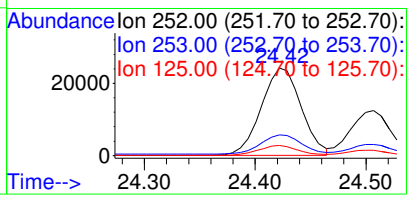


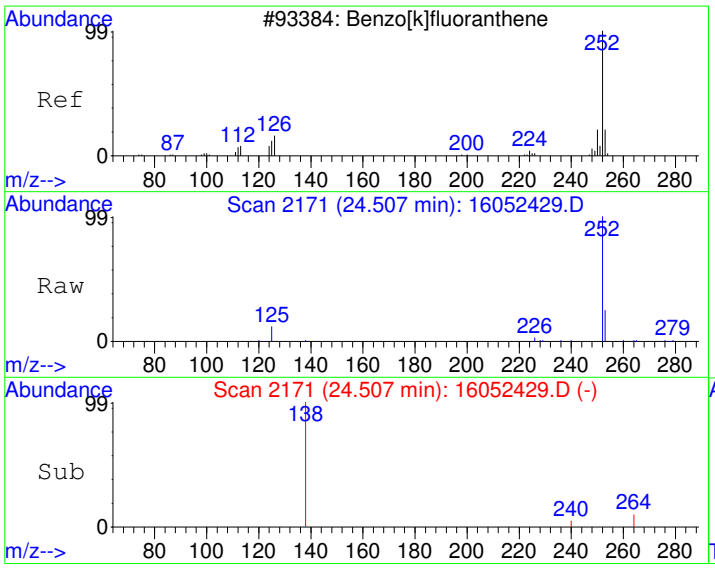


#21
Benzo[b]fluoranthene
Concen: 151.78 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.06 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:252 Resp: 60654

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	11.3	0.0	41.0

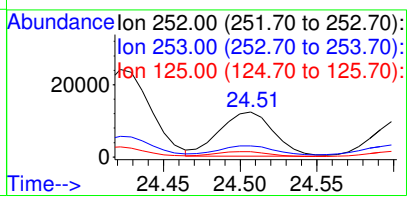


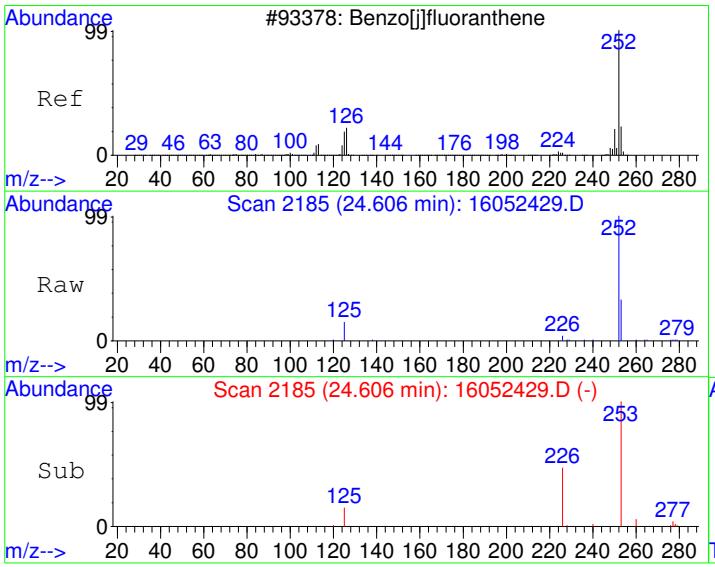


#22
Benzo[k]fluoranthene
Concen: 80.72 ug/kg
RT: 24.51 min Scan# 2171
Delta R.T. -0.06 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:252 Resp: 30259

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.1	42.1
125	10.8	0.0	31.3

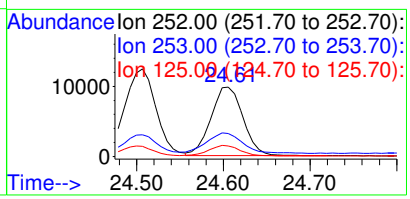


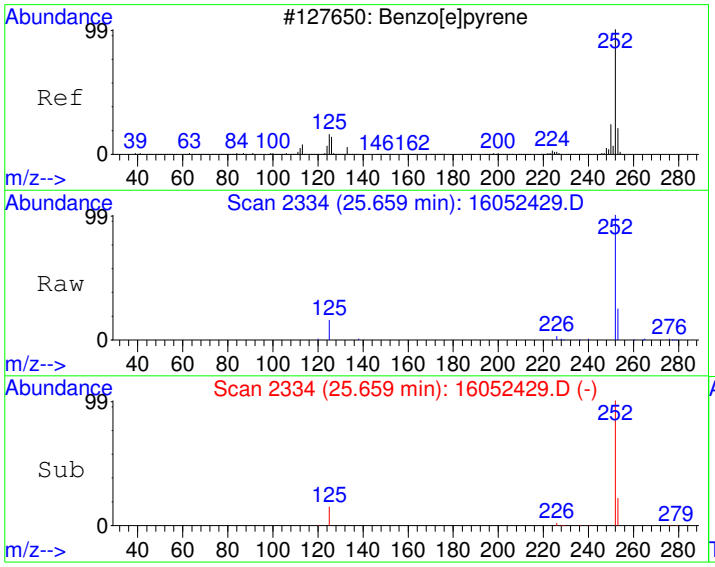


#23
Benzo(j)fluoranthene
Concen: 75.45 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:252 Resp: 25196

Ion	Ratio	Lower	Upper
252	100		
253	28.7	2.1	42.1
125	14.3	0.0	34.4

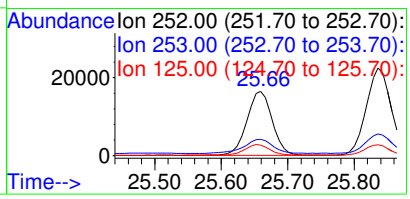


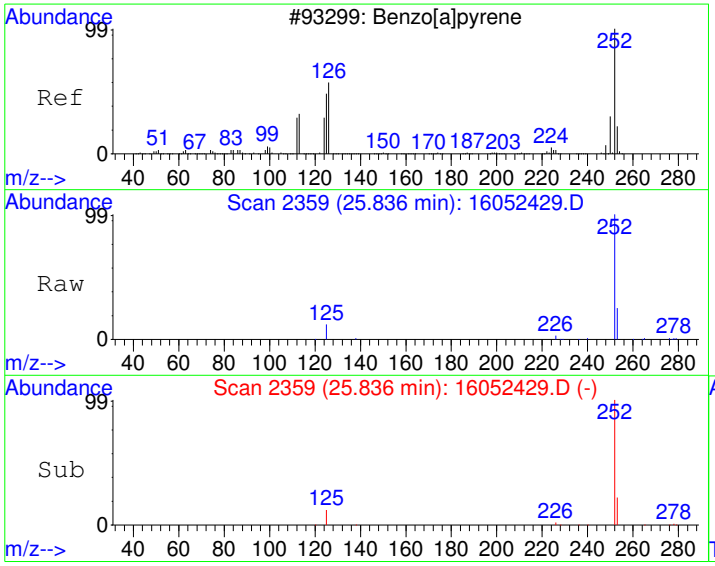


#24
Benzo[e]pyrene
Concen: 121.37 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.06 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:252 Resp: 43436

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	15.6	0.0	36.1

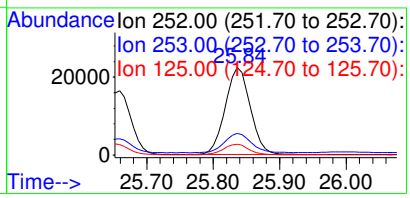


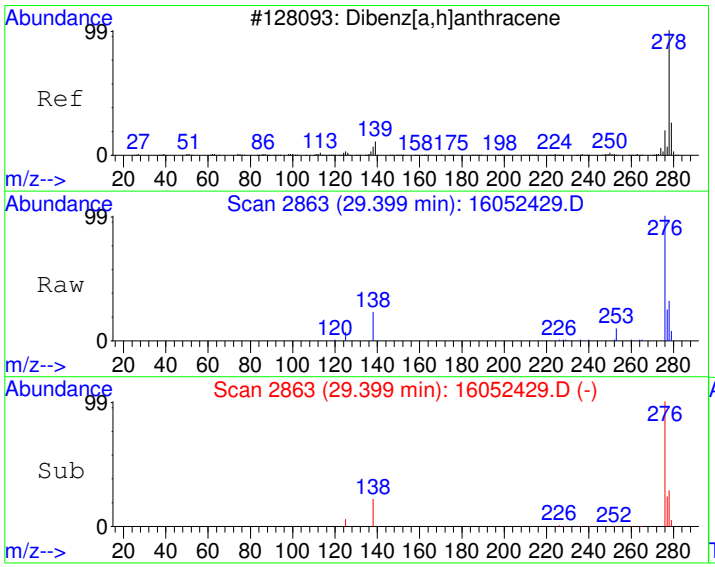


#25
Benzo[a]pyrene
Concen: 160.33 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:252 Resp: 58636

Ion	Ratio	Lower	Upper
252	100		
253	22.0	1.9	41.9
125	12.0	0.0	31.7

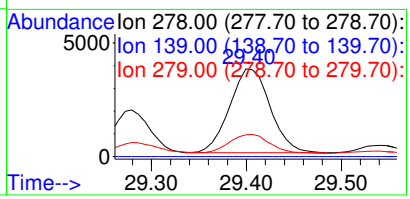


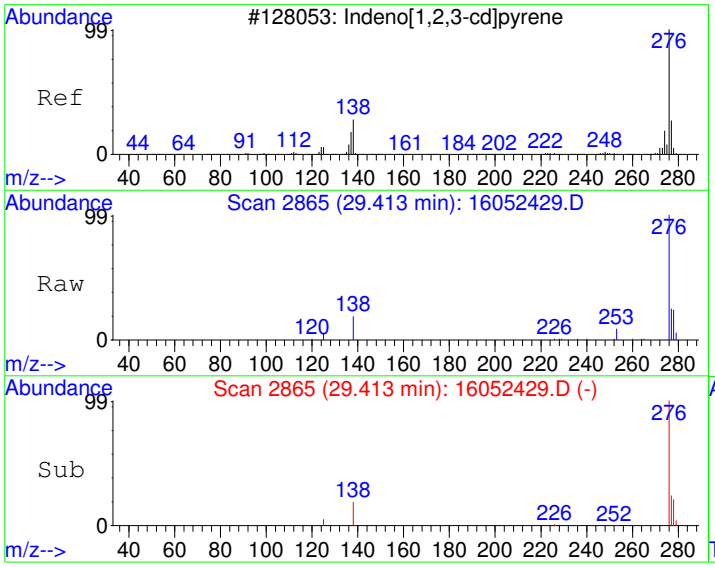


#26
Dibenz[a,h]anthracene
Concen: 32.99 ug/kg
RT: 29.40 min Scan# 2863
Delta R.T. -0.08 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:278 Resp: 10989

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.2	4.2	44.2

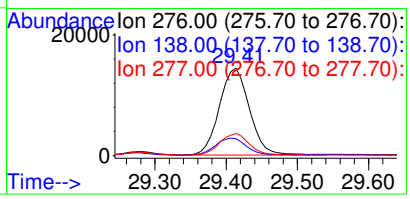


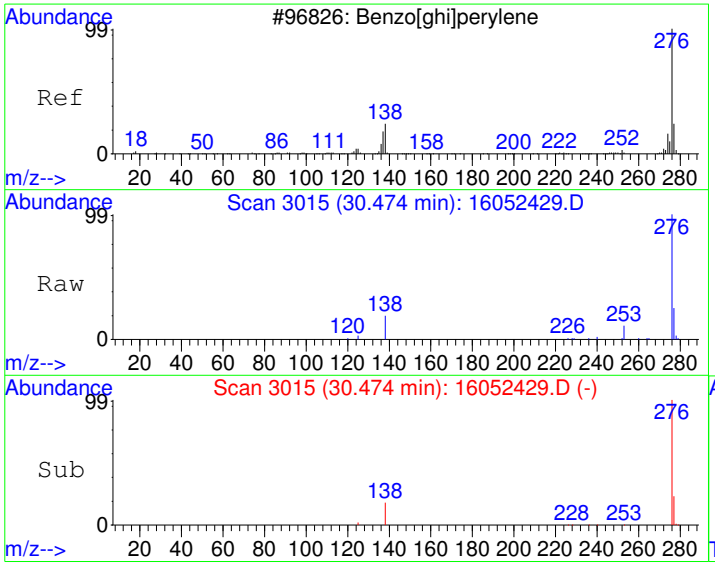


#27
Indeno[1,2,3-cd]pyrene
Concen: 106.30 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:276 Resp: 42236

Ion	Ratio	Lower	Upper
276	100		
138	18.7	6.7	46.7
277	24.5	5.8	45.8

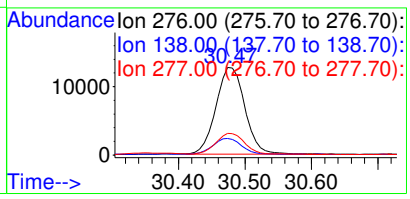




#28
Benzo[g,h,i]perylene
Concen: 122.72 ug/kg
RT: 30.47 min Scan# 3015
Delta R.T. -0.08 min
Lab File: 16052429.D
Acq: 25 May 2016 4:25 am

Tgt Ion:276 Resp: 38024

Ion	Ratio	Lower	Upper
276	100		
138	18.5	0.0	39.1
277	24.3	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052430.D Vial: 30
Acq On : 25 May 2016 5:05 am Operator:
Sample : 1605135-35A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1229875	4000.00 ug/kg	106
5) Acenaphthene-d10	13.25	164	812066	4000.00 ug/kg	71
11) Phenanthrene-d10	15.33	188	1419968	4000.00 ug/kg	70
17) Chrysene-d12	21.04	240	1697359	4000.00 ug/kg	75
20) Perylene-d12	26.18	264	1533580	4000.00 ug/kg	74

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	16755	70.73 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.77%#	
16) 4-Terphenyl-d14	17.82	244	24387	66.38 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.66%#	

Target Compounds					Qvalue
12) Phenanthrene	15.37	178	18601	49.81 ug/kg	99
13) Anthracene	15.41	178	4257	12.04 ug/kg	98
14) Fluoranthene	17.31	202	45233	117.05 ug/kg	99
15) Pyrene	17.90	202	38736	96.50 ug/kg	99
18) Benzo[a]anthracene	20.87	228	22790	57.31 ug/kg	99
19) Chrysene	21.12	228	24589	64.00 ug/kg	99
21) Benzo[b]fluoranthene	24.42	252	22743	56.27 ug/kg	99
22) Benzo[k]fluoranthene	24.50	252	12586	33.19 ug/kg	97
23) Benzo(j)fluoranthene	24.61	252	9586	28.38 ug/kg	93
24) Benzo[e]pyrene	25.66	252	14664	40.51 ug/kg	98
25) Benzo[a]pyrene	25.84	252	22376	60.49 ug/kg	99
26) Dibenz[a,h]anthracene	29.40	278	4966	14.74 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.41	276	15302	38.08 ug/kg	91
28) Benzo[g,h,i]perylene	30.47	276	12650	40.37 ug/kg	99

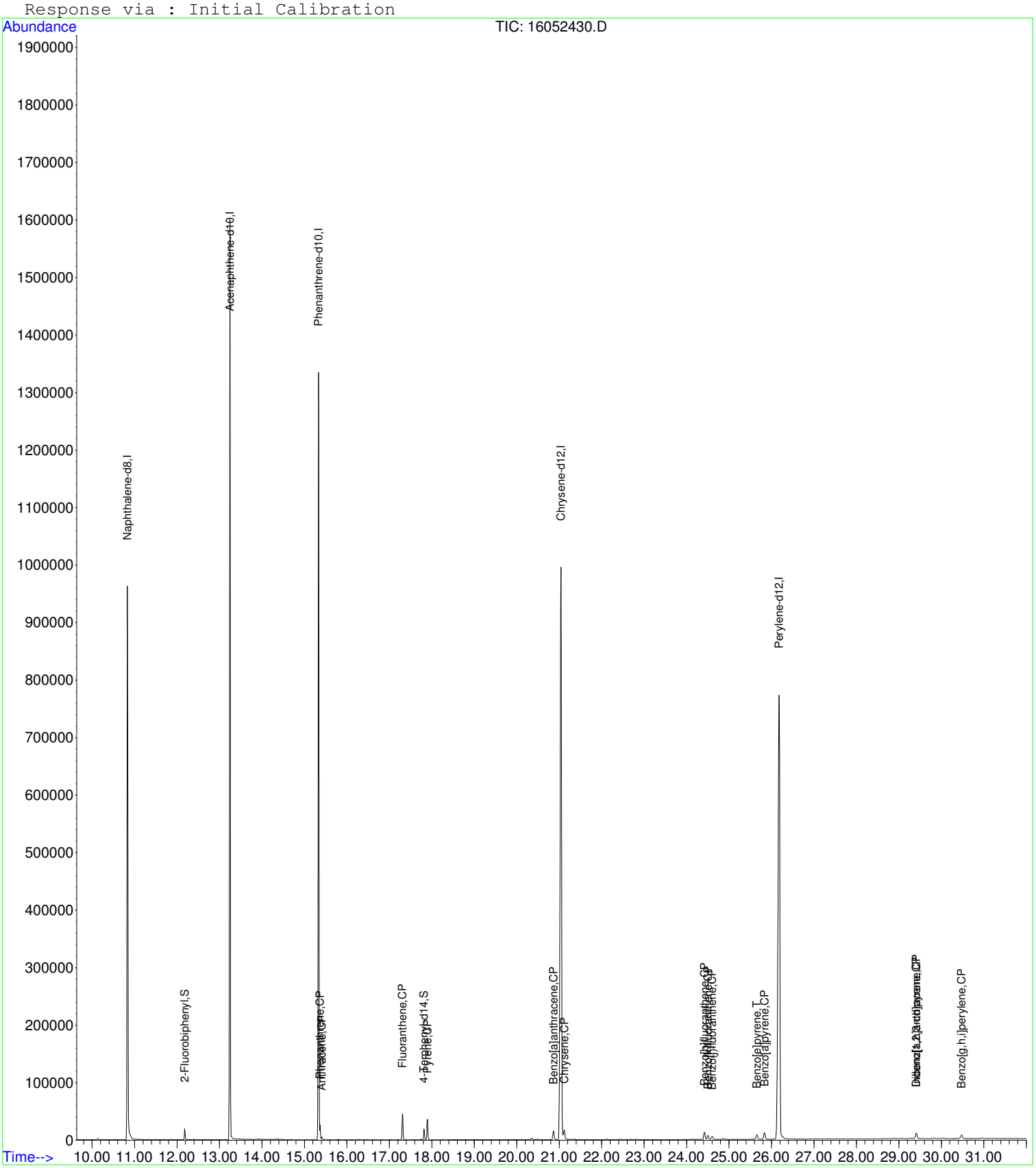
CONFIRMED
By Sherri Herschmann at 10:35:39 AM, 6/1/2016

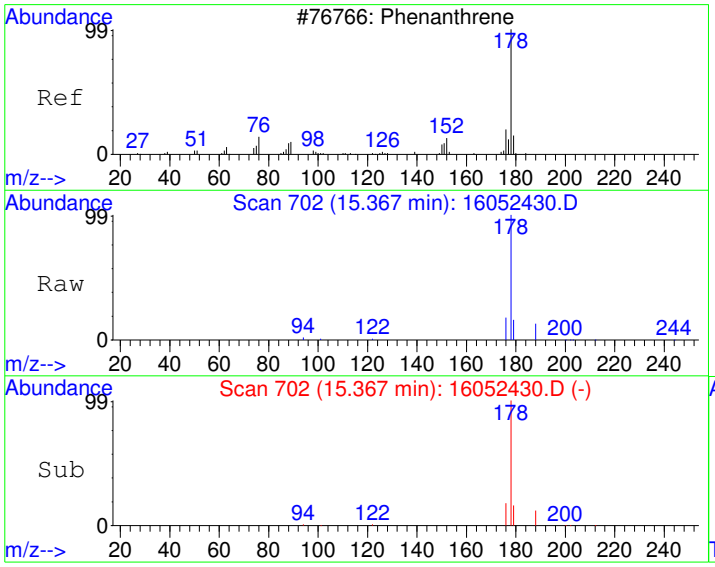
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052430.D Vial: 30
Acq On : 25 May 2016 5:05 am Operator:
Sample : 1605135-35A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

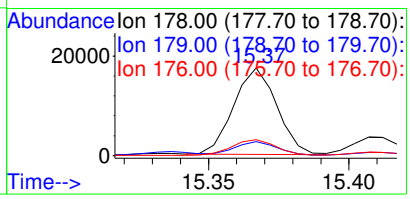


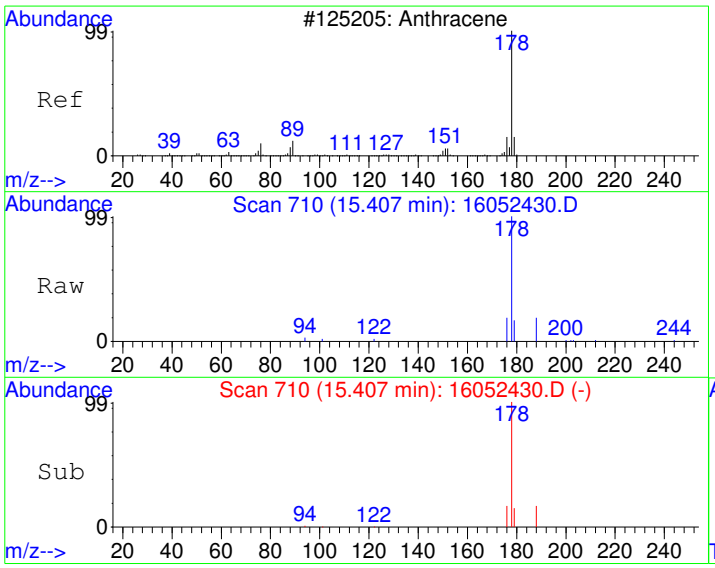


#12
Phenanthrene
Concen: 49.81 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.03 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:178 Resp: 18601

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	45.9
176	18.1	0.0	48.5

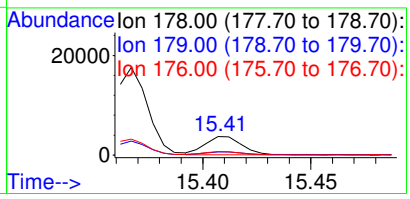


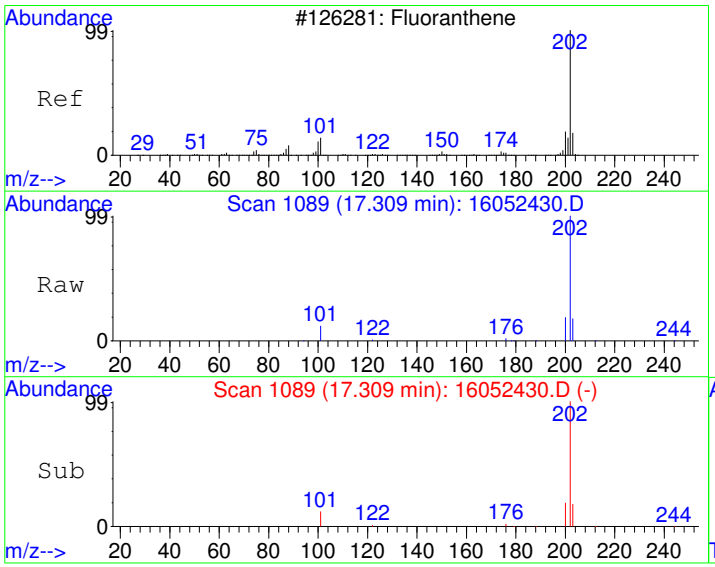


#13
Anthracene
Concen: 12.04 ug/kg
RT: 15.41 min Scan# 710
Delta R.T. -0.03 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:178 Resp: 4257

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	45.9
176	17.3	0.0	48.2

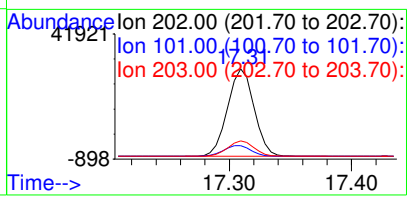


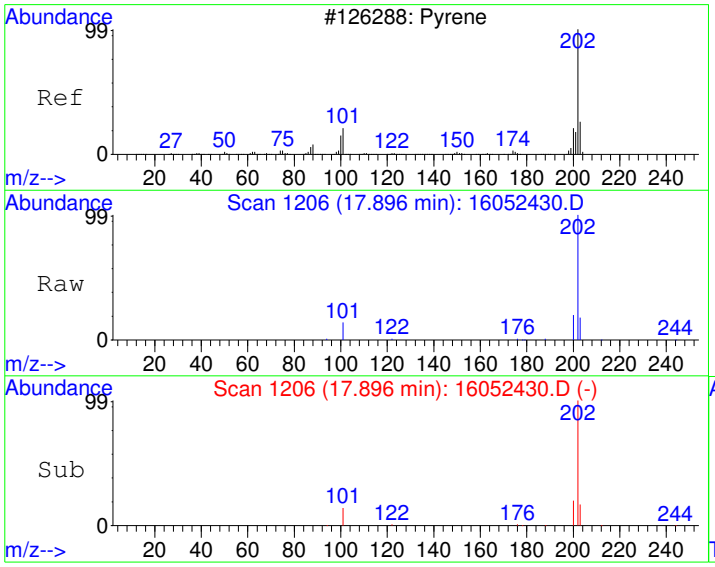


#14
Fluoranthene
Concen: 117.05 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.03 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:202 Resp: 45233

Ion	Ratio	Lower	Upper
202	100		
101	12.1	0.0	43.0
203	17.6	0.0	47.9

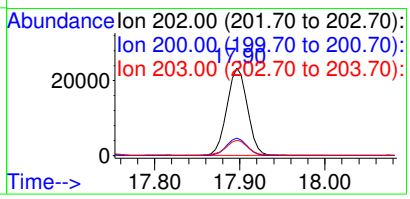


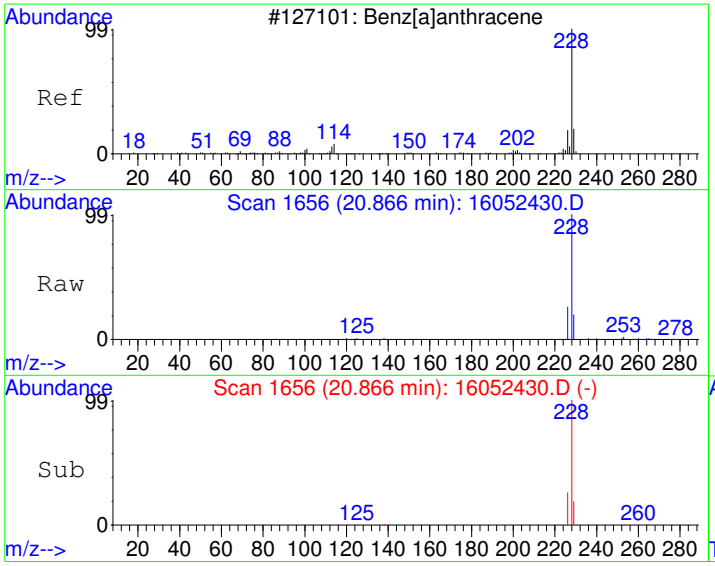


#15
Pyrene
Concen: 96.50 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.04 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:202 Resp: 38736

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	17.4	0.0	48.0

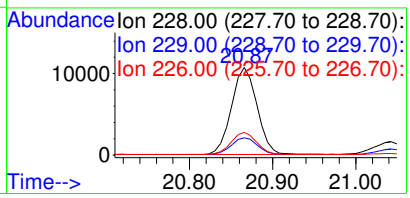


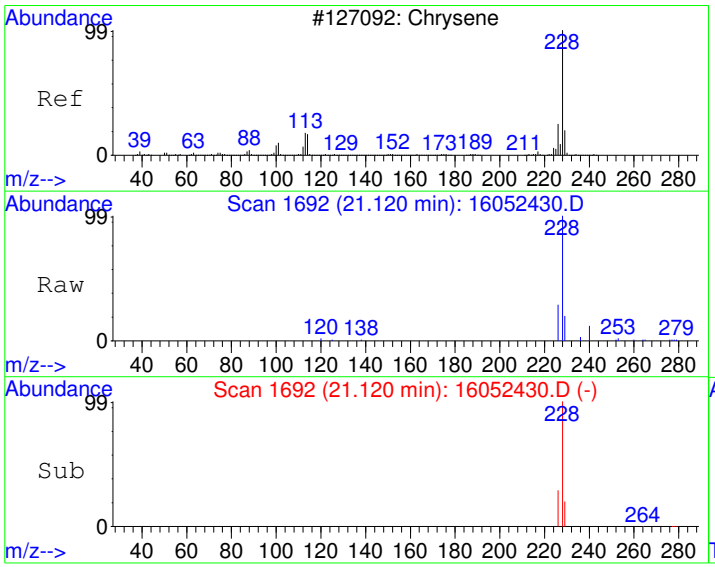


#18
Benzo[a]anthracene
Concen: 57.31 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.05 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:228 Resp: 22790

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.0	50.1
226	25.5	0.0	55.2

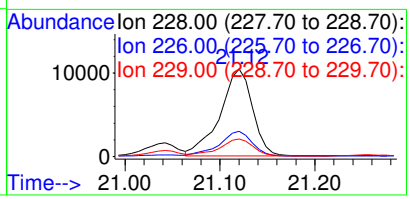


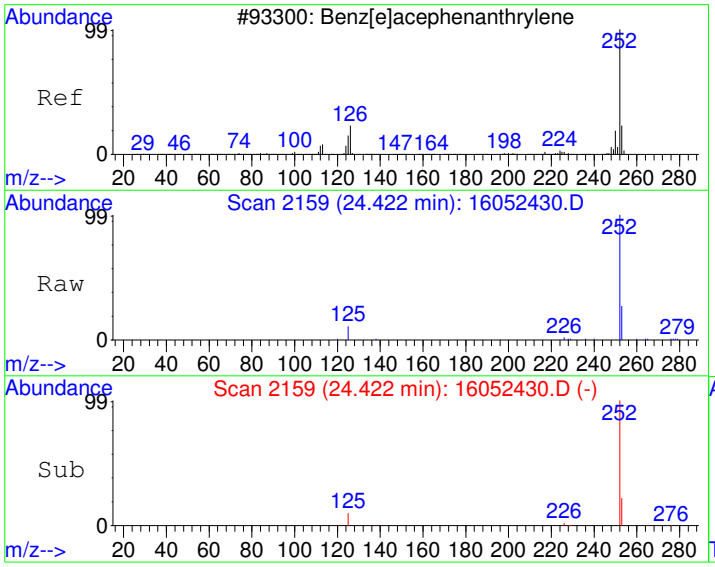


#19
Chrysene
Concen: 64.00 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.05 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:228 Resp: 24589

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.1
229	19.6	0.0	50.1

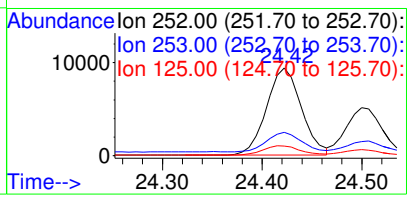


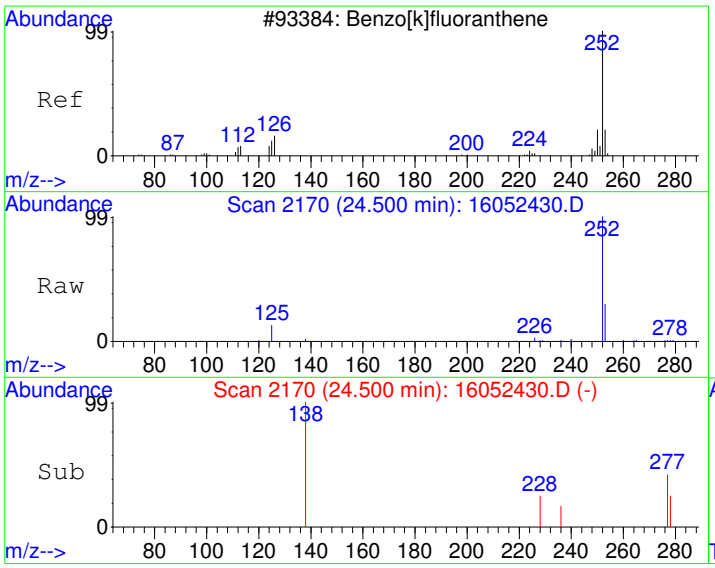


#21
Benzo[b]fluoranthene
Concen: 56.27 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.06 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:252 Resp: 22743

Ion	Ratio	Lower	Upper
252	100		
253	22.5	0.0	52.2
125	10.2	0.0	41.0

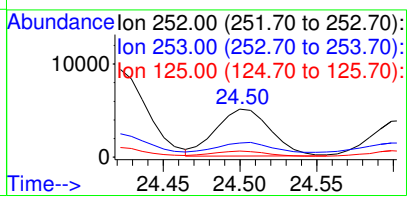


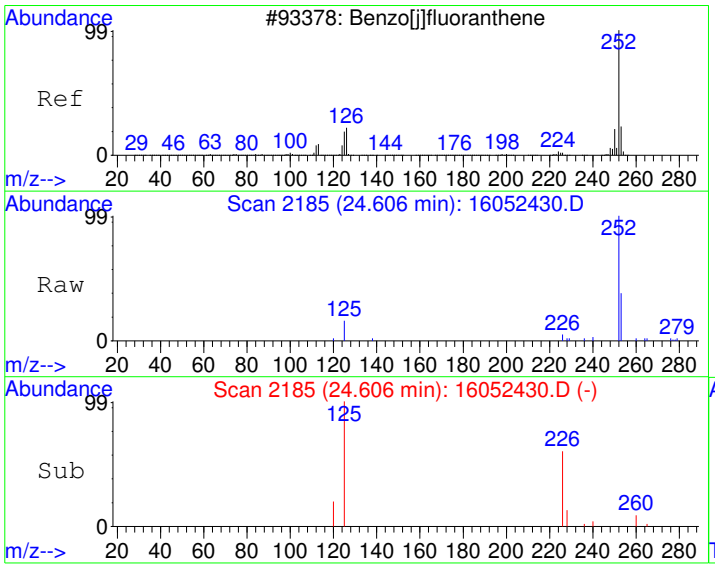


#22
Benzo[k]fluoranthene
Concen: 33.19 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.07 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:252 Resp: 12586

Ion	Ratio	Lower	Upper
252	100		
253	20.2	2.1	42.1
125	11.4	0.0	31.3

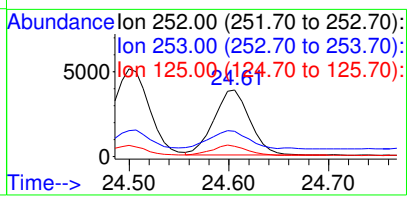


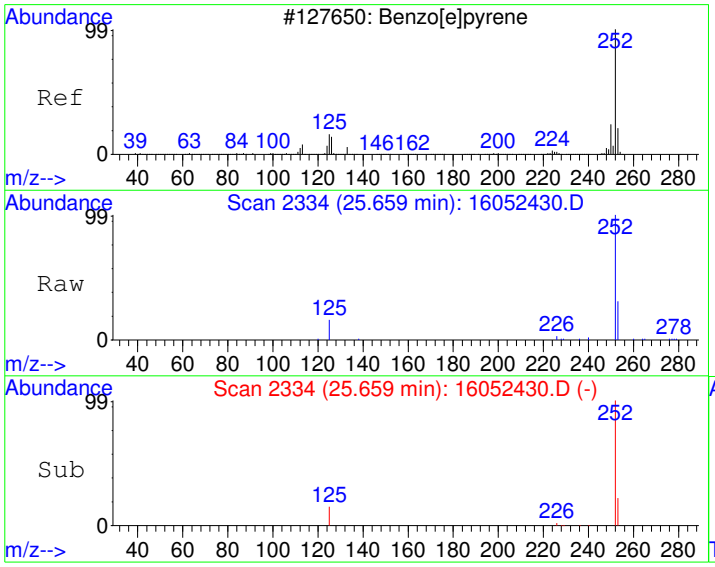


#23
Benzo(j)fluoranthene
Concen: 28.38 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.06 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:252 Resp: 9586

Ion	Ratio	Lower	Upper
252	100		
253	27.0	2.1	42.1
125	14.1	0.0	34.4

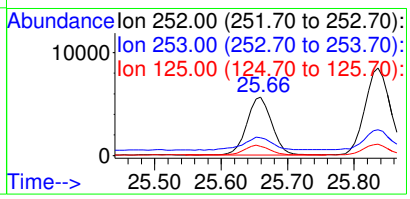


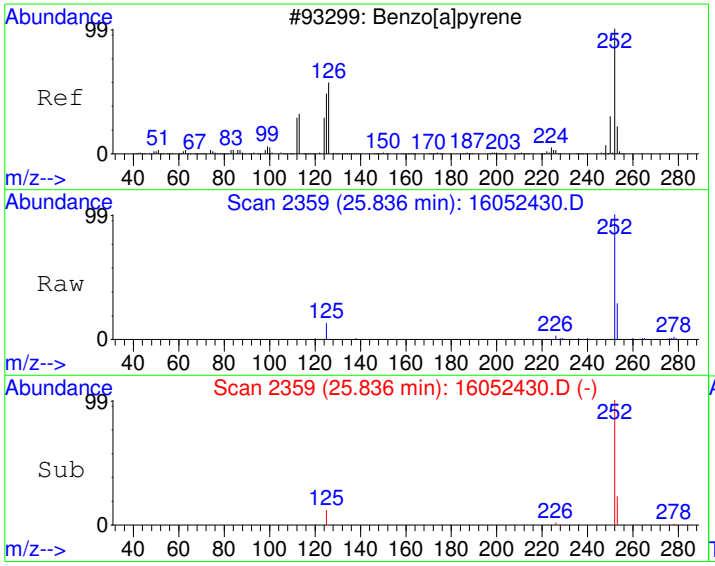


#24
Benzo[e]pyrene
Concen: 40.51 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.06 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:252 Resp: 14664

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.2	42.2
125	14.9	0.0	36.1

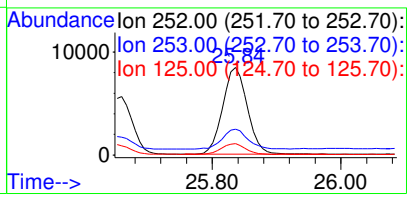


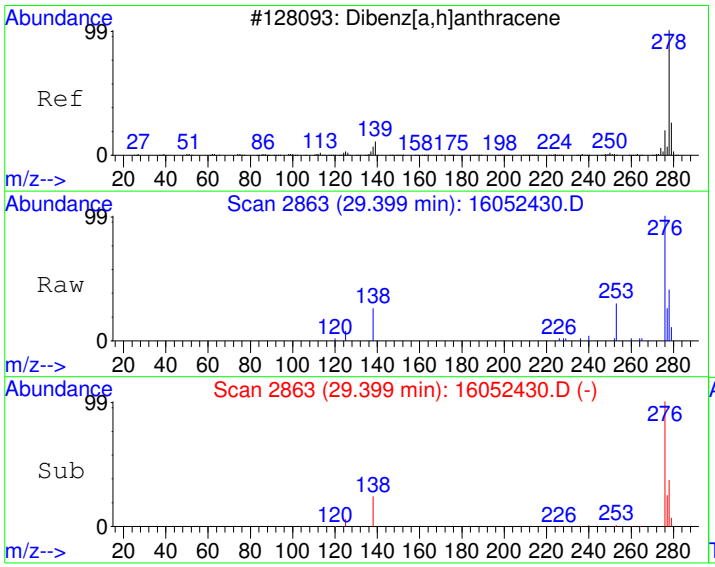


#25
Benzo[a]pyrene
Concen: 60.49 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.06 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:252 Resp: 22376

Ion	Ratio	Lower	Upper
252	100		
253	22.6	1.9	41.9
125	12.3	0.0	31.7

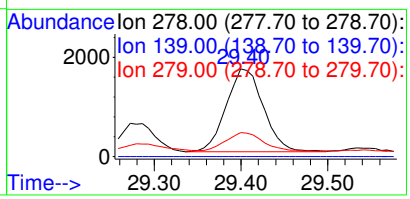


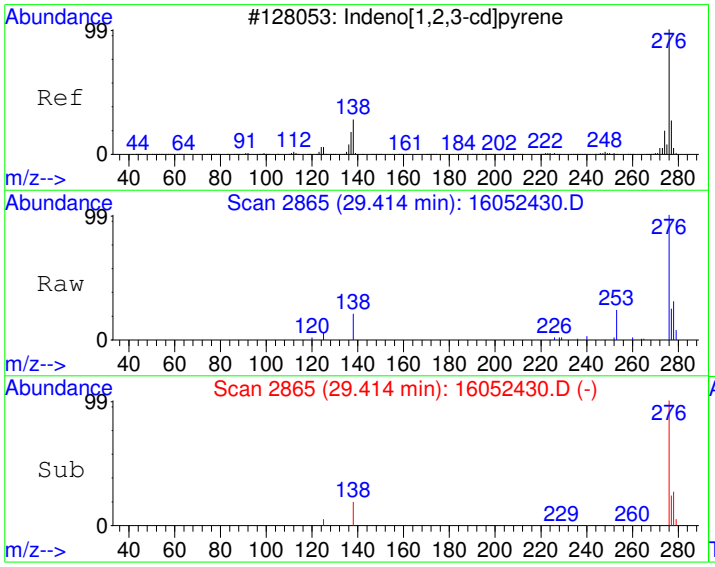


#26
Dibenz[a,h]anthracene
Concen: 14.74 ug/kg
RT: 29.40 min Scan# 2863
Delta R.T. -0.08 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:278 Resp: 4966

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.0	4.2	44.2

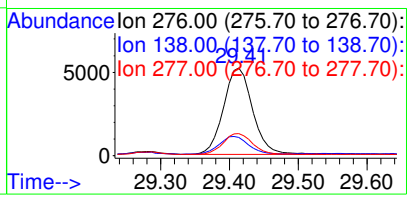


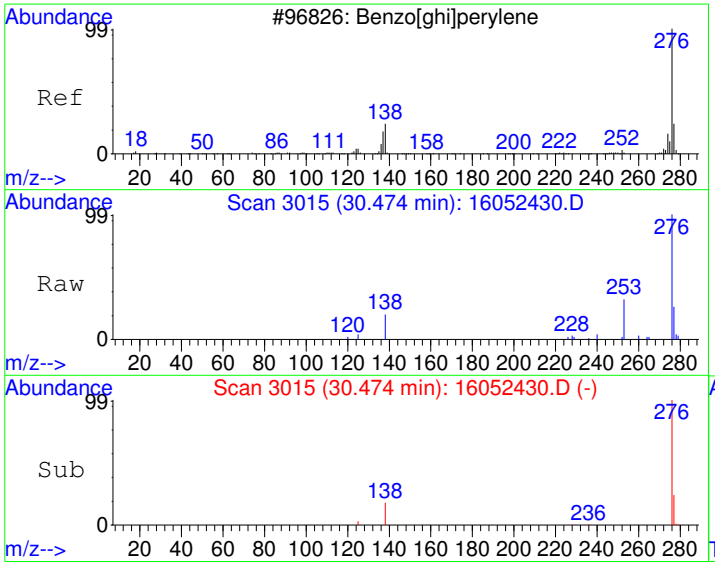


#27
Indeno[1,2,3-cd]pyrene
Concen: 38.08 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:276 Resp: 15302

Ion	Ratio	Lower	Upper
276	100		
138	19.4	6.7	46.7
277	23.9	5.8	45.8

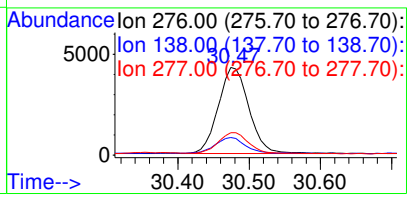




#28
Benzo[g,h,i]perylene
Concen: 40.37 ug/kg
RT: 30.47 min Scan# 3015
Delta R.T. -0.08 min
Lab File: 16052430.D
Acq: 25 May 2016 5:05 am

Tgt Ion:276 Resp: 12650

Ion	Ratio	Lower	Upper
276	100		
138	18.5	0.0	39.1
277	24.5	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160524\16052431.D Vial: 31
Acq On : 25 May 2016 5:45 am Operator:
Sample : CCV1-160524 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1404555	4000.00 ug/kg	121
5) Acenaphthene-d10	13.25	164	1013939	4000.00 ug/kg	88
11) Phenanthrene-d10	15.33	188	1682322	4000.00 ug/kg	82
17) Chrysene-d12	21.04	240	1964795	4000.00 ug/kg	86
20) Perylene-d12	26.19	264	1784046	4000.00 ug/kg	87

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	296951	1003.98 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	25.10%#	
16) 4-Terphenyl-d14	17.82	244	387991	891.43 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	22.29%#	

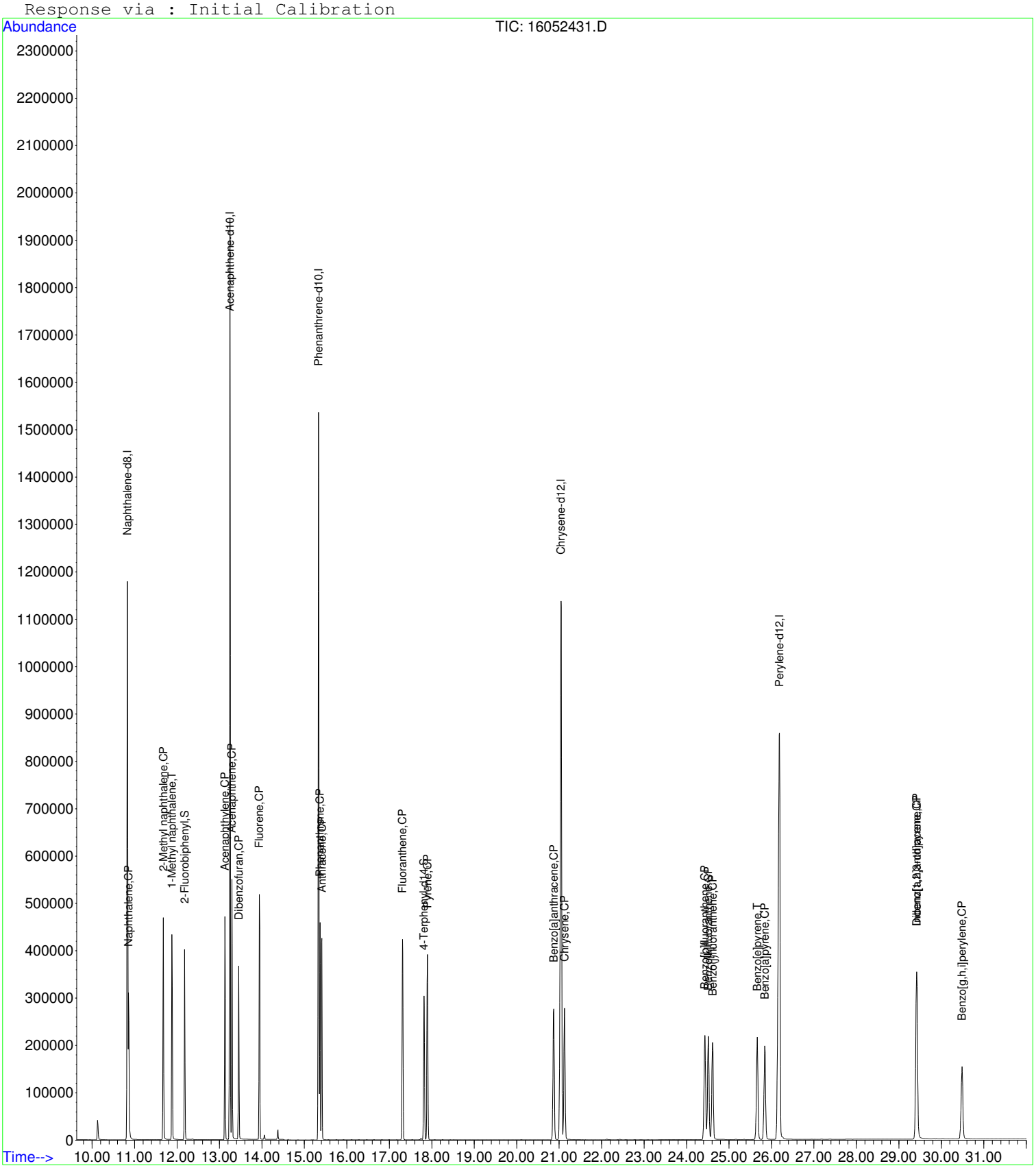
Target Compounds					Qvalue
2) Naphthalene	10.86	128	304388	866.38 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	255060	821.87 ug/kg	98
4) 1-Methyl naphthalene	11.88	142	229823	808.58 ug/kg	92
6) Dibenzofuran	13.46	168	330494	869.69 ug/kg	98
8) Acenaphthylene	13.13	152	405000	927.49 ug/kg	100
9) Acenaphthene	13.29	154	231179	852.96 ug/kg	96
10) Fluorene	13.94	166	274883	835.12 ug/kg	98
12) Phenanthrene	15.37	178	372558	842.09 ug/kg	99
13) Anthracene	15.41	178	370544	884.86 ug/kg	99
14) Fluoranthene	17.31	202	415074	906.61 ug/kg	99
15) Pyrene	17.90	202	418793	880.58 ug/kg	99
18) Benzo[a]anthracene	20.87	228	413594	898.52 ug/kg	100
19) Chrysene	21.13	228	378063	850.07 ug/kg	100
21) Benzo[b]fluoranthene	24.43	252	415973	884.65 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	393014	890.98 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	358229	911.68 ug/kg	100
24) Benzo[e]pyrene	25.67	252	381707	906.45 ug/kg	99
25) Benzo[a]pyrene	25.84	252	374459	870.19 ug/kg	100
26) Dibenz[a,h]anthracene	29.42	278	337696	861.69 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.42	276	393271	841.18 ug/kg	97
28) Benzo[g,h,i]perylene	30.49	276	300212	823.48 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160524\16052431.D Vial: 31
Acq On : 25 May 2016 5:45 am Operator:
Sample : CCV1-160524 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 8:41 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



GCMS6_160525A
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS6_160525A
Batch Number(s): See Run Log.	SOP: ORGANICS-PAH-01
Matrix: See Run Log.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List

EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	x
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	x
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Analyst: Karyn Lane Lauren Garcia Date: 5/26/2016

Second-Level Review: Janice Whitt Date: 6/1/2016

REVIEWED BY
By Janice Whitt at 12:52:19 PM, 6/1/2016

DHL Analytical, Inc.

Run ID: **GCMS6_160525A** **Run No.:** 86008

Analytical Run Date: 5/25/2016 **InstrumentID:** GCMS6

Analyst: Karyn Lane **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160525	1	PAH_LL_SDOD1	TUNE	R86008	5/25/2016 8:58:00 AM		
ICV-160525	1	PAH_LL_SDOD1	ICV	R86008	5/25/2016 9:34:00 AM		
LCS-75281	1	PAH_LL_SDOD1	LCS	75281	5/25/2016 10:14:00 AM		
MB-75281	1	PAH_LL_SDOD1	MBLK	75281	5/25/2016 10:53:00 AM		
1605135-36A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 11:33:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605135-37A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 12:13:00 PM		
1605135-38A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 12:53:00 PM		
1605135-39A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 1:32:00 PM		
1605135-40A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 2:12:00 PM		
1605135-41A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 2:52:00 PM		
1605135-42A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 3:32:00 PM		
1605144-01A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 4:11:00 PM		
1605144-02A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 4:51:00 PM		
1605144-03A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 5:31:00 PM		
1605144-04A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 6:12:00 PM		
1605144-05A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 6:52:00 PM		
1605135-36AMS	10	PAH_LL_SDOD1	MS	75281	5/25/2016 7:32:00 PM		
1605135-36AMSD	10	PAH_LL_SDOD1	MSD	75281	5/25/2016 8:12:00 PM		
DFTPP2-160525	1	PAH_LL_SDOD1	TUNE	R86008	5/25/2016 8:51:00 PM		
ICV2-160525	1	PAH_LL_SDOD1	ICV	R86008	5/25/2016 9:28:00 PM		
SB-160525	1	PAH_LL_SDOD1	SBLK	75281	5/25/2016 10:47:00 PM		
1605144-06A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 11:27:00 PM		
1605144-07A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 12:07:00 AM		
1605144-08A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 12:47:00 AM		
1605144-09A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 1:27:00 AM		
1605144-10A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 2:06:00 AM		
1605144-11A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 2:46:00 AM		
1605144-12A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 3:25:00 AM		
CCV1-160525	1	PAH_LL_SDOD1	CCV	R86008	5/26/2016 4:05:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\HPCHEM\1\SEQUENCE\160525.S
Comment:
Operator: AR
Data Path: C:\HPCHEM\1\DATA\160525\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	16052501	DFTPPPAH	DFTPP-160525
2	Sample	2	16052502	PP160421	ICV-160525
3	Sample	3	16052503	PP160421	LCS 75281
4	Sample	4	16052504	PP160421	MB-75281
5	Sample	5	16052505	PP160421	1605135-36A
6	Sample	6	16052506	PP160421	1605135-37A
7	Sample	7	16052507	PP160421	1605135-38A
8	Sample	8	16052508	PP160421	1605135-39A
9	Sample	9	16052509	PP160421	1605135-40A
10	Sample	10	16052510	PP160421	1605135-41A
11	Sample	11	16052511	PP160421	1605135-42A
12	Sample	12	16052512	PP160421	1605144-01A
13	Sample	13	16052513	PP160421	1605144-02A
14	Sample	14	16052514	PP160421	1605144-03A
15	Sample	15	16052515	PP160421	1605144-04A
16	Sample	16	16052516	PP160421	1605144-05A
17	Sample	17	16052517	PP160421	1605135-36AMS
18	Sample	18	16052518	PP160421	1605135-36AMSD
19	Sample	19	16052519	DFTPPPAH	DFTPP2-160525
20	Sample	20	16052520	PP160421	ICV2-160525
21	Sample	21	16052521	PP160421	SBLK
22	Sample	22	16052522	PP160421	SB-160525
23	Sample	23	16052523	PP160421	1605144-06A
24	Sample	24	16052524	PP160421	1605144-07A
25	Sample	25	16052525	PP160421	1605144-08A
26	Sample	26	16052526	PP160421	1605144-09A
27	Sample	27	16052527	PP160421	1605144-10A
28	Sample	28	16052528	PP160421	1605144-11A
29	Sample	29	16052529	PP160421	1605144-12A
30	Sample	30	16052530	PP160421	CCV1-160525

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 8:54:01 AM**
Digestion:
Prep End Date: **5/23/2016 3:00:00 PM**

Prep Batch **75281** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-36A	Soil		10.04	10	0.996	12 of 3	
1605135-36AMS	Soil		10.12	10	0.988	1 of	
1605135-36AMSD	Soil		10.11	10	0.989	1 of	
1605135-37A	Soil		10.02	10	0.998	1 of 1	
1605135-38A	Soil		10.01	10	0.999	1 of 1	
1605135-39A	Soil		10.01	10	0.999	1 of 1	
1605135-40A	Soil		10.02	10	0.998	1 of 1	
1605135-41A	Soil		10.06	10	0.994	1 of 1	
1605135-42A	Soil		10.05	10	0.995	1 of 1	
1605144-01A	Soil		10.07	10	0.993	1 of 1	
1605144-02A	Soil		10.17	10	0.983	1 of 1	
1605144-03A	Soil		10.16	10	0.984	1 of 1	
1605144-04A	Soil		10	10	1.000	1 of 1	
1605144-05A	Soil		10.02	10	0.998	1 of 1	
1605144-06A	Soil		10.48	10	0.954	1 of 1	
1605144-07A	Soil		10.03	10	0.997	1 of 1	
1605144-08A	Soil		10.2	10	0.980	1 of 1	
1605144-09A	Soil		10.02	10	0.998	1 of 1	
1605144-10A	Soil		10.09	10	0.991	1 of 1	
1605144-11A	Soil		10.07	10	0.993	1 of 1	
1605144-12A	Soil		10.02	10	0.998	1 of 1	
LCS-75281	Soil		10	10	1.000	of	
MB-75281	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10383	1:1 MeCl2/Acetone	120	ml	05/19/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 12:13:51 PM, 6/1/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 8:54:01 AM**
Digestion:
Prep End Date: 5/23/16 @ 3:00 PM

Prep Batch **75281** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605135-36A	Soil		10 .04	10	1.000	1,2	of	3	
1605135-36AMS	Soil		10 .12	10	1.000	1	of	3	
1605135-36AMSD	Soil		10 .11	10	1.000	1	of	3	
1605135-37A	Soil		10 .02	10	1.000	1	of	1	
1605135-38A	Soil		10 .01	10	1.000	1	of	1	
1605135-39A	Soil		10 .01	10	1.000	1	of	1	
1605135-40A	Soil		10 .02	10	1.000	1	of	1	
1605135-41A	Soil		10 .06	10	1.000	1	of	1	
1605135-42A	Soil		10 .05	10	1.000	1	of	1	
1605144-01A	Soil		10 .07	10	1.000	1	of	1	
1605144-02A	Soil		10 .17	10	1.000	1	of	1	
1605144-03A	Soil		10 .16	10	1.000	1	of	1	
1605144-04A	Soil		10 .00	10	1.000	1	of	1	
1605144-05A	Soil		10 .02	10	1.000	1	of	1	
1605144-06A	Soil		10 .48	10	1.000	1	of	1	
1605144-07A	Soil		10 .03	10	1.000	1	of	1	
1605144-08A	Soil		10 .20	10	1.000	1	of	1	
1605144-09A	Soil		10 .02	10	1.000	1	of	1	
1605144-10A	Soil		10 .09	10	1.000	1	of	1	
1605144-11A	Soil		10 .07	10	1.000	1	of	1	
1605144-12A	Soil		10 .02	10	1.000	1	of	1	
LCS-75281	Soil		10	10	1.000		of		
MB-75281	Soil		10	10	1.000		of		

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10383	1:1 MeCl2/Acetone	120	ml	05/19/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 12:13:48 PM, 6/1/2016

5/23/16 AR 5/23/16

DHL Analytical, Inc.

PREP BATCH REPORT

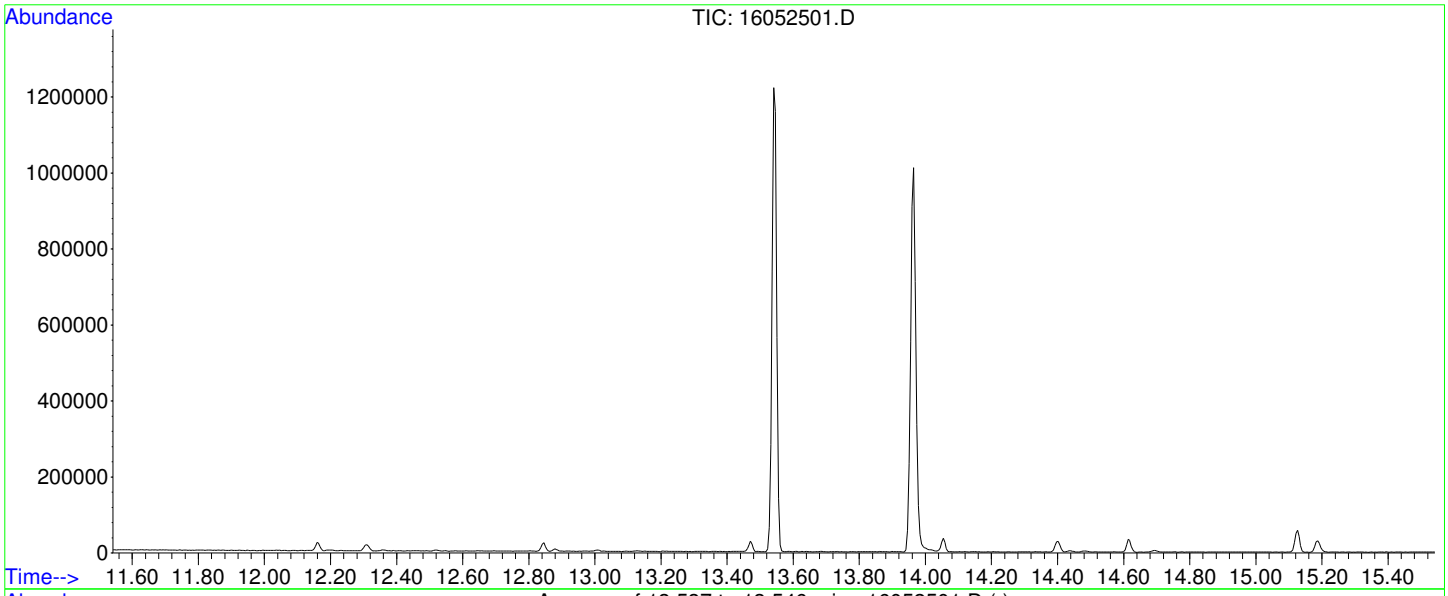
Prep Start Date: **5/17/2016 12:00:00 PM**
Digestion: **Start: 5/17/2016 1:20:00 PM / Stop: 5/19/2016 8:30:00 AM**
Prep End Date: **5/19/2016 1:00:00 PM**

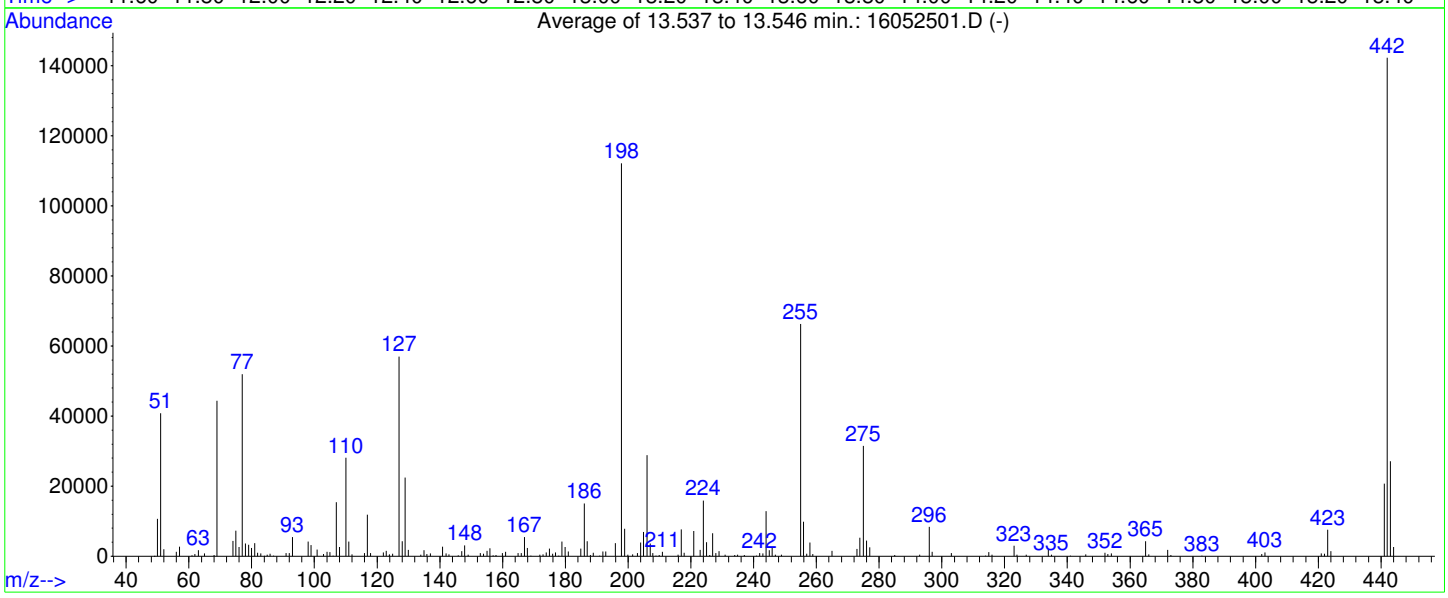
Prep Batch **75205** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-36A	Soil		0	0	#Num!	of 3	
Extra subsampled for MS/MSD							
1605135-37A	Soil		0	0	#Num!	1 of 1	
1605135-38A	Soil		0	0	#Num!	1 of 1	
1605135-39A	Soil		0	0	#Num!	1 of 1	
1605135-40A	Soil		0	0	#Num!	1 of 1	
1605135-41A	Soil		0	0	#Num!	1 of 1	
1605135-42A	Soil		0	0	#Num!	1 of 1	
1605144-01A	Soil		0	0	#Num!	1 of 1	
1605144-02A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-03A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-04A	Soil		0	0	#Num!	1 of 1	
1605144-05A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-06A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-07A	Soil		0	0	#Num!	1 of 1	
1605144-08A	Soil		0	0	#Num!	1 of 1	
1605144-09A	Soil		0	0	#Num!	1 of 1	
1605144-10A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-11A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-12A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 12:13:59 PM, 6/1/2016

Data File : C:\HPCHEM\1\DATA\160525\16052501.D Vial: 1
Acq On : 25 May 2016 8:58 am Operator: AR
Sample : DFTPP-160525 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration



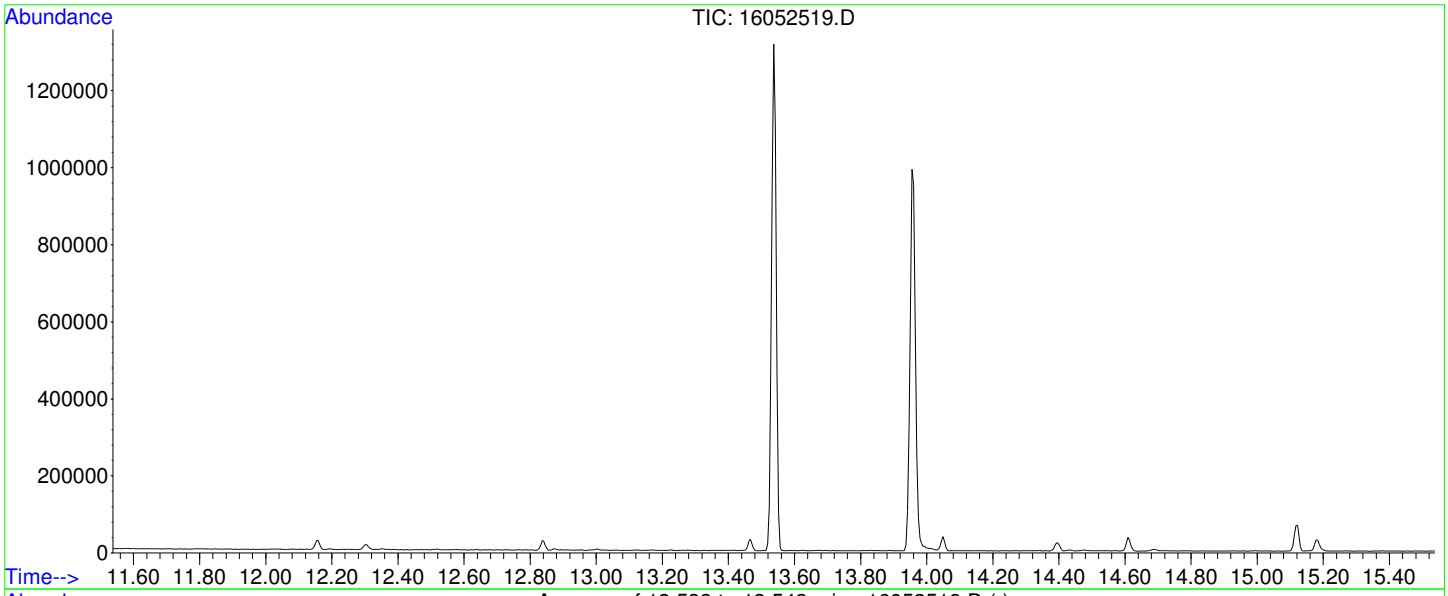


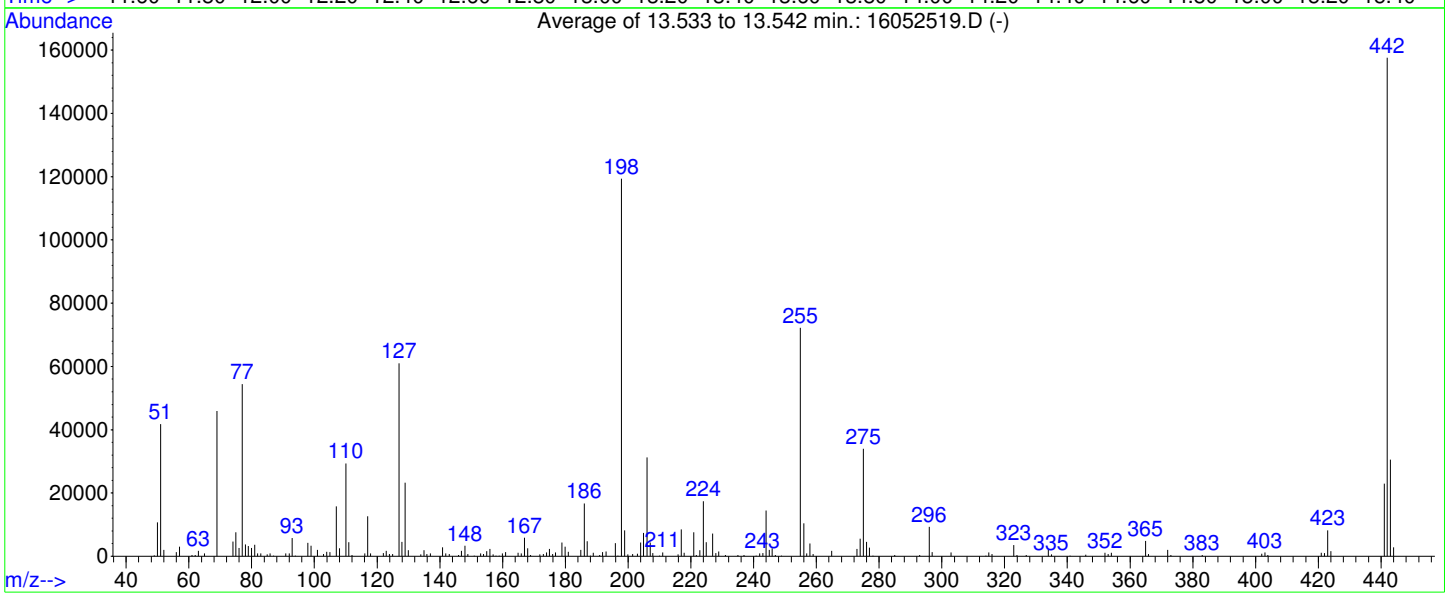
AutoFind: Scans 1584, 1585, 1586; Background Corrected with Scan 1578

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.4	40811	PASS
68	69	0.00	2	0.8	348	PASS
69	198	0.00	100	39.6	44405	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	50.8	57016	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	112152	PASS
199	198	5	9	7.0	7819	PASS
275	198	10	60	28.1	31501	PASS
365	198	1	200	3.9	4340	PASS
441	442	0.01	24	14.6	20724	PASS
442	198	50	400	126.9	142267	PASS
443	442	15	24	19.1	27112	PASS

REVIEWED BY
By Janice Whitt at 12:14:01 PM, 6/1/2016

Data File : C:\HPCHEM\1\DATA\160525\16052519.D Vial: 19
Acq On : 25 May 2016 8:51 pm Operator: AR
Sample : DFTPP2-160525 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration





AutoFind: Scans 1583, 1584, 1585; Background Corrected with Scan 1577

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.0	41794	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	38.5	45952	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	51.1	61045	PASS
197	198	0.00	2	0.2	213	PASS
198	198	100	100	100.0	119349	PASS
199	198	5	9	6.9	8197	PASS
275	198	10	60	28.5	33963	PASS
365	198	1	200	4.1	4874	PASS
441	442	0.01	24	14.6	22978	PASS
442	198	50	400	132.1	157616	PASS
443	442	15	24	19.4	30509	PASS

REVIEWED BY
By Janice Whitt at 12:14:03 PM, 6/1/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052502.D Vial: 2
Acq On : 25 May 2016 9:34 am Operator: AR
Sample : ICV-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1521214	4000.00 ug/kg	131
5) Acenaphthene-d10	13.25	164	1271940	4000.00 ug/kg	110
11) Phenanthrene-d10	15.34	188	2118305	4000.00 ug/kg	104
17) Chrysene-d12	21.05	240	2449305	4000.00 ug/kg	108
20) Perylene-d12	26.20	264	2201661	4000.00 ug/kg	107

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	745844	2010.17 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	50.25%	
16) 4-Terphenyl-d14	17.82	244	1009599	1842.19 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.05%	

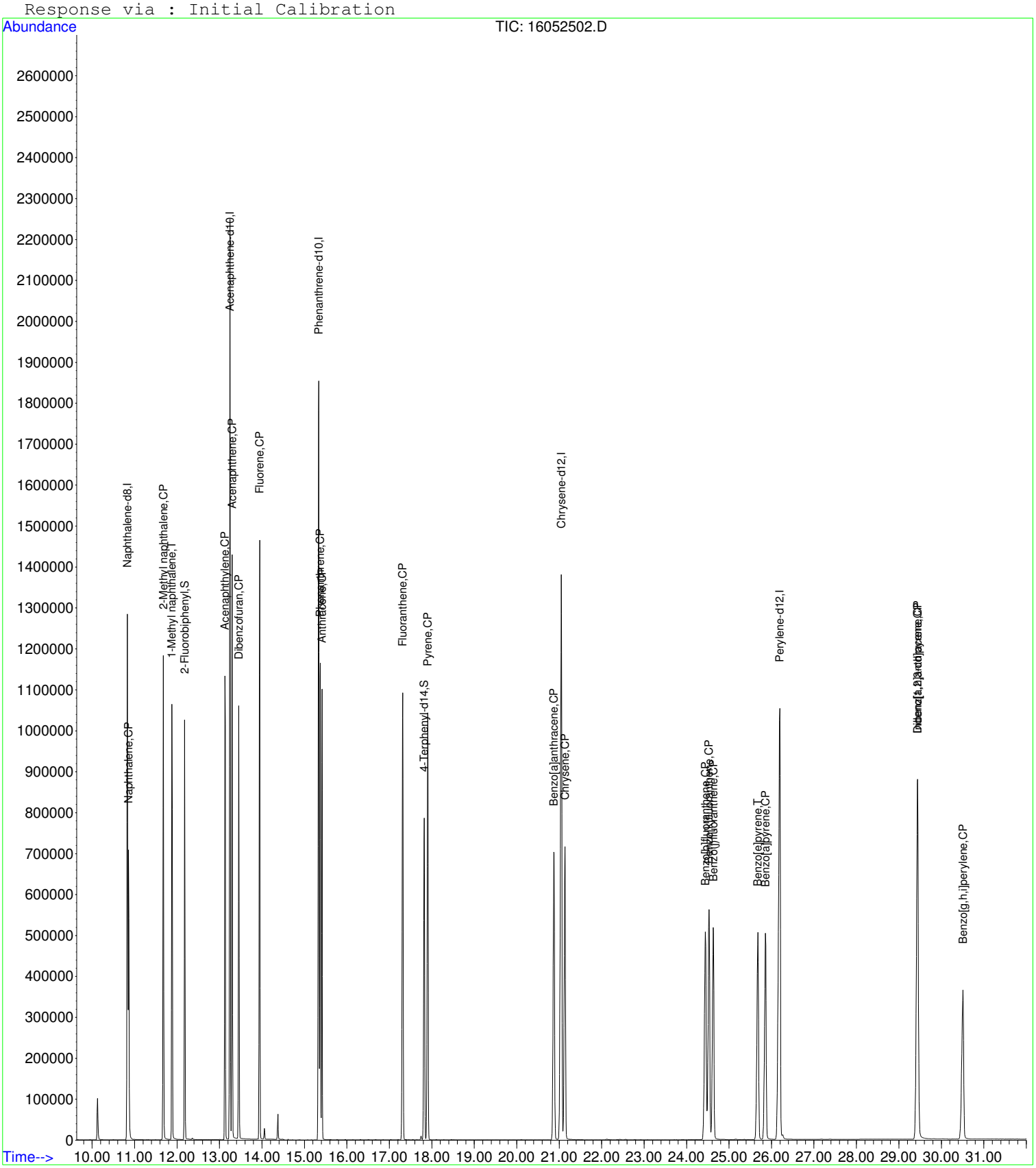
Target Compounds					Qvalue
2) Naphthalene	10.86	128	709737	1865.22 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	617645	1837.60 ug/kg	99
4) 1-Methyl naphthalene	11.88	142	558552	1814.45 ug/kg	92
6) Dibenzofuran	13.45	168	887923	1862.61 ug/kg	98
8) Acenaphthylene	13.13	152	1077448	1966.96 ug/kg	99
9) Acenaphthene	13.30	154	631895	1858.53 ug/kg	98
10) Fluorene	13.95	166	758210	1836.26 ug/kg	98
12) Phenanthrene	15.37	178	1005639	1805.20 ug/kg	100
13) Anthracene	15.41	178	918976	1742.86 ug/kg	100
14) Fluoranthene	17.31	202	1100558	1909.09 ug/kg	99
15) Pyrene	17.90	202	1102805	1841.57 ug/kg	99
18) Benzo[a]anthracene	20.87	228	1093660	1905.95 ug/kg	99
19) Chrysene	21.13	228	1003949	1810.82 ug/kg	100
21) Benzo[b]fluoranthene	24.44	252	1080780	1862.51 ug/kg	100
22) Benzo[k]fluoranthene	24.53	252	1009879	1855.17 ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	916454	1889.95 ug/kg	99
24) Benzo[e]pyrene	25.68	252	969641	1865.86 ug/kg	100
25) Benzo[a]pyrene	25.86	252	973785	1833.71 ug/kg	99
26) Dibenz[a,h]anthracene	29.44	278	871865	1802.72 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.44	276	1012042	1754.08 ug/kg	98
28) Benzo[g,h,i]perylene	30.51	276	783204	1740.83 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052502.D Vial: 2
Acq On : 25 May 2016 9:34 am Operator: AR
Sample : ICV-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

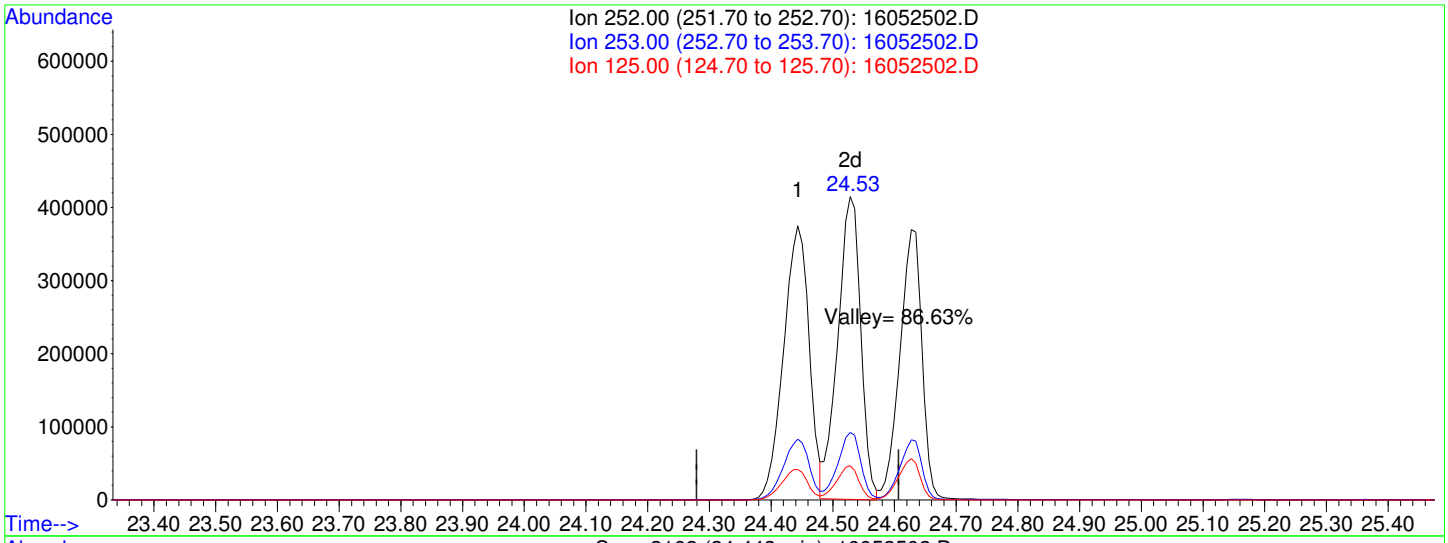
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

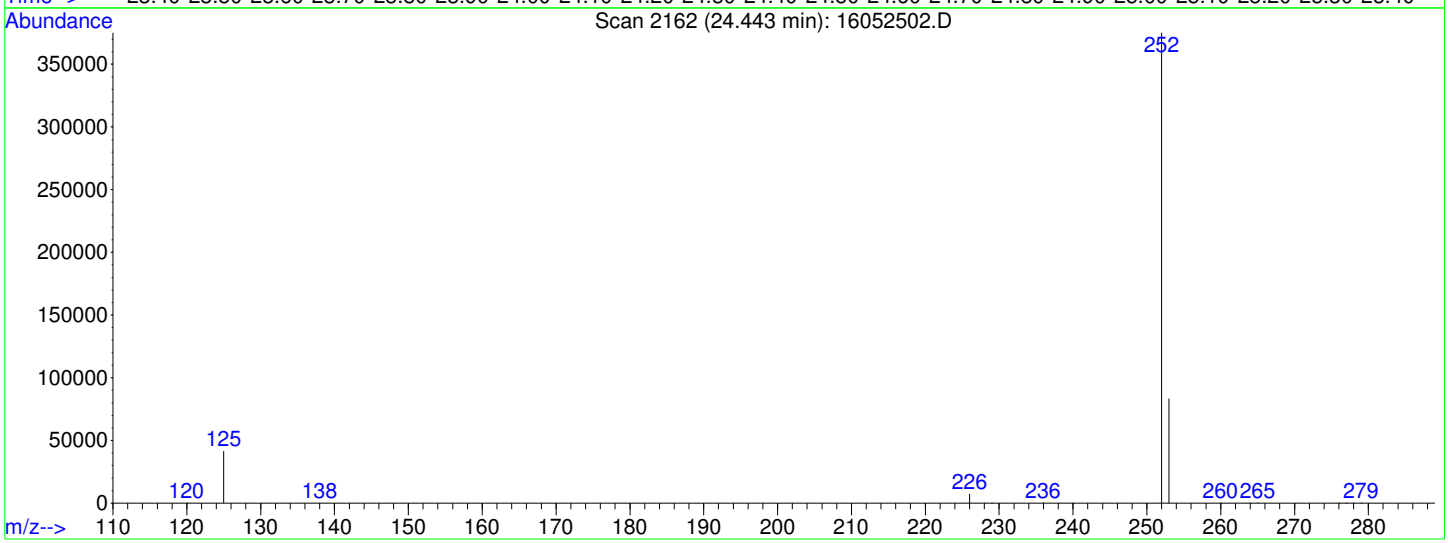


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160525\16052502.D Vial: 2
Acq On : 25 May 2016 9:34 am Operator: AR
Sample : ICV-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Multiple Level Calibration





TIC: 16052502.D

(21) Benzo[b]fluoranthene (CP)

24.44min 1862.51ug/kg

response 1080780

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.11
125.00	11.00	11.09
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052503.D Vial: 3
Acq On : 25 May 2016 10:14 am Operator: AR
Sample : LCS 75281 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1193315	4000.00 ug/kg	103
5) Acenaphthene-d10	13.25	164	808464	4000.00 ug/kg	70
11) Phenanthrene-d10	15.33	188	1541875	4000.00 ug/kg	75
17) Chrysene-d12	21.04	240	1727529	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1552127	4000.00 ug/kg	75

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	171661	727.88 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.20%#		
16) 4-Terphenyl-d14	17.81	244	276427	692.96 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.32%#		

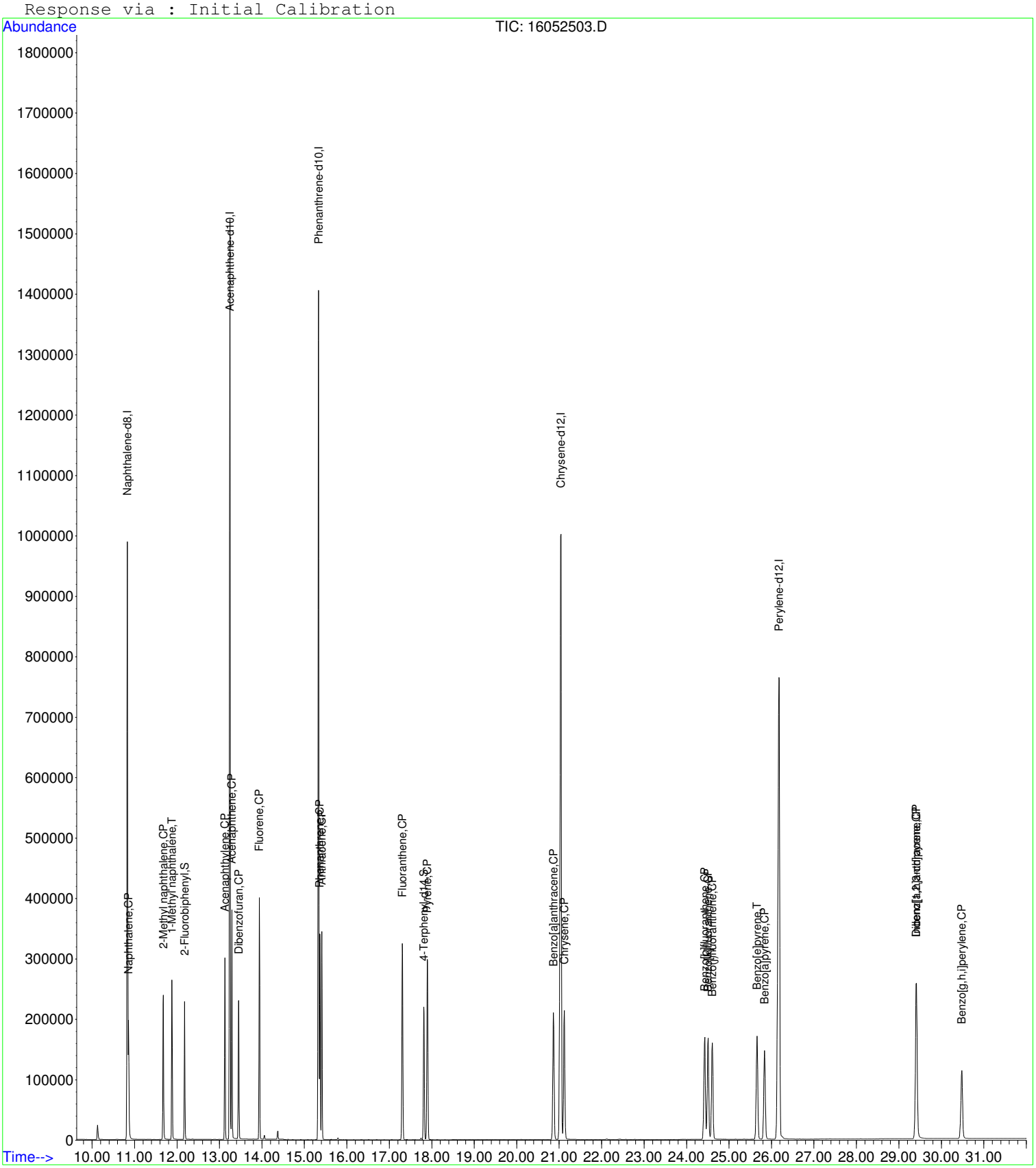
Target Compounds					Qvalue
2) Naphthalene	10.86	128	179846	602.51 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	142501	540.46 ug/kg	97
4) 1-Methyl naphthalene	11.88	142	131368	544.01 ug/kg	94
6) Dibenzofuran	13.46	168	231780	764.94 ug/kg	99
8) Acenaphthylene	13.13	152	251148	721.33 ug/kg	99
9) Acenaphthene	13.29	154	146480	677.81 ug/kg	99
10) Fluorene	13.94	166	195209	743.79 ug/kg	99
12) Phenanthrene	15.36	178	288678	711.93 ug/kg	99
13) Anthracene	15.41	178	281708	734.00 ug/kg	99
14) Fluoranthene	17.31	202	323978	772.09 ug/kg	99
15) Pyrene	17.90	202	324260	743.91 ug/kg	99
18) Benzo[a]anthracene	20.87	228	310647	767.56 ug/kg	99
19) Chrysene	21.12	228	288045	736.62 ug/kg	100
21) Benzo[b]fluoranthene	24.43	252	311835	762.27 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	287314	748.68 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	275967	807.27 ug/kg	100
24) Benzo[e]pyrene	25.66	252	312192	852.14 ug/kg	100
25) Benzo[a]pyrene	25.84	252	275948	737.09 ug/kg	100
26) Dibenz[a,h]anthracene	29.41	278	248386	728.50 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.41	276	288082	708.26 ug/kg	95
28) Benzo[g,h,i]perylene	30.48	276	221843	699.44 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052503.D Vial: 3
Acq On : 25 May 2016 10:14 am Operator: AR
Sample : LCS 75281 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052504.D Vial: 4
Acq On : 25 May 2016 10:53 am Operator: AR
Sample : MB-75281 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1213768	4000.00	ug/kg	105
5) Acenaphthene-d10	13.25	164	825448	4000.00	ug/kg	72
11) Phenanthrene-d10	15.33	188	1501189	4000.00	ug/kg	74
17) Chrysene-d12	21.04	240	1702950	4000.00	ug/kg	75
20) Perylene-d12	26.18	264	1524157	4000.00	ug/kg	74

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	173421	720.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.01%#			
16) 4-Terphenyl-d14	17.81	244	269519	693.95	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.35%#			

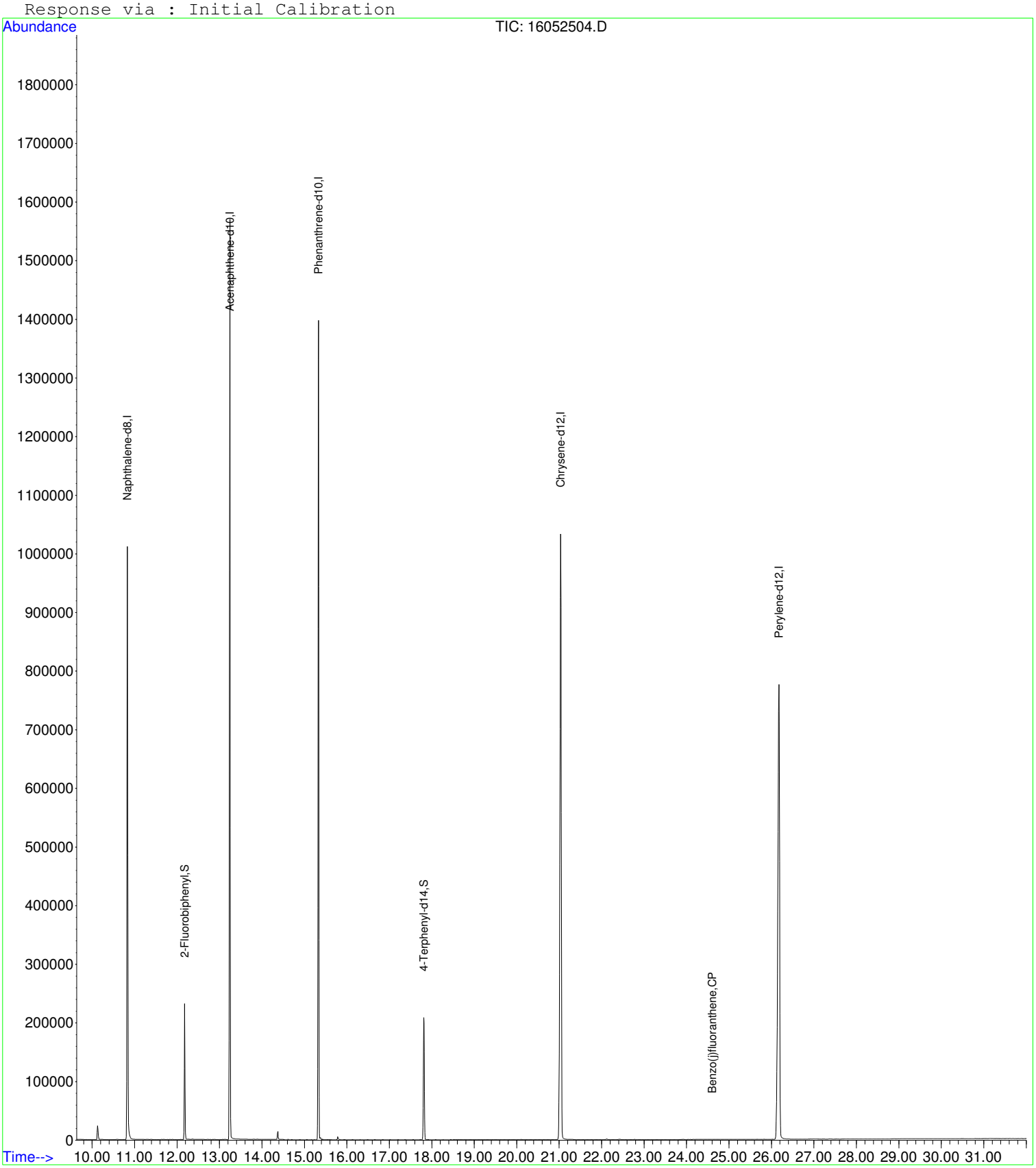
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.61	252	71	0.21	ug/kg	68

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052504.D Vial: 4
Acq On : 25 May 2016 10:53 am Operator: AR
Sample : MB-75281 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052505.D Vial: 5
Acq On : 25 May 2016 11:33 am Operator: AR
Sample : 1605135-36A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:25 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1237627	4000.00 ug/kg	107
5) Acenaphthene-d10	13.24	164	798346	4000.00 ug/kg	69
11) Phenanthrene-d10	15.33	188	1409195	4000.00 ug/kg	69
17) Chrysene-d12	21.04	240	1670458	4000.00 ug/kg	74
20) Perylene-d12	26.18	264	1520007	4000.00 ug/kg	74

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18388	78.96 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.97%#	
16) 4-Terphenyl-d14	17.81	244	26921	73.84 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.85%#	

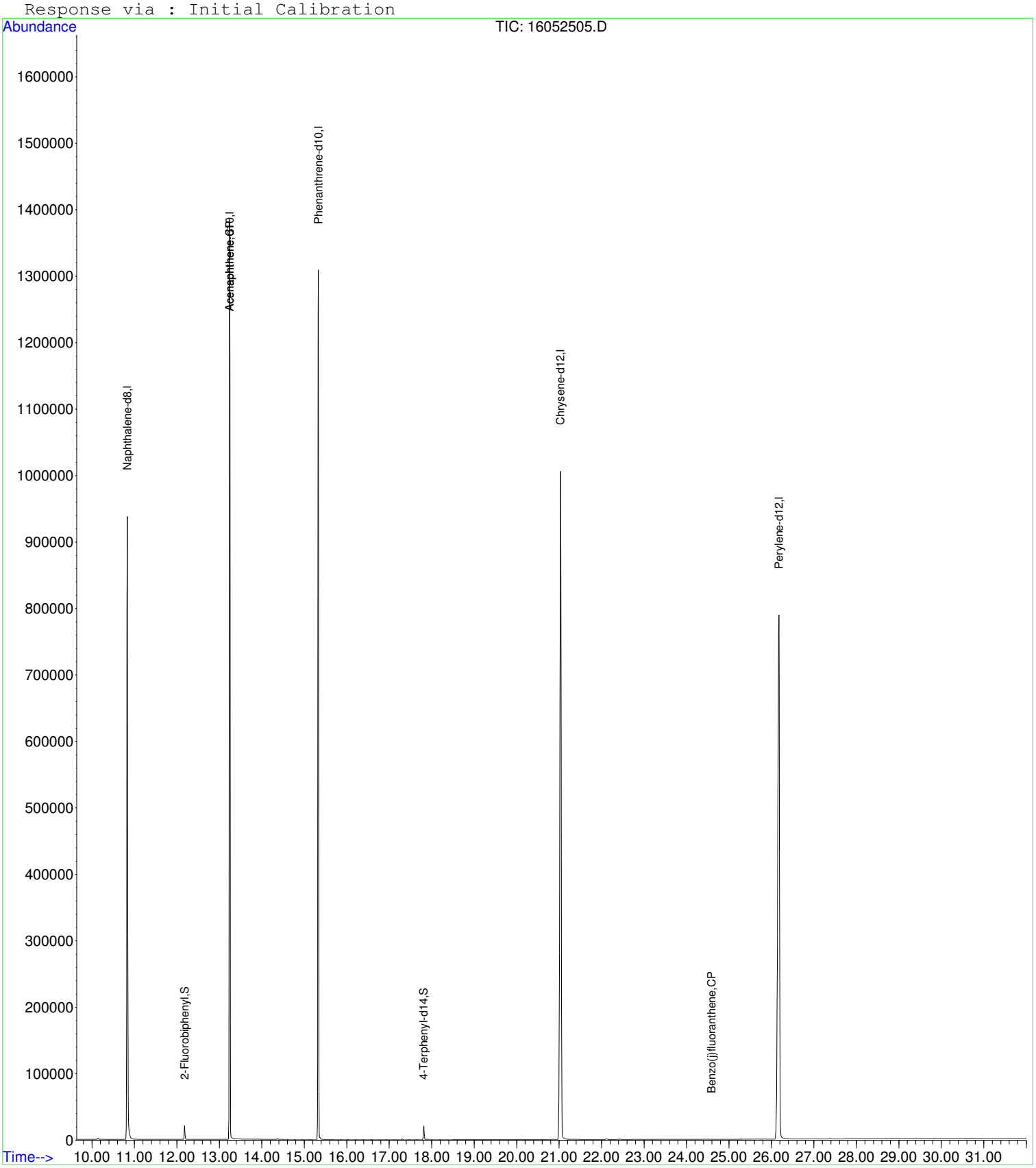
Target Compounds					Qvalue
9) Acenaphthene	13.24	154	2365	~~11.08 ug/kg#~~	~~9~~
23) Benzo(j)fluoranthene	24.60	252	367	1.10 ug/kg	93

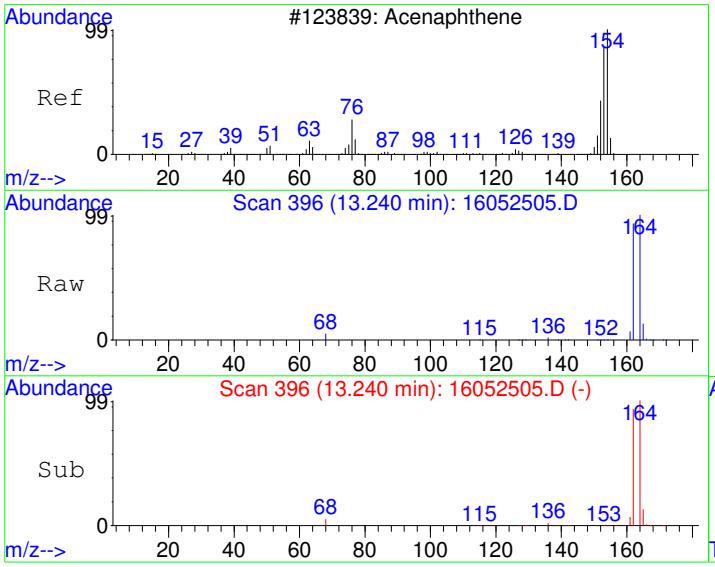
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052505.D Vial: 5
Acq On : 25 May 2016 11:33 am Operator: AR
Sample : 1605135-36A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:25 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

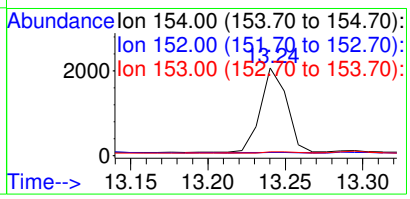


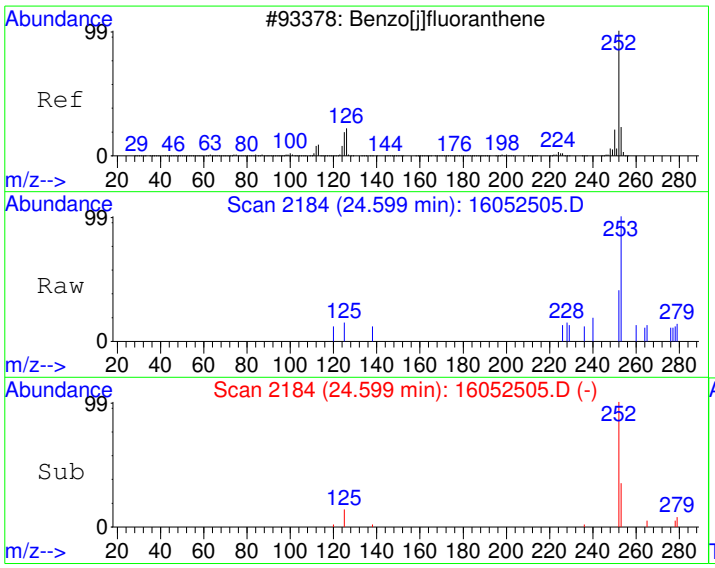


#9
Acenaphthene
Concen: 11.08 ug/kg
RT: 13.24 min Scan# 396
Delta R.T. -0.06 min
Lab File: 16052505.D
Acq: 25 May 2016 11:33 am

Tgt Ion:154 Resp: 2365

Ion	Ratio	Lower	Upper
154	100		
152	0.7	18.9	78.9#
153	1.5	75.2	135.2#

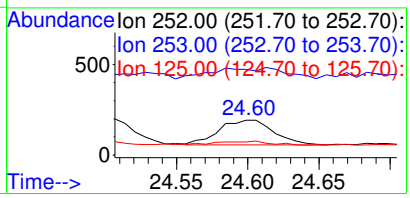




#23
Benzo(j)fluoranthene
Concen: 1.10 ug/kg
RT: 24.60 min Scan# 2184
Delta R.T. -0.03 min
Lab File: 16052505.D
Acq: 25 May 2016 11:33 am

Tgt Ion:252 Resp: 367

Ion	Ratio	Lower	Upper
252	100		
253	25.5	2.1	42.1
125	11.7	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052506.D Vial: 6
Acq On : 25 May 2016 12:13 pm Operator: AR
Sample : 1605135-37A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:25 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1239937	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	790119	4000.00 ug/kg	69
11) Phenanthrene-d10	15.33	188	1407112	4000.00 ug/kg	69
17) Chrysene-d12	21.04	240	1674372	4000.00 ug/kg	74
20) Perylene-d12	26.18	264	1512584	4000.00 ug/kg	73

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	17721	76.89 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.92%#	
16) 4-Terphenyl-d14	17.81	244	26997	74.16 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.85%#	

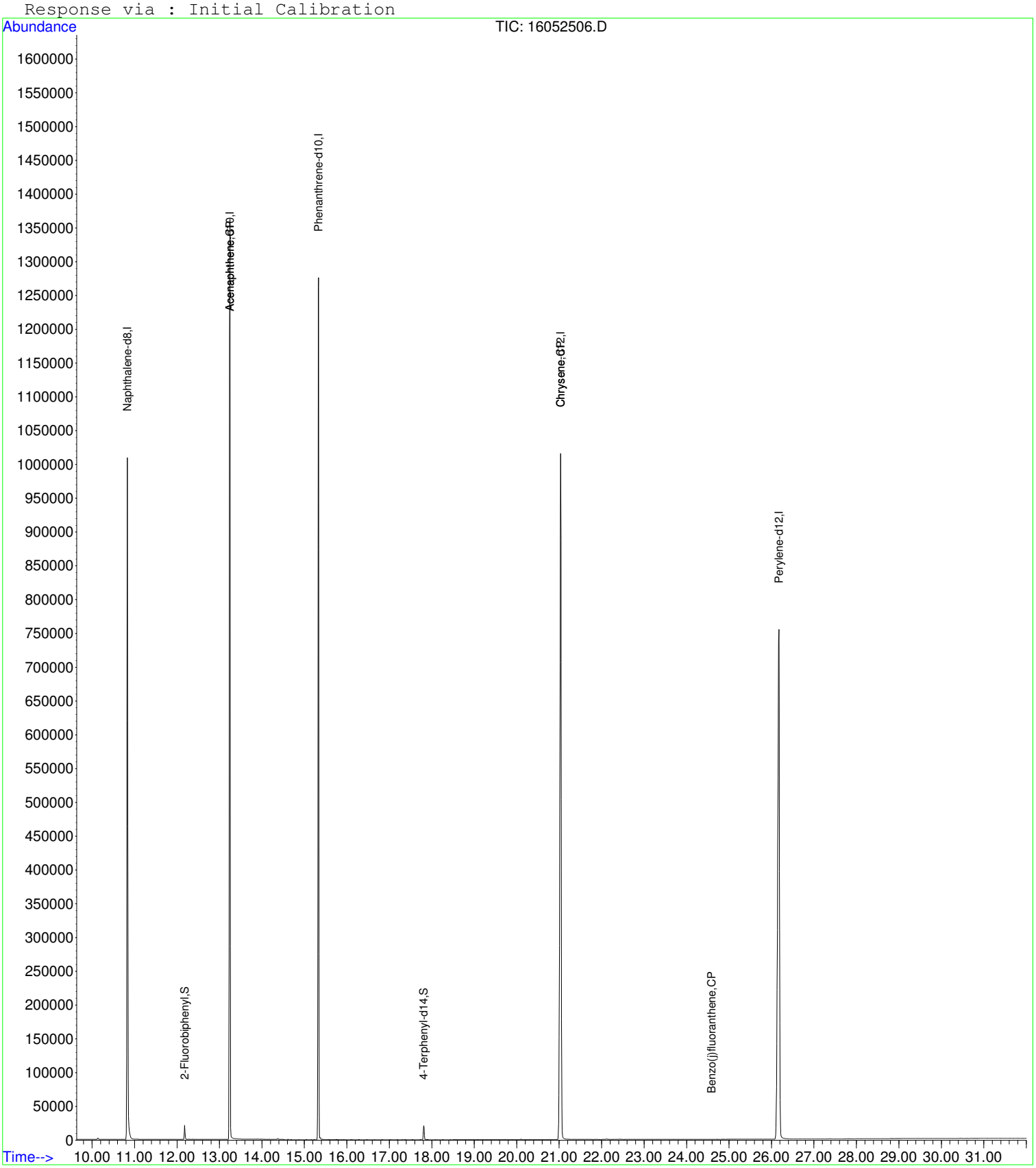
Target Compounds					Qvalue
9) Acenaphthene	13.24	154	2366	~~11.20 ug/kg#~~	~~9~~
19) Chrysene	21.04	228	3359	~~8.86 ug/kg~~	~~76~~
23) Benzo(j)fluoranthene	24.58	252	52	0.16 ug/kg#	70

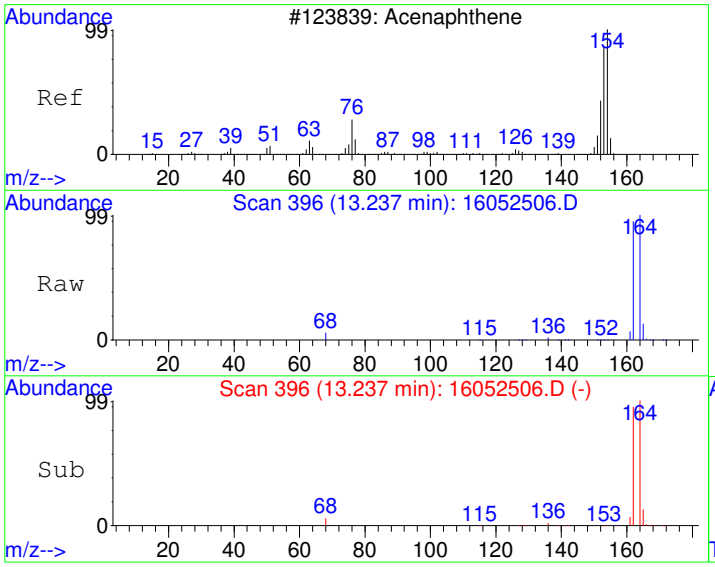
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052506.D Vial: 6
Acq On : 25 May 2016 12:13 pm Operator: AR
Sample : 1605135-37A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:25 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

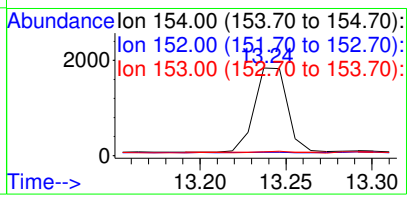


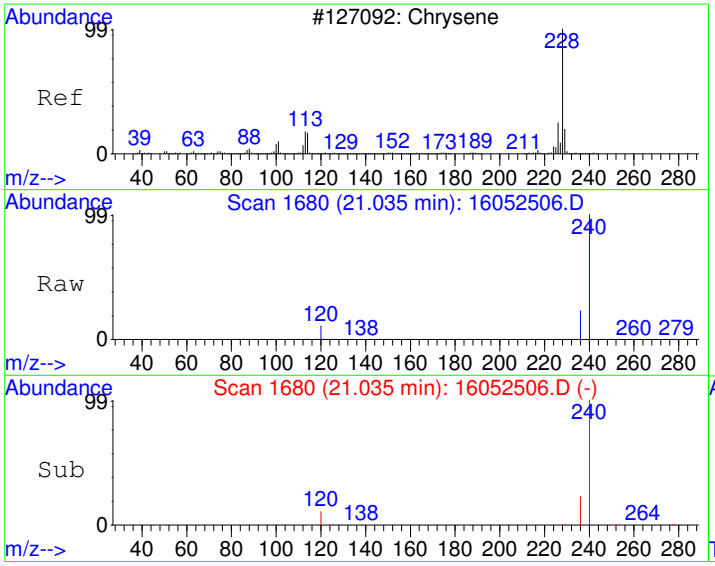


#9
Acenaphthene
Concen: 11.20 ug/kg
RT: 13.24 min Scan# 396
Delta R.T. -0.06 min
Lab File: 16052506.D
Acq: 25 May 2016 12:13 pm

Tgt Ion:154 Resp: 2366

Ion	Ratio	Lower	Upper
154	100		
152	0.6	18.9	78.9#
153	1.2	75.2	135.2#

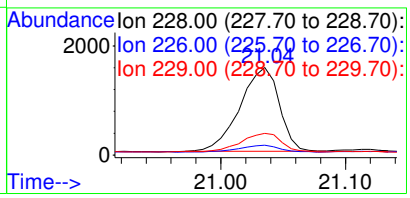


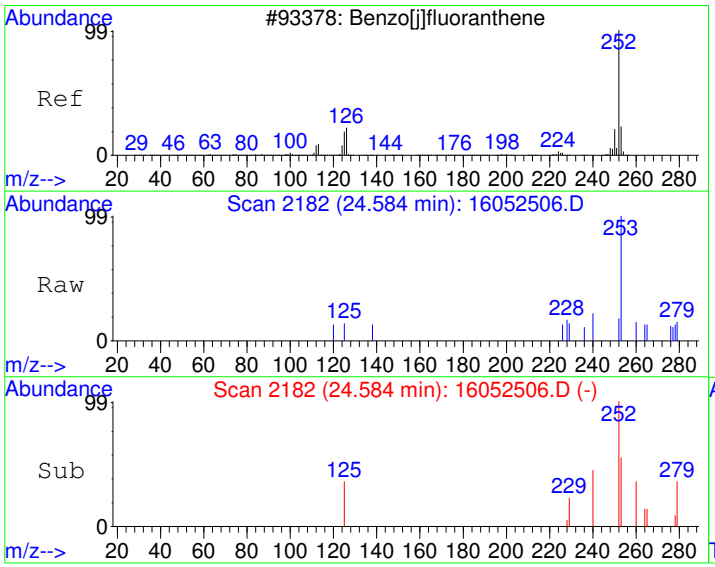


#19
Chrysene
Concen: 8.86 ug/kg
RT: 21.04 min Scan# 1680
Delta R.T. -0.10 min
Lab File: 16052506.D
Acq: 25 May 2016 12:13 pm

Tgt Ion:228 Resp: 3359

Ion	Ratio	Lower	Upper
228	100		
226	7.8	0.0	58.1
229	22.3	0.0	50.1

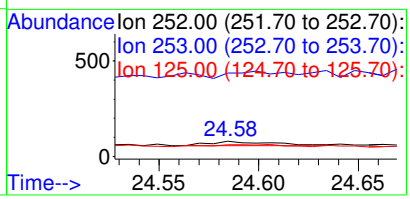




#23
Benzo(j)fluoranthene
Concen: 0.16 ug/kg
RT: 24.58 min Scan# 2182
Delta R.T. -0.04 min
Lab File: 16052506.D
Acq: 25 May 2016 12:13 pm

Tgt Ion:252 Resp: 52

Ion	Ratio	Lower	Upper
252	100		
253	0.0	2.1	42.1#
125	16.7	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052507.D Vial: 7
Acq On : 25 May 2016 12:53 pm Operator: AR
Sample : 1605135-38A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.82	136	1196152	4000.00	ug/kg	103
5) Acenaphthene-d10	13.24	164	779001	4000.00	ug/kg	68
11) Phenanthrene-d10	15.33	188	1362738	4000.00	ug/kg	67
17) Chrysene-d12	21.04	240	1603844	4000.00	ug/kg	71
20) Perylene-d12	26.18	264	1443972	4000.00	ug/kg	70

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	18289	80.48	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.01%#			
16) 4-Terphenyl-d14	17.81	244	26834	76.11	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.90%#			

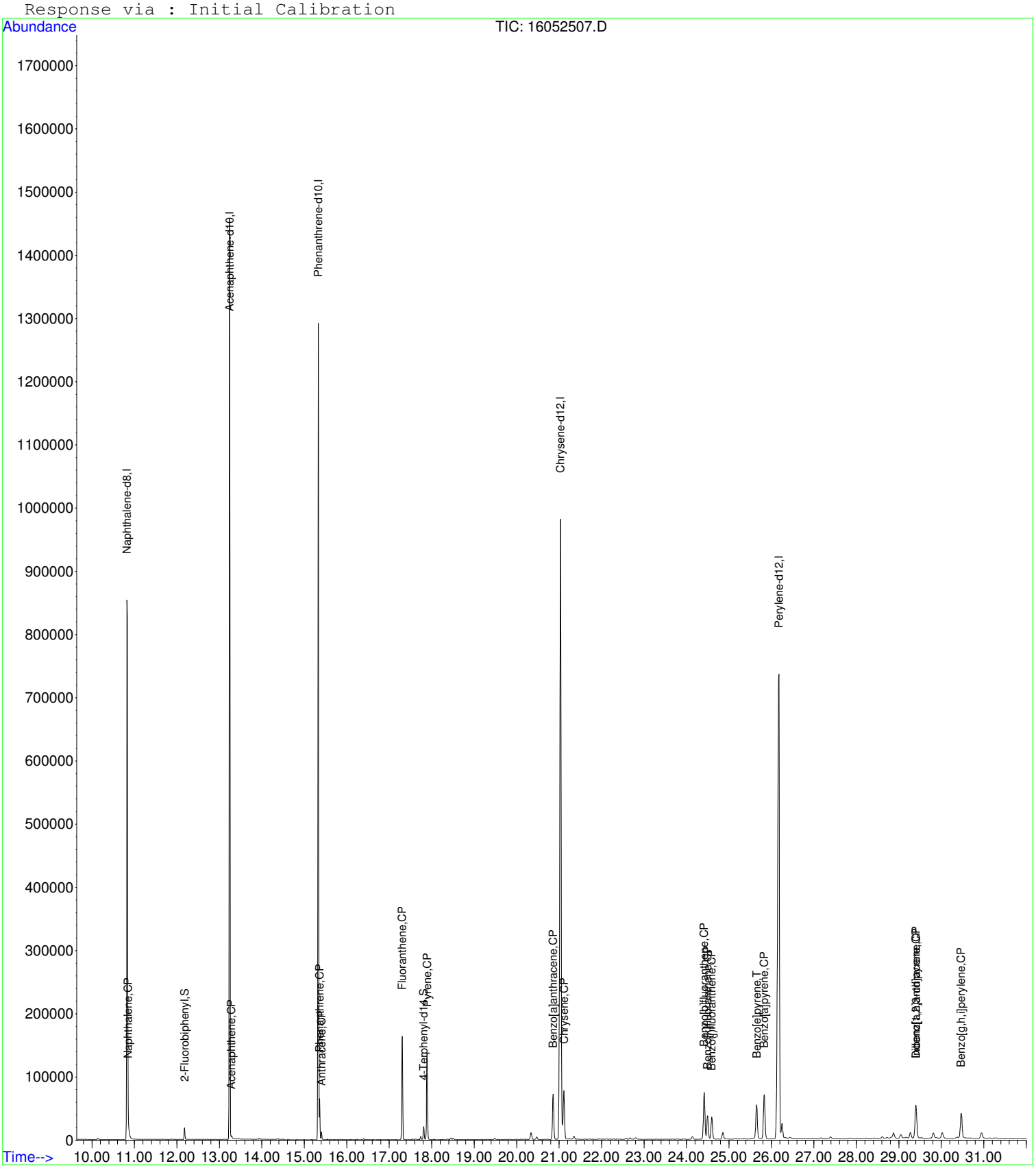
Target Compounds						Qvalue
2) Naphthalene	10.86	128	1603	5.36	ug/kg	95
9) Acenaphthene	13.29	154	1476	7.09	ug/kg	93
12) Phenanthrene	15.36	178	52961	147.78	ug/kg	98
13) Anthracene	15.40	178	10478	30.89	ug/kg	99
14) Fluoranthene	17.31	202	160476	432.71	ug/kg	98
15) Pyrene	17.89	202	146440	380.12	ug/kg	99
18) Benzo[a]anthracene	20.86	228	103219	274.71	ug/kg	99
19) Chrysene	21.11	228	122810	338.28	ug/kg	99
21) Benzo[b]fluoranthene	24.41	252	137493	361.27	ug/kg	100
22) Benzo[k]fluoranthene	24.49	252	65239	182.73	ug/kg	99
23) Benzo(j)fluoranthene	24.59	252	59056	185.69	ug/kg	89
24) Benzo[e]pyrene	25.65	252	98811	289.91	ug/kg	99
25) Benzo[a]pyrene	25.83	252	132089	379.25	ug/kg	99
26) Dibenz[a,h]anthracene	29.39	278	19751	62.27	ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.41	276	88012	232.59	ug/kg	90
28) Benzo[g,h,i]perylene	30.47	276	78847	267.21	ug/kg	98

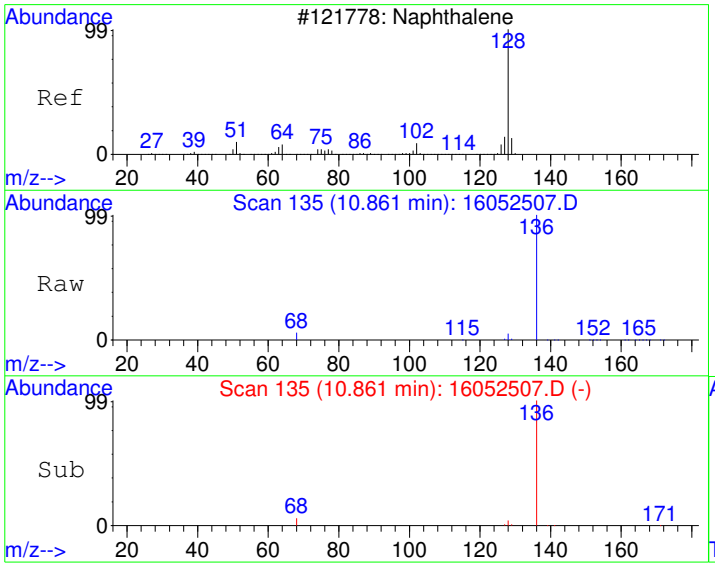
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052507.D Vial: 7
Acq On : 25 May 2016 12:53 pm Operator: AR
Sample : 1605135-38A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

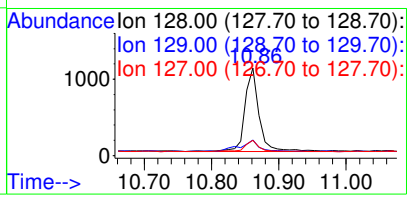


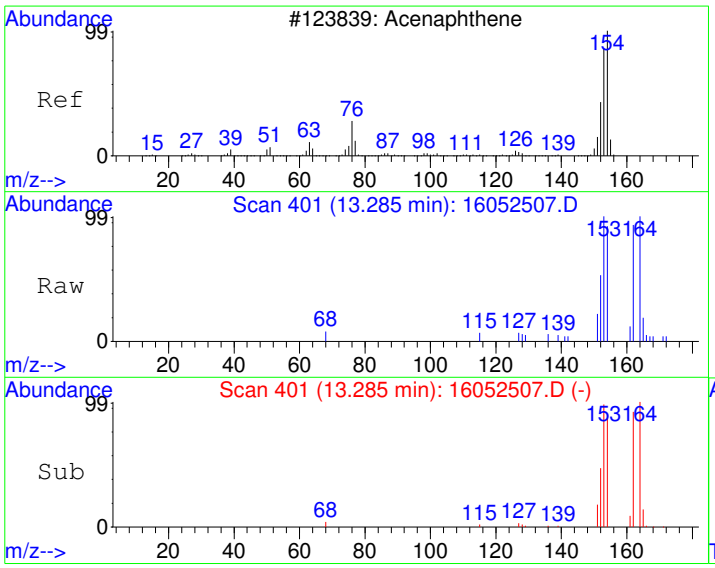


#2
Naphthalene
Concen: 5.36 ug/kg
RT: 10.86 min Scan# 135
Delta R.T. 0.00 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:128 Resp: 1603

Ion	Ratio	Lower	Upper
128	100		
129	13.8	0.0	41.1
127	13.7	0.0	42.4

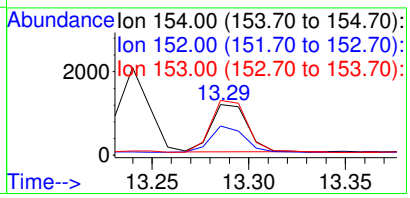


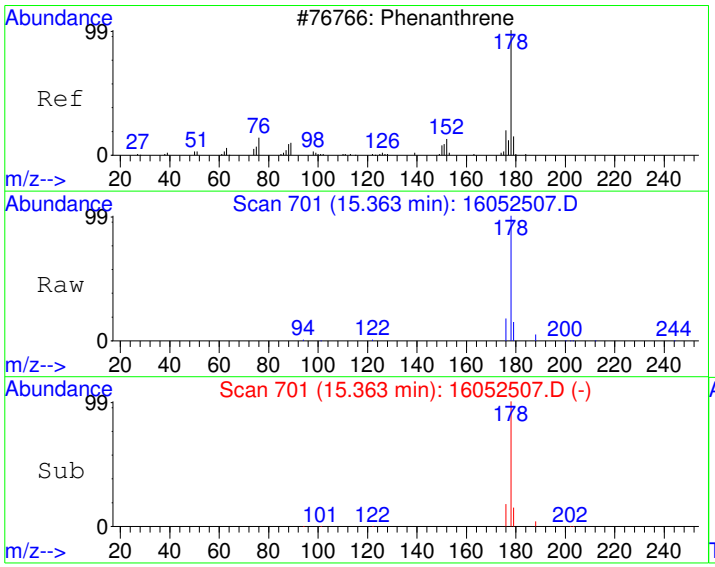


#9
Acenaphthene
Concen: 7.09 ug/kg
RT: 13.29 min Scan# 401
Delta R.T. -0.01 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:154 Resp: 1476

Ion	Ratio	Lower	Upper
154	100		
152	55.8	18.9	78.9
153	110.6	75.2	135.2

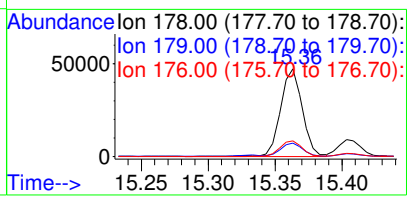


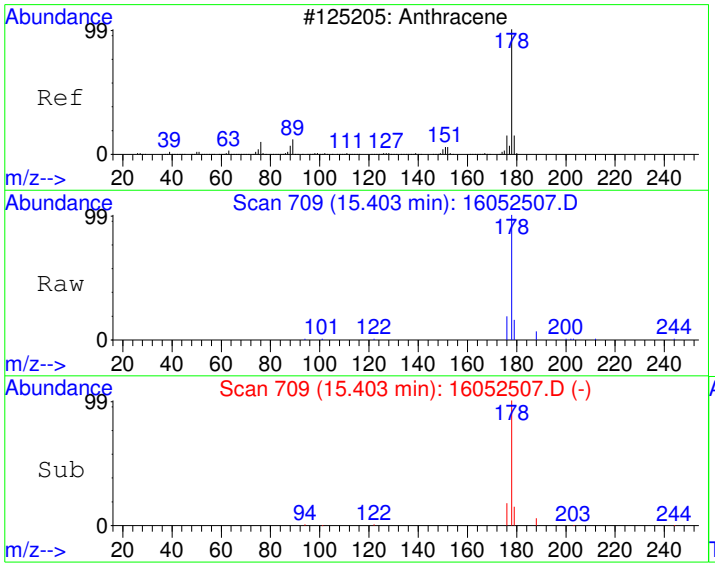


#12
Phenanthrene
Concen: 147.78 ug/kg
RT: 15.36 min Scan# 701
Delta R.T. -0.01 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:178 Resp: 52961

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	17.8	0.0	48.5

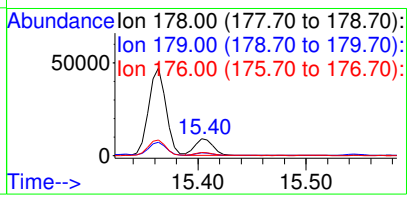


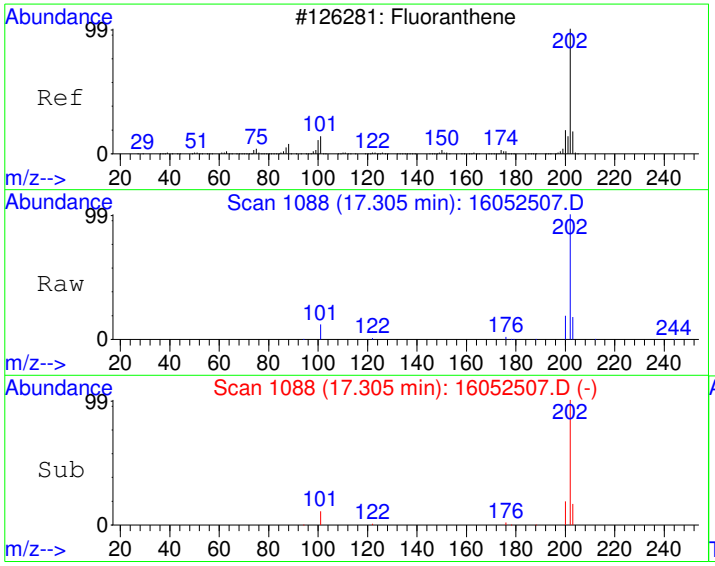


#13
Anthracene
Concen: 30.89 ug/kg
RT: 15.40 min Scan# 709
Delta R.T. -0.01 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:178 Resp: 10478

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	45.9
176	18.2	0.0	48.2

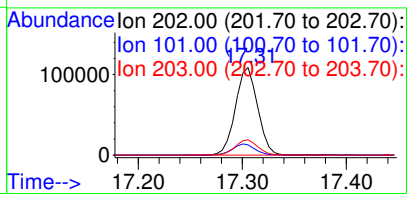


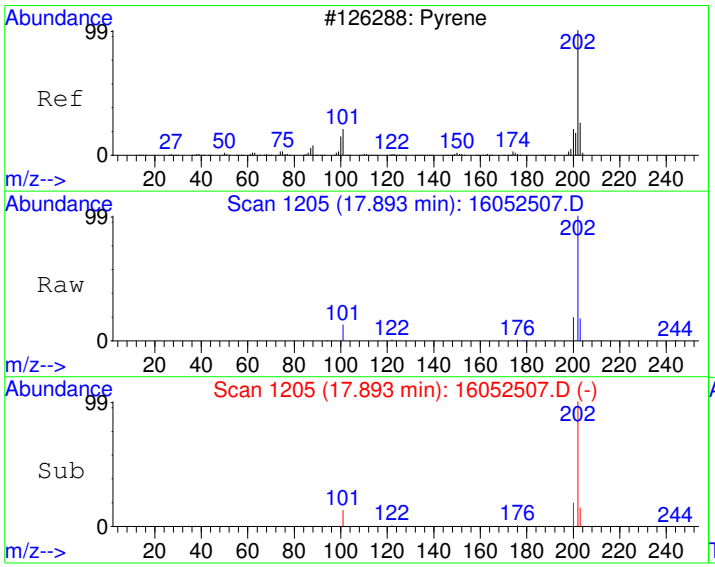


#14
Fluoranthene
Concen: 432.71 ug/kg
RT: 17.31 min Scan# 1088
Delta R.T. -0.01 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:202 Resp: 160476

Ion	Ratio	Lower	Upper
202	100		
101	11.5	0.0	43.0
203	17.5	0.0	47.9

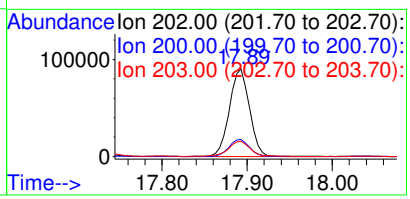


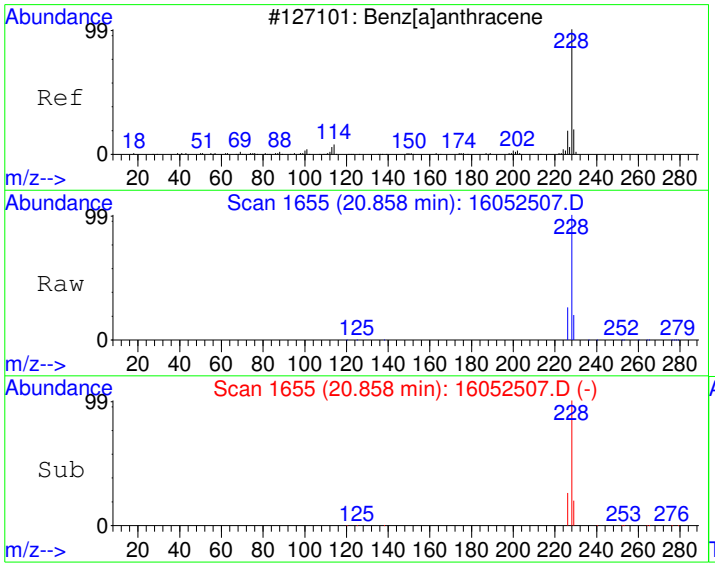


#15
Pyrene
Concen: 380.12 ug/kg
RT: 17.89 min Scan# 1205
Delta R.T. -0.01 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:202 Resp: 146440

Ion	Ratio	Lower	Upper
202	100		
200	19.4	0.0	50.0
203	17.6	0.0	48.0

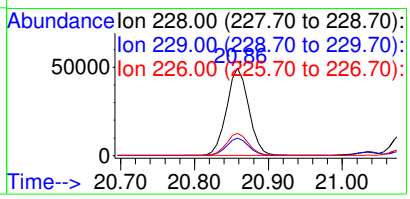


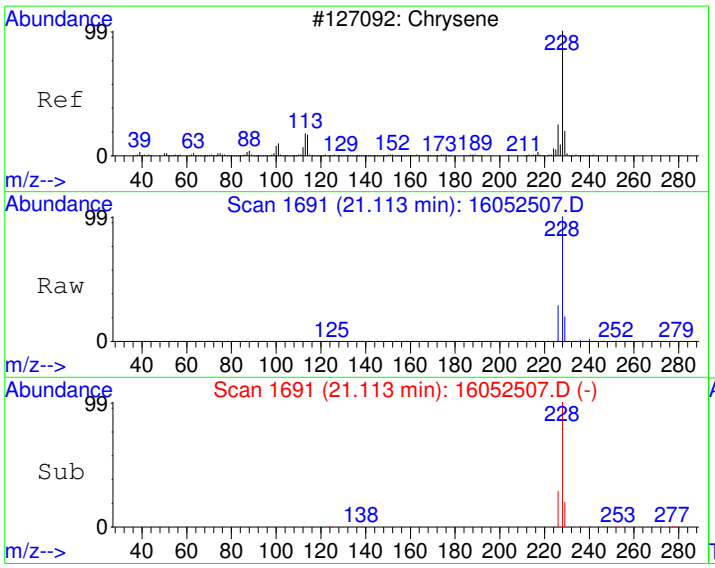


#18
Benzo[a]anthracene
Concen: 274.71 ug/kg
RT: 20.86 min Scan# 1655
Delta R.T. -0.01 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:228 Resp: 103219

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	25.5	0.0	55.2

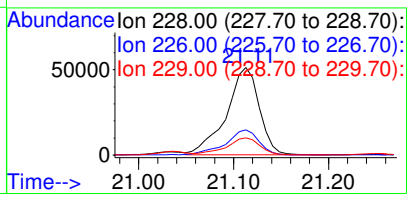


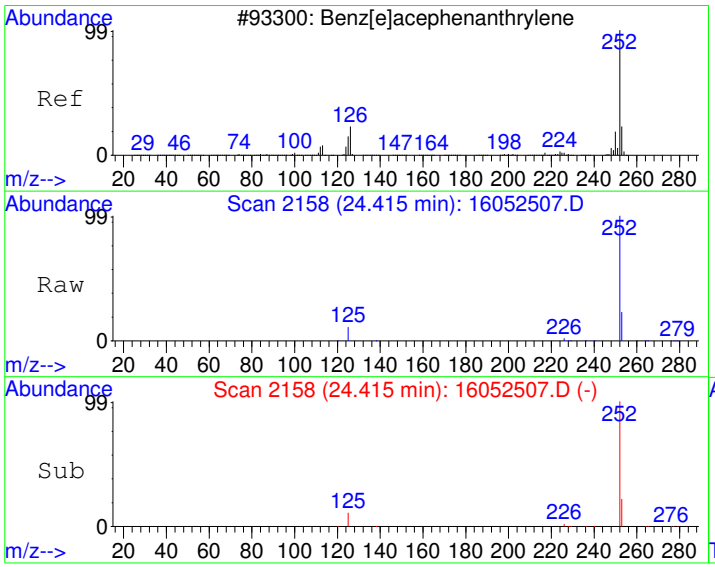


#19
Chrysene
Concen: 338.28 ug/kg
RT: 21.11 min Scan# 1691
Delta R.T. -0.02 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:228 Resp: 122810

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	58.1
229	19.7	0.0	50.1

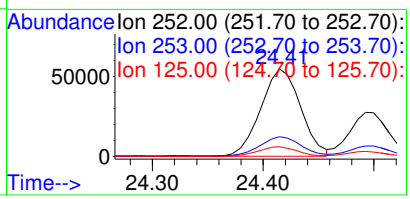


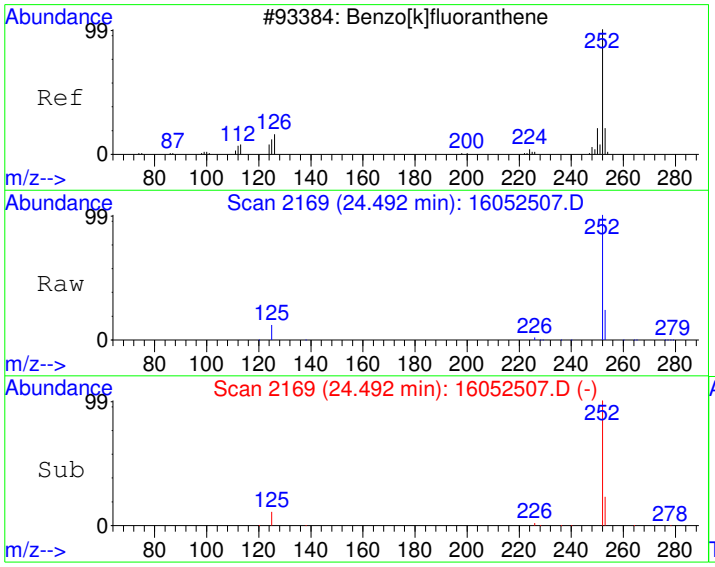


#21
Benzo[b]fluoranthene
Concen: 361.27 ug/kg
RT: 24.41 min Scan# 2158
Delta R.T. -0.03 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:252 Resp: 137493

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	11.0	0.0	41.0

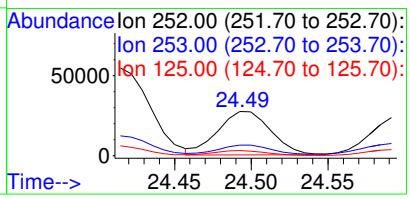


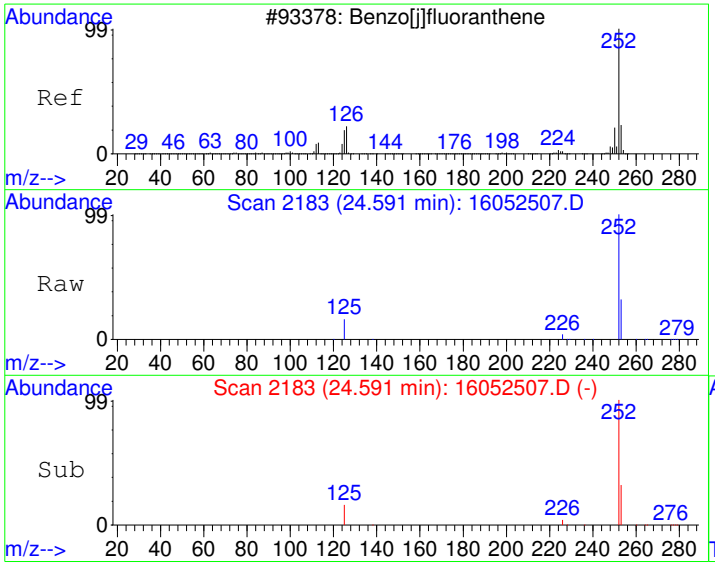


#22
Benzo[k]fluoranthene
Concen: 182.73 ug/kg
RT: 24.49 min Scan# 2169
Delta R.T. -0.04 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:252 Resp: 65239

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.1	42.1
125	11.2	0.0	31.3

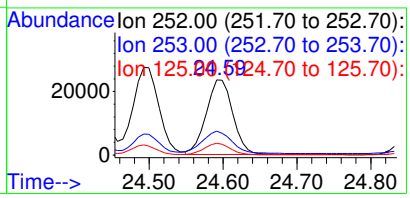


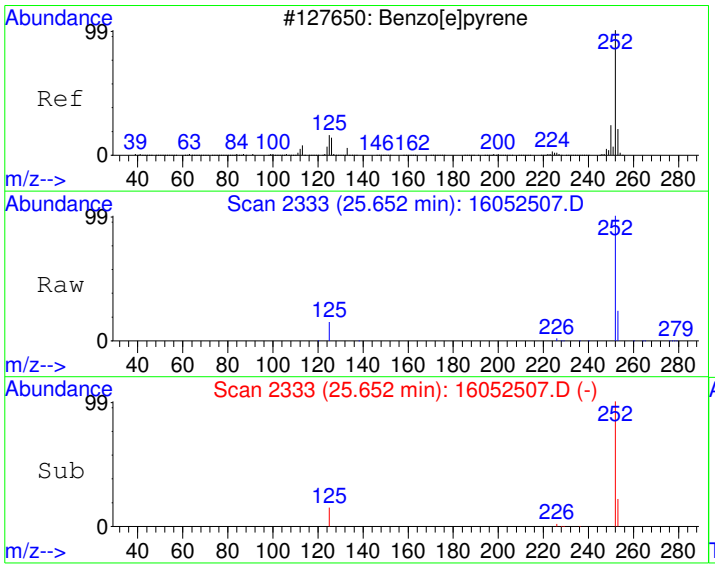


#23
Benzo(j)fluoranthene
Concen: 185.69 ug/kg
RT: 24.59 min Scan# 2183
Delta R.T. -0.04 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:252 Resp: 59056

Ion	Ratio	Lower	Upper
252	100		
253	29.8	2.1	42.1
125	15.3	0.0	34.4

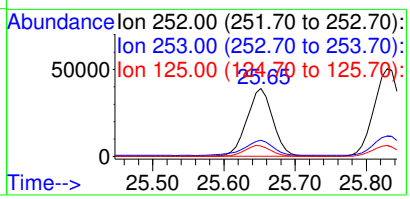


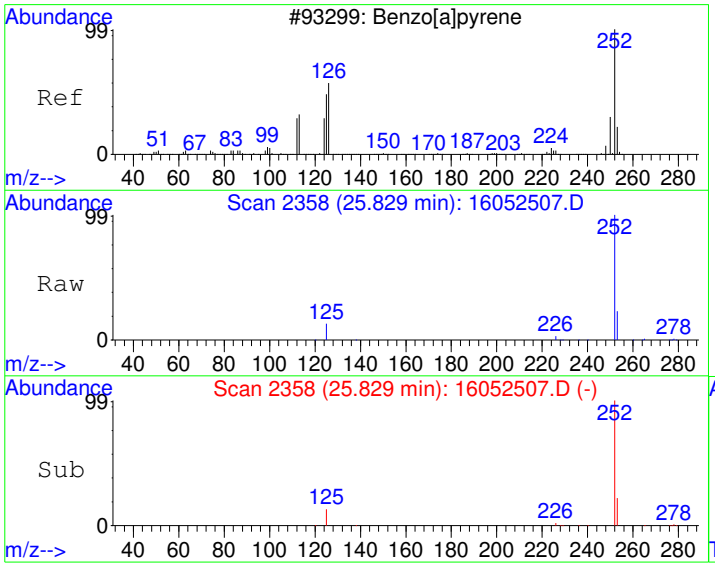


#24
Benzo[e]pyrene
Concen: 289.91 ug/kg
RT: 25.65 min Scan# 2333
Delta R.T. -0.03 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:252 Resp: 98811

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.2	42.2
125	15.3	0.0	36.1

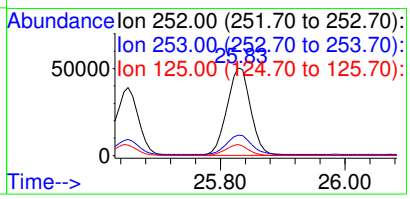


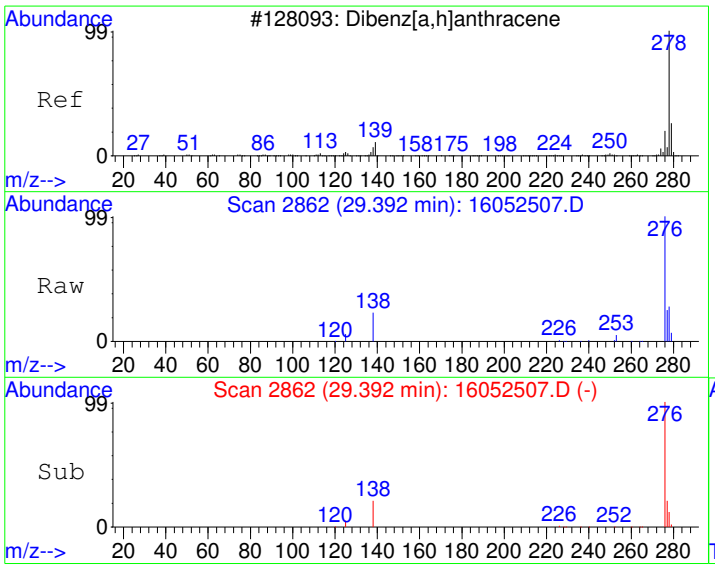


#25
Benzo[a]pyrene
Concen: 379.25 ug/kg
RT: 25.83 min Scan# 2358
Delta R.T. -0.03 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:252 Resp: 132089

Ion	Ratio	Lower	Upper
252	100		
253	22.1	1.9	41.9
125	12.7	0.0	31.7

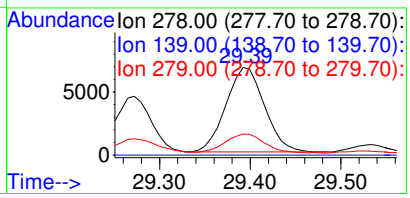


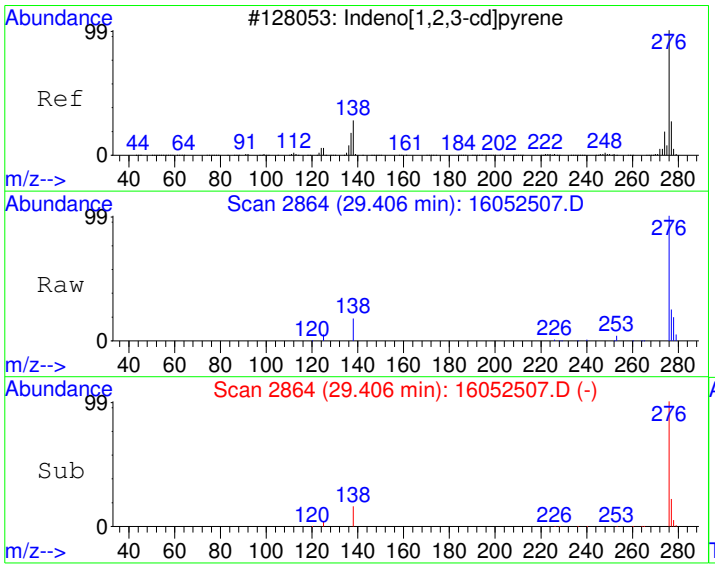


#26
Dibenz[a,h]anthracene
Concen: 62.27 ug/kg
RT: 29.39 min Scan# 2862
Delta R.T. -0.05 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:278 Resp: 19751

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.5	4.2	44.2

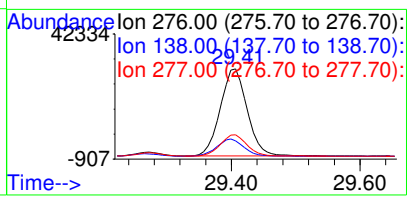


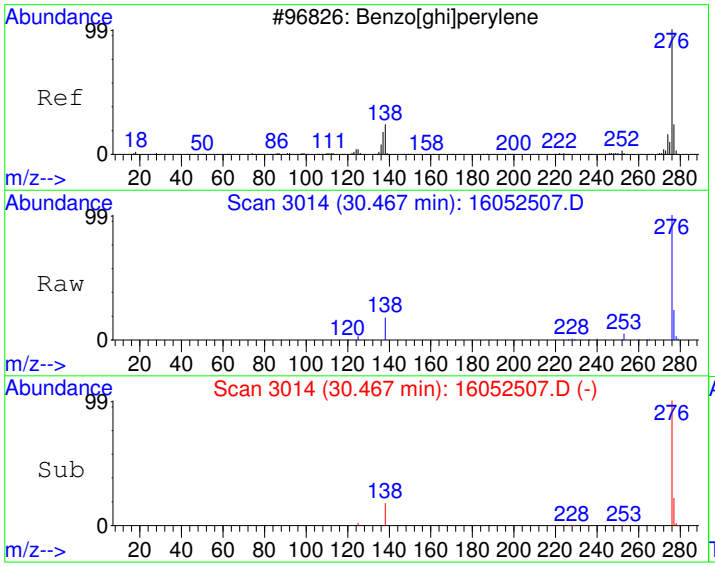


#27
Indeno[1,2,3-cd]pyrene
Concen: 232.59 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.04 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:276 Resp: 88012

Ion	Ratio	Lower	Upper
276	100		
138	17.7	6.7	46.7
277	24.6	5.8	45.8

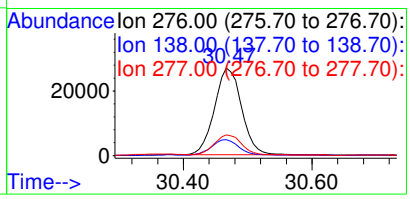




#28
Benzo[g,h,i]perylene
Concen: 267.21 ug/kg
RT: 30.47 min Scan# 3014
Delta R.T. -0.04 min
Lab File: 16052507.D
Acq: 25 May 2016 12:53 pm

Tgt Ion:276 Resp: 78847

Ion	Ratio	Lower	Upper
276	100		
138	18.0	0.0	39.1
277	23.5	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052508.D Vial: 8
Acq On : 25 May 2016 1:32 pm Operator: AR
Sample : 1605135-39A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1247321	4000.00 ug/kg	108
5) Acenaphthene-d10	13.24	164	821822	4000.00 ug/kg	71
11) Phenanthrene-d10	15.33	188	1446152	4000.00 ug/kg	71
17) Chrysene-d12	21.04	240	1732670	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1564613	4000.00 ug/kg	76

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18069	75.37 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.88%#	
16) 4-Terphenyl-d14	17.81	244	26829	71.71 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.79%#	

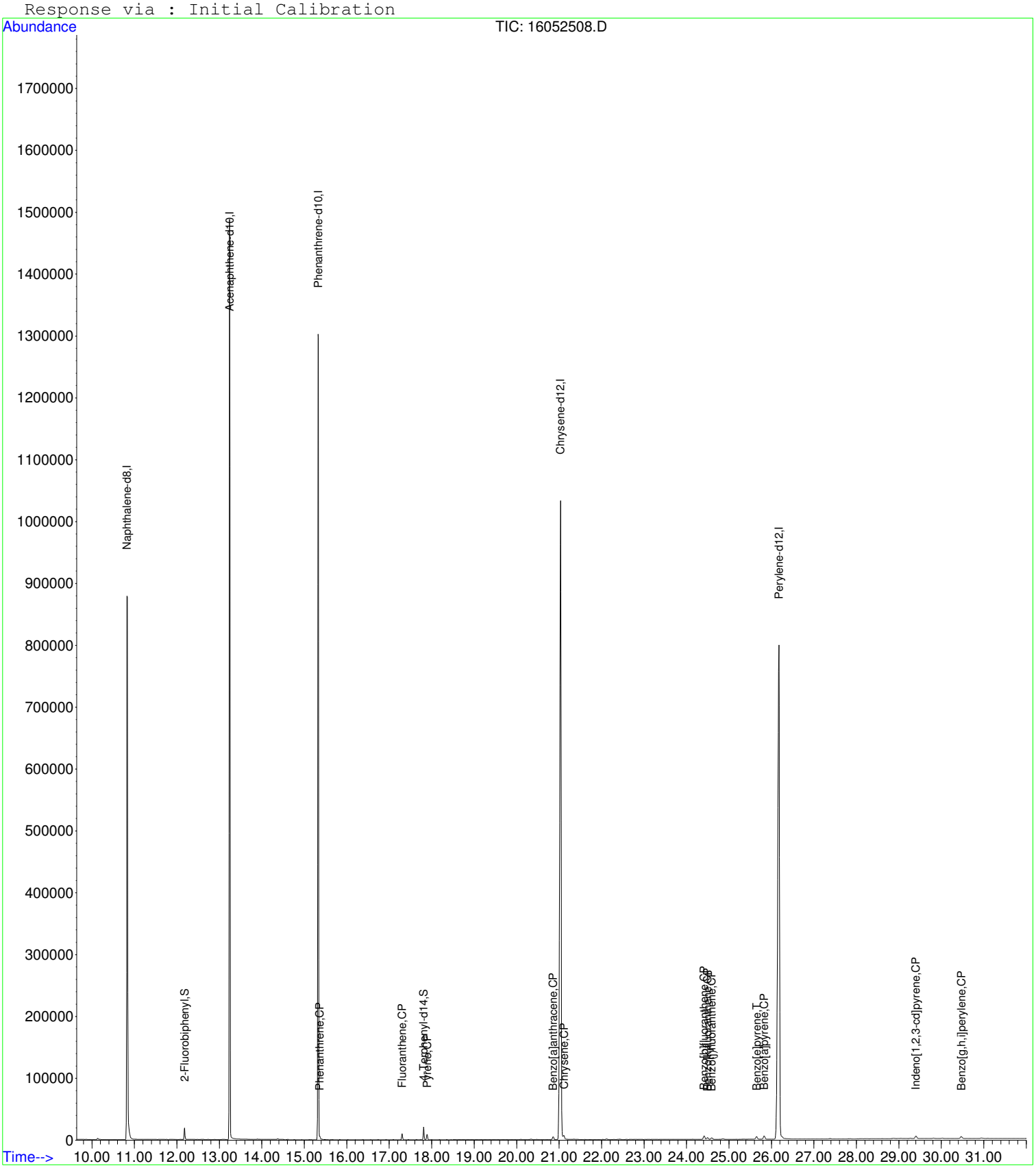
Target Compounds					Qvalue
12) Phenanthrene	15.36	178	2750	7.23 ug/kg	99
14) Fluoranthene	17.30	202	9667	24.56 ug/kg	99
15) Pyrene	17.89	202	9406	23.01 ug/kg	99
18) Benzo[a]anthracene	20.86	228	7088	17.46 ug/kg	98
19) Chrysene	21.11	228	8785	22.40 ug/kg	98
21) Benzo[b]fluoranthene	24.41	252	10271	24.91 ug/kg	100
22) Benzo[k]fluoranthene	24.50	252	4845	12.52 ug/kg	98
23) Benzo(j)fluoranthene	24.59	252	4513	13.10 ug/kg	91
24) Benzo[e]pyrene	25.65	252	7895	21.38 ug/kg	98
25) Benzo[a]pyrene	25.83	252	9970	26.42 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.41	276	7116	17.36 ug/kg	87
28) Benzo[g,h,i]perylene	30.47	276	6437	20.13 ug/kg	97

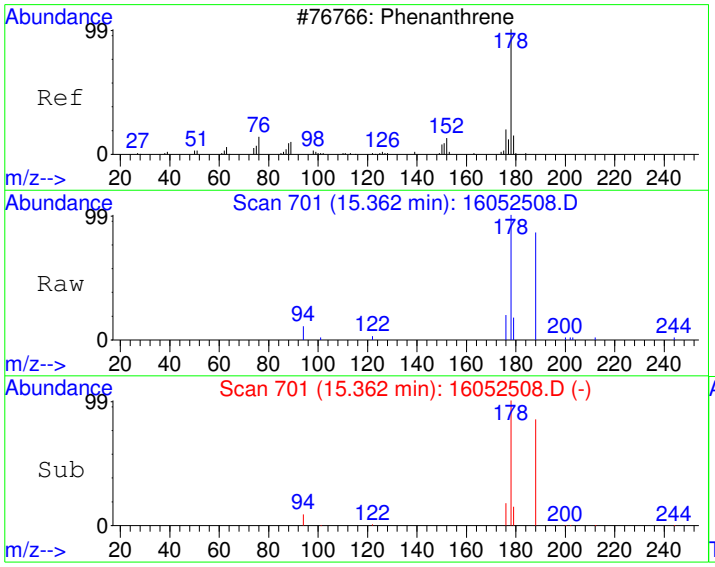
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052508.D Vial: 8
Acq On : 25 May 2016 1:32 pm Operator: AR
Sample : 1605135-39A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

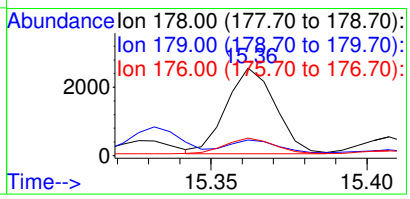


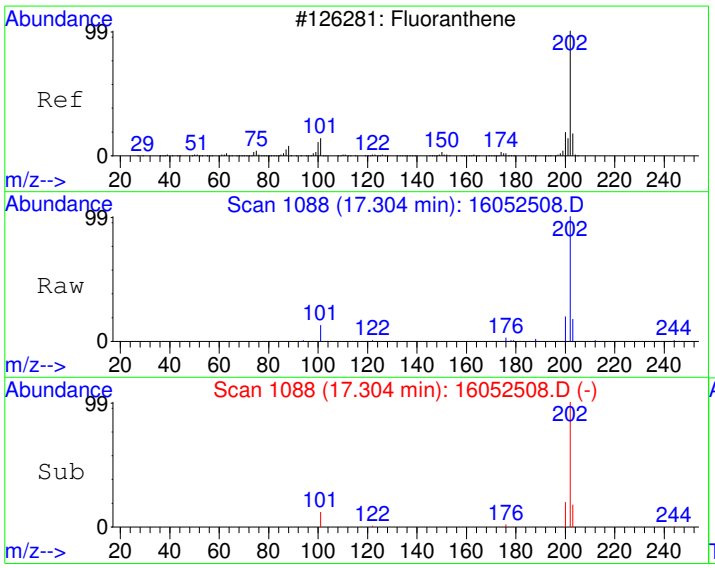


#12
Phenanthrene
Concen: 7.23 ug/kg
RT: 15.36 min Scan# 701
Delta R.T. -0.01 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:178 Resp: 2750

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	18.1	0.0	48.5

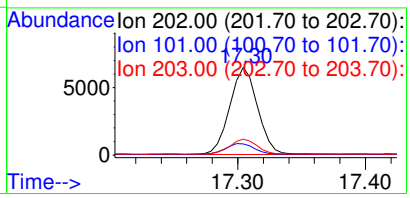


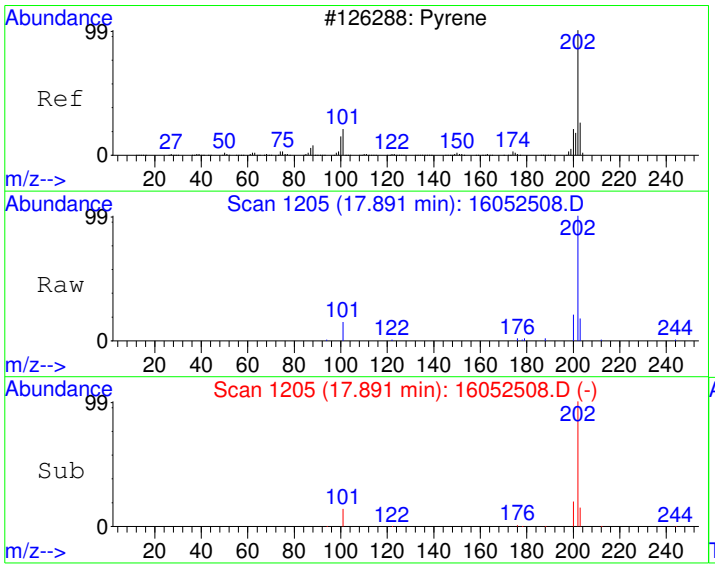


#14
Fluoranthene
Concen: 24.56 ug/kg
RT: 17.30 min Scan# 1088
Delta R.T. -0.01 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:202 Resp: 9667

Ion	Ratio	Lower	Upper
202	100		
101	12.1	0.0	43.0
203	17.7	0.0	47.9

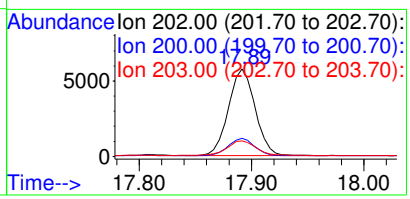


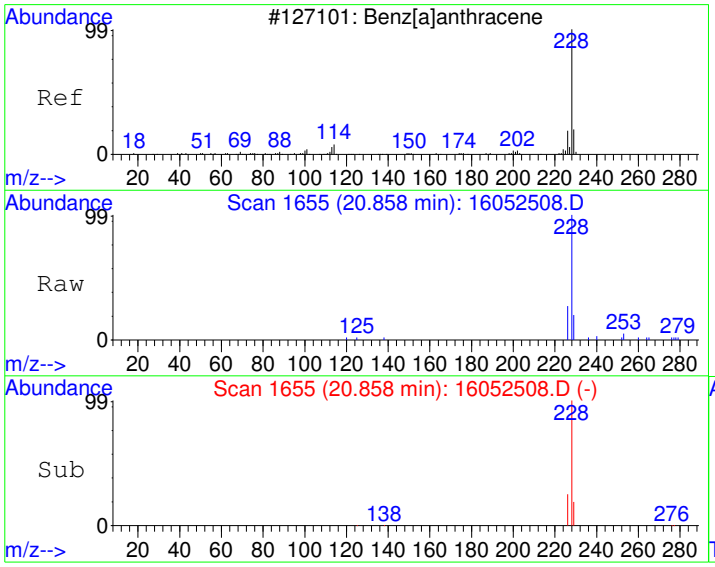


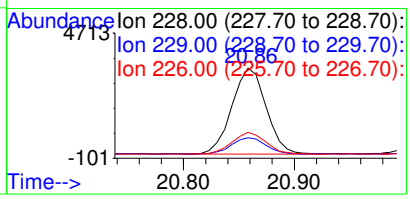
#15
Pyrene
Concen: 23.01 ug/kg
RT: 17.89 min Scan# 1205
Delta R.T. -0.01 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:202 Resp: 9406

Ion	Ratio	Lower	Upper
202	100		
200	20.0	0.0	50.0
203	16.9	0.0	48.0



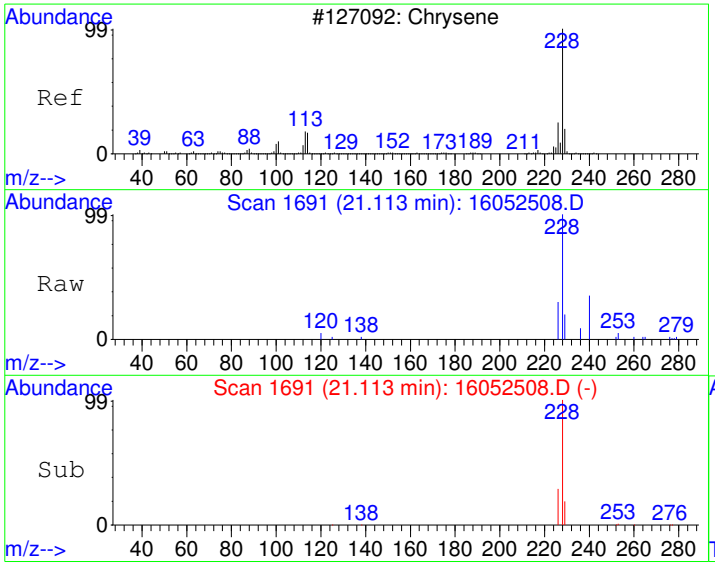


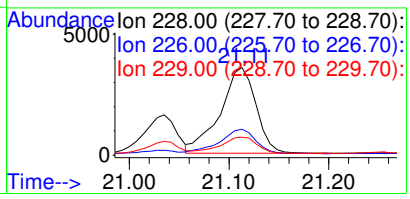


#18
Benzo[a]anthracene
Concen: 17.46 ug/kg
RT: 20.86 min Scan# 1655
Delta R.T. -0.01 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:228 Resp: 7088

Ion	Ratio	Lower	Upper
228	100		
229	18.7	0.0	50.1
226	25.4	0.0	55.2

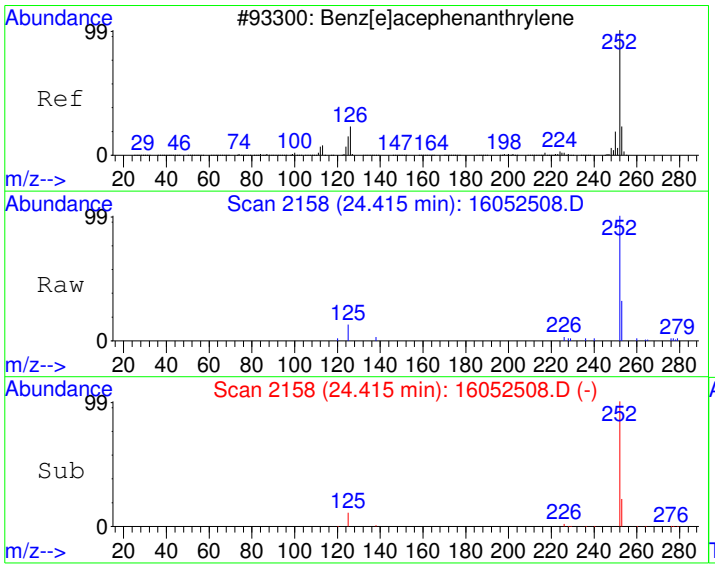


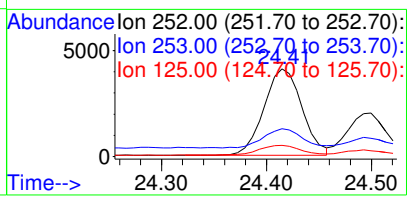


#19
Chrysene
Concen: 22.40 ug/kg
RT: 21.11 min Scan# 1691
Delta R.T. -0.02 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:228 Resp: 8785

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	58.1
229	18.6	0.0	50.1

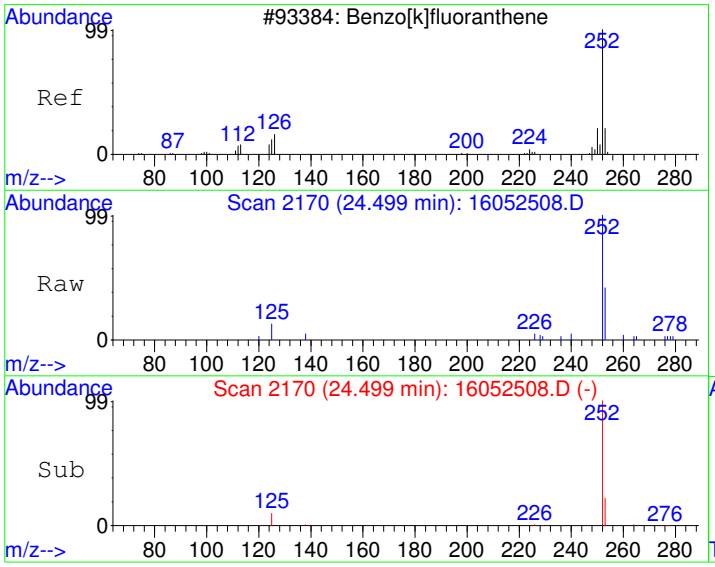




#21
Benzo[b]fluoranthene
Concen: 24.91 ug/kg
RT: 24.41 min Scan# 2158
Delta R.T. -0.03 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:252 Resp: 10271

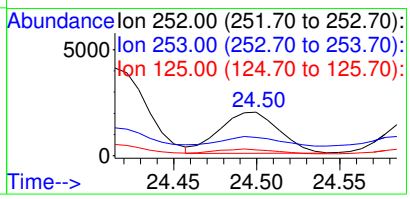
Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	11.2	0.0	41.0

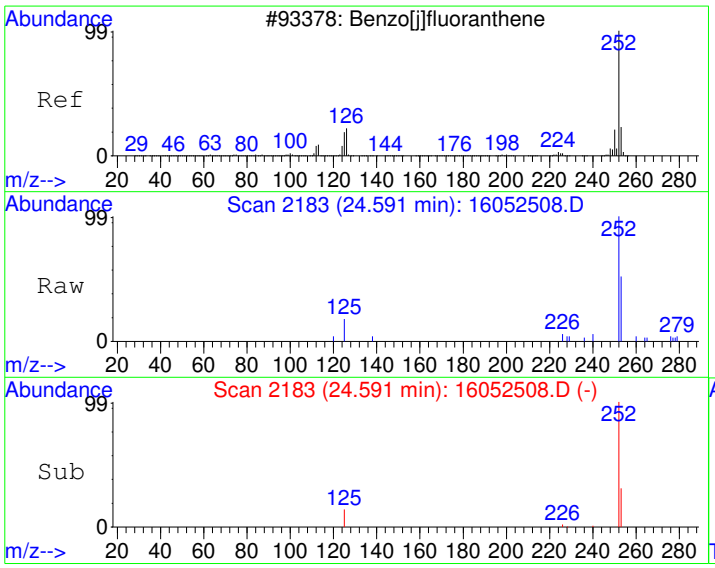


#22
Benzo[k]fluoranthene
Concen: 12.52 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.03 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:252 Resp: 4845

Ion	Ratio	Lower	Upper
252	100		
253	21.5	2.1	42.1
125	9.7	0.0	31.3

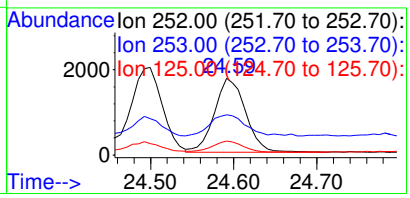


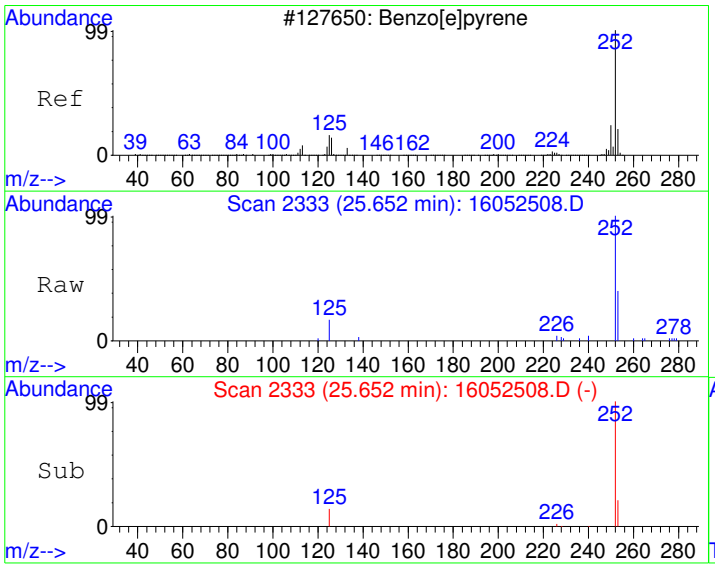


#23
Benzo(j)fluoranthene
Concen: 13.10 ug/kg
RT: 24.59 min Scan# 2183
Delta R.T. -0.04 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:252 Resp: 4513

Ion	Ratio	Lower	Upper
252	100		
253	28.7	2.1	42.1
125	14.5	0.0	34.4

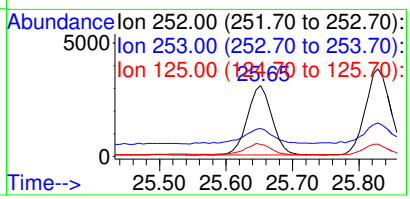


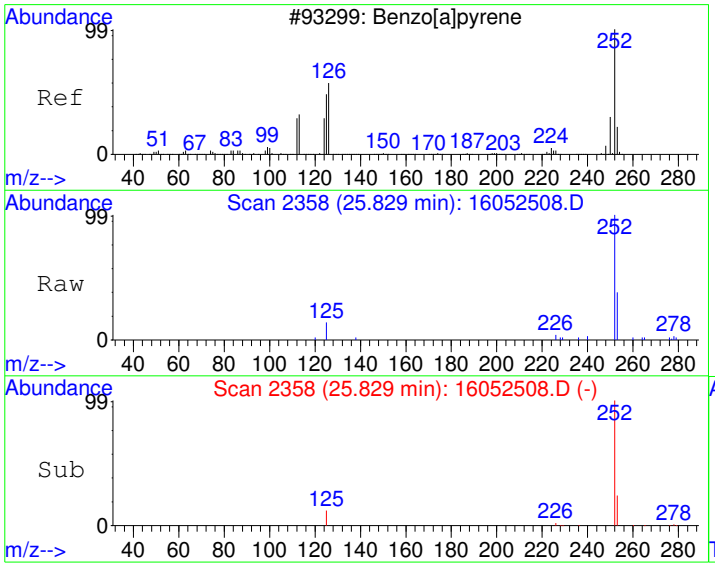


#24
Benzo[e]pyrene
Concen: 21.38 ug/kg
RT: 25.65 min Scan# 2333
Delta R.T. -0.03 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:252 Resp: 7895

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.2	42.2
125	14.5	0.0	36.1

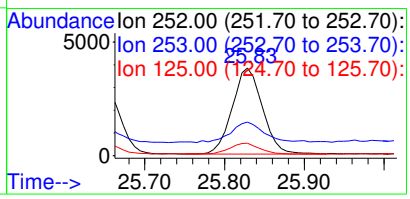


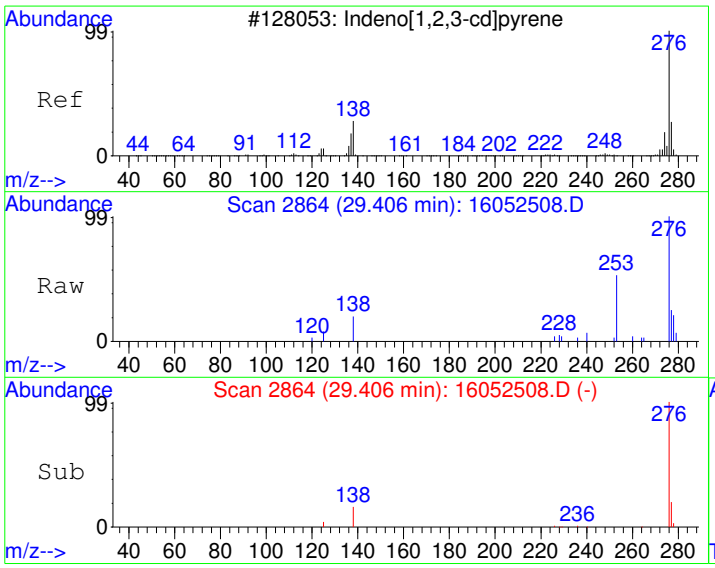


#25
Benzo[a]pyrene
Concen: 26.42 ug/kg
RT: 25.83 min Scan# 2358
Delta R.T. -0.03 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:252 Resp: 9970

Ion	Ratio	Lower	Upper
252	100		
253	23.3	1.9	41.9
125	12.8	0.0	31.7

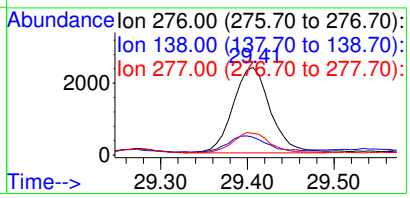


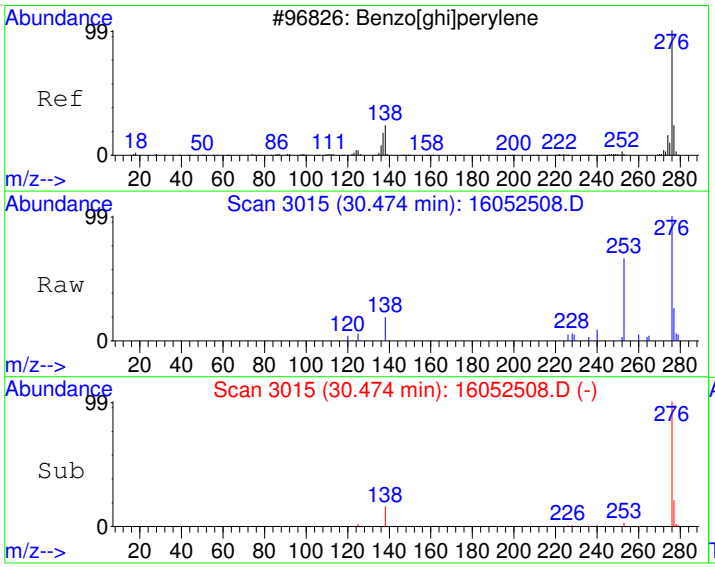


#27
Indeno[1,2,3-cd]pyrene
Concen: 17.36 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.04 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:276 Resp: 7116

Ion	Ratio	Lower	Upper
276	100		
138	17.0	6.7	46.7
277	22.6	5.8	45.8

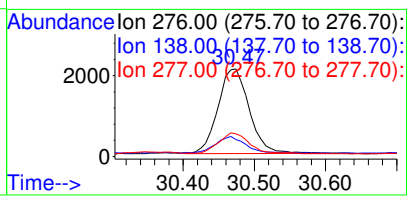




#28
Benzo[g,h,i]perylene
Concen: 20.13 ug/kg
RT: 30.47 min Scan# 3015
Delta R.T. -0.04 min
Lab File: 16052508.D
Acq: 25 May 2016 1:32 pm

Tgt Ion:276 Resp: 6437

Ion	Ratio	Lower	Upper
276	100		
138	16.2	0.0	39.1
277	23.6	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052509.D Vial: 9
Acq On : 25 May 2016 2:12 pm Operator: AR
Sample : 1605135-40A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1240952	4000.00	ug/kg	107
5) Acenaphthene-d10	13.25	164	814736	4000.00	ug/kg	71
11) Phenanthrene-d10	15.33	188	1448042	4000.00	ug/kg	71
17) Chrysene-d12	21.04	240	1718909	4000.00	ug/kg	76
20) Perylene-d12	26.18	264	1544295	4000.00	ug/kg	75

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	18586	78.20	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.96%#			
16) 4-Terphenyl-d14	17.82	244	27498	73.40	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.84%#			

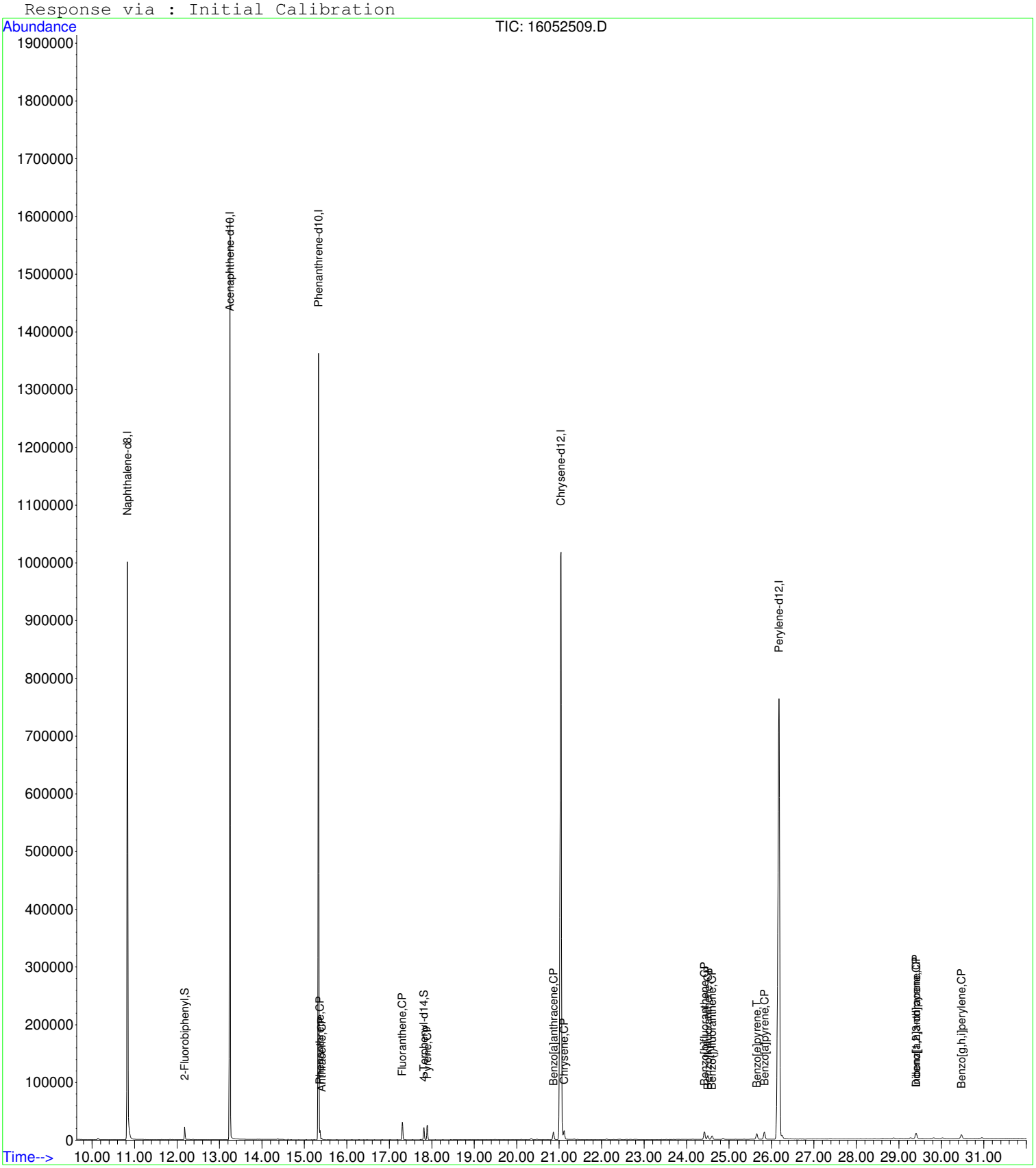
Target Compounds						Qvalue
12) Phenanthrene	15.37	178	11584	30.42	ug/kg	98
13) Anthracene	15.41	178	2295	6.37	ug/kg	98
14) Fluoranthene	17.30	202	30386	77.11	ug/kg	99
15) Pyrene	17.90	202	27270	66.62	ug/kg	98
18) Benzo[a]anthracene	20.87	228	18776	46.63	ug/kg	99
19) Chrysene	21.11	228	22178	57.00	ug/kg	99
21) Benzo[b]fluoranthene	24.42	252	24407	59.96	ug/kg	99
22) Benzo[k]fluoranthene	24.50	252	11210	29.36	ug/kg	99
23) Benzo(j)fluoranthene	24.60	252	10624	31.24	ug/kg	90
24) Benzo[e]pyrene	25.65	252	17713	48.59	ug/kg	99
25) Benzo[a]pyrene	25.84	252	23759	63.78	ug/kg	100
26) Dibenz[a,h]anthracene	29.40	278	3739	11.02	ug/kg	95
27) Indeno[1,2,3-cd]pyrene	29.41	276	15719	38.84	ug/kg	92
28) Benzo[g,h,i]perylene	30.47	276	13506	42.80	ug/kg	97

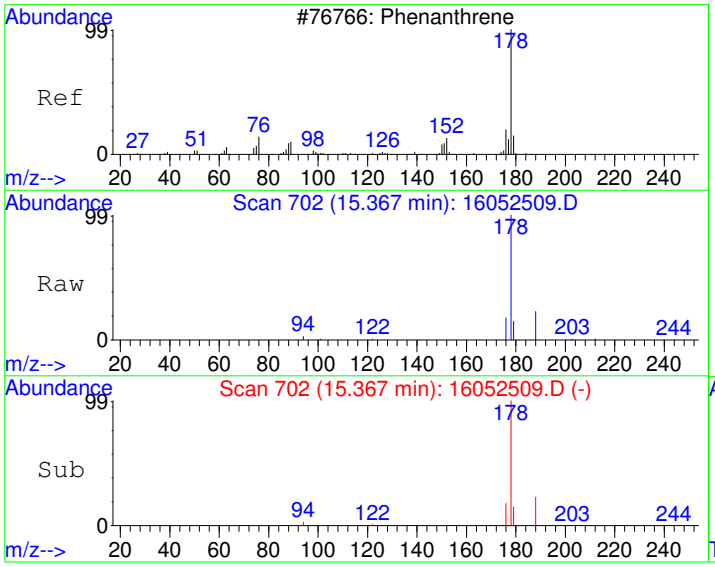
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052509.D Vial: 9
Acq On : 25 May 2016 2:12 pm Operator: AR
Sample : 1605135-40A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

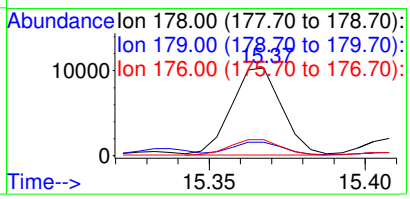


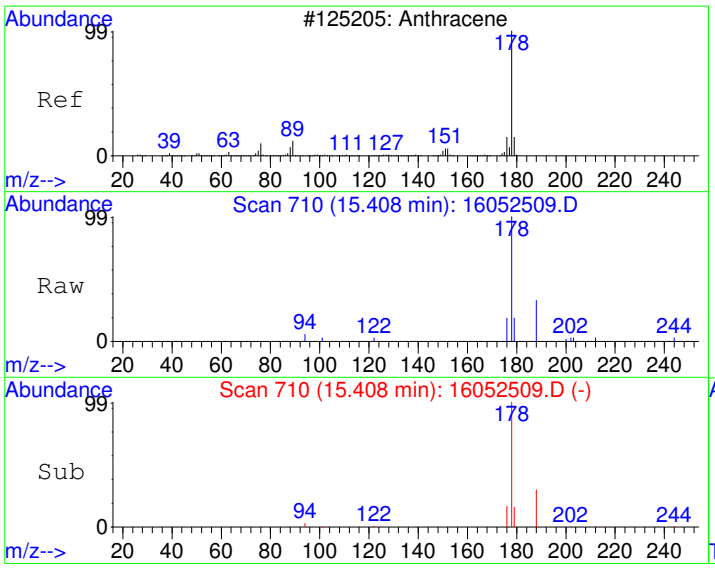


#12
Phenanthrene
Concen: 30.42 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.00 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:178 Resp: 11584

Ion	Ratio	Lower	Upper
178	100		
179	14.6	0.0	45.9
176	17.9	0.0	48.5

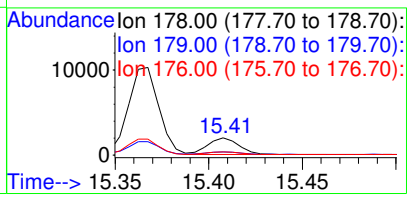


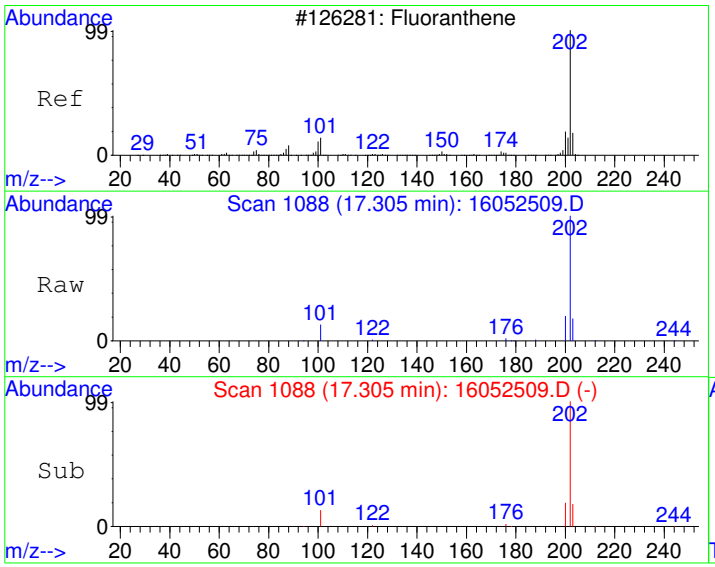


#13
Anthracene
Concen: 6.37 ug/kg
RT: 15.41 min Scan# 710
Delta R.T. -0.00 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:178 Resp: 2295

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	45.9
176	16.8	0.0	48.2

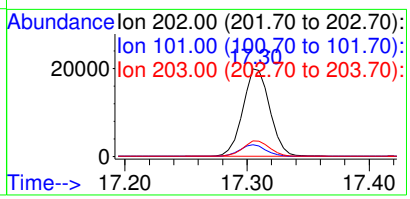


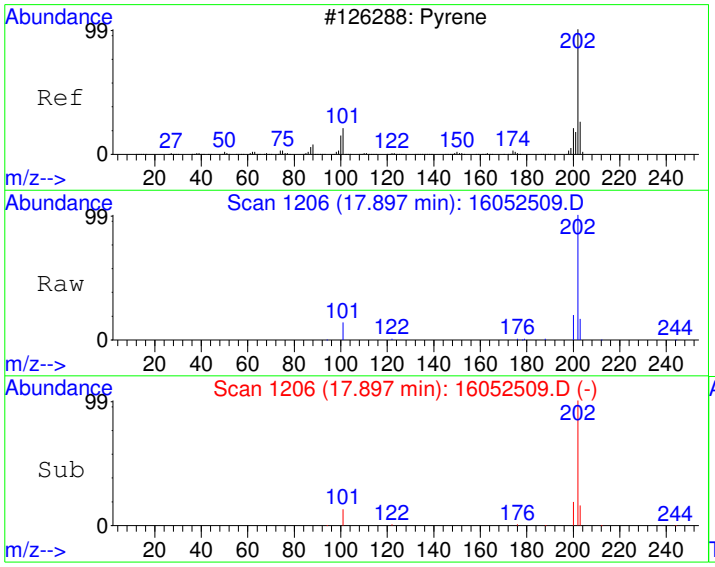


#14
Fluoranthene
Concen: 77.11 ug/kg
RT: 17.30 min Scan# 1088
Delta R.T. -0.01 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:202 Resp: 30386

Ion	Ratio	Lower	Upper
202	100		
101	13.1	0.0	43.0
203	17.5	0.0	47.9

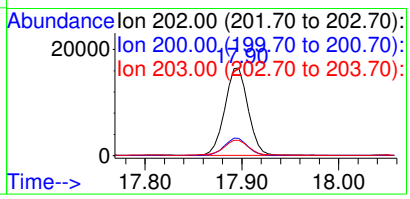


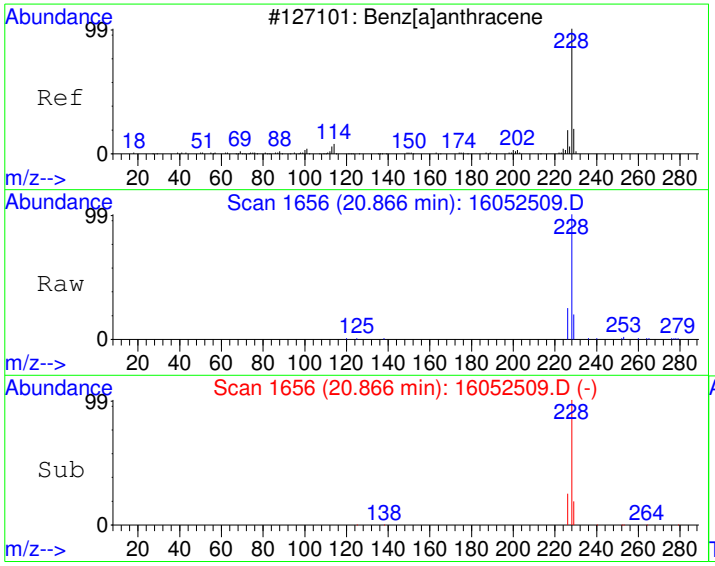


#15
Pyrene
Concen: 66.62 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.00 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:202 Resp: 27270

Ion	Ratio	Lower	Upper
202	100		
200	19.3	0.0	50.0
203	17.1	0.0	48.0

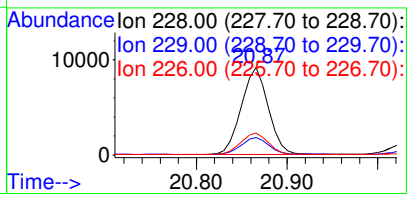


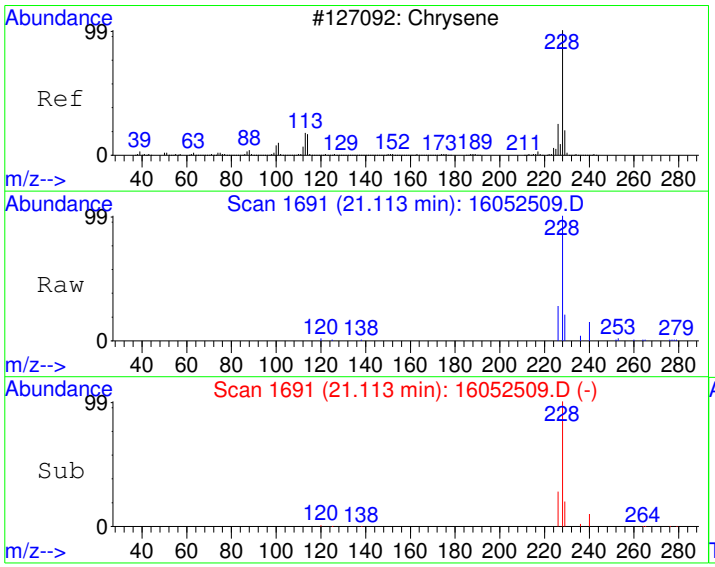


#18
Benzo[a]anthracene
Concen: 46.63 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.01 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:228 Resp: 18776

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	24.8	0.0	55.2

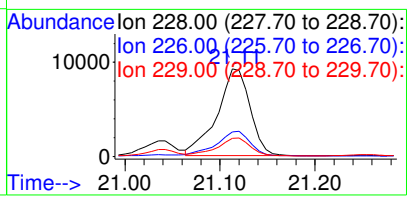


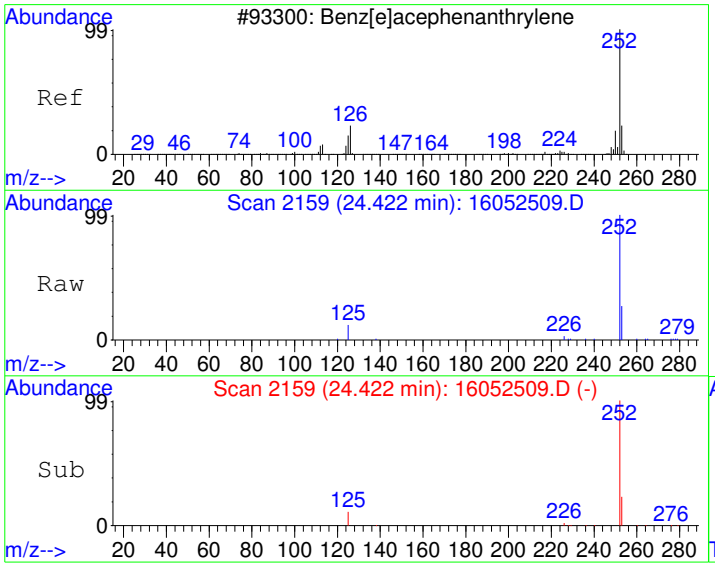


#19
Chrysene
Concen: 57.00 ug/kg
RT: 21.11 min Scan# 1691
Delta R.T. -0.02 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:228 Resp: 22178

Ion	Ratio	Lower	Upper
228	100		
226	27.7	0.0	58.1
229	20.2	0.0	50.1

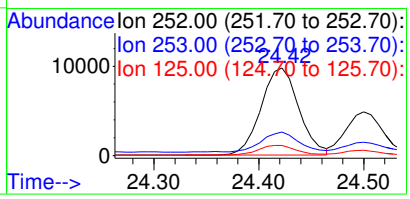


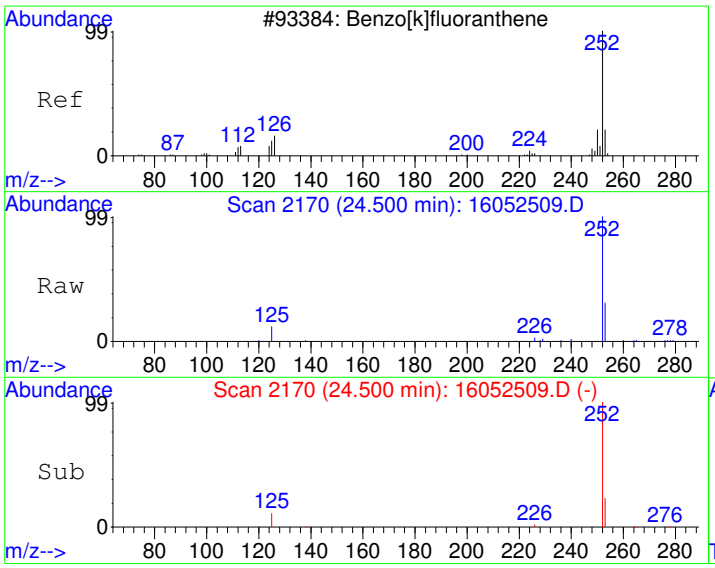


#21
Benzo[b]fluoranthene
Concen: 59.96 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.02 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:252 Resp: 24407

Ion	Ratio	Lower	Upper
252	100		
253	23.1	0.0	52.2
125	11.0	0.0	41.0

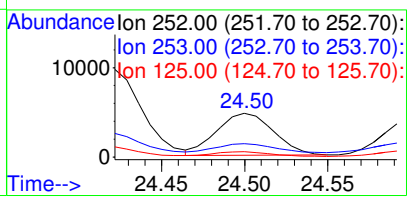


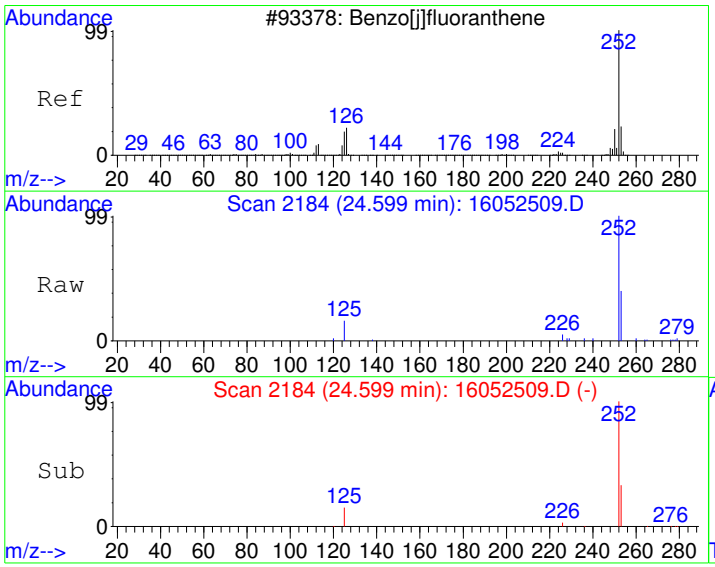


#22
Benzo[k]fluoranthene
Concen: 29.36 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.03 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:252 Resp: 11210

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.1	42.1
125	11.1	0.0	31.3

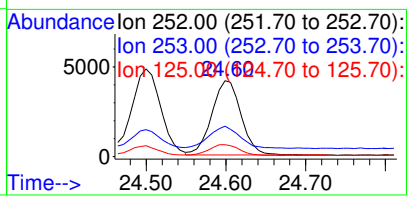


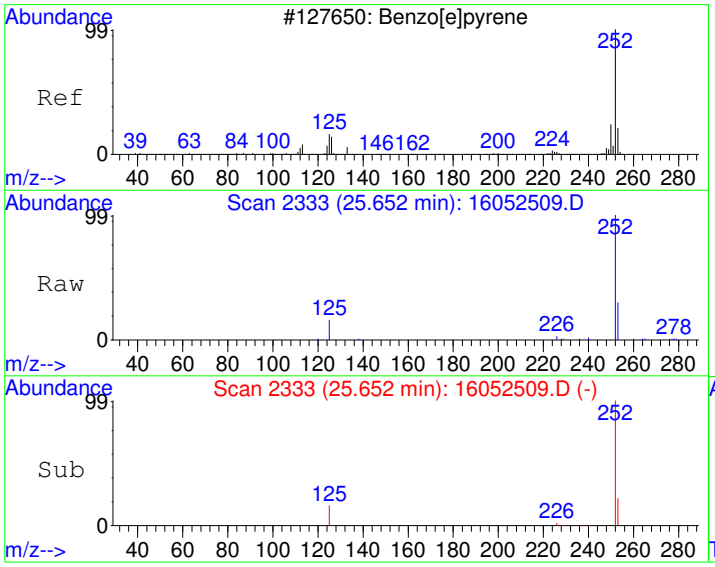


#23
Benzo(j)fluoranthene
Concen: 31.24 ug/kg
RT: 24.60 min Scan# 2184
Delta R.T. -0.03 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:252 Resp: 10624

Ion	Ratio	Lower	Upper
252	100		
253	29.9	2.1	42.1
125	14.5	0.0	34.4

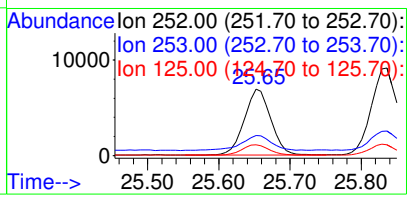


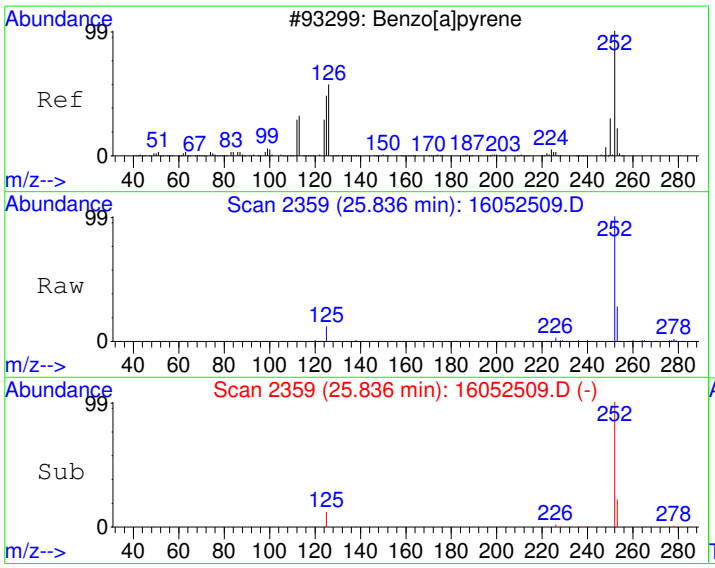


#24
Benzo[e]pyrene
Concen: 48.59 ug/kg
RT: 25.65 min Scan# 2333
Delta R.T. -0.03 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:252 Resp: 17713

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.2	42.2
125	15.5	0.0	36.1

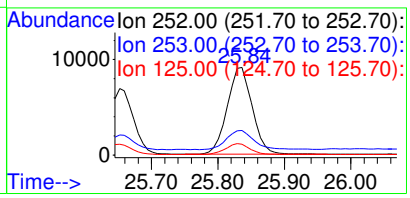


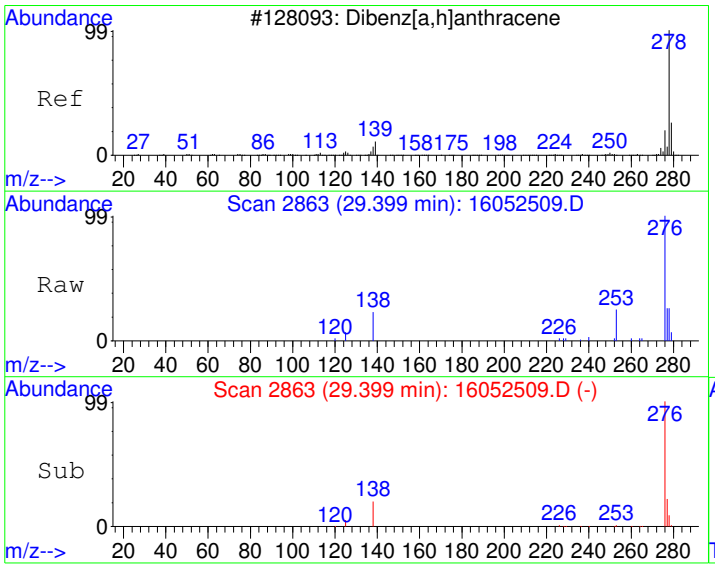


#25
Benzo[a]pyrene
Concen: 63.78 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.02 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:252 Resp: 23759

Ion	Ratio	Lower	Upper
252	100		
253	21.8	1.9	41.9
125	11.7	0.0	31.7

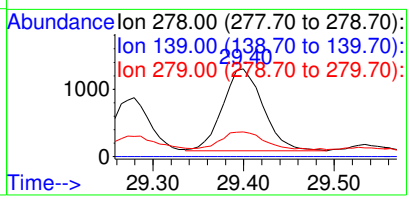


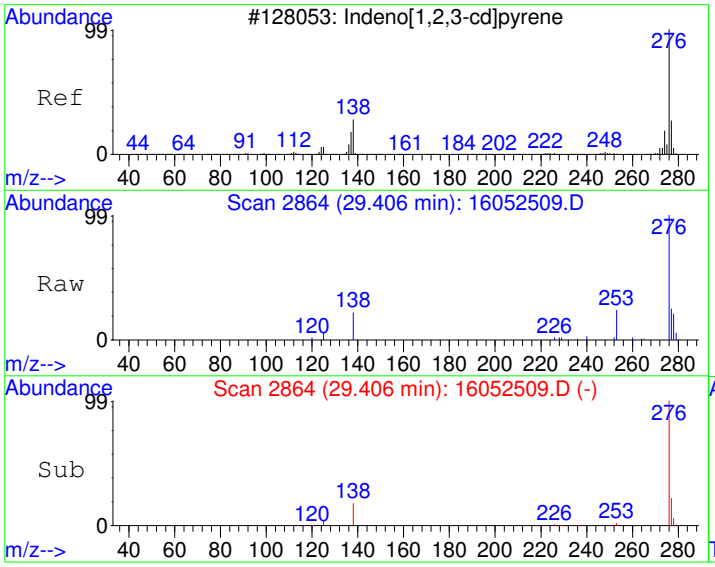


#26
Dibenz[a,h]anthracene
Concen: 11.02 ug/kg
RT: 29.40 min Scan# 2863
Delta R.T. -0.04 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:278 Resp: 3739

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.5	4.2	44.2

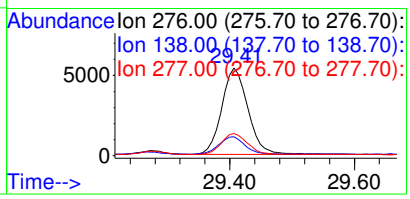


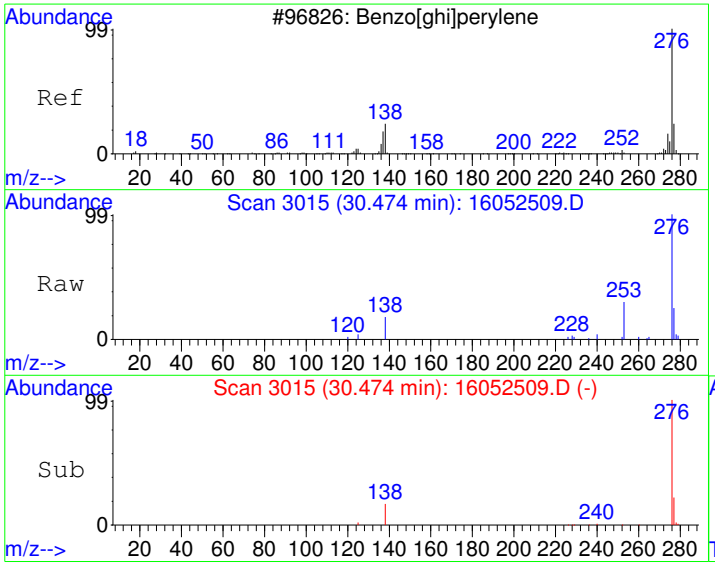


#27
Indeno[1,2,3-cd]pyrene
Concen: 38.84 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.04 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:276 Resp: 15719

Ion	Ratio	Lower	Upper
276	100		
138	20.1	6.7	46.7
277	24.4	5.8	45.8

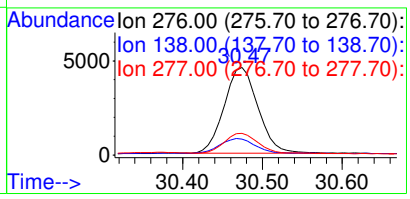




#28
Benzo[g,h,i]perylene
Concen: 42.80 ug/kg
RT: 30.47 min Scan# 3015
Delta R.T. -0.04 min
Lab File: 16052509.D
Acq: 25 May 2016 2:12 pm

Tgt Ion:276 Resp: 13506

Ion	Ratio	Lower	Upper
276	100		
138	16.6	0.0	39.1
277	23.8	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052510.D Vial: 10
Acq On : 25 May 2016 2:52 pm Operator: AR
Sample : 1605135-41A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1217515	4000.00 ug/kg	105
5) Acenaphthene-d10	13.25	164	789622	4000.00 ug/kg	69
11) Phenanthrene-d10	15.33	188	1398380	4000.00 ug/kg	68
17) Chrysene-d12	21.03	240	1657846	4000.00 ug/kg	73
20) Perylene-d12	26.17	264	1497914	4000.00 ug/kg	73

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	17739	77.01 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.93%#		
16) 4-Terphenyl-d14	17.81	244	26013	71.90 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.80%#		

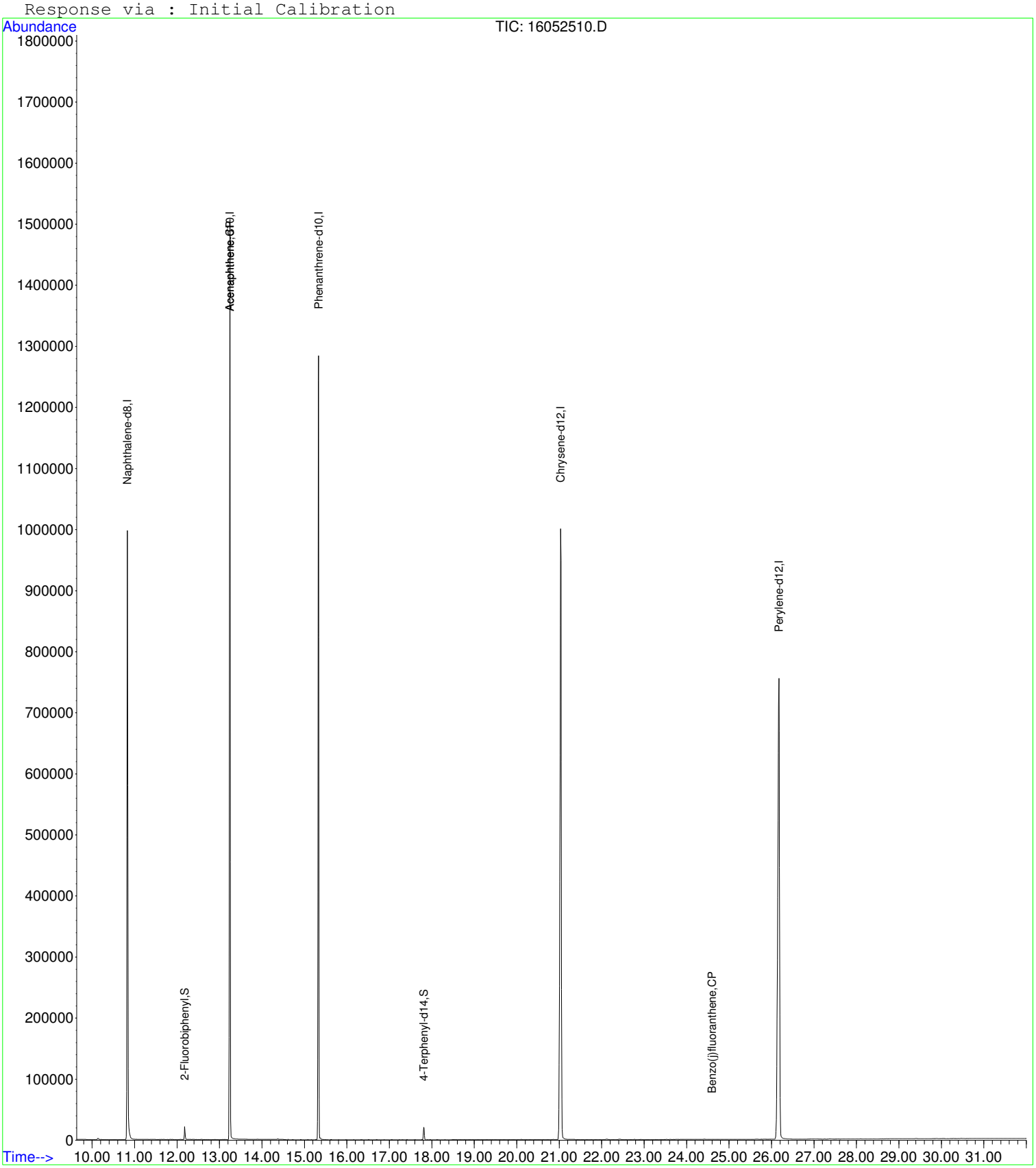
Target Compounds					Qvalue
9) Acenaphthene	13.25	154	2410	~~11.42 ug/kg#~~	~~9~~
23) Benzo(j)fluoranthene	24.60	252	330	1.00 ug/kg#	62

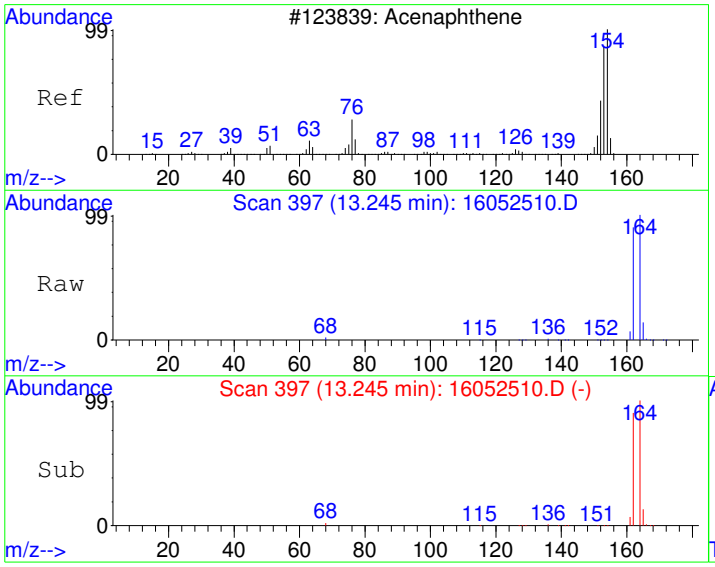
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052510.D Vial: 10
Acq On : 25 May 2016 2:52 pm Operator: AR
Sample : 1605135-41A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:26 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

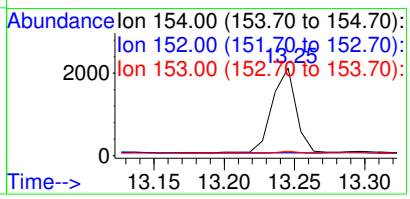


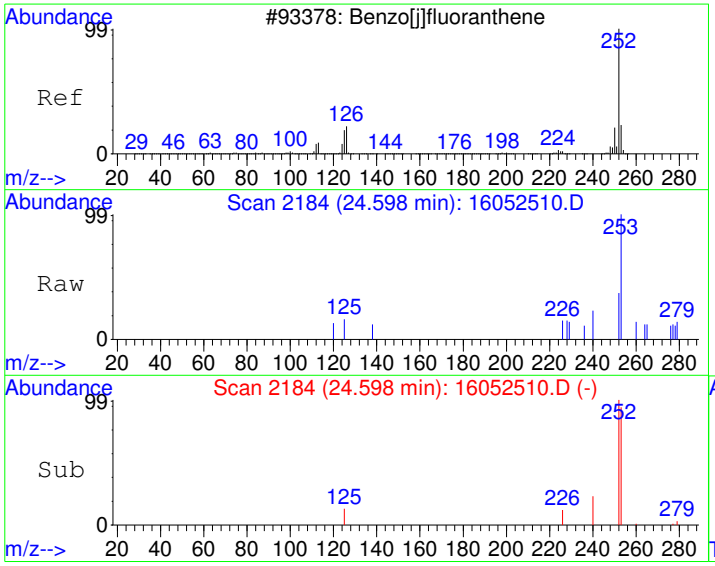


#9
Acenaphthene
Concen: 11.42 ug/kg
RT: 13.25 min Scan# 397
Delta R.T. -0.05 min
Lab File: 16052510.D
Acq: 25 May 2016 2:52 pm

Tgt Ion:154 Resp: 2410

Ion	Ratio	Lower	Upper
154	100		
152	0.5	18.9	78.9#
153	2.4	75.2	135.2#

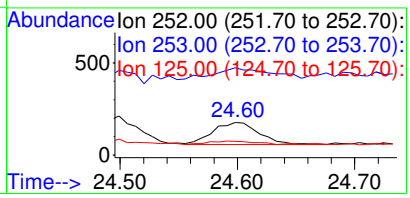




#23
Benzo(j)fluoranthene
Concen: 1.00 ug/kg
RT: 24.60 min Scan# 2184
Delta R.T. -0.03 min
Lab File: 16052510.D
Acq: 25 May 2016 2:52 pm

Tgt Ion:252 Resp: 330

Ion	Ratio	Lower	Upper
252	100		
253	51.7	2.1	42.1#
125	15.0	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052511.D Vial: 11
Acq On : 25 May 2016 3:32 pm Operator: AR
Sample : 1605135-42A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1280317	4000.00	ug/kg	110
5) Acenaphthene-d10	13.25	164	808129	4000.00	ug/kg	70
11) Phenanthrene-d10	15.33	188	1446813	4000.00	ug/kg	71
17) Chrysene-d12	21.04	240	1672123	4000.00	ug/kg	74
20) Perylene-d12	26.17	264	1522250	4000.00	ug/kg	74

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	17735	75.23	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.88%#			
16) 4-Terphenyl-d14	17.82	244	25921	69.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.73%#			

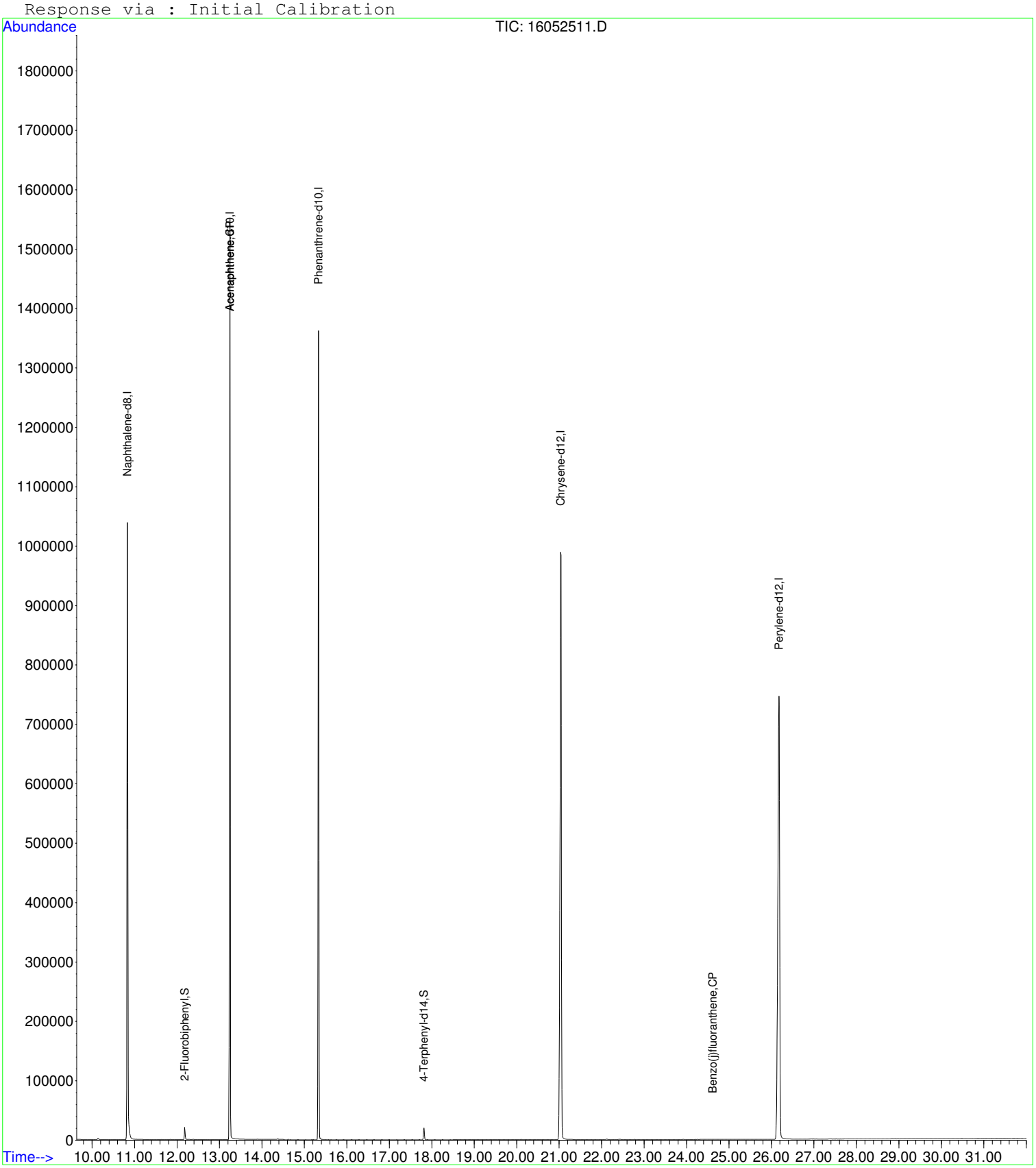
Target Compounds						Qvalue
9) Acenaphthene	13.25	154	2422	~~11.21~~	~~ug/kg#~~	~~9~~
23) Benzo(j)fluoranthene	24.61	252	79	0.24	ug/kg	87

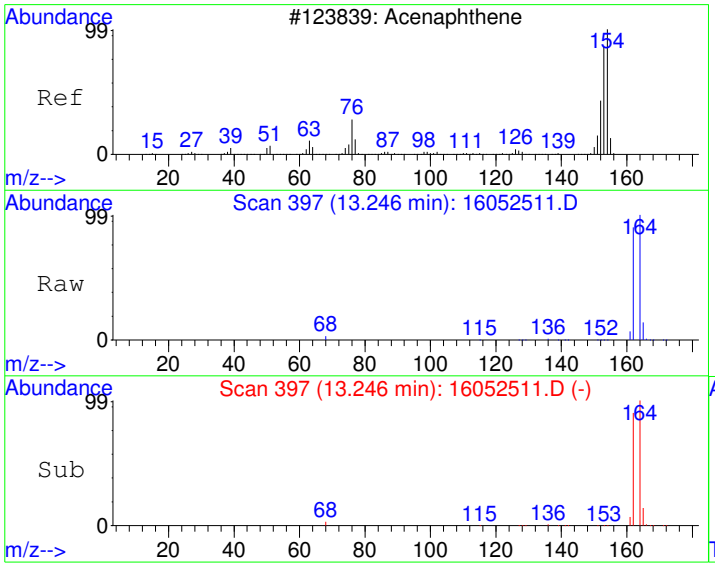
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052511.D Vial: 11
Acq On : 25 May 2016 3:32 pm Operator: AR
Sample : 1605135-42A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

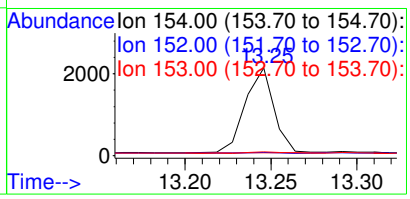


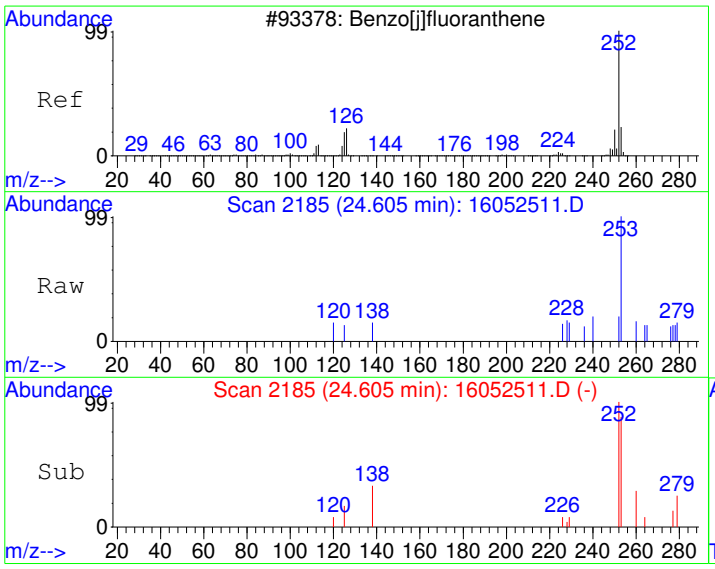


#9
Acenaphthene
Concen: 11.21 ug/kg
RT: 13.25 min Scan# 397
Delta R.T. -0.05 min
Lab File: 16052511.D
Acq: 25 May 2016 3:32 pm

Tgt Ion:154 Resp: 2422

Ion	Ratio	Lower	Upper
154	100		
152	0.8	18.9	78.9#
153	1.4	75.2	135.2#

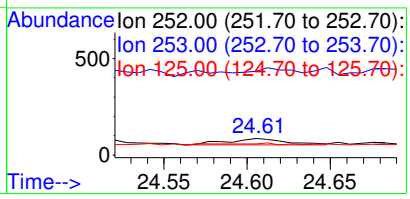




#23
Benzo(j)fluoranthene
Concen: 0.24 ug/kg
RT: 24.61 min Scan# 2185
Delta R.T. -0.02 min
Lab File: 16052511.D
Acq: 25 May 2016 3:32 pm

Tgt Ion:252 Resp: 79

Ion	Ratio	Lower	Upper
252	100		
253	27.3	2.1	42.1
125	21.2	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052517.D Vial: 17
Acq On : 25 May 2016 7:32 pm Operator: AR
Sample : 1605135-36AMS Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1138528	4000.00 ug/kg	98
5) Acenaphthene-d10	13.24	164	724981	4000.00 ug/kg	63
11) Phenanthrene-d10	15.33	188	1272375	4000.00 ug/kg	62
17) Chrysene-d12	21.04	240	1494687	4000.00 ug/kg	66
20) Perylene-d12	26.18	264	1360436	4000.00 ug/kg	66

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	17302	81.81 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.05%#	
16) 4-Terphenyl-d14	17.82	244	25169	76.46 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.91%#	

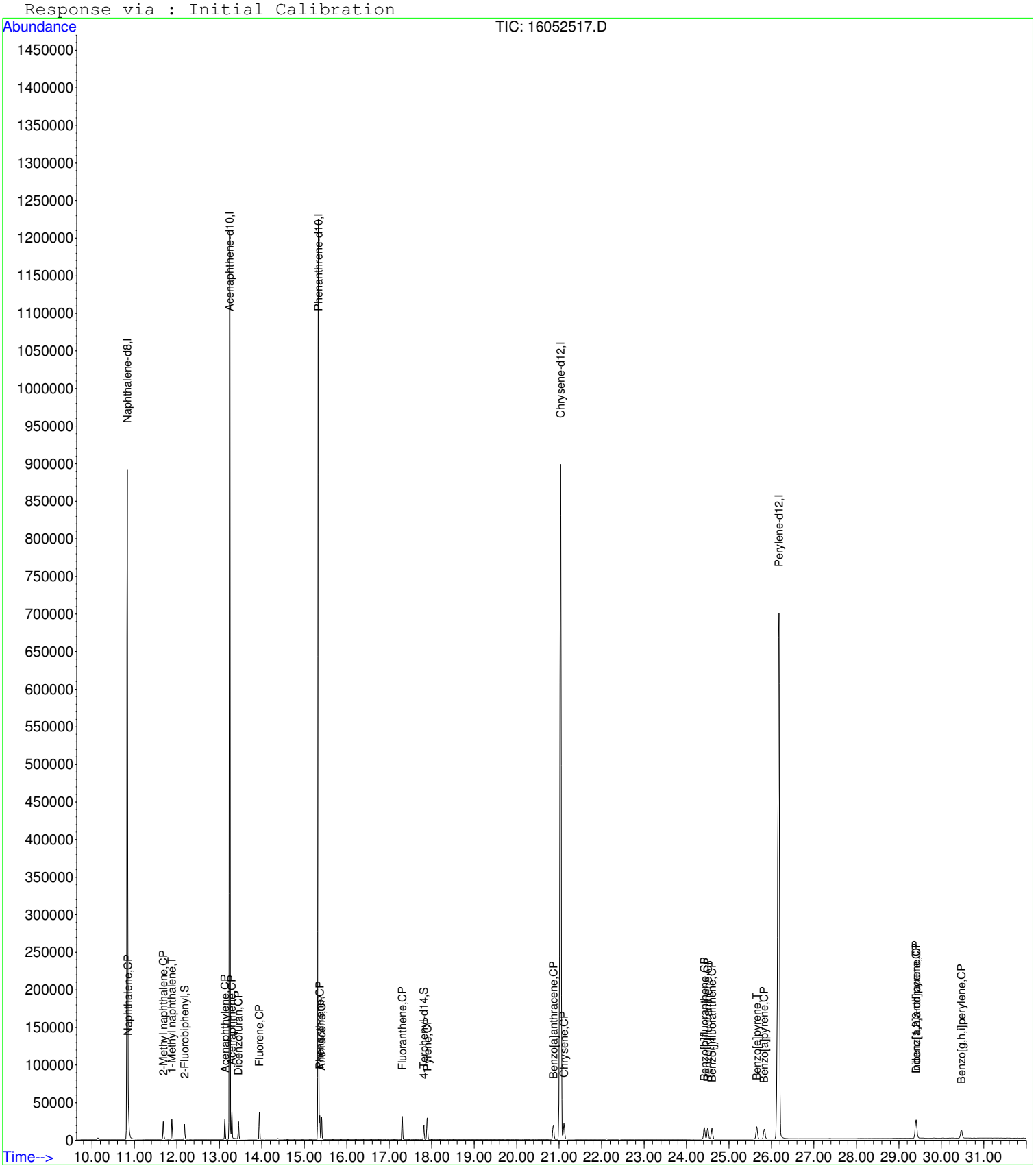
Target Compounds					Qvalue
2) Naphthalene	10.86	128	20335	71.40 ug/kg	100
3) 2-Methyl naphthalene	11.68	142	15506	61.64 ug/kg	99
4) 1-Methyl naphthalene	11.88	142	14342	62.25 ug/kg	95
6) Dibenzofuran	13.45	168	21392	78.73 ug/kg	97
8) Acenaphthylene	13.13	152	24241	77.64 ug/kg	98
9) Acenaphthene	13.29	154	14290	73.74 ug/kg	99
10) Fluorene	13.94	166	17188	73.03 ug/kg	99
12) Phenanthrene	15.37	178	26840	80.21 ug/kg	98
13) Anthracene	15.41	178	24907	78.64 ug/kg	99
14) Fluoranthene	17.31	202	30788	88.91 ug/kg	97
15) Pyrene	17.90	202	31420	87.35 ug/kg	99
18) Benzo[a]anthracene	20.87	228	28212	80.57 ug/kg	99
19) Chrysene	21.11	228	27169	80.30 ug/kg	100
21) Benzo[b]fluoranthene	24.42	252	28920	80.66 ug/kg	99
22) Benzo[k]fluoranthene	24.50	252	26525	78.86 ug/kg	99
23) Benzo(j)fluoranthene	24.60	252	25214	84.15 ug/kg	100
24) Benzo[e]pyrene	25.65	252	29272	91.16 ug/kg	99
25) Benzo[a]pyrene	25.83	252	25864	78.82 ug/kg	99
26) Dibenz[a,h]anthracene	29.41	278	23246	77.79 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.41	276	28375	79.59 ug/kg	97
28) Benzo[g,h,i]perylene	30.47	276	21623	77.78 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052517.D Vial: 17
Acq On : 25 May 2016 7:32 pm Operator: AR
Sample : 1605135-36AMS Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052518.D Vial: 18
Acq On : 25 May 2016 8:12 pm Operator: AR
Sample : 1605135-36AMSD Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1244352	4000.00 ug/kg	107
5) Acenaphthene-d10	13.25	164	790406	4000.00 ug/kg	69
11) Phenanthrene-d10	15.33	188	1411061	4000.00 ug/kg	69
17) Chrysene-d12	21.04	240	1647150	4000.00 ug/kg	73
20) Perylene-d12	26.18	264	1493717	4000.00 ug/kg	73

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	17618	76.41 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.91%#	
16) 4-Terphenyl-d14	17.81	244	25997	71.21 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	

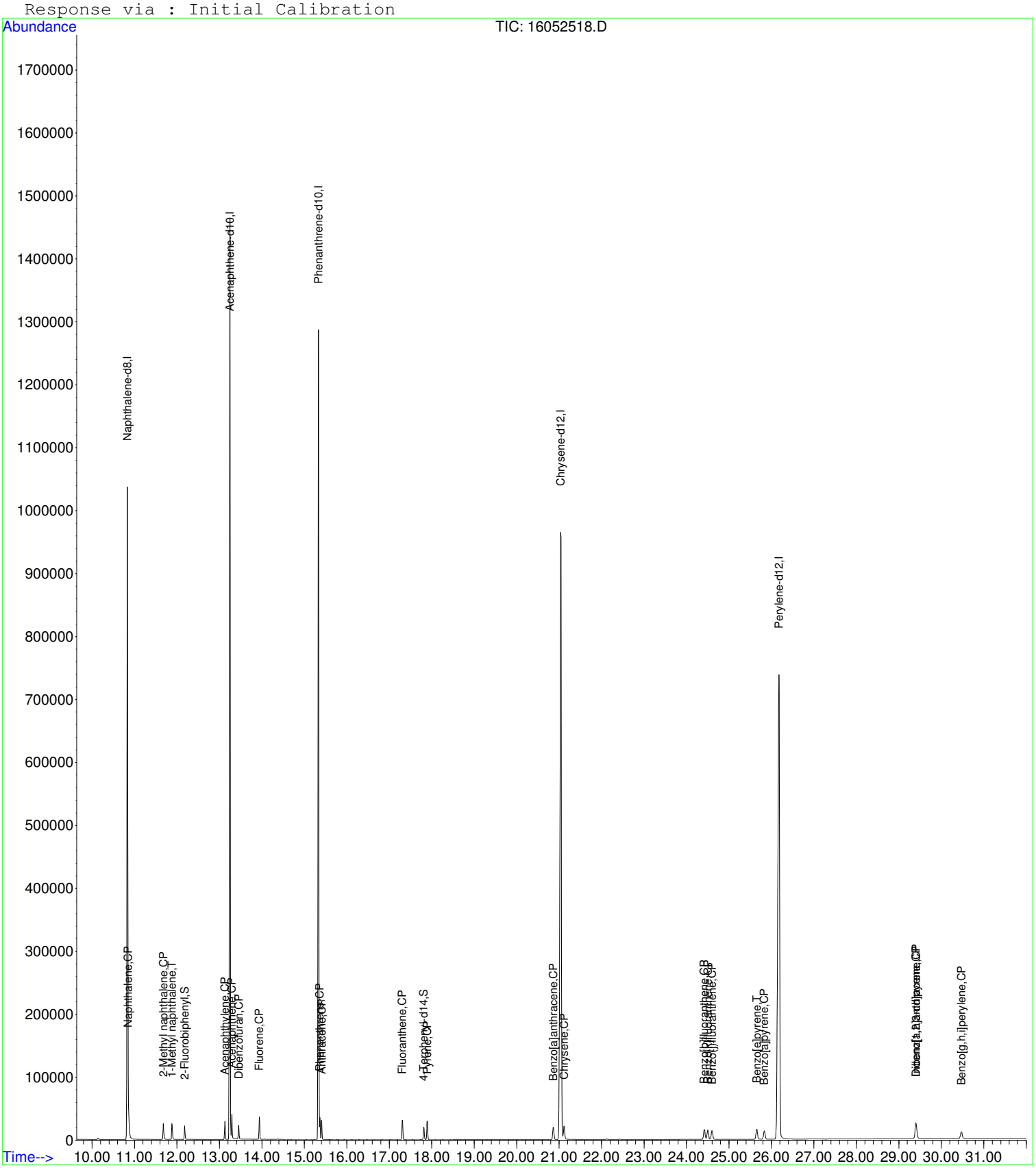
Target Compounds					Qvalue
2) Naphthalene	10.86	128	21199	68.11 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	15871	57.72 ug/kg	99
4) 1-Methyl naphthalene	11.88	142	14603	57.99 ug/kg	92
6) Dibenzofuran	13.46	168	22307	75.30 ug/kg	98
8) Acenaphthylene	13.13	152	24364	71.58 ug/kg	99
9) Acenaphthene	13.29	154	14869	70.38 ug/kg	99
10) Fluorene	13.94	166	17951	69.96 ug/kg	98
12) Phenanthrene	15.36	178	28045	75.58 ug/kg	99
13) Anthracene	15.41	178	25835	73.55 ug/kg	98
14) Fluoranthene	17.30	202	31721	82.60 ug/kg	99
15) Pyrene	17.89	202	32135	80.56 ug/kg	99
18) Benzo[a]anthracene	20.86	228	29135	75.50 ug/kg	99
19) Chrysene	21.11	228	27477	73.70 ug/kg	99
21) Benzo[b]fluoranthene	24.42	252	29213	74.20 ug/kg	99
22) Benzo[k]fluoranthene	24.50	252	26945	72.96 ug/kg	97
23) Benzo(j)fluoranthene	24.60	252	25699	78.12 ug/kg	99
24) Benzo[e]pyrene	25.65	252	29517	83.72 ug/kg	99
25) Benzo[a]pyrene	25.83	252	25877	71.82 ug/kg	99
26) Dibenz[a,h]anthracene	29.40	278	23954	73.00 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.41	276	28899	73.83 ug/kg	95
28) Benzo[g,h,i]perylene	30.47	276	22243	72.87 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052518.D Vial: 18
Acq On : 25 May 2016 8:12 pm Operator: AR
Sample : 1605135-36AMSD Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052520.D Vial: 20
Acq On : 25 May 2016 9:28 pm Operator: AR
Sample : ICV2-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1632535	4000.00 ug/kg	141
5) Acenaphthene-d10	13.25	164	1303917	4000.00 ug/kg	113
11) Phenanthrene-d10	15.33	188	2146514	4000.00 ug/kg	105
17) Chrysene-d12	21.05	240	2482886	4000.00 ug/kg	109
20) Perylene-d12	26.19	264	2271782	4000.00 ug/kg	110

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	779104	2048.32 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	51.21%	
16) 4-Terphenyl-d14	17.82	244	1028789	1852.54 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.31%	

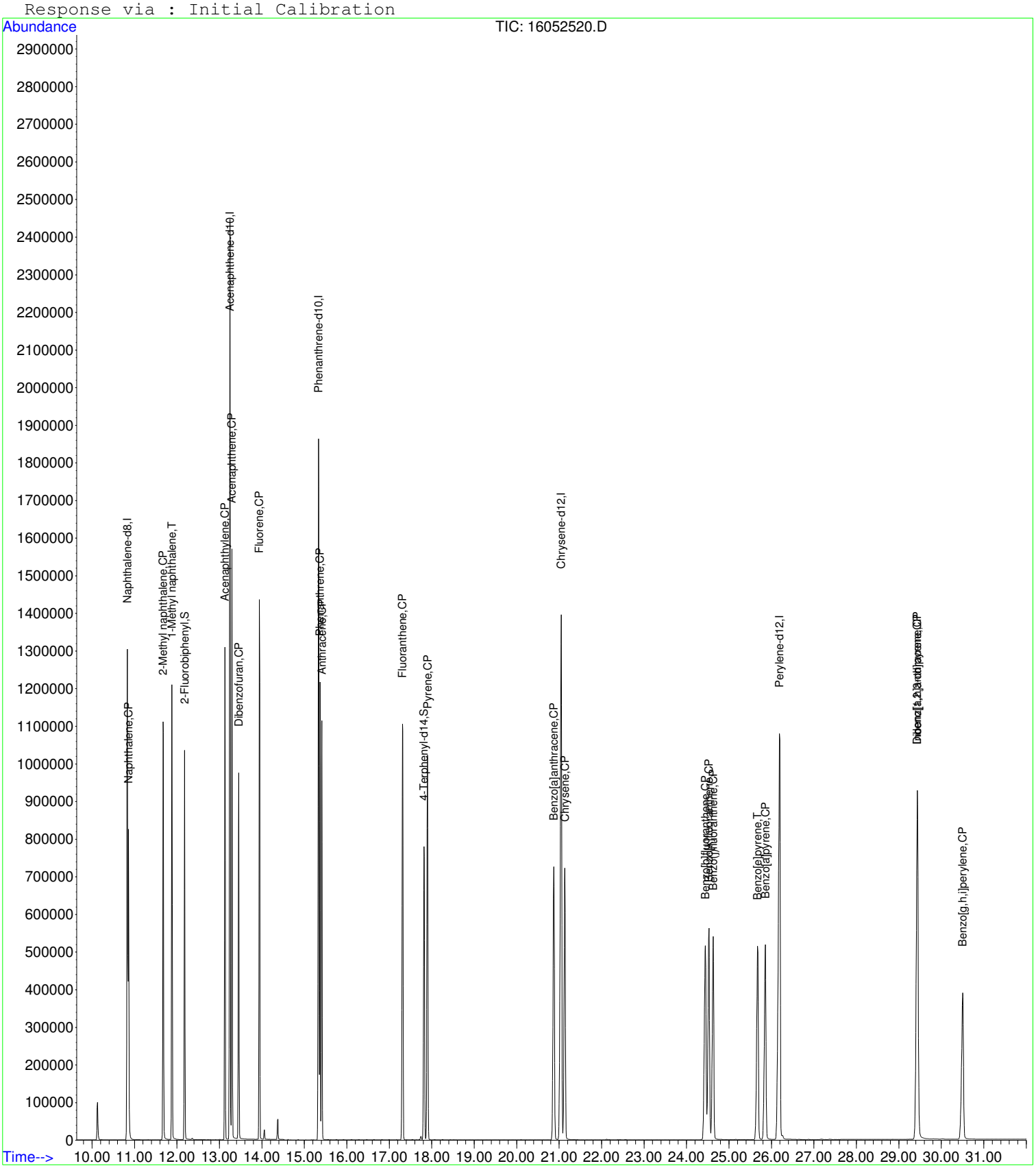
Target Compounds					Qvalue
2) Naphthalene	10.86	128	765912	1875.59 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	656409	1819.76 ug/kg	96
4) 1-Methyl naphthalene	11.88	142	590154	1786.38 ug/kg	96
6) Dibenzofuran	13.46	168	899818	1841.27 ug/kg	97
8) Acenaphthylene	13.13	152	1112945	1981.94 ug/kg	100
9) Acenaphthene	13.29	154	656725	1884.20 ug/kg	98
10) Fluorene	13.94	166	767186	1812.43 ug/kg	99
12) Phenanthrene	15.37	178	1008883	1787.22 ug/kg	99
13) Anthracene	15.41	178	937999	1755.56 ug/kg	100
14) Fluoranthene	17.31	202	1123519	1923.31 ug/kg	98
15) Pyrene	17.90	202	1125962	1855.53 ug/kg	100
18) Benzo[a]anthracene	20.87	228	1114943	1916.77 ug/kg	99
19) Chrysene	21.13	228	1015542	1806.96 ug/kg	100
21) Benzo[b]fluoranthene	24.44	252	1115346	1862.75 ug/kg	100
22) Benzo[k]fluoranthene	24.53	252	1012478	1802.54 ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	933438	1865.56 ug/kg	99
24) Benzo[e]pyrene	25.67	252	992678	1851.23 ug/kg	99
25) Benzo[a]pyrene	25.86	252	1000748	1826.32 ug/kg	100
26) Dibenz[a,h]anthracene	29.44	278	929688	1862.94 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.44	276	1078205	1811.08 ug/kg	96
28) Benzo[g,h,i]perylene	30.50	276	830055	1788.02 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052520.D Vial: 20
Acq On : 25 May 2016 9:28 pm Operator: AR
Sample : ICV2-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

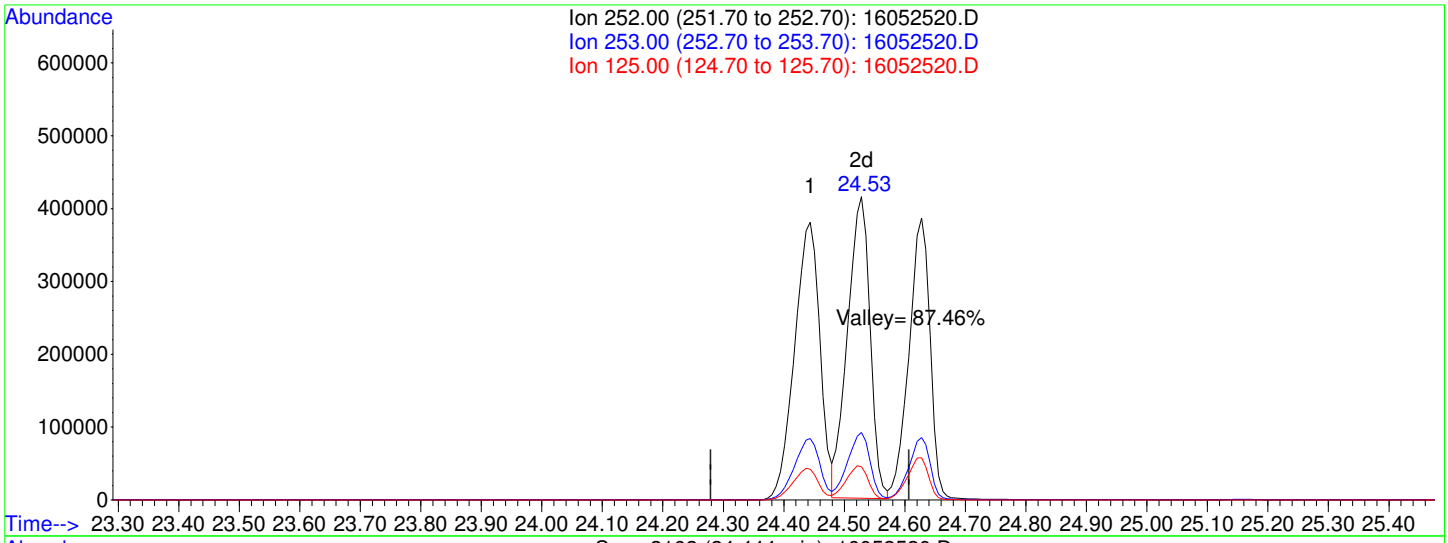
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

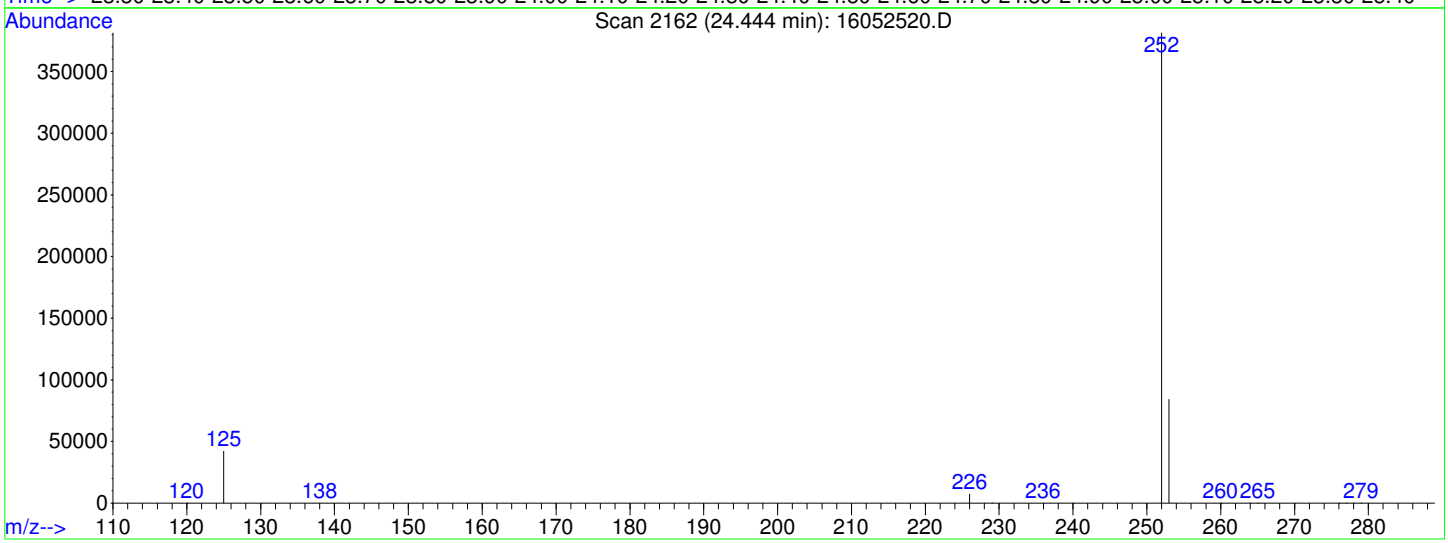


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160525\16052520.D Vial: 20
Acq On : 25 May 2016 9:28 pm Operator: AR
Sample : ICV2-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 22:00 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Multiple Level Calibration





TIC: 16052520.D

(21) Benzo[b]fluoranthene (CP)

24.44min 1862.75ug/kg

response 1115346

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.03
125.00	11.00	11.07
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052522.D Vial: 22
Acq On : 25 May 2016 10:47 pm Operator: AR
Sample : SB-160525 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1323019	4000.00 ug/kg	114
5) Acenaphthene-d10	13.25	164	804205	4000.00 ug/kg	70
11) Phenanthrene-d10	15.33	188	1450667	4000.00 ug/kg	71
17) Chrysene-d12	21.03	240	1745866	4000.00 ug/kg	77
20) Perylene-d12	26.17	264	1588788	4000.00 ug/kg	77

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.19	172	62	0.26 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#	
16) 4-Terphenyl-d14	17.81	244	101	0.27 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#	

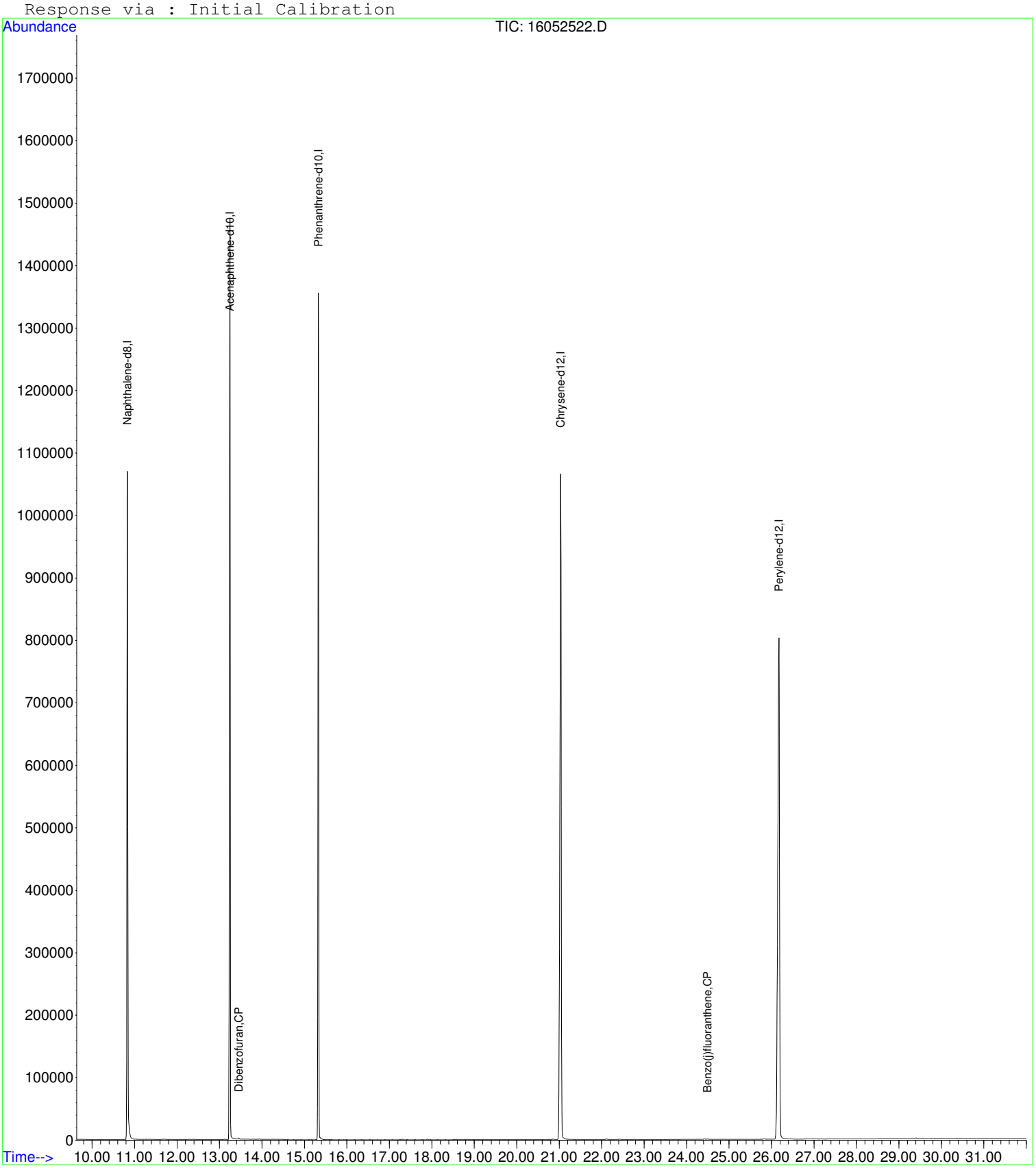
Target Compounds					Qvalue
6) Dibenzofuran	13.45	168	1595	5.29 ug/kg	95
23) Benzo(j)fluoranthene	24.49	252	1337	3.82 ug/kg	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052522.D Vial: 22
Acq On : 25 May 2016 10:47 pm Operator: AR
Sample : SB-160525 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052530.D Vial: 30
Acq On : 26 May 2016 4:05 am Operator: AR
Sample : CCV1-160525 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1466704	4000.00 ug/kg	127
5) Acenaphthene-d10	13.24	164	975107	4000.00 ug/kg	85
11) Phenanthrene-d10	15.33	188	1645129	4000.00 ug/kg	81
17) Chrysene-d12	21.04	240	1941750	4000.00 ug/kg	85
20) Perylene-d12	26.18	264	1764380	4000.00 ug/kg	86

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.17	172	288612	1014.64 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.37%#		
16) 4-Terphenyl-d14	17.81	244	382745	899.26 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 22.48%#		

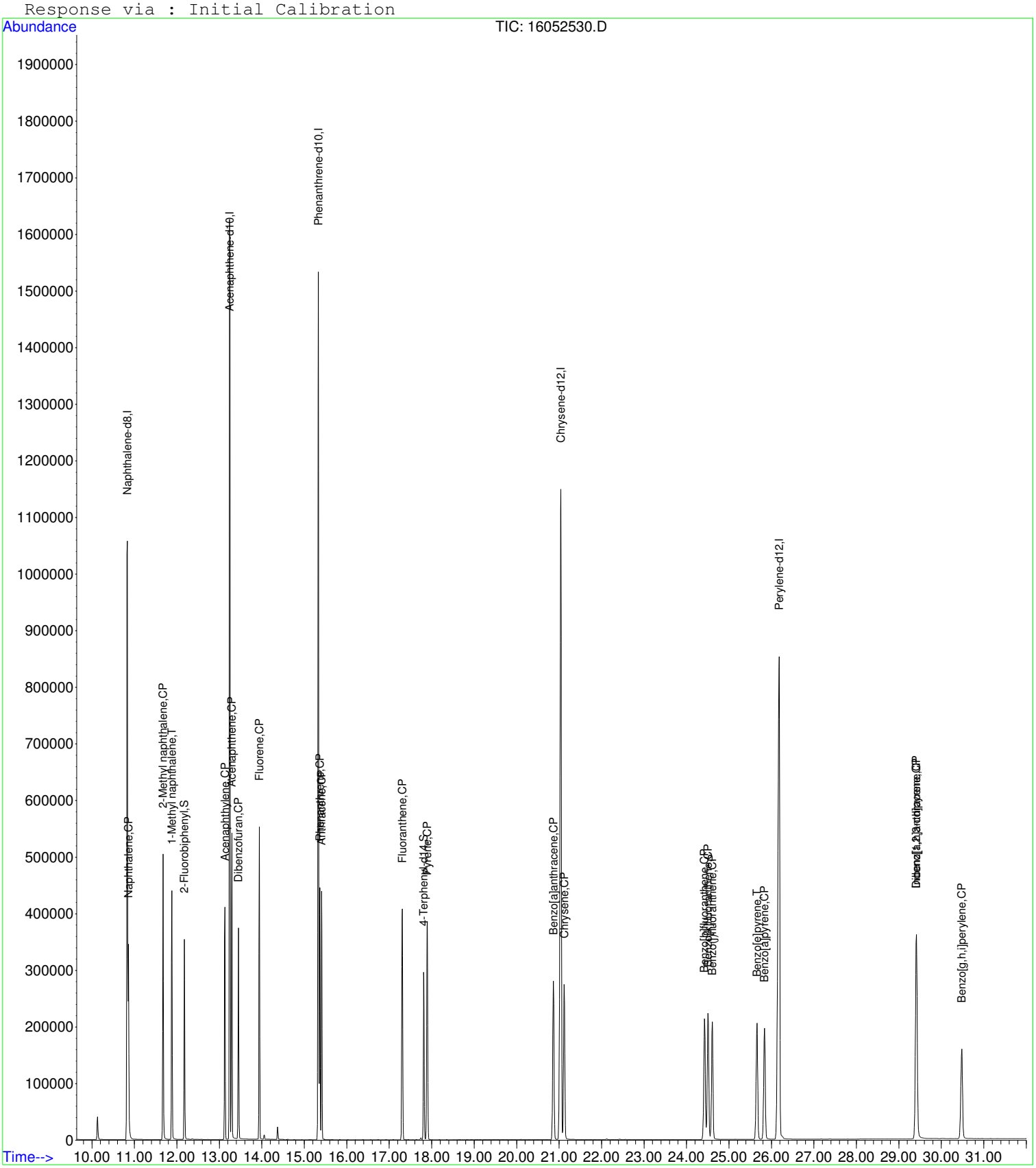
Target Compounds					Qvalue
2) Naphthalene	10.86	128	320606	873.88 ug/kg	100
3) 2-Methyl naphthalene	11.67	142	255827	789.42 ug/kg	97
4) 1-Methyl naphthalene	11.88	142	230377	776.19 ug/kg	99
6) Dibenzofuran	13.45	168	316275	865.42 ug/kg	98
8) Acenaphthylene	13.13	152	388820	925.90 ug/kg	99
9) Acenaphthene	13.29	154	224191	860.12 ug/kg	98
10) Fluorene	13.94	166	262229	828.40 ug/kg	99
12) Phenanthrene	15.37	178	363808	840.90 ug/kg	99
13) Anthracene	15.41	178	360691	880.81 ug/kg	99
14) Fluoranthene	17.31	202	413178	922.87 ug/kg	98
15) Pyrene	17.90	202	413886	889.93 ug/kg	99
18) Benzo[a]anthracene	20.87	228	408941	898.96 ug/kg	99
19) Chrysene	21.12	228	375418	854.14 ug/kg	100
21) Benzo[b]fluoranthene	24.42	252	407590	876.48 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	385697	884.14 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	353937	910.80 ug/kg	99
24) Benzo[e]pyrene	25.66	252	374680	899.68 ug/kg	100
25) Benzo[a]pyrene	25.84	252	368529	865.96 ug/kg	99
26) Dibenz[a,h]anthracene	29.41	278	341523	881.17 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.41	276	400529	866.25 ug/kg	99
28) Benzo[g,h,i]perylene	30.48	276	308334	855.19 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052530.D Vial: 30
Acq On : 26 May 2016 4:05 am Operator: AR
Sample : CCV1-160525 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:42 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



GCMS6
Calibration Curve
For

DHL Work Order
1605135

CAL ID: 651

Method 8270 PAH Calibration Curve Sheet

Instrument ID: GCMS #6 **Calibration File Name:** PP160421.CAL

Target Concentration	Solvent Amount mL	Standard Preparation Stocks and Surrogate (µL/mL)	Final Volume mL
5 ppb	0.999	0.001 mL of 5000 ppb	1
10 ppb	0.998	0.002 mL of 5000 ppb	1
50 ppb	0.990	0.01 mL of 5000 ppb	1
100 ppb	0.980	0.02 mL of 5000 ppb	1
500 ppb	0.900	0.10 mL of 5000 ppb	1
1000 ppb	0.800	0.20 mL of 5000 ppb	1
2000 ppb	0.600	0.40 mL of 5000 ppb	1
5000 ppb	----	PAHCAL160421	10
SSCV 2500 ppb	0.500	0.50 mL of PAHSSCV160317-1	1
SSCV 2500 ppb	----	PAHSSCV160322-2	1

Standards Used for the Calibration Curve

Primary Stock STDs	DHL Standard ID	Second Source (SS) Stock STDs	DHL Standard ID
5 PPM (5000 PPB) PAH CAL STD	**PAHCAL160421**	5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160317-1**
		5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160322-2**

Review Item	Acceptance Criteria	Yes	No	N/A	2nd Level Review
1. Are all standards within expiration dates?	Primary Stocks = 1 year Intermediate Standards = 6 months	X			X
2. Are all manual integrations listed on MI tracking form? **(DoD Projects only)**	Manual Integration Tracking Form			X	X
3. Does the tune and resolution check meet criteria?	Benzo(b) / Benzo(k)phenanthrene Valley > 50% See Tune Eval Report	X			X
4. Does the ICAL curve meet criteria? Use average CF only if %RSD < 15%	%RSD < 15% COD ≥ 0.990	X			X
5. Has the low point been reprocessed under the new ICAL curve and meets criteria?	70-130% recovery	X			X
6. Has the SSCV been analyzed and meets criteria?	80-120% recovery	X			X

Analyst: Karyn Lane Date: 04/22/16

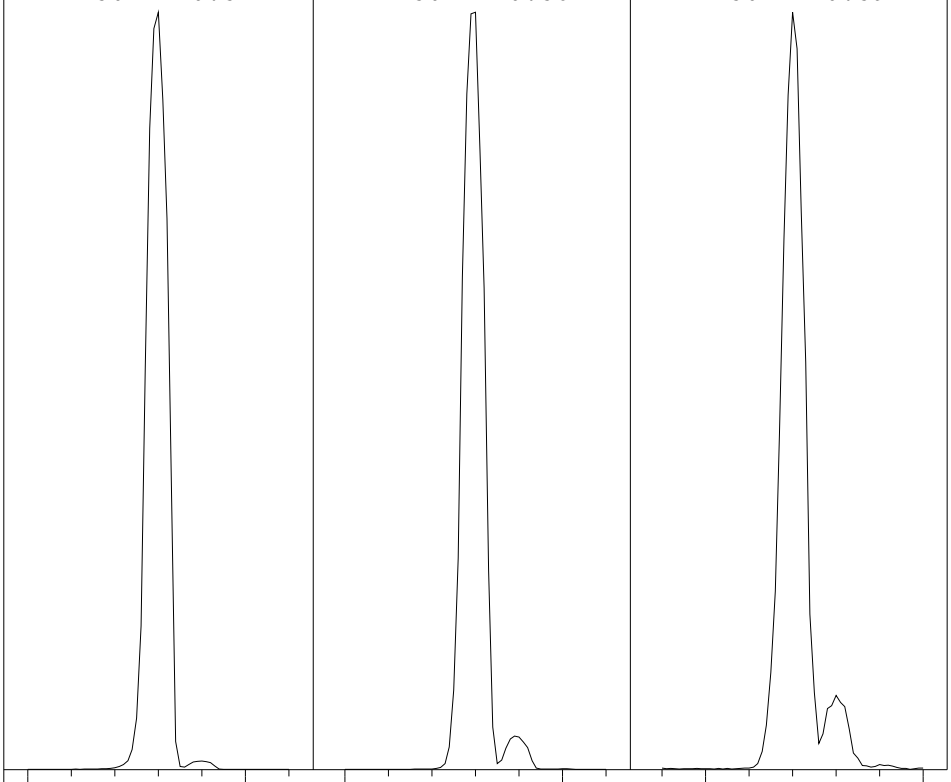
Second-Level Review: [signature] Date: 04/22/2016

HP5973

Instrument: GC/MS #6

Thu Apr 21 13:07:27 2016 C:\HPCHEM\1\5973\ATUNE.U

Mass	Ab	Pw50
69.00	443007	0.57
219.00	295483	0.58
502.00	16133	0.59



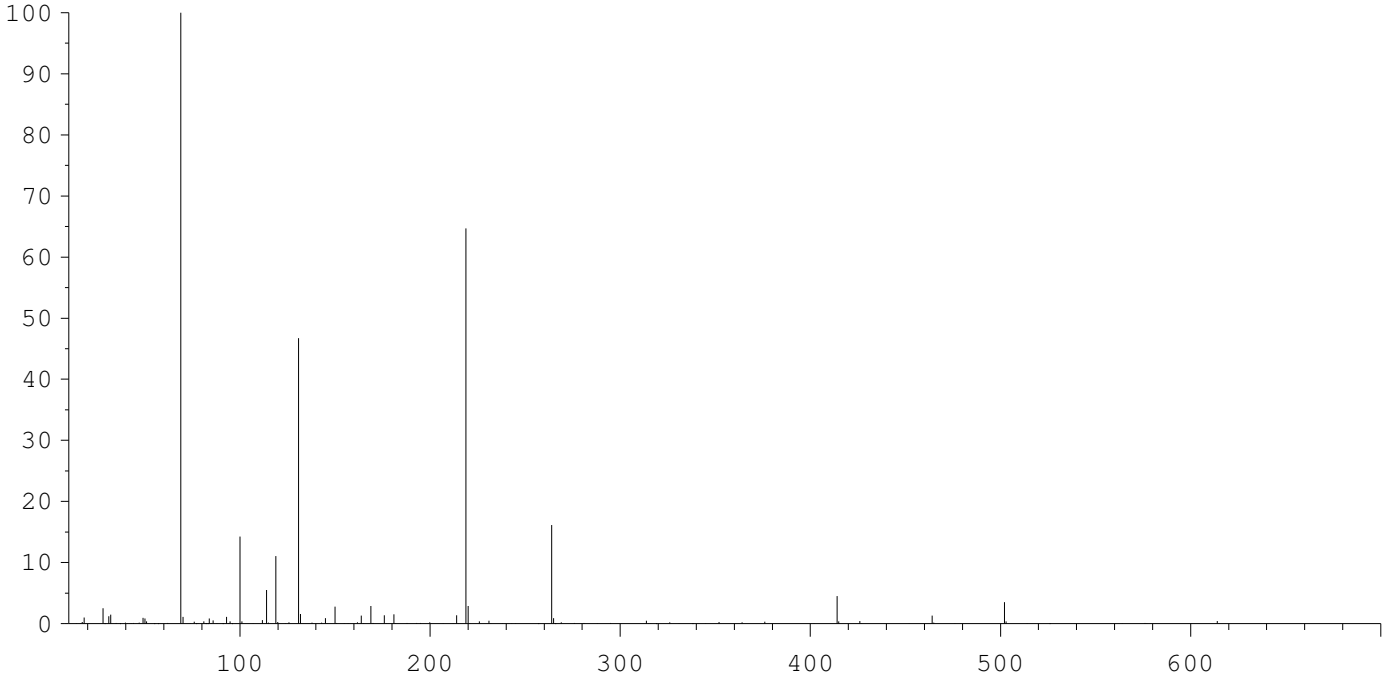
Ion Pol	POS	MassGain	7
		MassOffs	-14
Emission	34.6	AmuGain	2195
EleEnergy	69.9	AmuOffs	127
Filament	2	Wid219	0.011
		DC Pol	POS
Repeller	19.90		
IonFocus	80.7	HED	ON
EntLens	14.0	EMVolts	1424
EntOffs	16.06		
		Samples	8
PFTBA	OPEN	Averages	3
		StepSize	0.10

Zones:

MS Source	230	Foreline	71
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100

125 peaks Base: 69.00 Abundance: 394176



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	394176	100.00	70.00	4405	1.12
218.90	254912	64.67	220.00	11307	4.44
502.00	13826	3.51	503.00	1441	10.42

TARGET MASS:	50	69	131	219	414	502
TARGET ABUND(%):	1.0	100.0	55.0	45.0	3.5	2.5
ACTUAL TUNE ABUND(%):	0.9	100.0	46.7	64.7	4.5	3.5

DHL Analytical, Inc.

Run ID: **GCMS6_160421A** **Run No.:** 85382

Analytical Run Date: 4/21/2016 **InstrumentID:** GCMS6

Analyst: Karyn Lane **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160421	1	PAH_ALL_W	TUNE	R85382	4/21/2016 1:12:00 PM		
PCAL-160421 (5 ppb)	1	PAH_ALL_W	CAL1	R85382	4/21/2016 2:30:00 PM		
PCAL-160421 (10 ppb)	1	PAH_ALL_W	CAL	R85382	4/21/2016 3:10:00 PM		
PCAL-160421 (50 ppb)	1	PAH_ALL_W	CAL	R85382	4/21/2016 3:51:00 PM		
PCAL-160421 (100 ppb	1	PAH_ALL_W	CAL	R85382	4/21/2016 4:31:00 PM		
PCAL-160421 (500 ppb	1	PAH_ALL_W	CAL	R85382	4/21/2016 5:11:00 PM		
PCAL-160421 (1000 pp	1	PAH_ALL_W	CAL	R85382	4/21/2016 5:50:00 PM		
PCAL-160421 (2000 pp	1	PAH_ALL_W	CAL	R85382	4/21/2016 6:30:00 PM		
PCAL-160421 (5000 pp	1	PAH_ALL_W	CAL	R85382	4/21/2016 7:10:00 PM		
PSSCV-160421 (2500 p	1	PAH_ALL_W	ICV	R85382	4/21/2016 8:30:00 PM		
PSSCV-160421 (2500 p	1	PAH_ALL_W	ICV	R85382	4/21/2016 9:10:00 PM		

REVIEWED/APPROVED

By Sherri Herschmann at 9:42:32 AM, 4/28/2016

Response Factor Report GC/MS #6

Method Path : F:\IC\GCMS#6\
Method File : PP160421.M
Title : PAH Calibration
Last Update : Fri Apr 22 09:12:07 2016
Response Via : Initial Calibration

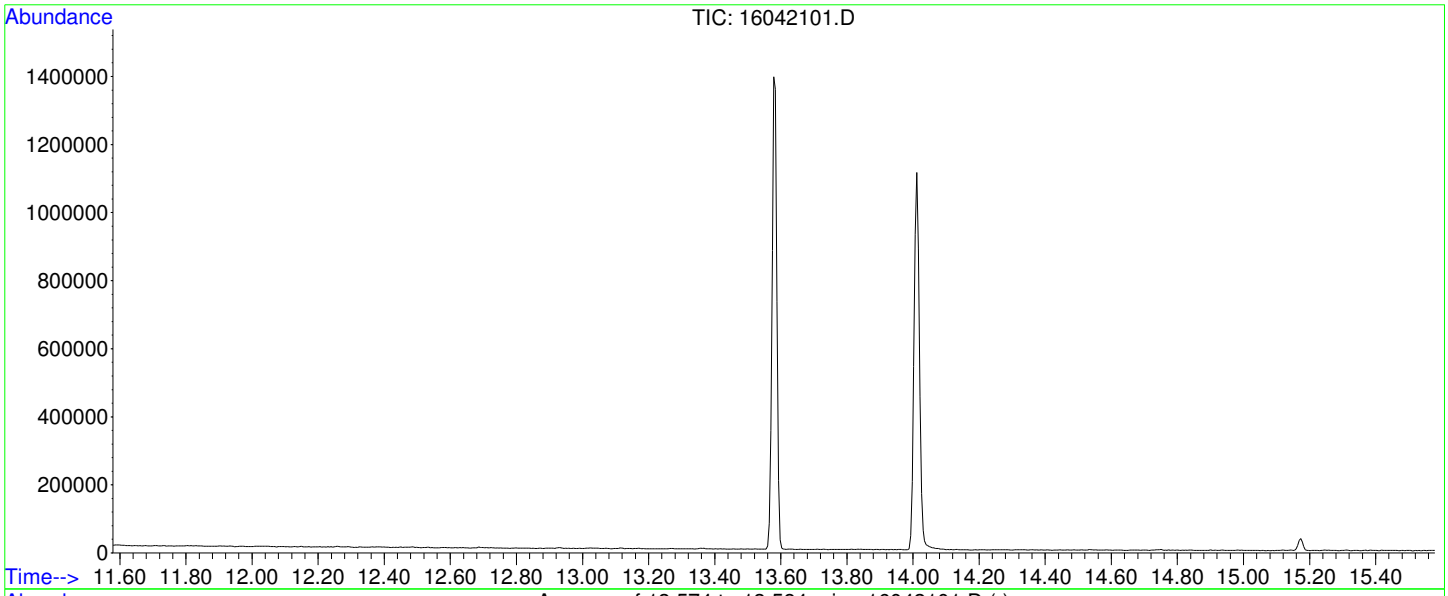
REVIEWED/APPROVED
By Sherri Herschmann at 9:42:37 AM, 4/28/2016

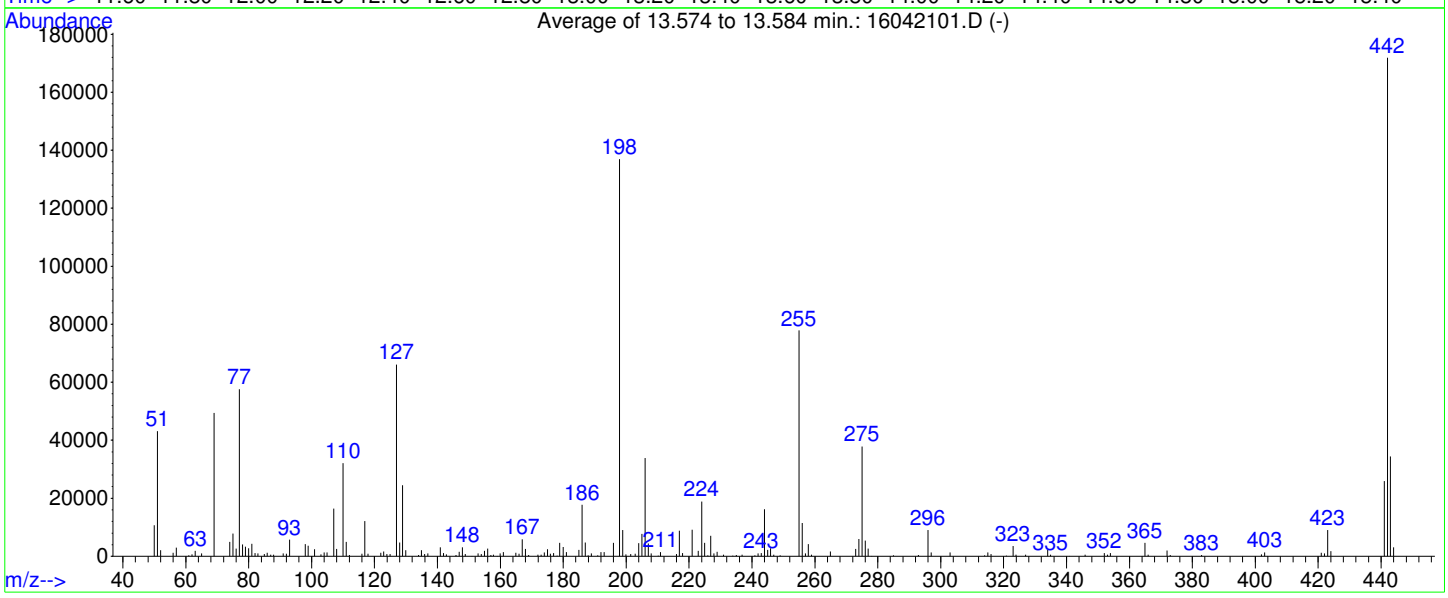
Calibration Files
1 =16042103.D 2 =16042104.D 3 =16042105.D 4 =16042106.D 5 =16042107.D 6 =16042108.D 7 =16042109.D
8 =16042110.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD	Fit	RSD/CF	Constant	Linear	Quad
1)	I	Naphthalene-d8	----------ISTD----------														
2)	CP	Naphthalene	1.072	1.056	1.009	0.988	1.009	0.977	0.968	0.925	1.001	4.73	A	0.0473	0.0000	1.0005	0.0000
3)	CP	2-Methyl napht...	0.953	0.908	0.902	0.917	0.935	0.832	0.831	0.792	0.884	6.55	A	0.0655	0.0000	0.8838	0.0000
4)	T	1-Methyl napht...	0.853	0.833	0.826	0.836	0.861	0.767	0.766	0.734	0.809	5.82	A	0.0582	0.0000	0.8094	0.0000
5)	I	Acenaphthene-d10	----------ISTD----------														
6)	CP	Dibenzofuran	1.545	1.518	1.528	1.405	1.512	1.565	1.518	1.402	1.499	4.09#	A	0.0409	0.0000	1.4992	0.0000
7)	S	2-Fluorobiphenyl	1.227	1.249	1.171	1.271	1.202	1.091	1.074	1.049	1.167	7.28	A	0.0728	0.0000	1.1668	0.0000
8)	CP	Acenaphthylene	1.674	1.692	1.669	1.714	1.816	1.765	1.778	1.672	1.723	3.28	A	0.0328	0.0000	1.7226	0.0000
9)	CP	Acenaphthene	1.098	1.076	1.079	1.061	1.086	1.068	1.068	1.019	1.069	2.19	A	0.0219	0.0000	1.0692	0.0000
10)	CP	Fluorene	1.289	1.261	1.290	1.183	1.319	1.395	1.381	1.270	1.299	5.23	A	0.0523	0.0000	1.2985	0.0000
11)	I	Phenanthrene-d10	----------ISTD----------														
12)	CP	Phenanthrene	1.112	1.104	1.033	1.056	1.077	1.042	1.021	0.970	1.052	4.44	A	0.0444	0.0000	1.0519	0.0000
13)	CP	Anthracene	0.994	1.001	0.984	0.995	1.044	1.012	0.997	0.939	0.996	2.94	A	0.0294	0.0000	0.9957	0.0000
14)	CP	Fluoranthene	1.097	1.126	1.050	1.113	1.130	1.091	1.082	1.033	1.090	3.18	A	0.0318	0.0000	1.0903	0.0000
15)	CP	Pyrene	1.164	1.208	1.085	1.158	1.154	1.114	1.100	1.065	1.131	4.23	A	0.0423	0.0000	1.1308	0.0000
16)	S	4-Terphenyl-d14	1.290	1.174	0.947	1.015	0.997	0.964	0.956	0.937	1.035	12.39	A	0.1239	0.0000	1.0349	0.0000
17)	I	Chrysene-d12	----------ISTD----------														
18)	CP	Benzo[a]anthra...	0.905	0.905	0.896	0.905	0.987	0.967	0.978	0.953	0.937	4.04	A	0.0404	0.0000	0.9371	0.0000
19)	CP	Chrysene	0.917	0.912	0.890	0.892	0.939	0.912	0.909	0.873	0.905	2.24	A	0.0224	0.0000	0.9054	0.0000
20)	I	Perylene-d12	----------ISTD----------														
21)	CP	Benzo[b]fluora...	1.031	1.068	1.042	1.021	1.084	1.075	1.080	1.033	1.054	2.37	A	0.0237	0.0000	1.0543	0.0000
22)	CP	Benzo[k]fluora...	0.949	0.988	0.978	0.973	1.045	1.016	1.004	0.961	0.989	3.18	A	0.0318	0.0000	0.9890	0.0000
23)	CP	Benzo(j)fluora...	0.840	0.858	0.868	0.867	0.923	0.906	0.907	0.878	0.881	3.23	A	0.0323	0.0000	0.8810	0.0000
24)	T	Benzo[e]pyrene	0.931	0.957	0.942	0.931	0.974	0.953	0.956	0.909	0.944	2.13	A	0.0213	0.0000	0.9442	0.0000
25)	CP	Benzo[a]pyrene	0.955	0.941	0.944	0.932	0.997	0.991	0.998	0.962	0.965	2.76	A	0.0276	0.0000	0.9648	0.0000
26)	CP	Dibenz[a,h]ant...	0.881	0.820	0.849	0.840	0.906	0.908	0.913	0.911	0.879	4.22	A	0.0422	0.0000	0.8787	0.0000
27)	CP	Indeno[1,2,3-c...	1.037	0.991	1.024	1.016	1.084	1.078	1.084	1.071	1.048	3.43	A	0.0343	0.0000	1.0482	0.0000
28)	CP	Benzo[g,h,i]pe...	0.797	0.782	0.792	0.796	0.842	0.843	0.852	0.834	0.817	3.44	A	0.0344	0.0000	0.8174	0.0000

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\160421\16042101.D Vial: 1
Acq On : 21 Apr 2016 1:12 pm Operator:
Sample : DFTPP-160421 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration





AutoFind: Scans 1592, 1593, 1594; Background Corrected with Scan 1586

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	31.5	43141	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.1	49451	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.3	66112	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	136896	PASS
199	198	5	9	6.6	9062	PASS
275	198	10	60	27.7	37883	PASS
365	198	1	200	3.4	4588	PASS
441	442	0.01	24	15.1	25970	PASS
442	198	50	400	125.6	171901	PASS
443	442	15	24	20.0	34379	PASS

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042103.D Vial: 3
Acq On : 21 Apr 2016 2:30 pm Operator:
Sample : PCAL-160421 (5 ppb) Inst : GC/MS #6
Misc : CAL1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration Reprocessed low point.
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1142778	4000.00 ug/kg	99
5) Acenaphthene-d10	13.30	164	1244911	4000.00 ug/kg	108
11) Phenanthrene-d10	15.39	188	1877690	4000.00 ug/kg	92
17) Chrysene-d12	21.15	240	2186100	4000.00 ug/kg	96
20) Perylene-d12	26.31	264	2056958	4000.00 ug/kg	100

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	1910	5.26 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.13%#		
16) 4-Terphenyl-d14	17.89	244	3028	6.23 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.16%#		

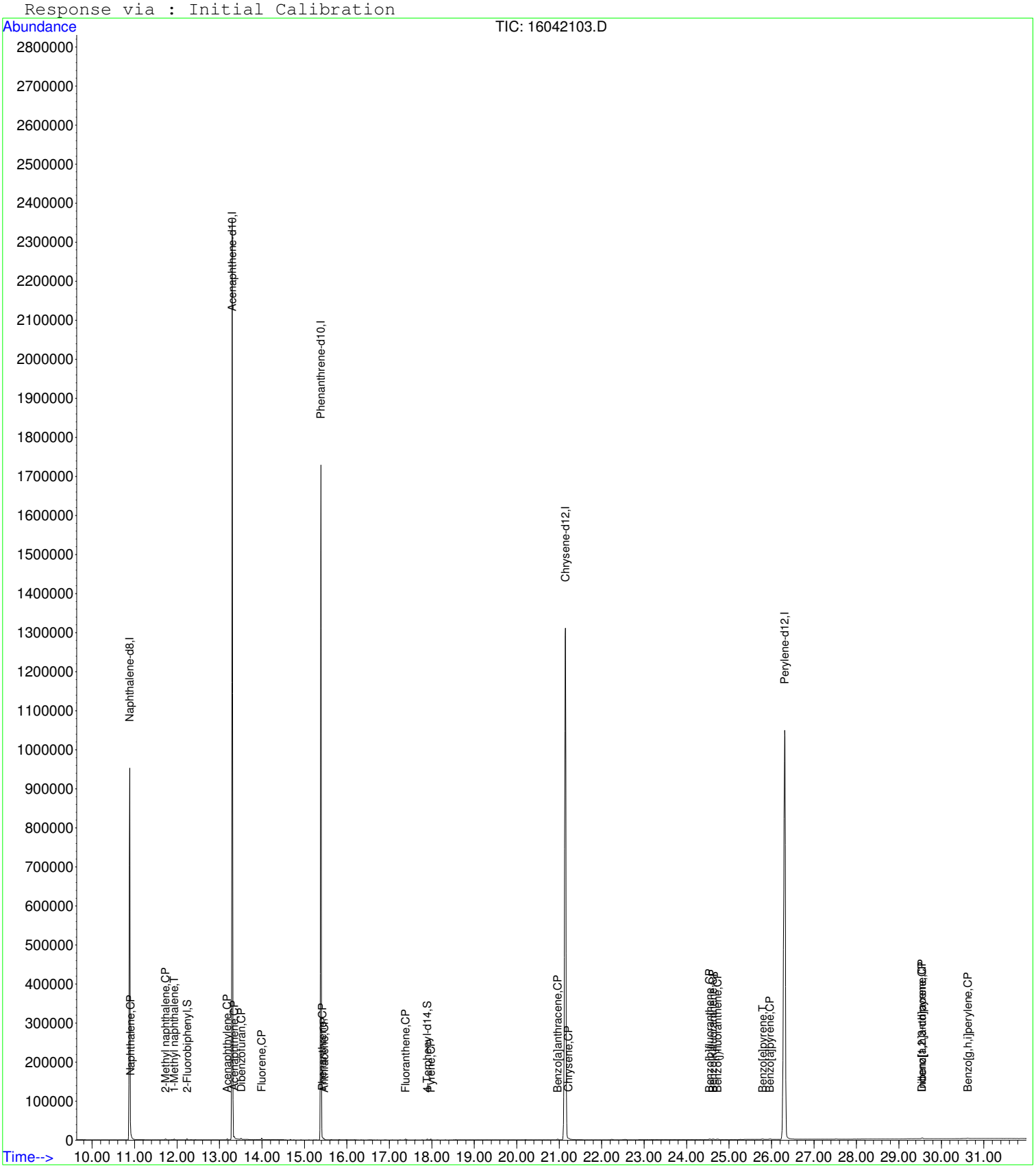
Target Compounds					Qvalue
2) Naphthalene	10.91	128	1531	5.36 ug/kg	98
3) 2-Methyl naphthalene	11.73	142	1362	5.39 ug/kg	98
4) 1-Methyl naphthalene	11.93	142	1218	5.27 ug/kg	92
6) Dibenzofuran	13.51	168	2405	5.15 ug/kg	100
8) Acenaphthylene	13.18	152	2605	4.86 ug/kg	99
9) Acenaphthene	13.35	154	1708	5.13 ug/kg	99
10) Fluorene	13.99	166	2006	4.96 ug/kg	100
12) Phenanthrene	15.42	178	2611	5.29 ug/kg	98
13) Anthracene	15.46	178	2334	4.99 ug/kg	97
14) Fluoranthene	17.38	202	2574	5.04 ug/kg	97
15) Pyrene	17.98	202	2731	5.14 ug/kg	98
18) Benzo[a]anthracene	20.96	228	2474	4.83 ug/kg	98
19) Chrysene	21.23	228	2506	5.06 ug/kg	98
21) Benzo[b]fluoranthene	24.54	252	2650	4.89 ug/kg	95
22) Benzo[k]fluoranthene	24.62	252	2439	4.80 ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	2160	4.77 ug/kg	98
24) Benzo[e]pyrene	25.79	252	2395	4.93 ug/kg	99
25) Benzo[a]pyrene	25.96	252	2456	4.95 ug/kg	98
26) Dibenz[a,h]anthracene	29.54	278	2266	5.01 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.55	276	2667	4.95 ug/kg	94
28) Benzo[g,h,i]perylene	30.62	276	2050	4.88 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042103.D Vial: 3
Acq On : 21 Apr 2016 2:30 pm Operator:
Sample : PCAL-160421 (5 ppb) Inst : GC/MS #6
Misc : CAL1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042104.D Vial: 4
Acq On : 21 Apr 2016 3:10 pm Operator:
Sample : PCAL-160421 (10 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.89	136	1199002	4000.00 ug/kg	103
5) Acenaphthene-d10	13.30	164	1222079	4000.00 ug/kg	106
11) Phenanthrene-d10	15.39	188	1882400	4000.00 ug/kg	92
17) Chrysene-d12	21.15	240	2305426	4000.00 ug/kg	101
20) Perylene-d12	26.31	264	2097207	4000.00 ug/kg	102

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.24	172	3816	10.70 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.27%#		
16) 4-Terphenyl-d14	17.89	244	5525	11.34 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.28%#		

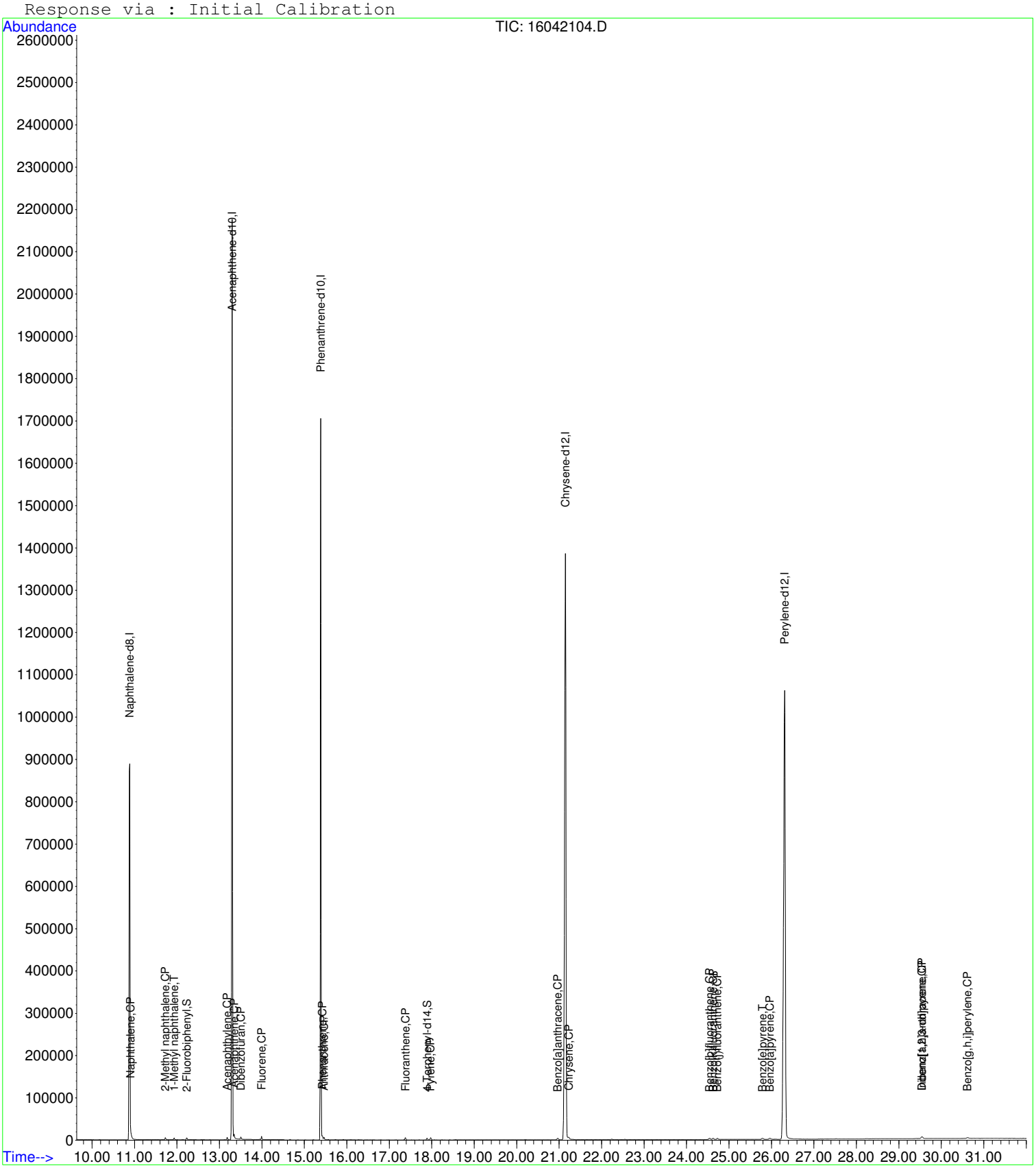
Target Compounds					Qvalue
2) Naphthalene	10.91	128	3165	10.55 ug/kg	99
3) 2-Methyl naphthalene	11.72	142	2722	10.27 ug/kg	96
4) 1-Methyl naphthalene	11.93	142	2498	10.30 ug/kg	98
6) Dibenzofuran	13.50	168	4637	10.12 ug/kg	97
8) Acenaphthylene	13.18	152	5169	9.82 ug/kg	99
9) Acenaphthene	13.35	154	3288	10.07 ug/kg	99
10) Fluorene	13.99	166	3853	9.71 ug/kg	100
12) Phenanthrene	15.42	178	5197	10.50 ug/kg	100
13) Anthracene	15.46	178	4709	10.05 ug/kg	99
14) Fluoranthene	17.38	202	5273	10.29 ug/kg	98
15) Pyrene	17.97	202	5684	10.68 ug/kg	98
18) Benzo[a]anthracene	20.96	228	5216	9.66 ug/kg	99
19) Chrysene	21.23	228	5255	10.07 ug/kg	100
21) Benzo[b]fluoranthene	24.54	252	5597	10.13 ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	5178	9.99 ug/kg	98
23) Benzo(j)fluoranthene	24.73	252	4498	9.74 ug/kg	97
24) Benzo[e]pyrene	25.79	252	5016	10.13 ug/kg	99
25) Benzo[a]pyrene	25.96	252	4933	9.75 ug/kg	99
26) Dibenz[a,h]anthracene	29.55	278	4301	9.34 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	5196	9.45 ug/kg	97
28) Benzo[g,h,i]perylene	30.62	276	4100	9.57 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042104.D Vial: 4
Acq On : 21 Apr 2016 3:10 pm Operator:
Sample : PCAL-160421 (10 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042105.D Vial: 5
Acq On : 21 Apr 2016 3:51 pm Operator:
Sample : PCAL-160421 (50 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1080570	4000.00 ug/kg	93
5) Acenaphthene-d10	13.30	164	1201613	4000.00 ug/kg	104
11) Phenanthrene-d10	15.39	188	1885707	4000.00 ug/kg	92
17) Chrysene-d12	21.15	240	2199366	4000.00 ug/kg	97
20) Perylene-d12	26.31	264	2036632	4000.00 ug/kg	99

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	17592	50.19 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.25%#	
16) 4-Terphenyl-d14	17.89	244	22329	45.77 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.14%#	

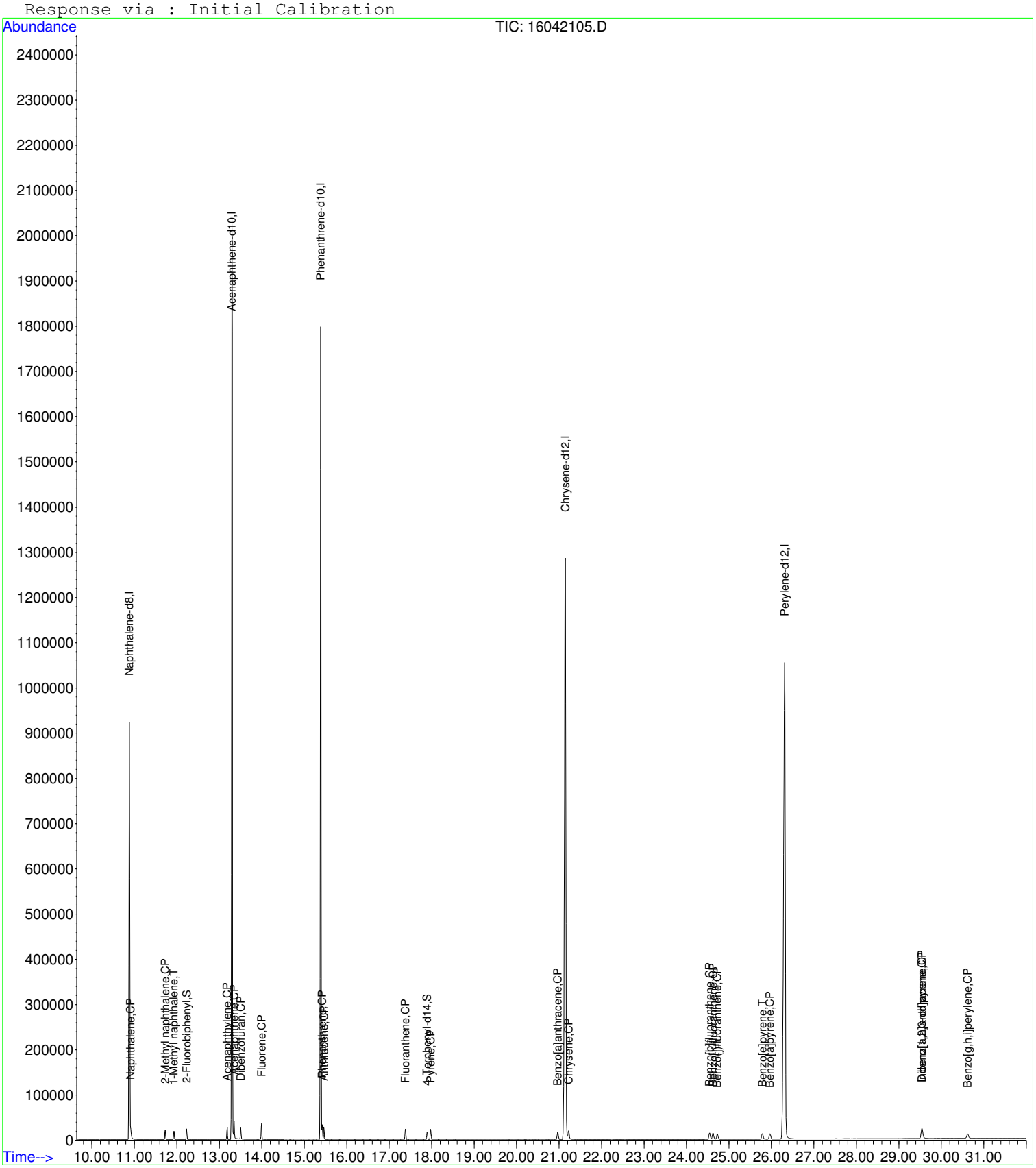
Target Compounds					Qvalue
2) Naphthalene	10.92	128	13632	50.43 ug/kg	99
3) 2-Methyl naphthalene	11.73	142	12186	51.04 ug/kg	97
4) 1-Methyl naphthalene	11.94	142	11156	51.02 ug/kg	99
6) Dibenzofuran	13.51	168	22945	50.95 ug/kg	99
8) Acenaphthylene	13.19	152	25071	48.45 ug/kg	98
9) Acenaphthene	13.35	154	16206	50.45 ug/kg	98
10) Fluorene	14.00	166	19379	49.68 ug/kg	98
12) Phenanthrene	15.42	178	24341	49.08 ug/kg	98
13) Anthracene	15.46	178	23196	49.42 ug/kg	99
14) Fluoranthene	17.38	202	24647	48.03 ug/kg	99
15) Pyrene	17.98	202	25571	47.97 ug/kg	99
18) Benzo[a]anthracene	20.96	228	24646	47.83 ug/kg	100
19) Chrysene	21.23	228	24465	49.14 ug/kg	99
21) Benzo[b]fluoranthene	24.54	252	26529	49.42 ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	24886	49.42 ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	22107	49.28 ug/kg	98
24) Benzo[e]pyrene	25.79	252	23989	49.90 ug/kg	99
25) Benzo[a]pyrene	25.96	252	24021	48.90 ug/kg	100
26) Dibenz[a,h]anthracene	29.54	278	21621	48.33 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.55	276	26066	48.84 ug/kg	95
28) Benzo[g,h,i]perylene	30.62	276	20164	48.45 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042105.D Vial: 5
Acq On : 21 Apr 2016 3:51 pm Operator:
Sample : PCAL-160421 (50 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042106.D Vial: 6
Acq On : 21 Apr 2016 4:31 pm Operator:
Sample : PCAL-160421 (100 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.89	136	1270878	4000.00 ug/kg	110
5) Acenaphthene-d10	13.30	164	1176698	4000.00 ug/kg	102
11) Phenanthrene-d10	15.39	188	1800254	4000.00 ug/kg	88
17) Chrysene-d12	21.15	240	2173217	4000.00 ug/kg	96
20) Perylene-d12	26.31	264	1915994	4000.00 ug/kg	93

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	37379	108.90 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.72%#	
16) 4-Terphenyl-d14	17.89	244	45660	98.03 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.45%#	

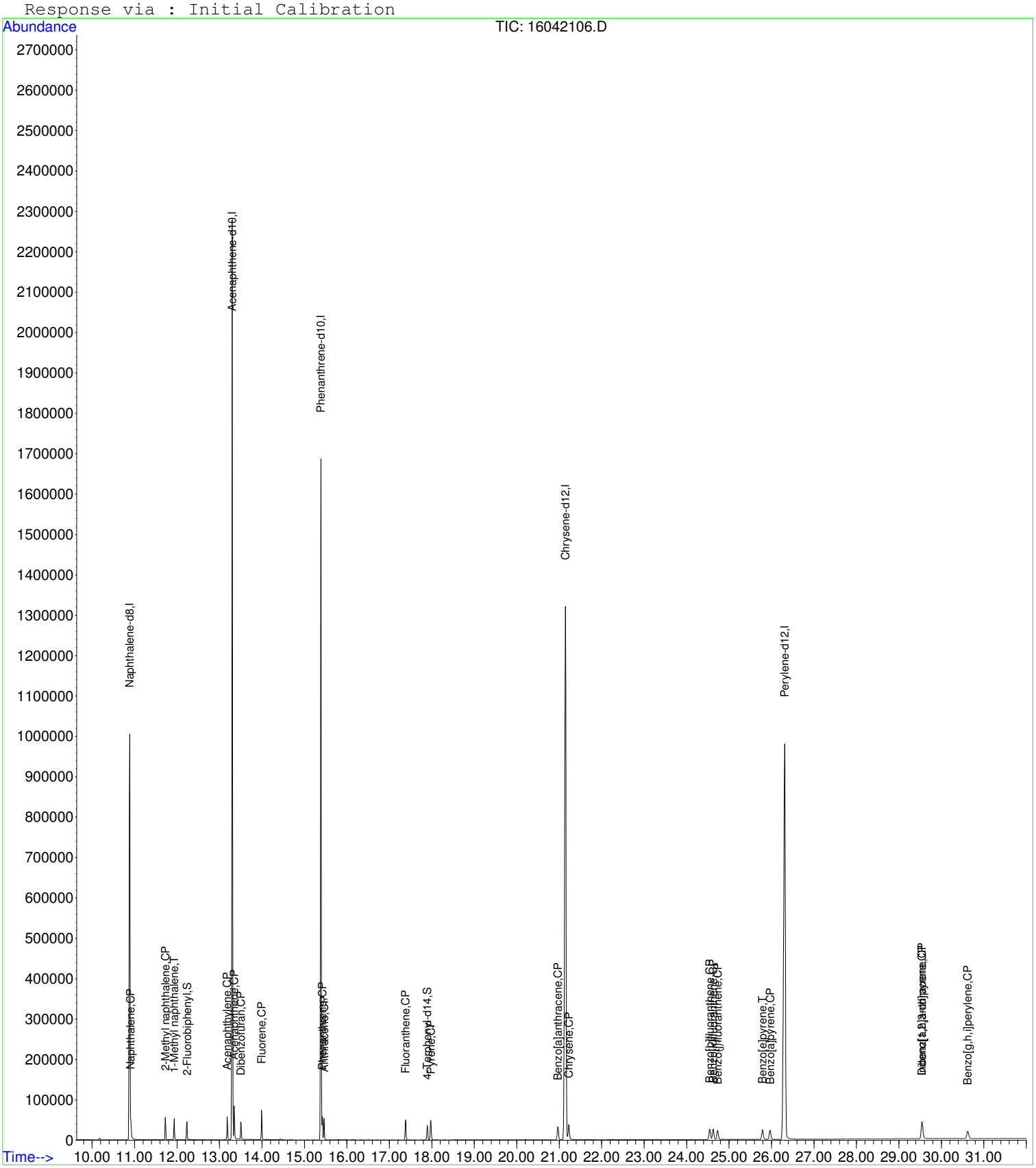
Target Compounds					Qvalue
2) Naphthalene	10.91	128	31387	98.73 ug/kg	100
3) 2-Methyl naphthalene	11.72	142	29129	103.73 ug/kg	96
4) 1-Methyl naphthalene	11.93	142	26563	103.29 ug/kg	97
6) Dibenzofuran	13.51	168	41336	93.73 ug/kg	98
8) Acenaphthylene	13.18	152	50435	99.53 ug/kg	99
9) Acenaphthene	13.35	154	31207	99.22 ug/kg	98
10) Fluorene	13.99	166	34802	91.11 ug/kg	100
12) Phenanthrene	15.42	178	47518	100.37 ug/kg	98
13) Anthracene	15.46	178	44798	99.97 ug/kg	99
14) Fluoranthene	17.38	202	50045	102.15 ug/kg	99
15) Pyrene	17.98	202	52116	102.40 ug/kg	99
18) Benzo[a]anthracene	20.97	228	49179	96.59 ug/kg	100
19) Chrysene	21.23	228	48443	98.48 ug/kg	99
21) Benzo[b]fluoranthene	24.55	252	48925	96.88 ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	46589	98.35 ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	41528	98.41 ug/kg	99
24) Benzo[e]pyrene	25.79	252	44578	98.57 ug/kg	99
25) Benzo[a]pyrene	25.97	252	44648	96.61 ug/kg	100
26) Dibenz[a,h]anthracene	29.54	278	40242	95.61 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	48662	96.92 ug/kg	95
28) Benzo[g,h,i]perylene	30.62	276	38139	97.41 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042106.D Vial: 6
Acq On : 21 Apr 2016 4:31 pm Operator:
Sample : PCAL-160421 (100 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042107.D Vial: 7
Acq On : 21 Apr 2016 5:11 pm Operator:
Sample : PCAL-160421 (500 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1148191	4000.00 ug/kg	99
5) Acenaphthene-d10	13.30	164	1212423	4000.00 ug/kg	105
11) Phenanthrene-d10	15.39	188	1918468	4000.00 ug/kg	94
17) Chrysene-d12	21.15	240	2190661	4000.00 ug/kg	96
20) Perylene-d12	26.31	264	2019677	4000.00 ug/kg	98

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	182135	514.98 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 12.87%#		
16) 4-Terphenyl-d14	17.89	244	239044	481.61 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 12.04%#		

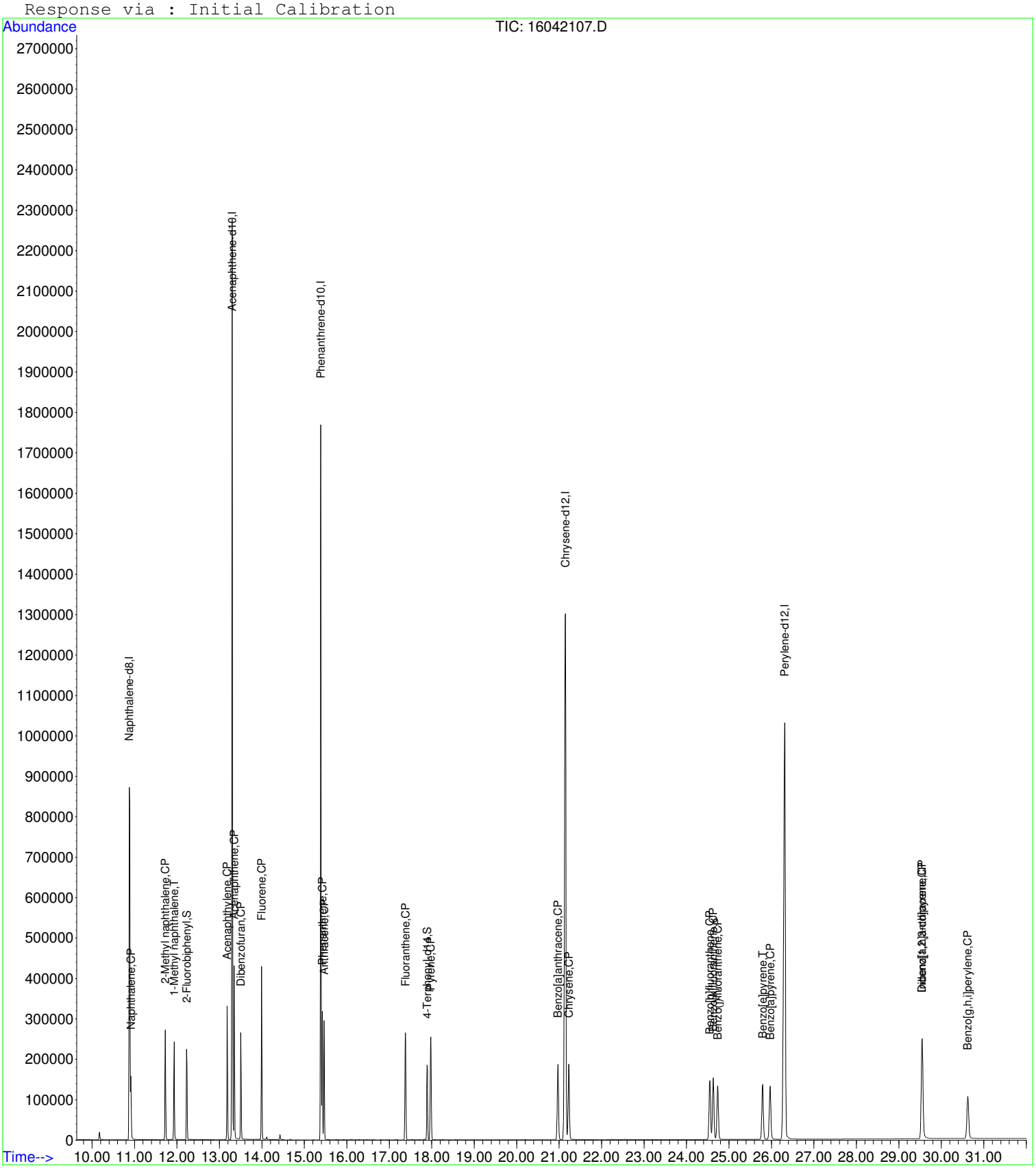
Target Compounds					Qvalue
2) Naphthalene	10.91	128	144814	504.22 ug/kg	100
3) 2-Methyl naphthalene	11.72	142	134217	529.05 ug/kg	99
4) 1-Methyl naphthalene	11.93	142	123573	531.84 ug/kg	99
6) Dibenzofuran	13.50	168	229182	504.36 ug/kg	99
8) Acenaphthylene	13.18	152	275195	527.05 ug/kg	99
9) Acenaphthene	13.35	154	164525	507.66 ug/kg	99
10) Fluorene	13.99	166	199871	507.82 ug/kg	99
12) Phenanthrene	15.42	178	258354	512.07 ug/kg	99
13) Anthracene	15.46	178	250282	524.11 ug/kg	99
14) Fluoranthene	17.38	202	270526	518.15 ug/kg	99
15) Pyrene	17.98	202	276662	510.12 ug/kg	99
18) Benzo[a]anthracene	20.97	228	270207	526.50 ug/kg	100
19) Chrysene	21.23	228	257223	518.73 ug/kg	99
21) Benzo[b]fluoranthene	24.55	252	273668	514.11 ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	263925	528.52 ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	233097	524.02 ug/kg	99
24) Benzo[e]pyrene	25.79	252	245920	515.86 ug/kg	99
25) Benzo[a]pyrene	25.97	252	251605	516.48 ug/kg	100
26) Dibenz[a,h]anthracene	29.55	278	228786	515.68 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	273714	517.15 ug/kg	98
28) Benzo[g,h,i]perylene	30.62	276	212686	515.34 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042107.D Vial: 7
Acq On : 21 Apr 2016 5:11 pm Operator:
Sample : PCAL-160421 (500 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042108.D Vial: 8
Acq On : 21 Apr 2016 5:50 pm Operator:
Sample : PCAL-160421 (1000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1136496	4000.00 ug/kg	98
5) Acenaphthene-d10	13.30	164	1155470	4000.00 ug/kg	100
11) Phenanthrene-d10	15.39	188	2018968	4000.00 ug/kg	99
17) Chrysene-d12	21.15	240	2284860	4000.00 ug/kg	101
20) Perylene-d12	26.31	264	2095808	4000.00 ug/kg	102

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	315163	935.04 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 23.38%#		
16) 4-Terphenyl-d14	17.89	244	486503	931.39 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 23.28%#		

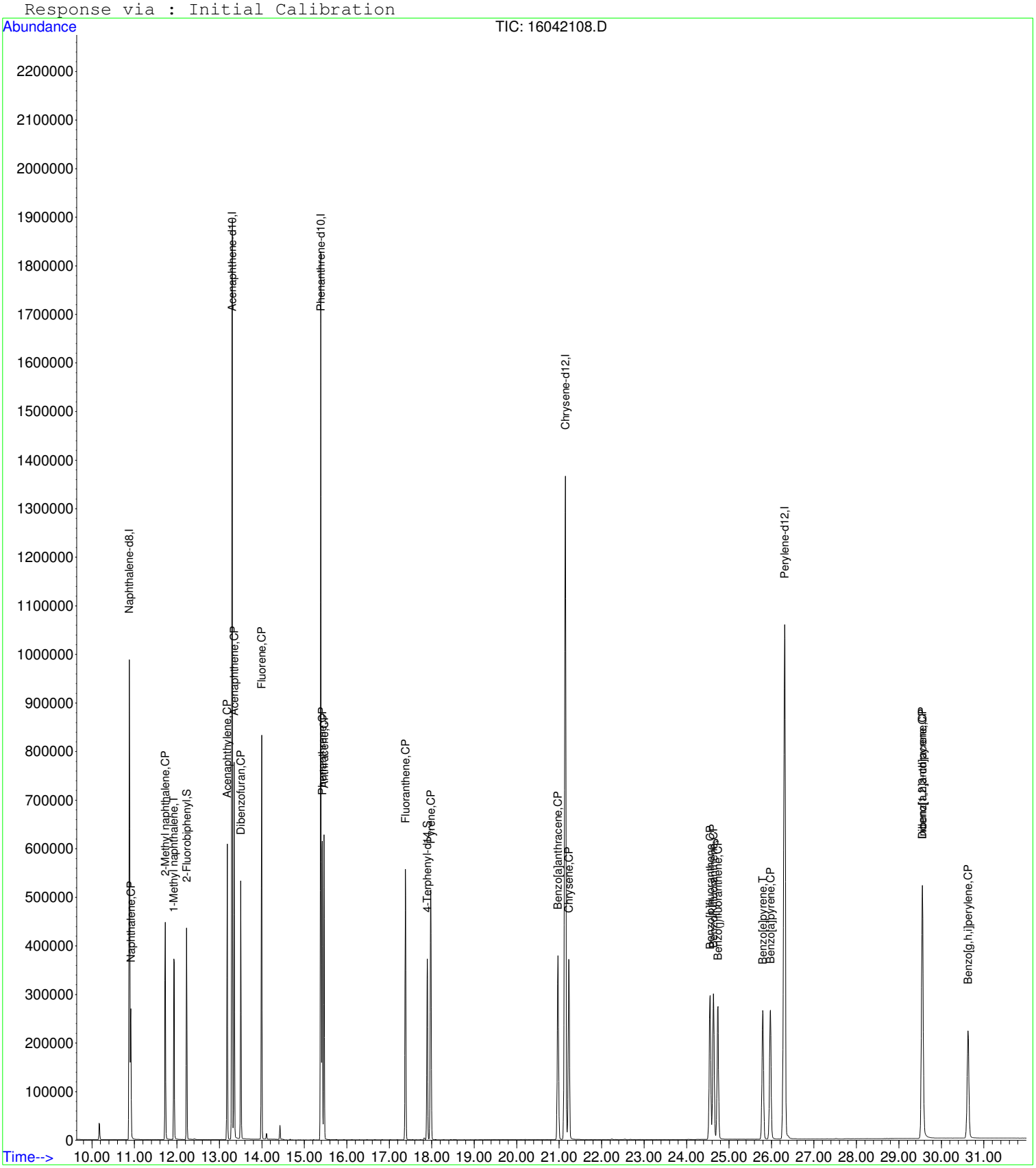
Target Compounds					Qvalue
2) Naphthalene	10.92	128	277677	976.77 ug/kg	100
3) 2-Methyl naphthalene	11.73	142	236454	941.63 ug/kg	97
4) 1-Methyl naphthalene	11.94	142	218047	948.10 ug/kg	98
6) Dibenzofuran	13.50	168	452065	1043.89 ug/kg	99
8) Acenaphthylene	13.18	152	509913	1024.72 ug/kg	99
9) Acenaphthene	13.35	154	308489	998.79 ug/kg	98
10) Fluorene	14.00	166	402991	1074.35 ug/kg	97
12) Phenanthrene	15.42	178	526173	990.99 ug/kg	99
13) Anthracene	15.46	178	510658	1016.12 ug/kg	99
14) Fluoranthene	17.38	202	550773	1002.41 ug/kg	99
15) Pyrene	17.98	202	562050	984.74 ug/kg	99
18) Benzo[a]anthracene	20.97	228	552303	1031.79 ug/kg	100
19) Chrysene	21.23	228	520856	1007.08 ug/kg	99
21) Benzo[b]fluoranthene	24.56	252	563310	1019.78 ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	532095	1026.84 ug/kg	99
23) Benzo(j)fluoranthene	24.74	252	474751	1028.50 ug/kg	99
24) Benzo[e]pyrene	25.79	252	499171	1009.06 ug/kg	99
25) Benzo[a]pyrene	25.98	252	519265	1027.20 ug/kg	99
26) Dibenz[a,h]anthracene	29.55	278	475543	1032.92 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	565012	1028.75 ug/kg	97
28) Benzo[g,h,i]perylene	30.63	276	441808	1031.61 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042108.D Vial: 8
Acq On : 21 Apr 2016 5:50 pm Operator:
Sample : PCAL-160421 (1000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042109.D Vial: 9
Acq On : 21 Apr 2016 6:30 pm Operator:
Sample : PCAL-160421 (2000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1159180	4000.00 ug/kg	100
5) Acenaphthene-d10	13.30	164	1151209	4000.00 ug/kg	100
11) Phenanthrene-d10	15.39	188	2042352	4000.00 ug/kg	100
17) Chrysene-d12	21.15	240	2271514	4000.00 ug/kg	100
20) Perylene-d12	26.31	264	2059792	4000.00 ug/kg	100

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	618262	1841.07 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.03%	
16) 4-Terphenyl-d14	17.90	244	975941	1847.00 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.17%	

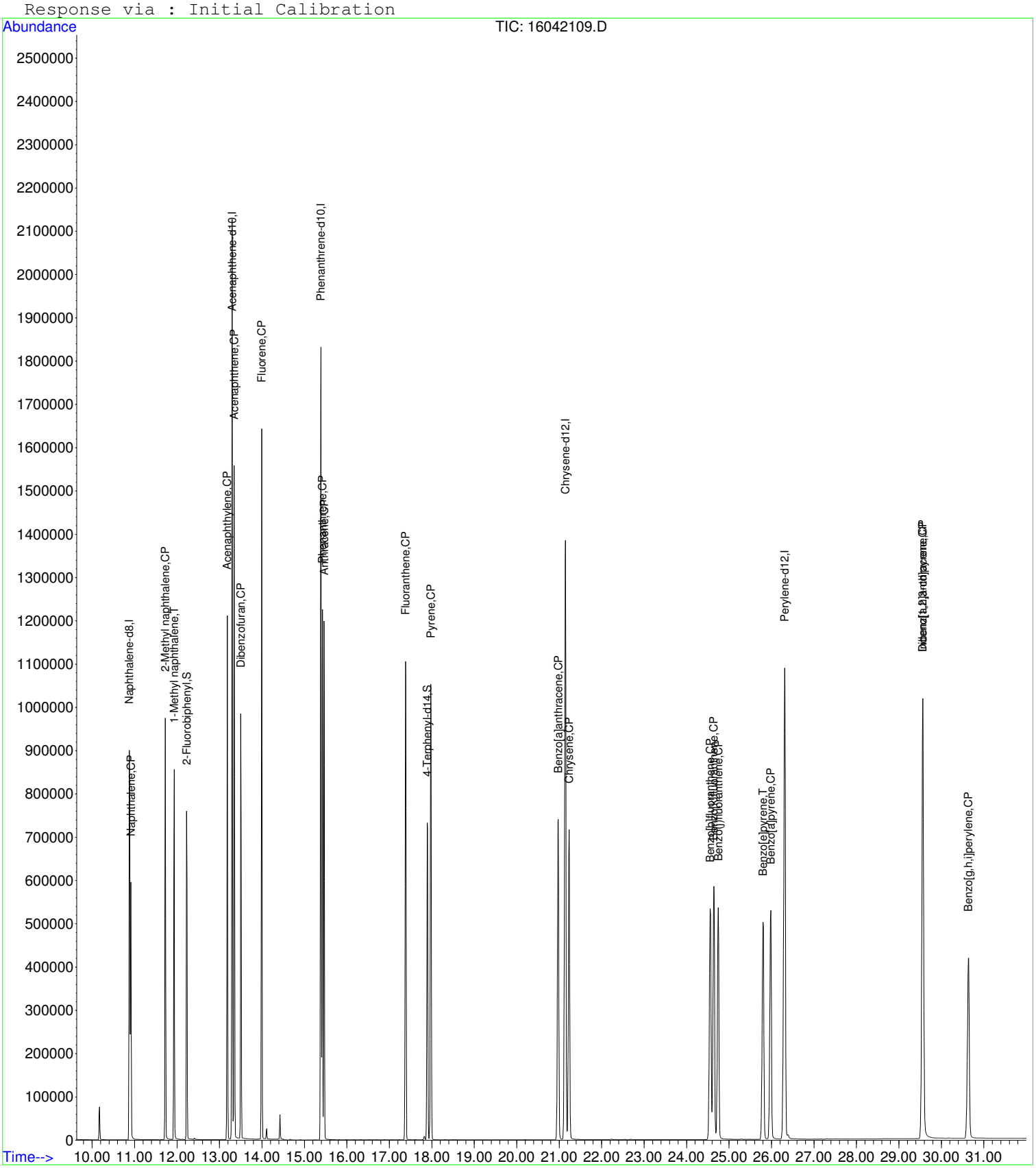
Target Compounds					Qvalue
2) Naphthalene	10.91	128	561019	1934.86 ug/kg	100
3) 2-Methyl naphthalene	11.72	142	481530	1880.07 ug/kg	100
4) 1-Methyl naphthalene	11.93	142	443761	1891.77 ug/kg	100
6) Dibenzofuran	13.50	168	873590	2024.72 ug/kg	100
8) Acenaphthylene	13.18	152	1023648	2064.73 ug/kg	100
9) Acenaphthene	13.35	154	614677	1997.49 ug/kg	100
10) Fluorene	13.99	166	794927	2127.08 ug/kg	100
12) Phenanthrene	15.42	178	1042190	1940.39 ug/kg	100
13) Anthracene	15.46	178	1017931	2002.32 ug/kg	100
14) Fluoranthene	17.38	202	1104168	1986.59 ug/kg	100
15) Pyrene	17.98	202	1123696	1946.24 ug/kg	100
18) Benzo[a]anthracene	20.98	228	1111322	2088.32 ug/kg	100
19) Chrysene	21.23	228	1032491	2008.06 ug/kg	100
21) Benzo[b]fluoranthene	24.56	252	1112314	2048.87 ug/kg	100
22) Benzo[k]fluoranthene	24.64	252	1033820	2029.96 ug/kg	100
23) Benzo(j)fluoranthene	24.75	252	933880	2058.53 ug/kg	100
24) Benzo[e]pyrene	25.80	252	984667	2025.28 ug/kg	100
25) Benzo[a]pyrene	25.98	252	1027353	2067.83 ug/kg	100
26) Dibenz[a,h]anthracene	29.56	278	940656	2078.92 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.56	276	1116484	2068.39 ug/kg	100
28) Benzo[g,h,i]perylene	30.64	276	877689	2085.21 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042109.D Vial: 9
Acq On : 21 Apr 2016 6:30 pm Operator:
Sample : PCAL-160421 (2000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

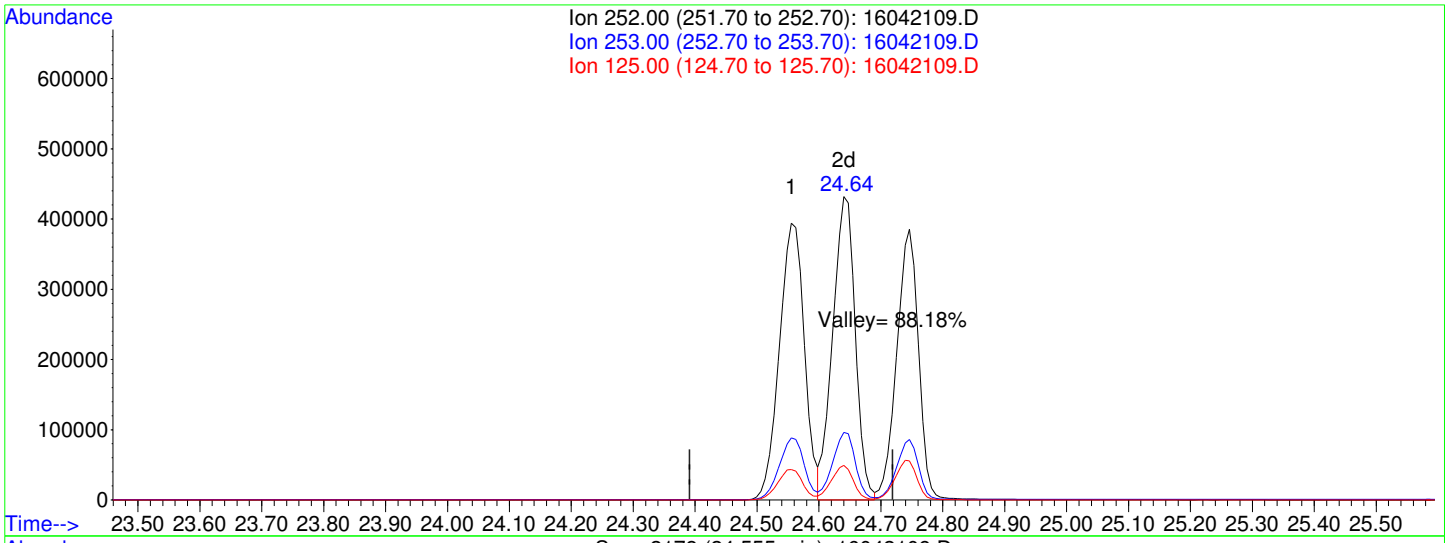
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration

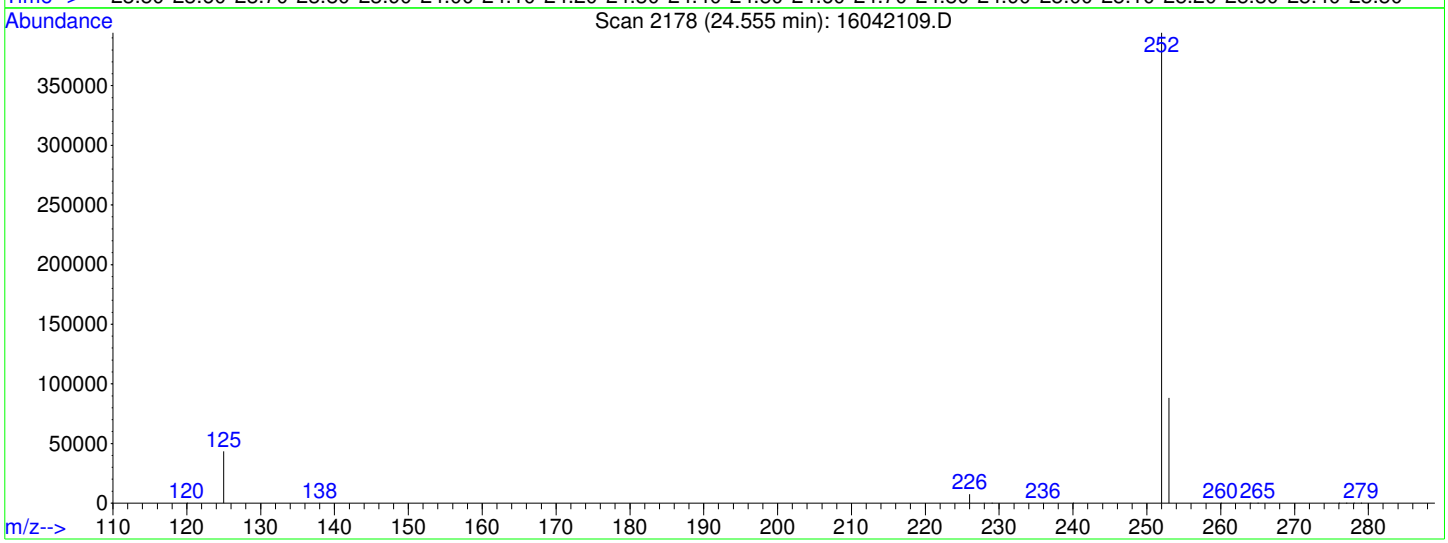


Quantitation Report (Qedit)

```
Data File : C:\HPCHEM\1\DATA\160421\16042109.D          Vial: 9
Acq On    : 21 Apr 2016   6:30 pm                   Operator:
Sample    : PCAL-160421 (2000 ppb)                  Inst    : GC/MS #6
Misc      : CAL                                     Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22  9:10 2016             Quant Results File: temp.res

Method       : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title        : PAH Calibration
Last Update  : Fri Apr 22 09:12:07 2016
Response via : Multiple Level Calibration
```





TIC: 16042109.D

(21) Benzo[b]fluoranthene (CP)

24.56min 1892.05ug/kg

response 1112314

Ion	Exp%	Act%
252.00	100	100
253.00	22.10	22.23
125.00	10.50	11.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042110.D Vial: 10
Acq On : 21 Apr 2016 7:10 pm Operator:
Sample : PCAL-160421 (5000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1267887	4000.00	ug/kg	109
5) Acenaphthene-d10	13.30	164	1170622	4000.00	ug/kg	102
11) Phenanthrene-d10	15.39	188	2026803	4000.00	ug/kg	99
17) Chrysene-d12	21.15	240	2321115	4000.00	ug/kg	102
20) Perylene-d12	26.32	264	2077450	4000.00	ug/kg	101

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	1535636	4497.00	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 112.43%			
16) 4-Terphenyl-d14	17.90	244	2372972	4525.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 113.13%			

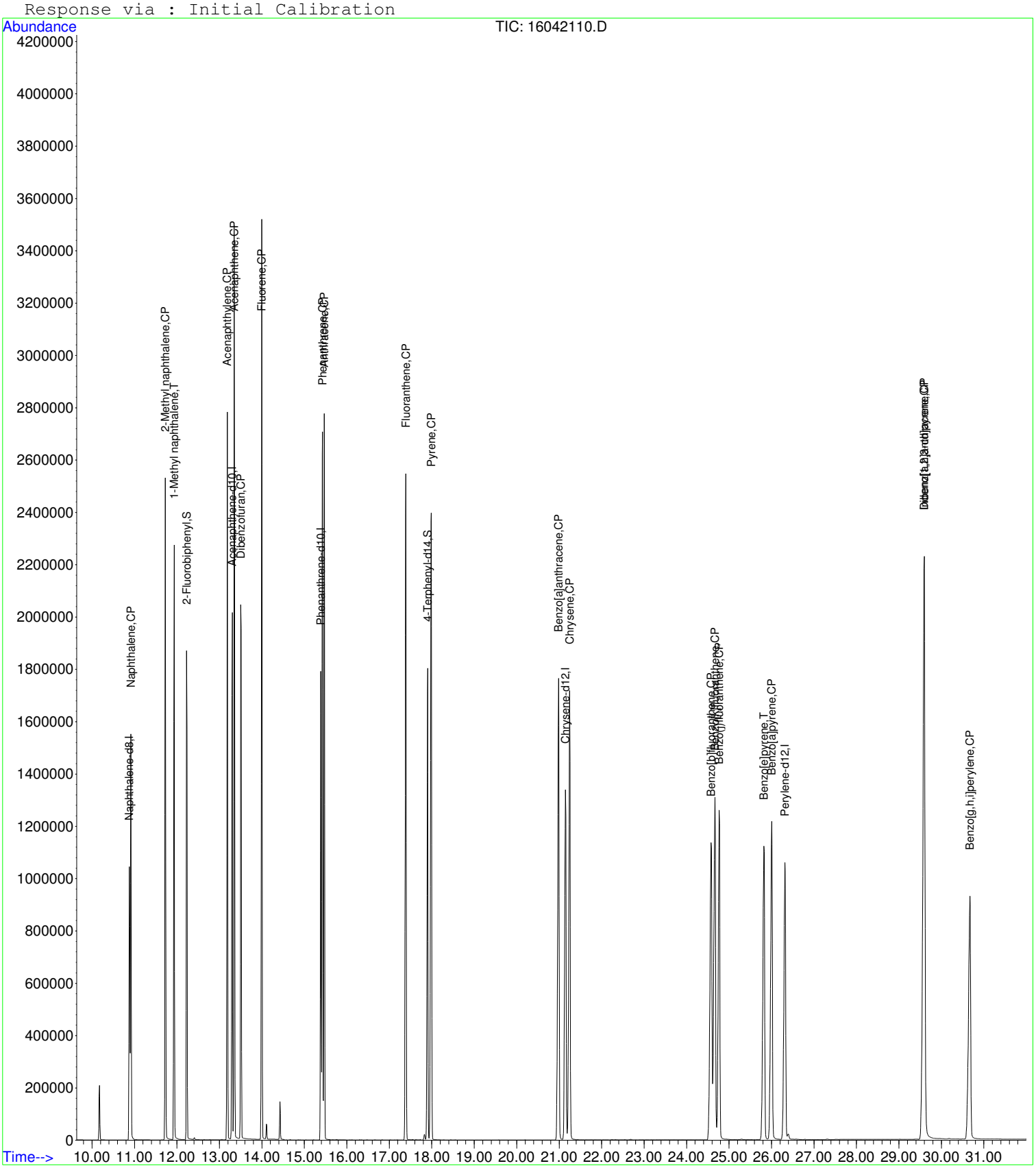
Target Compounds						Qvalue
2) Naphthalene	10.91	128	1466551	4624.22	ug/kg	99
3) 2-Methyl naphthalene	11.73	142	1254770	4479.04	ug/kg	99
4) 1-Methyl naphthalene	11.94	142	1162503	4530.90	ug/kg	99
6) Dibenzofuran	13.51	168	2052094	4677.28	ug/kg	99
8) Acenaphthylene	13.18	152	2446851	4853.52	ug/kg	98
9) Acenaphthene	13.35	154	1490789	4764.22	ug/kg	98
10) Fluorene	14.00	166	1858069	4889.40	ug/kg	100
12) Phenanthrene	15.43	178	2457176	4609.95	ug/kg	99
13) Anthracene	15.47	178	2377979	4713.49	ug/kg	98
14) Fluoranthene	17.39	202	2617800	4746.00	ug/kg	98
15) Pyrene	17.99	202	2697026	4707.07	ug/kg	99
18) Benzo[a]anthracene	20.99	228	2764069	5083.06	ug/kg	99
19) Chrysene	21.25	228	2532342	4819.83	ug/kg	99
21) Benzo[b]fluoranthene	24.58	252	2683309	4900.63	ug/kg	99
22) Benzo[k]fluoranthene	24.67	252	2495150	4857.71	ug/kg	99
23) Benzo(j)fluoranthene	24.77	252	2281068	4985.37	ug/kg	99
24) Benzo[e]pyrene	25.82	252	2361015	4814.90	ug/kg	99
25) Benzo[a]pyrene	26.00	252	2496967	4983.10	ug/kg	99
26) Dibenz[a,h]anthracene	29.60	278	2366235	5185.10	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.60	276	2781552	5109.27	ug/kg	99
28) Benzo[g,h,i]perylene	30.67	276	2164787	5099.38	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042110.D Vial: 10
Acq On : 21 Apr 2016 7:10 pm Operator:
Sample : PCAL-160421 (5000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042112.D Vial: 12
Acq On : 21 Apr 2016 8:30 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1773814	4000.00 ug/kg	153
5) Acenaphthene-d10	13.29	164	1073271	4000.00 ug/kg	93
11) Phenanthrene-d10	15.38	188	1966702	4000.00 ug/kg	96
17) Chrysene-d12	21.14	240	2203847	4000.00 ug/kg	97
20) Perylene-d12	26.30	264	1999501	4000.00 ug/kg	97

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	473	1.51 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery	= 0.04%#	
16) 4-Terphenyl-d14	17.89	244	1537	3.02 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery	= 0.08%#	

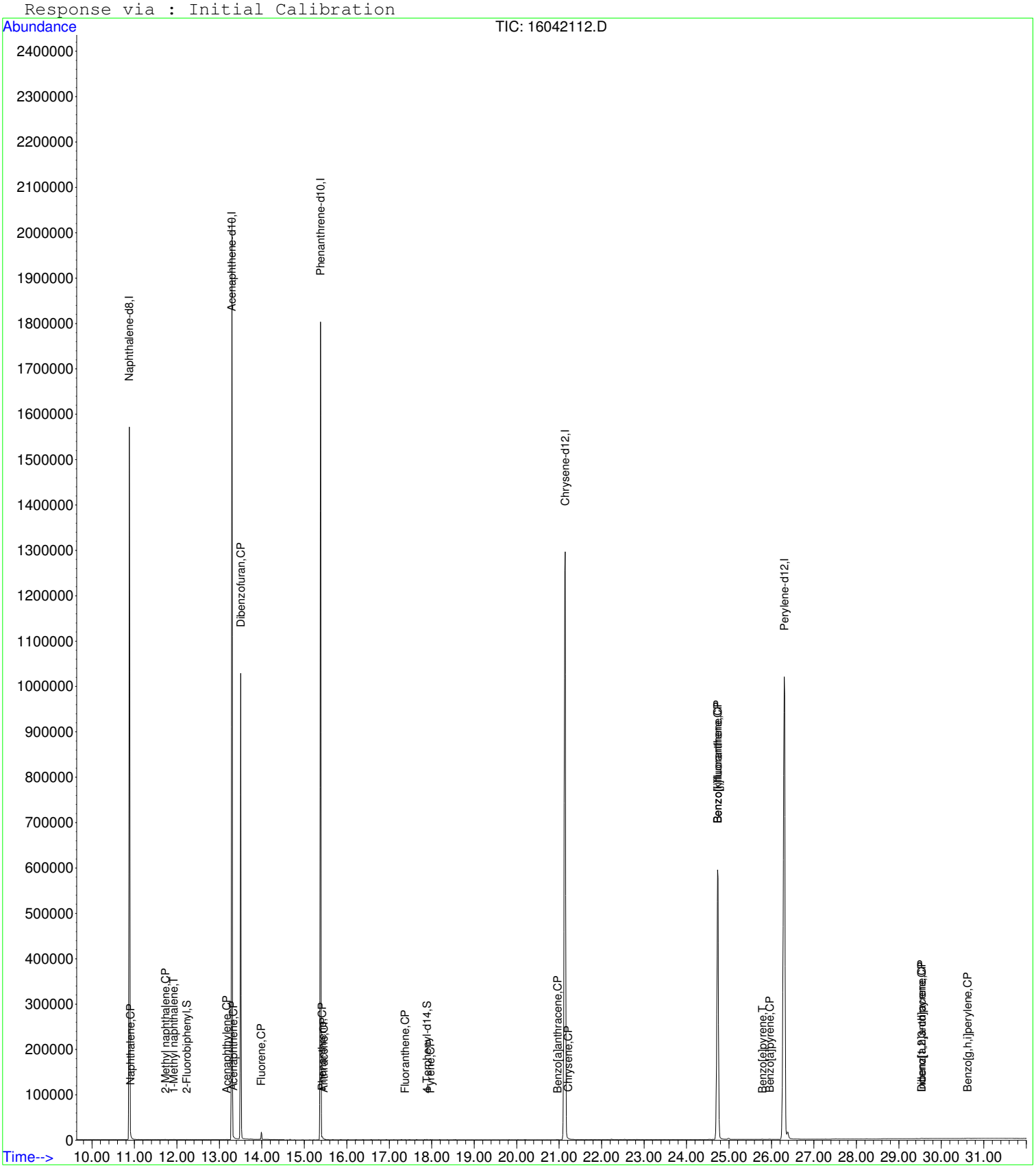
Target Compounds					Qvalue	
2) Naphthalene	10.92	128	667	1.50 ug/kg	98	
3) 2-Methyl naphthalene	11.73	142	541	1.38 ug/kg	94	
4) 1-Methyl naphthalene	11.93	142	390	1.09 ug/kg	96	
6) Dibenzofuran	13.50	168	930384	2312.95 ug/kg	99	92.52%
8) Acenaphthylene	13.18	152	654	1.41 ug/kg	99	
9) Acenaphthene	13.34	154	537	1.87 ug/kg	96	
10) Fluorene	13.99	166	8239	23.65 ug/kg	99	
12) Phenanthrene	15.42	178	915	1.77 ug/kg	99	
13) Anthracene	15.46	178	904	1.85 ug/kg	96	
14) Fluoranthene	17.37	202	754	1.41 ug/kg	97	
15) Pyrene	17.97	202	988	1.78 ug/kg	95	
18) Benzo[a]anthracene	20.96	228	786	1.52 ug/kg	92	
19) Chrysene	21.22	228	862	1.73 ug/kg	97	
21) Benzo[b]fluoranthene	0.00	252	0	N.D.		
22) Benzo[k]fluoranthene	~~24.73~~	~~252~~	~~1073092~~	~~2170.60 ug/kg~~	~~96~~	
23) Benzo(j)fluoranthene	24.73	252	1088009	2470.59 ug/kg	99	98.80%
24) Benzo[e]pyrene	25.79	252	711	1.51 ug/kg	85	
25) Benzo[a]pyrene	25.96	252	776	1.61 ug/kg	86	
26) Dibenz[a,h]anthracene	29.54	278	674	1.53 ug/kg	97	
27) Indeno[1,2,3-cd]pyrene	29.55	276	905	1.73 ug/kg	91	
28) Benzo[g,h,i]perylene	30.62	276	929	2.27 ug/kg	94	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042112.D Vial: 12
Acq On : 21 Apr 2016 8:30 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042113.D Vial: 13
Acq On : 21 Apr 2016 9:10 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1207407	4000.00 ug/kg	104
5) Acenaphthene-d10	13.29	164	1125201	4000.00 ug/kg	98
11) Phenanthrene-d10	15.38	188	2006052	4000.00 ug/kg	98
17) Chrysene-d12	21.14	240	2214439	4000.00 ug/kg	97
20) Perylene-d12	26.30	264	2022205	4000.00 ug/kg	98

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.23	172	865296	2636.25 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	65.91%	
16) 4-Terphenyl-d14	17.89	244	1276971	2460.44 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	61.51%	

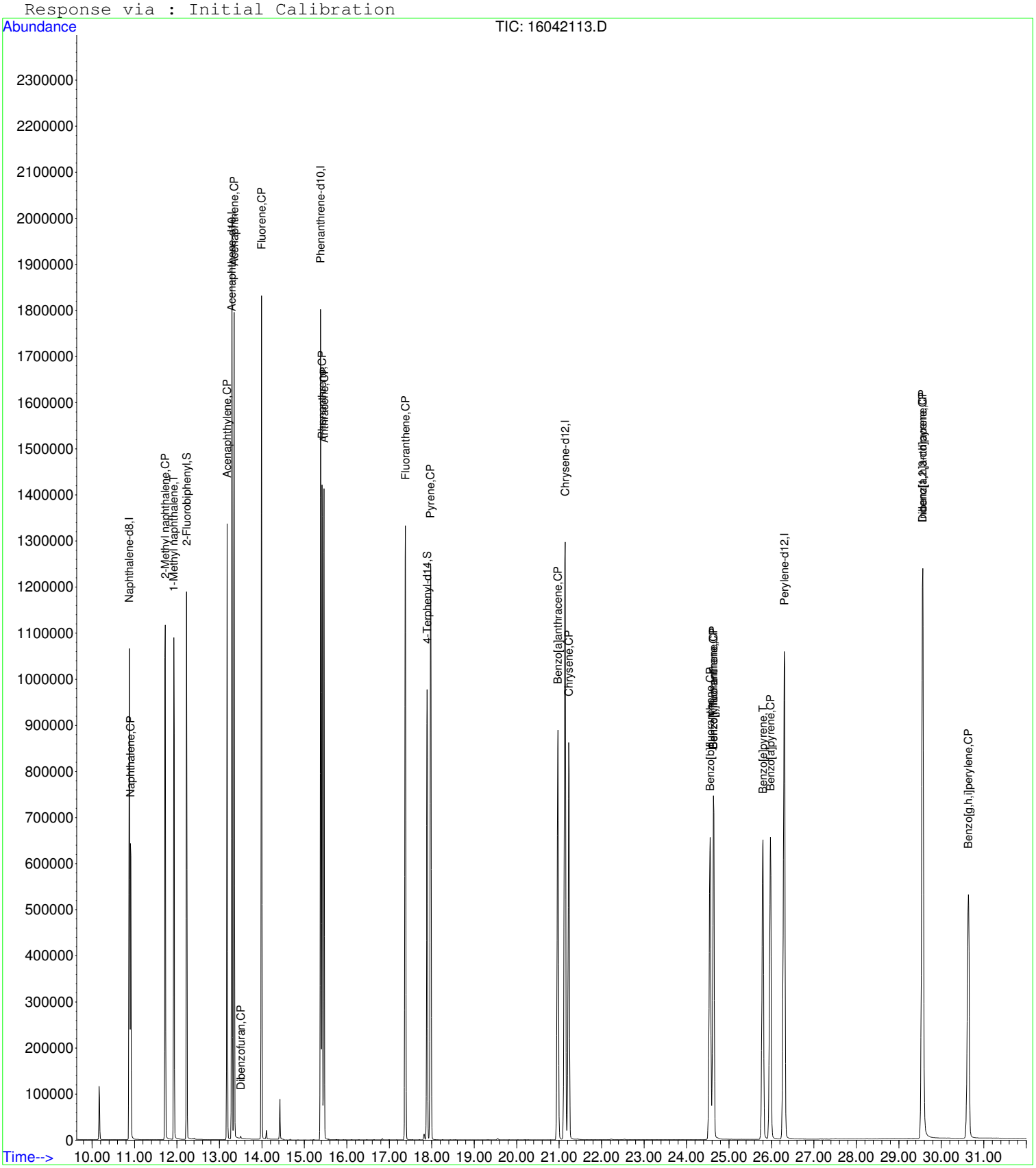
Target Compounds					Qvalue
2) Naphthalene	10.90	128	700486	2319.36 ug/kg	99
3) 2-Methyl naphthalene	11.72	142	646154	2422.05 ug/kg	96
4) 1-Methyl naphthalene	11.93	142	589122	2411.14 ug/kg	93
6) ~~Dibenzofuran~~	~~13.50~~	~~168~~	~~4477~~	~~10.62 ug/kg~~	~~99~~
8) Acenaphthylene	13.18	152	1162279	2398.54 ug/kg	99
9) Acenaphthene	13.35	154	742241	2467.78 ug/kg	98
10) Fluorene	13.99	166	937451	2566.43 ug/kg	98
12) Phenanthrene	15.42	178	1224975	2321.97 ug/kg	100
13) Anthracene	15.46	178	1210391	2423.98 ug/kg	100
14) Fluoranthene	17.38	202	1343025	2460.06 ug/kg	99
15) Pyrene	17.98	202	1367241	2410.90 ug/kg	100
18) Benzo[a]anthracene	20.97	228	1320521	2545.39 ug/kg	100
19) Chrysene	21.23	228	1199457	2392.91 ug/kg	100
21) Benzo[b]fluoranthene	24.56	252	1332056	2499.24 ug/kg	100
22) Benzo[k]fluoranthene	24.63	252	1314395	2628.85 ug/kg	99
23) ~~Benzo(j)fluoranthene~~	~~24.63~~	~~252~~	~~1324210~~	~~2973.18 ug/kg~~	~~96~~
24) Benzo[e]pyrene	25.80	252	1256065	2631.51 ug/kg	99
25) Benzo[a]pyrene	25.98	252	1257772	2578.66 ug/kg	99
26) Dibenz[a,h]anthracene	29.56	278	1181135	2658.91 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.56	276	1381760	2607.41 ug/kg	99
28) Benzo[g,h,i]perylene	30.64	276	1103924	2671.45 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042113.D Vial: 13
Acq On : 21 Apr 2016 9:10 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



16042113.D PP160421.M Fri Apr 22 11:46:46 2016 Page 2

GCMS8
For

DHL Work Order
1605135

GCMS8_160518B
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160518B
Batch Number(s): See Run Log.	SOP: ORGANICS-PAH-01
Matrix: See Run Log.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS			X	
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS			X	
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)			X	

Lab Data Review Check List

EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction	X			X
1. Are all sample hold times met?	14 days (Soil) - extraction			X	
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard			X	
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS __LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	X Flag data / Case narrative
X Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	X Other (describe below)	___ Accept data
___ Other (describe below)	___ Cannot reanalyze (HT out/Lack of Sample)	

General Comments and Impact on Data: **See Run Log.**

Equipment blanks - LCS and MB is only QC requirement.

Analyst: Karyn Lane Date: **REVIEWED/APPROVED** 5/19/2016

Second-Level Review: Date: *By Sherri Herschmann at 4:06:35 PM, 5/23/2016* **05/23/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160518B **Run No.:** 85875

Analytical Run Date: 5/18/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160518	1	PAH_LL_WDOD1	TUNE	R85875	5/18/2016 8:58:00 AM		
ICV-160518	1	PAH_LL_WDOD1	ICV	R85875	5/18/2016 9:35:00 AM		Use DCS/LQV from GCMS8_160518A.
LCS-75146	1	PAH_LL_WDOD1	LCS	75146	5/18/2016 2:03:00 PM		Equipment blanks - LCS and MB is only QC requirement.
MB-75146	1	PAH_LL_WDOD1	MBLK	75146	5/18/2016 2:40:00 PM		
1605074-33B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 3:17:00 PM		
1605074-34B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 3:53:00 PM		
1605074-35B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 4:30:00 PM		
1605096-36B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 5:07:00 PM		
1605096-37B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 5:44:00 PM		
1605096-44B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 6:21:00 PM		
1605097-27B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 6:58:00 PM		
1605097-30B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 7:34:00 PM		
DFTPP2-160518	1	PAH_LL_WDOD1	TUNE	R85875	5/18/2016 8:11:00 PM		
ICV2-160518	1	PAH_LL_WDOD1	ICV	R85875	5/18/2016 8:49:00 PM		
SBLK-160518	1	PAH_LL_WDOD1	SBLK	75146	5/18/2016 10:03:00 PM		
1605098-42B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 10:40:00 PM		
1605121-46B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 11:17:00 PM		
1605121-47B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 11:54:00 PM		
1605135-46B	1	PAH_LL_WDOD1	SAMP	75146	5/19/2016 12:31:00 AM		
1605144-16B	1	PAH_LL_WDOD1	SAMP	75146	5/19/2016 1:08:00 AM		
CCV-160520	1	PAH_LL_WDOD1	CCV	R85875	5/19/2016 2:59:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 4:07:08 PM, 5/23/2016

Sequence Name: C:\msdchem\1\sequence\160518.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160518\
Instrument Name: GCMS #8
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info		
1)	Sample	1	16051801	DFTPPPAH	DFTPP-160518
2)	Sample	2	16051802	PAH160517	ICV-160518
3)	Sample	3	16051803	PAH160517	DCS-75209
4)	Sample	4	16051804	PAH160517	LQV-75209
5)	Sample	5	16051805	PAH160517	LCS-75209
6)	Sample	6	16051806	PAH160517	LCSD-75209
7)	Sample	7	16051807	PAH160517	MB-75209
8)	Sample	8	16051808	PAH160517	1605142-01E
9)	Sample	9	16051809	PAH160517	LCS-75146
10)	Sample	10	16051810	PAH160517	MB-75146
11)	Sample	11	16051811	PAH160517	1605074-33B
12)	Sample	12	16051812	PAH160517	1605074-34B
13)	Sample	13	16051813	PAH160517	1605074-35B
14)	Sample	14	16051814	PAH160517	1605096-36B
15)	Sample	15	16051815	PAH160517	1605096-37B
16)	Sample	16	16051816	PAH160517	1605096-44B
17)	Sample	17	16051817	PAH160517	1605097-27B
18)	Sample	18	16051818	PAH160517	1605097-30B
19)	Sample	19	16051819	DFTPPPAH	DFTPP2-160518
20)	Sample	20	16051820	PAH160517	ICV2-160518
21)	Sample	21	16051821	PAH160517	SBLK
22)	Sample	22	16051822	PAH160517	SBLK-160518
23)	Sample	23	16051823	PAH160517	1605098-42B
24)	Sample	24	16051824	PAH160517	1605121-46B
25)	Sample	25	16051825	PAH160517	1605121-47B
26)	Sample	26	16051826	PAH160517	1605135-46B
27)	Sample	27	16051827	PAH160517	1605144-16B
28)	Sample	28	16051828	PAH160517	1605071-38A
29)	Sample	29	16051829	PAH160517	1605071-32A
30)	Sample	30	16051830	PAH160517	CCV-160520

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 8:48:47 AM**
Digestion:
Prep End Date: 5/13/16 11:35AM

Prep Batch **75146** Prep Code: **3510_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/mL**

Equipment List
Turbo-Vap #1,2,3
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-33B	Equip Blank	6	500	1	0.002	1 of 1	532.2 - 212.6 = 319.6
1605074-34B	Equip Blank		500	1	0.002	1 of 1	535.8 - 213.4 = 322.4
1605074-35B	Equip Blank		500	1	0.002	1 of 1	AR 5/13/16 ~~358.0~~ 538.0 - 214.4 = 323.6
1605096-36B	Equip Blank		500	1	0.002	1 of	543.3 - 213.4 = 329.9
1605096-37B	Equip Blank		500	1	0.002	1 of 1	532.9 - 213.6 = 318.4
1605096-44B	Equip Blank		500	1	0.002	1 of 1	531.6 - 212.5 = 319.1
1605097-27B	Equip Blank		500	1	0.002	1 of 1	536.8 - 212.2 = 324.6
1605097-30B	Equip Blank		500	1	0.002	1 of 1	537.3 - 213.3 = 324.0
1605098-42B	Equip Blank		500	1	0.002	1 of 1	537.9 - 212.9 = ~~315.1~~ 325
1605121-46B	Equip Blank		500	1	0.002	1 of 1	526.8 - 213.4 = 313.4
1605121-47B	Equip Blank		500	1	0.002	1 of 1	528.7 - 212.3 = ~~308.7~~ 316.4
1605135-46B	Equip Blank		500	1	0.002	1 of 1	534.2 - 212.8 = 321.4
LCS-75146	Aqueous		500	1	0.002	of	738.3 - 238.3 = 500.0
~~LCSD-75146~~ 5/13/16	Aqueous		500	1	0.002	of	~~Insufficient sample for MS/D~~ 5/13/16
MB-75146	Aqueous		500	1	0.002	of	777.4 - 277.4 = 500.0

1605144-16B 6

536.0 - 214.7 = 321.3

Added @ 1:00PM 5/13/16.

REVIEWED/APPROVED

By Sherri Herschmann at 4:12:07 PM, 5/23/2016

Number	Reagent Name	Amt	Units	Exp. Da
7509	pH paper 0-14	1	paper	10/15/2025
9927	Purified Sodium Sulfate	10	g	07/04/2016
10169	Methylene Chloride	120	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/LCSD	0.01	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.1	08/08/2016

5/13/16 AR 5/13/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 8:48:47 AM**
Digestion:
Prep End Date: **5/13/2016 2:10:17 PM**

Prep Batch **75146** Prep Code: **3510_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/mL**

Equipment List

Turbo-Vap #1,2,3
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-33B	Equip Blank	6	319.6	1	0.003	1 of 1	
1605074-34B	Equip Blank	6	322.4	1	0.003	1 of 1	
1605074-35B	Equip Blank	6	323.6	1	0.003	1 of 1	
1605096-36B	Equip Blank	6	329.9	1	0.003	1 of 1	
1605096-37B	Equip Blank	6	318.4	1	0.003	1 of 1	
1605096-44B	Equip Blank	6	319.1	1	0.003	1 of 1	
1605097-27B	Equip Blank	6	324.6	1	0.003	1 of 1	
1605097-30B	Equip Blank	6	324	1	0.003	1 of 1	
1605098-42B	Equip Blank	6	~~315.1~~ **325**	1	0.003	1 of 1	
1605121-46B	Equip Blank	6	313.4	1	0.003	1 of 1	
1605121-47B	Equip Blank	6	~~308.7~~ **316.4**	1	0.003	1 of 1	
1605135-46B	Equip Blank	6	321.4	1	0.003	1 of 1	
1605144-16B	Equip Blank	6	321.3	1	0.003	1 of 1	
LCS-75146	Aqueous	6	500	1	0.002	of	
MB-75146	Aqueous	6	500	1	0.002	of	

REVIEWED/APPROVED

By Sherri Herschmann at 4:15:47 PM, 5/23/2016

Number	Reagent Name	Amt	Units	Exp. Da
7509	pH paper 0-14	1	paper	10/15/2025
9927	Purified Sodium Sulfate	10	g	07/04/2016
10169	Methylene Chloride	120	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026

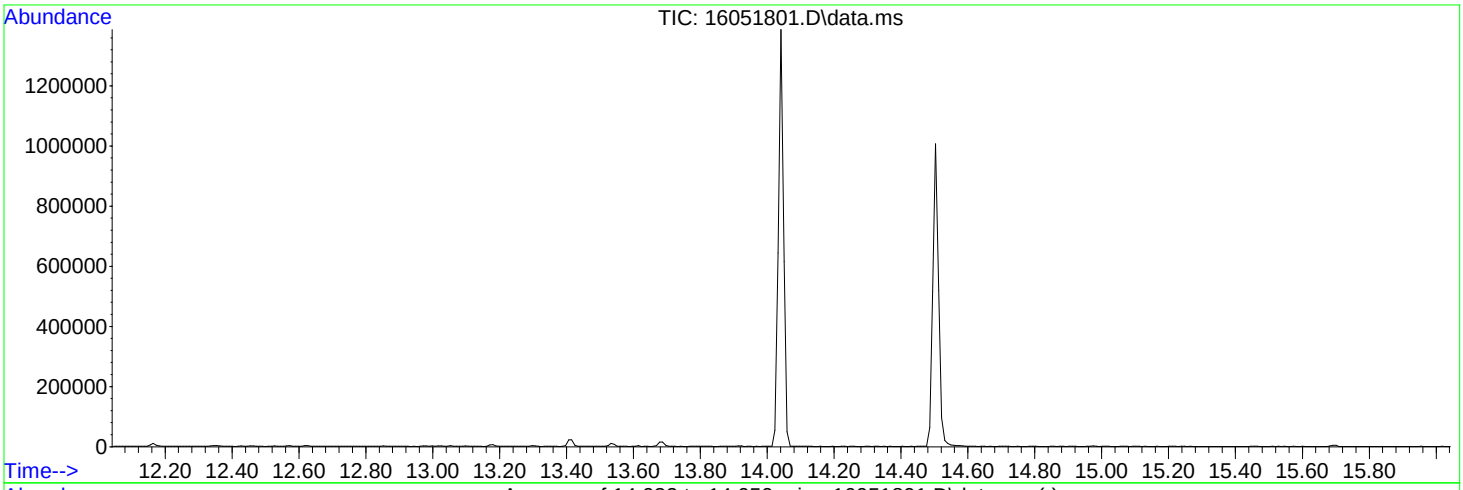
Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/LCSD	0.01	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.1	08/08/2016

DFTPP

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051801.D
Acq On : 18 May 2016 8:58 am
Operator :
Sample : DFTPP-160518
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.6	32471	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.5	36940	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.7	42606	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	91320	PASS
199	198	5	9	6.7	6088	PASS
275	198	10	60	30.3	27688	PASS
365	198	1	200	3.6	3268	PASS
441	442	0.01	24	16.3	28059	PASS
442	198	50	400	189.0	172605	PASS
443	442	15	24	19.6	33763	PASS

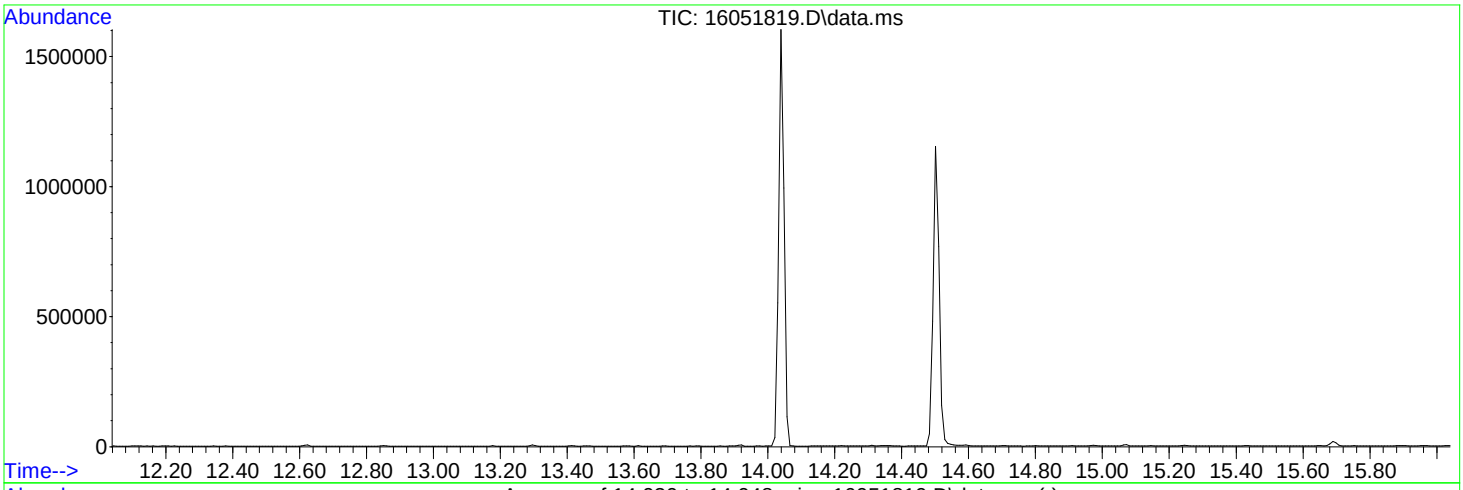
REVIEWED BY
By Janice Whitt at 2:34:46 PM, 5/19/2016

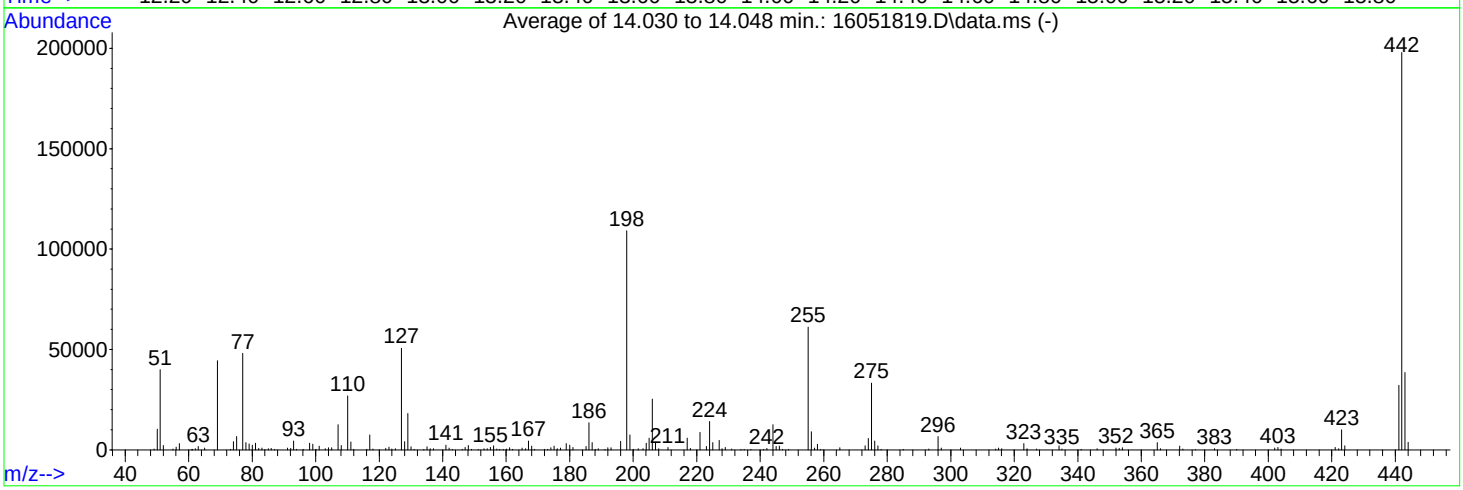
DFTPP

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051819.D
Acq On : 18 May 2016 8:11 pm
Operator :
Sample : DFTPP2-160518
Misc : TUNE
ALS Vial : 19 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015





AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.6	39974	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.8	44482	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.4	50616	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	109152	PASS
199	198	5	9	6.8	7381	PASS
275	198	10	60	30.5	33283	PASS
365	198	1	200	3.4	3666	PASS
441	442	0.01	24	16.2	32122	PASS
442	198	50	400	181.4	197986	PASS
443	442	15	24	19.5	38521	PASS

REVIEWED BY
By Janice Whitt at 12:56:17 PM, 5/23/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.263	136	1439270	4000.00	ug/kg	88
6) Acenaphthene-d10	12.851	164	1096742	4000.00	ug/kg	87
11) Phenanthrene-d10	14.976	188	2537779	4000.00	ug/kg	87
16) Chrysene-d12	20.981	240	2403266	4000.00	ug/kg	89
20) Perylene-d12	26.247	264	2183143	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.752	172	613046	1913.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 47.83%			
17) 4-Terphenyl-d14	17.584	244	1035464	2035.60	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.89%#			

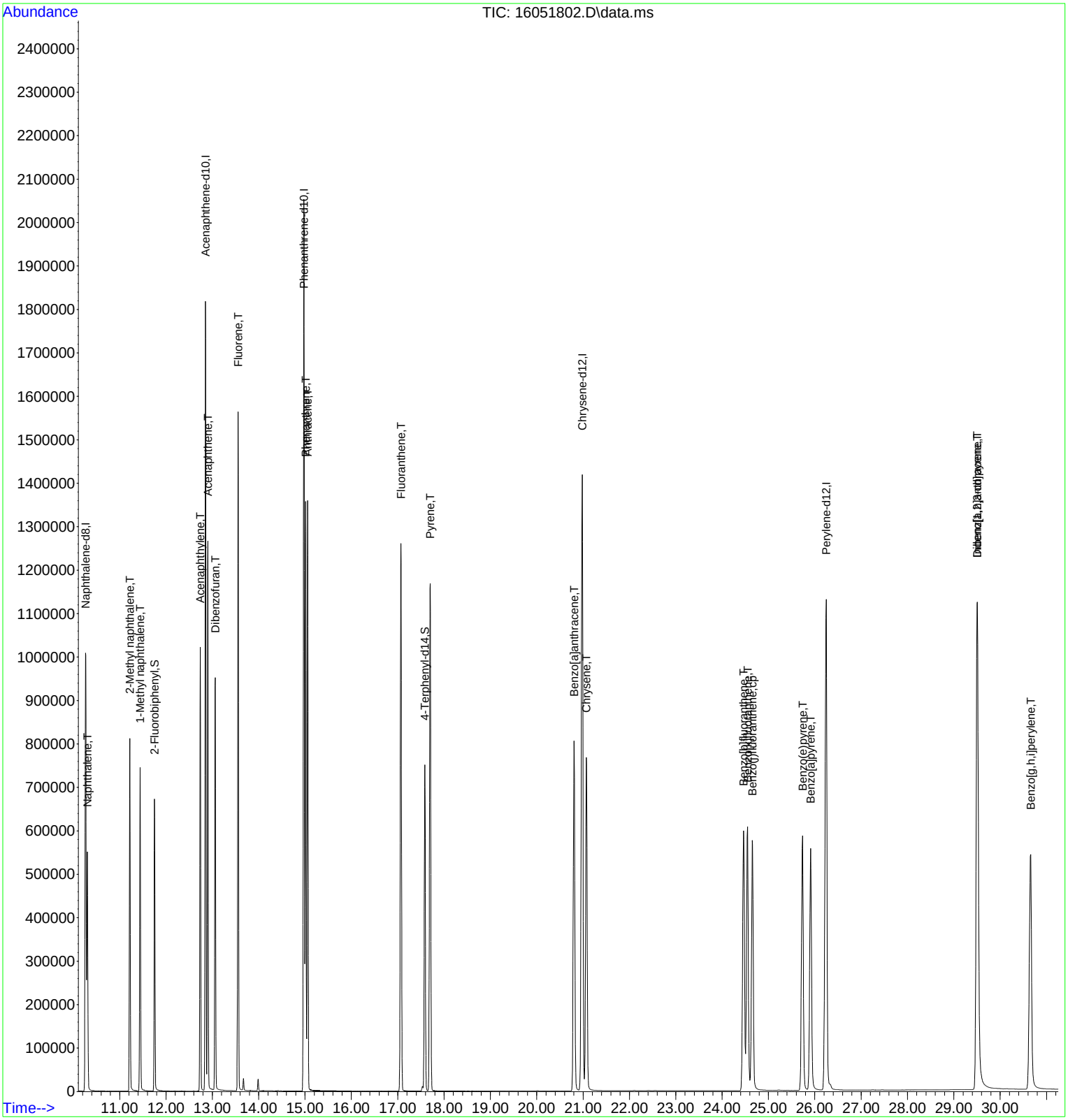
Target Compounds						Qvalue
2) Naphthalene	10.300	128	645598	2002.26	ug/kg	100
3) 2-Methyl naphthalene	11.217	142	500194	1995.54	ug/kg	98
4) 1-Methyl naphthalene	11.444	142	460727	1942.42	ug/kg	99
7) Acenaphthylene	12.738	152	964211	2011.33	ug/kg	100
8) Acenaphthene	12.905	153	609340	2014.36	ug/kg	100
9) Dibenzofuran	13.062	168	927693	2013.19	ug/kg	99
10) Fluorene	13.553	166	845853	2023.03	ug/kg	100
12) Phenanthrene	15.014	178	1313221	1880.65	ug/kg	100
13) Anthracene	15.056	178	1326462	1877.33	ug/kg	100
14) Fluoranthene	17.068	202	1419444	2135.93	ug/kg	100
15) Pyrene	17.701	202	1398615	2140.87	ug/kg	99
18) Benzo[a]anthracene	20.805	228	1261556	2123.30	ug/kg	100
19) Chrysene	21.069	228	1160852	2112.58	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	1189531	2127.79	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	1074594	2120.12	ug/kg	100
23) Benzo(j)fluoranthene	24.651	252	1026600	2124.35	ug/kg	100
24) Benzo(e)pyrene	25.735	252	1119451	2121.93	ug/kg	100
25) Benzo[a]pyrene	25.910	252	1107058	2114.72	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	1344214	2098.92	ug/kg	99
27) Dibenz[a,h]anthracene	29.500	278	1122117	2109.02	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	1164995	2108.28	ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

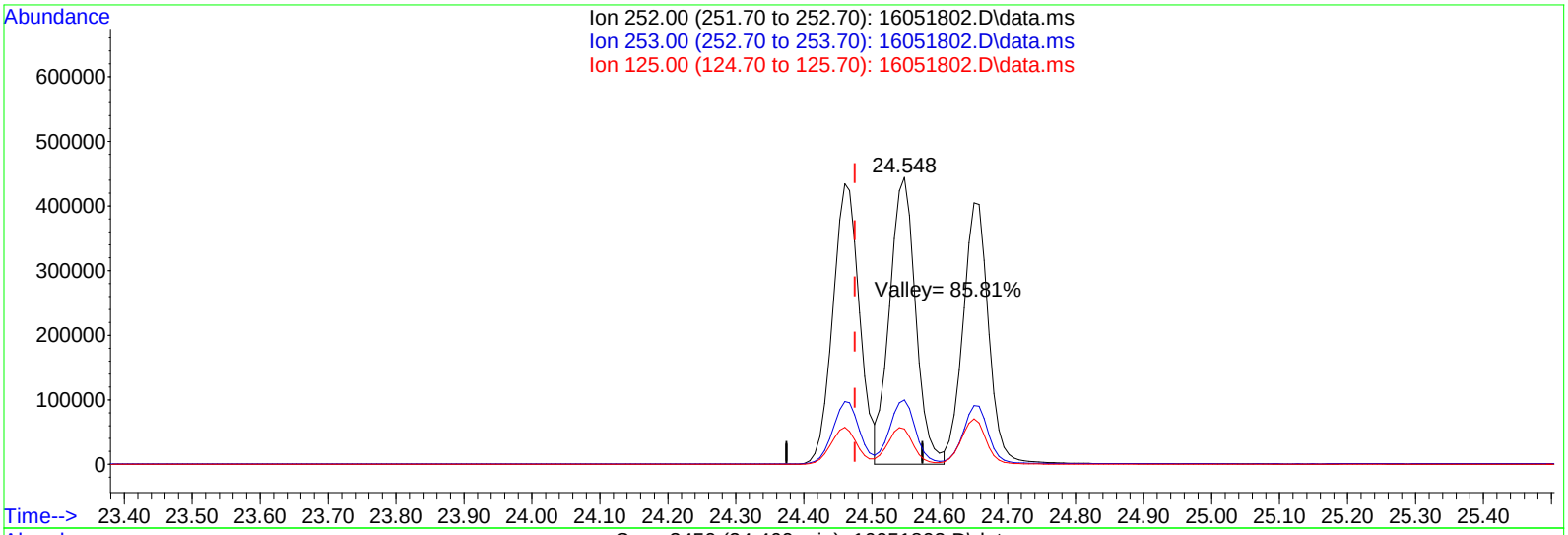
Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

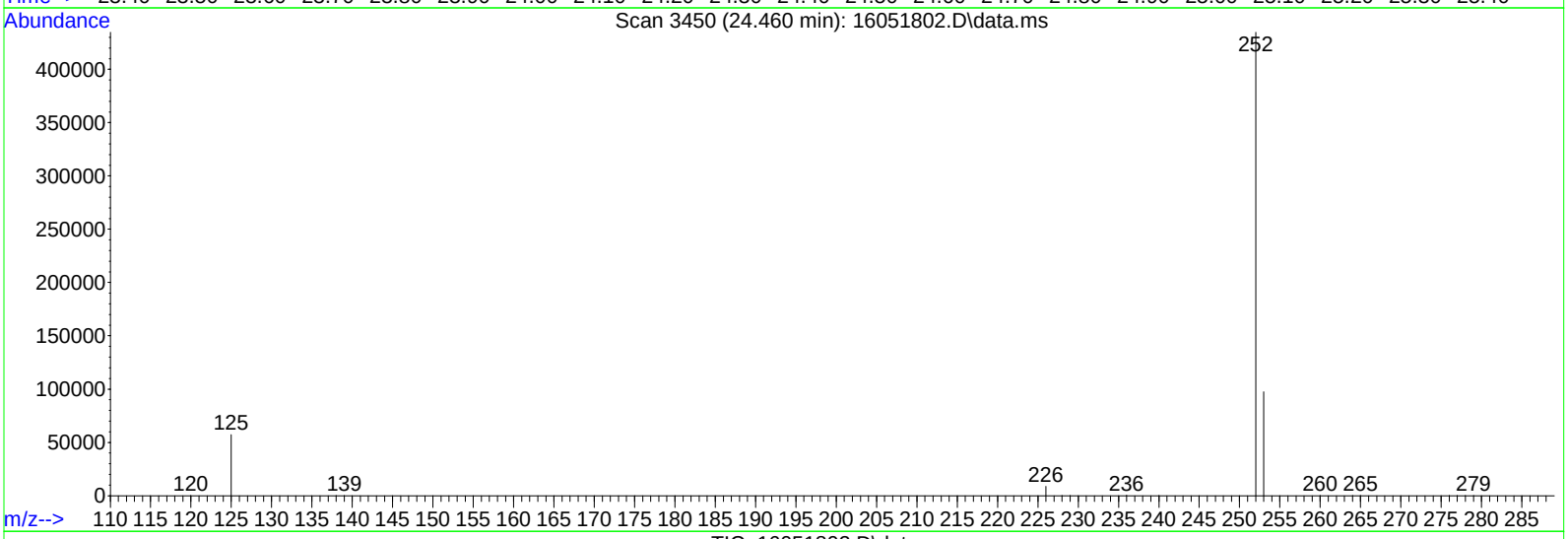


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051802.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.460min (-0.015) 2127.79ug/kg

response 1189531

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.26
125.00	12.20	13.16
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051809.D
Acq On : 18 May 2016 2:03 pm
Operator :
Sample : LCS-75146
Misc : LCS
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 09:16:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1319910	4000.00	ug/kg	81
6) Acenaphthene-d10	12.857	164	979132	4000.00	ug/kg	78
11) Phenanthrene-d10	14.977	188	2285148	4000.00	ug/kg	78
16) Chrysene-d12	20.981	240	2110098	4000.00	ug/kg	78
20) Perylene-d12	26.241	264	1904087	4000.00	ug/kg	77

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	657780	2238.26	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 55.96%			
17) 4-Terphenyl-d14	17.586	244	1177981	2637.52	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 65.94%			

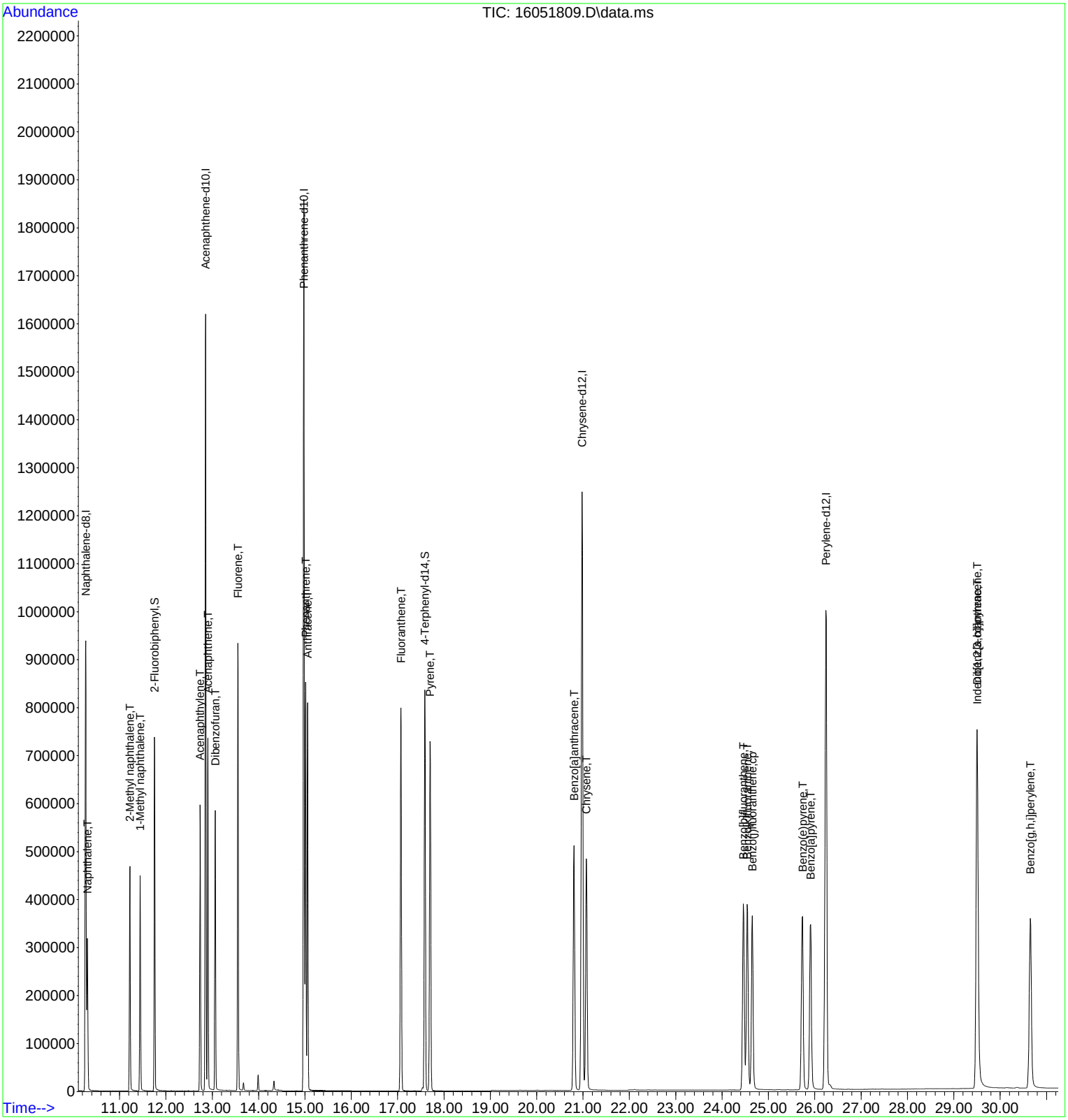
Target Compounds						Qvalue
2) Naphthalene	10.306	128	366938	1240.93	ug/kg	99
3) 2-Methyl naphthalene	11.224	142	288325	1254.30	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	267309	1228.89	ug/kg	99
7) Acenaphthylene	12.739	152	559567	1307.45	ug/kg	99
8) Acenaphthene	12.906	153	353590	1309.30	ug/kg	99
9) Dibenzofuran	13.063	168	539351	1311.04	ug/kg	99
10) Fluorene	13.554	166	507450	1359.45	ug/kg	100
12) Phenanthrene	15.015	178	815126	1296.39	ug/kg	99
13) Anthracene	15.057	178	785637	1234.83	ug/kg	99
14) Fluoranthene	17.070	202	887651	1454.69	ug/kg	99
15) Pyrene	17.700	202	872881	1459.82	ug/kg	98
18) Benzo[a]anthracene	20.805	228	787235	1485.78	ug/kg	100
19) Chrysene	21.069	228	729981	1491.09	ug/kg	100
21) Benzo[b]fluoranthene	24.461	252	762202	1545.20	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	688207	1542.68	ug/kg	99
23) Benzo(j)fluoranthene	24.651	252	630685	1475.70	ug/kg	100
24) Benzo(e)pyrene	25.735	252	687368	1472.95	ug/kg	100
25) Benzo[a]pyrene	25.911	252	693028	1503.32	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.515	276	848810	1500.32	ug/kg	98
27) Dibenz[a,h]anthracene	29.500	278	709881	1508.82	ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	731582	1498.98	ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051809.D
Acq On : 18 May 2016 2:03 pm
Operator :
Sample : LCS-75146
Misc : LCS
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 09:16:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051810.D
Acq On : 18 May 2016 2:40 pm
Operator :
Sample : MB-75146
Misc : MBLK
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 09:16:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1390449	4000.00	ug/kg	85
6) Acenaphthene-d10	12.857	164	1037657	4000.00	ug/kg	83
11) Phenanthrene-d10	14.977	188	2466155	4000.00	ug/kg	84
16) Chrysene-d12	20.981	240	2313139	4000.00	ug/kg	85
20) Perylene-d12	26.248	264	2116938	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	713716	2305.39	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 57.63%			
17) 4-Terphenyl-d14	17.590	244	1305557	2666.57	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 66.66%			

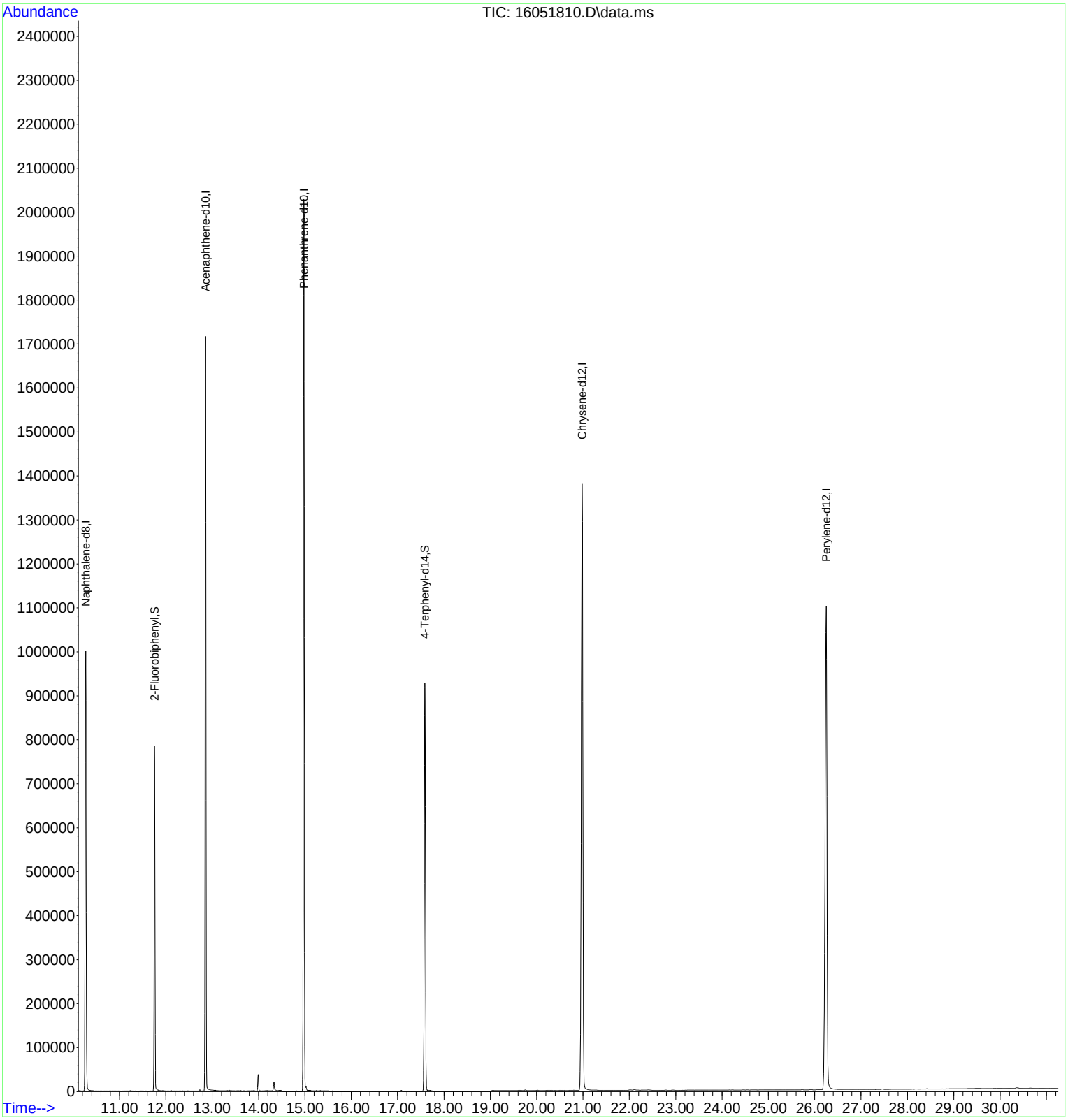
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051810.D
Acq On : 18 May 2016 2:40 pm
Operator :
Sample : MB-75146
Misc : MBLK
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 09:16:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 19 09:16:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1541947	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1207997	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2731012	4000.00	ug/kg	93
16) Chrysene-d12	20.989	240	2535151	4000.00	ug/kg	94
20) Perylene-d12	26.248	264	2319324	4000.00	ug/kg	93

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	660318	1923.35	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.08%			
17) 4-Terphenyl-d14	17.587	244	1090974	2033.15	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.83%#			

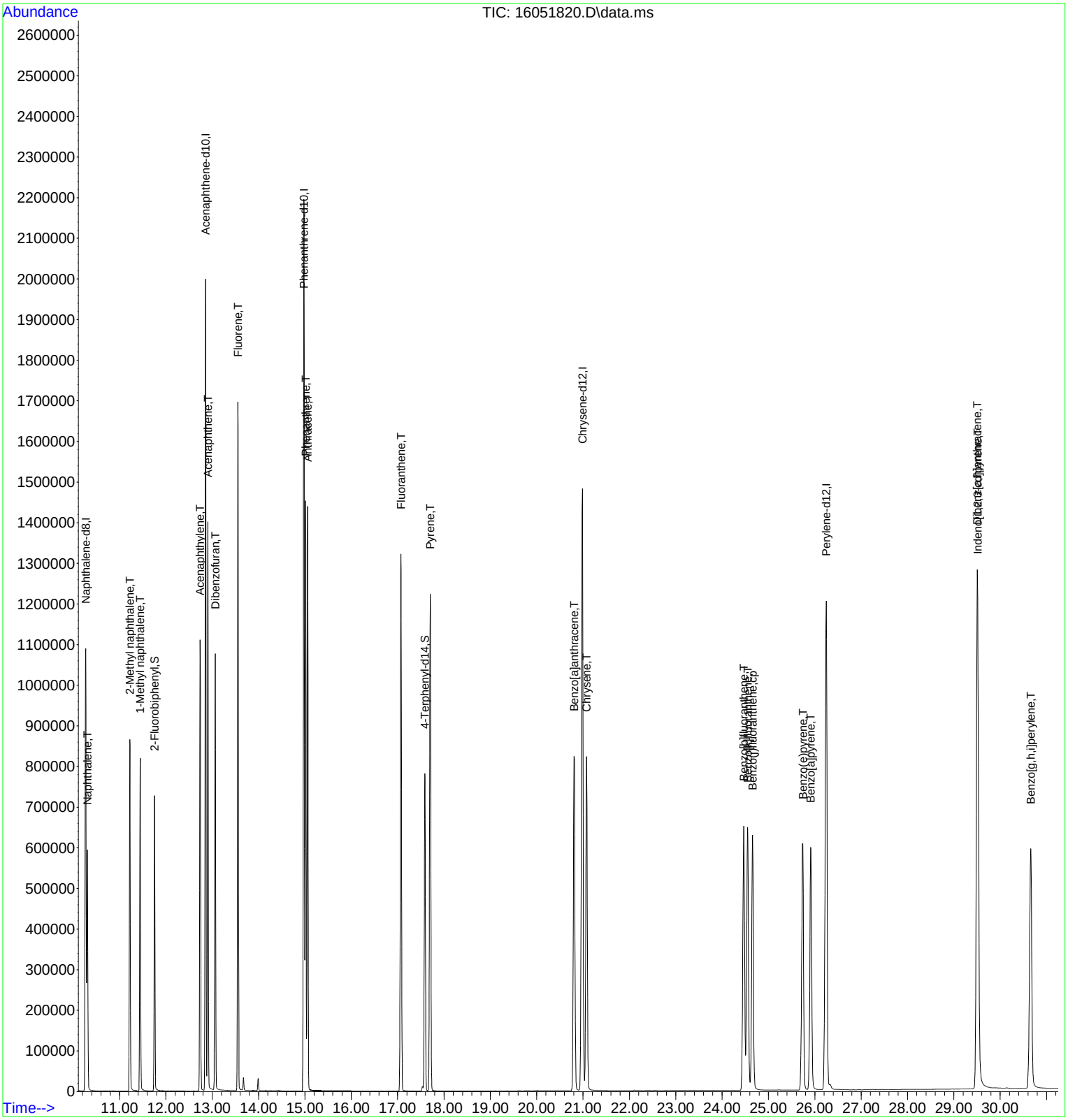
Target Compounds						Qvalue
2) Naphthalene	10.303	128	692653	2005.15	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	543376	2023.46	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	498034	1959.89	ug/kg	99
7) Acenaphthylene	12.739	152	1052817	1993.89	ug/kg	100
8) Acenaphthene	12.906	153	669198	2008.49	ug/kg	100
9) Dibenzofuran	13.064	168	1014806	1999.41	ug/kg	98
10) Fluorene	13.555	166	927758	2014.57	ug/kg	100
12) Phenanthrene	15.015	178	1399624	1862.57	ug/kg	100
13) Anthracene	15.059	178	1414791	1860.66	ug/kg	99
14) Fluoranthene	17.071	202	1484668	2072.21	ug/kg	99
15) Pyrene	17.704	202	1458241	2070.73	ug/kg	99
18) Benzo[a]anthracene	20.805	228	1322898	2110.03	ug/kg	100
19) Chrysene	21.076	228	1217225	2099.27	ug/kg	100
21) Benzo[b]fluoranthene	24.468	252	1259735	2120.76	ug/kg	100
22) Benzo[k]fluoranthene	24.549	252	1175849	2185.94	ug/kg	99
23) Benzo(j)fluoranthene	24.658	252	1091106	2125.31	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1183382	2110.90	ug/kg	100
25) Benzo[a]pyrene	25.918	252	1185414	2132.02	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1433865	2107.85	ug/kg	98
27) Dibenz[a,h]anthracene	29.508	278	1204388	2131.84	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	1254977	2139.12	ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

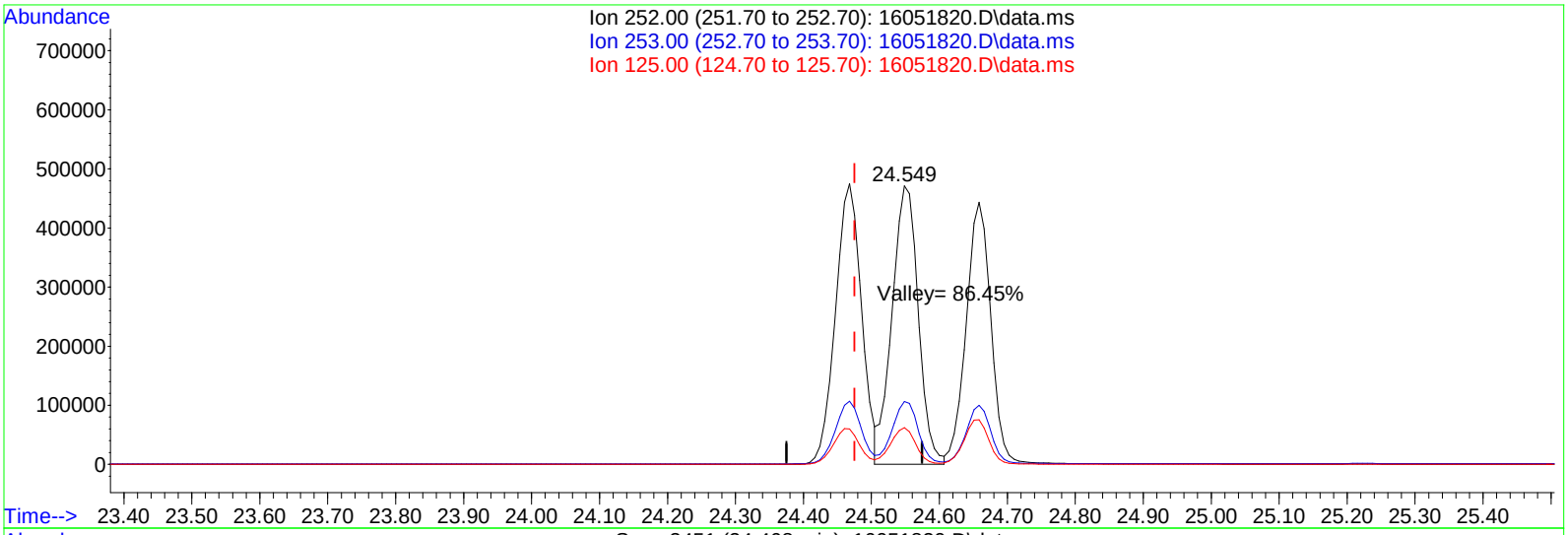
Quant Time: May 19 09:16:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

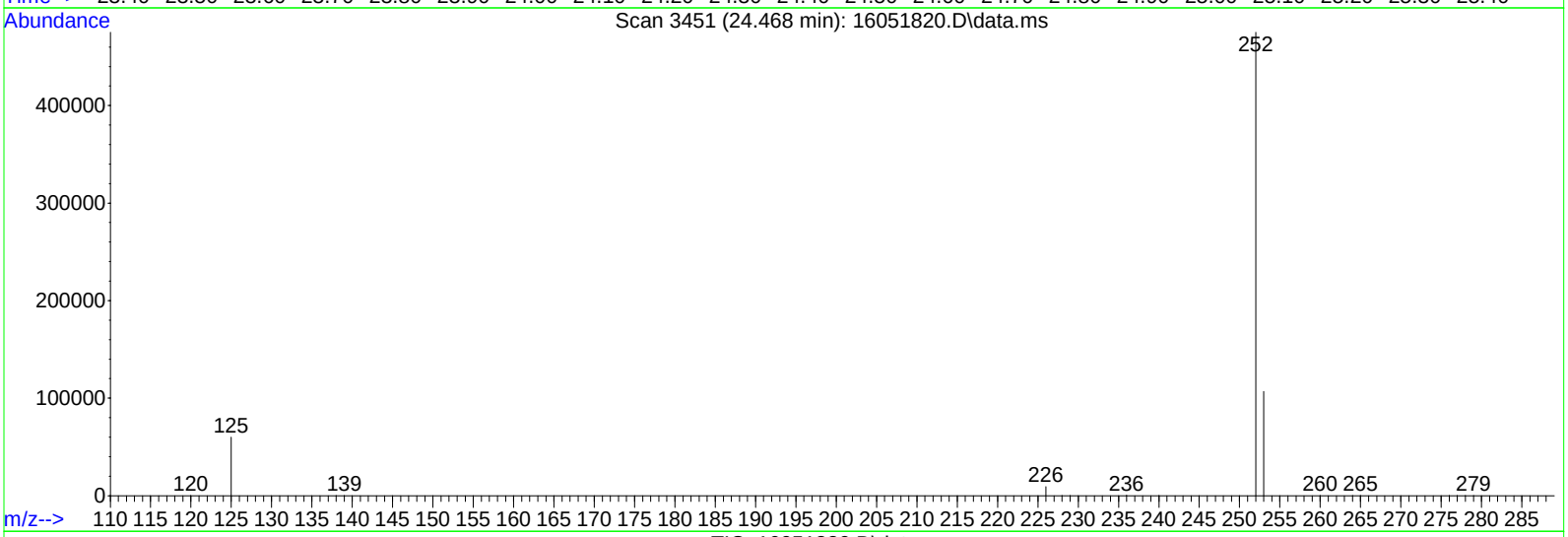


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 21:20:24 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051820.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.468min (-0.007) 2120.76ug/kg

response 1259735

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.27
125.00	12.20	12.57
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051822.D
Acq On : 18 May 2016 10:03 pm
Operator :
Sample : SBLK-160518
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 19 09:16:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1648675	4000.00 ug/kg	101
6) Acenaphthene-d10	12.857	164	1399121	4000.00 ug/kg	112
11) Phenanthrene-d10	14.977	188	2780441	4000.00 ug/kg	95
16) Chrysene-d12	20.980	240	2664039	4000.00 ug/kg	98
20) Perylene-d12	26.247	264	2504352	4000.00 ug/kg	101

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	70	0.19 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#		
17) 4-Terphenyl-d14	17.592	244	276	0.49 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#		

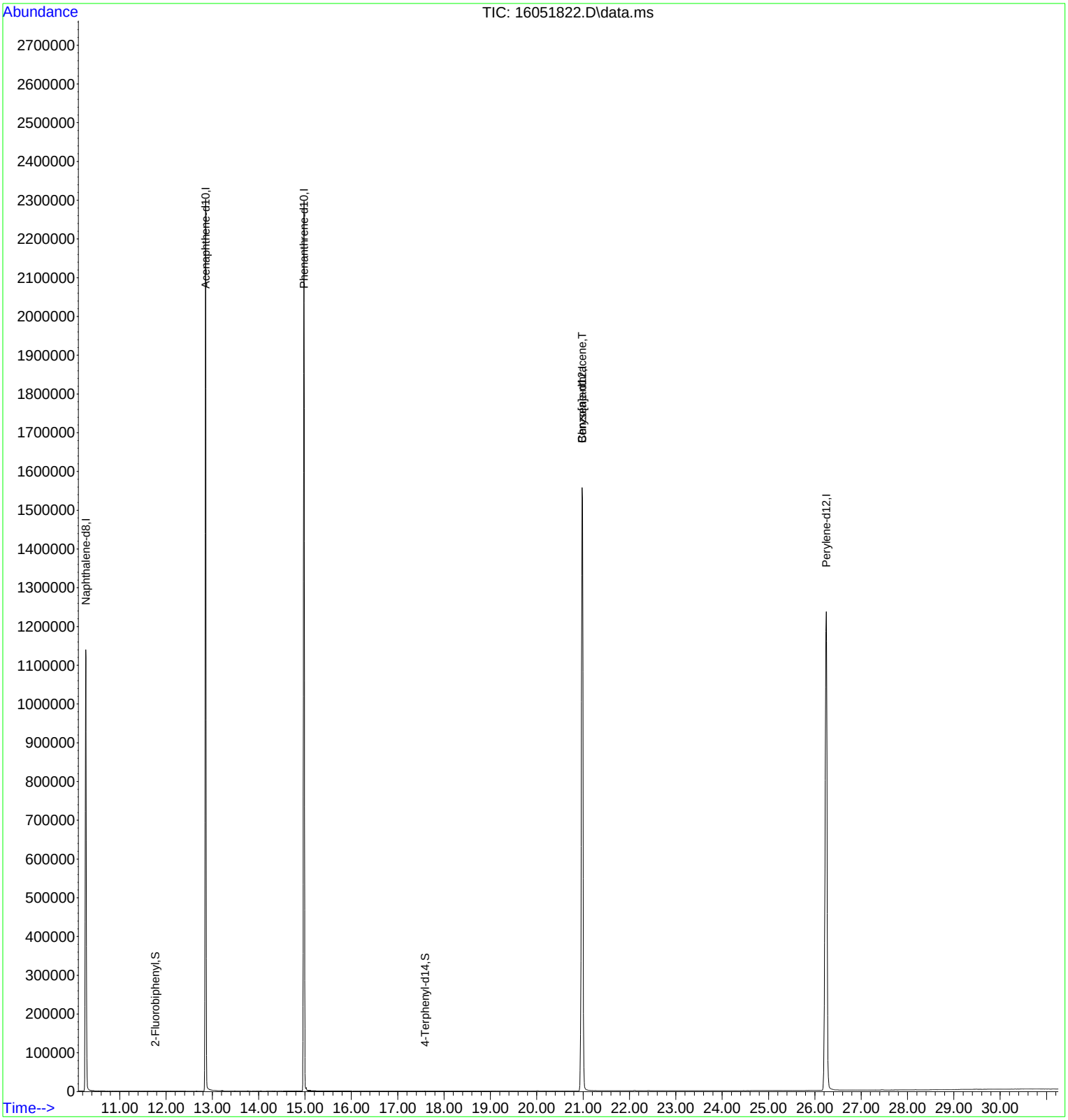
Target Compounds					Qvalue
18) Benzo[a]anthracene	20.980	228	6062	6.97 ug/kg	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051822.D
Acq On : 18 May 2016 10:03 pm
Operator :
Sample : SBLK-160518
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 19 09:16:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051826.D
Acq On : 19 May 2016 12:31 am
Operator :
Sample : 1605135-46B
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 19 09:18:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1488813	4000.00	ug/kg	91
6) Acenaphthene-d10	12.857	164	1125898	4000.00	ug/kg	90
11) Phenanthrene-d10	14.979	188	2641857	4000.00	ug/kg	90
16) Chrysene-d12	20.988	240	2560816	4000.00	ug/kg	94
20) Perylene-d12	26.247	264	2348704	4000.00	ug/kg	95

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	834241	2516.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 62.92%			
17) 4-Terphenyl-d14	17.589	244	1509329	2784.62	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 69.62%			

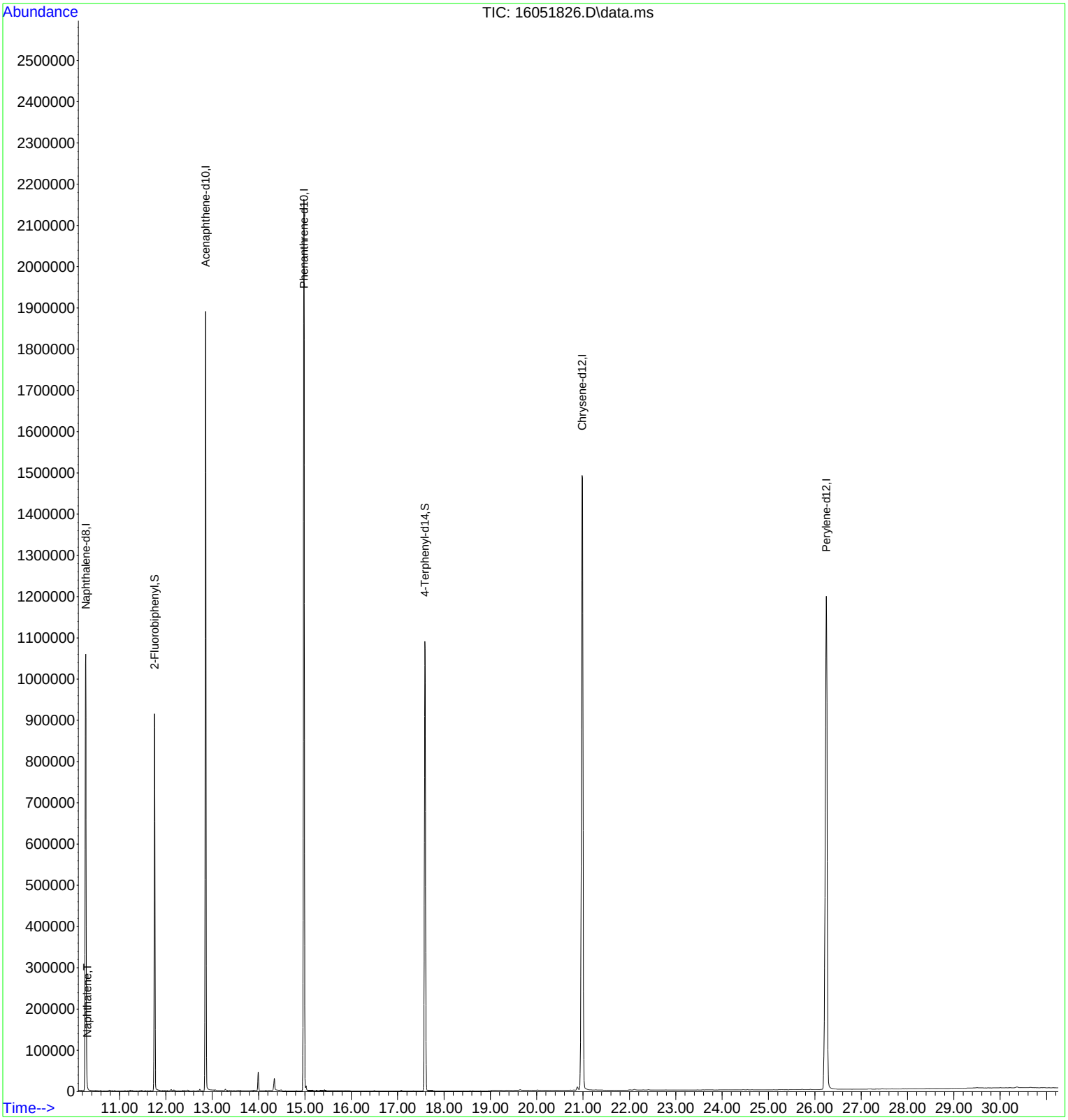
Target Compounds						Qvalue
2) Naphthalene	10.307	128	6246	18.73	ug/kg	97

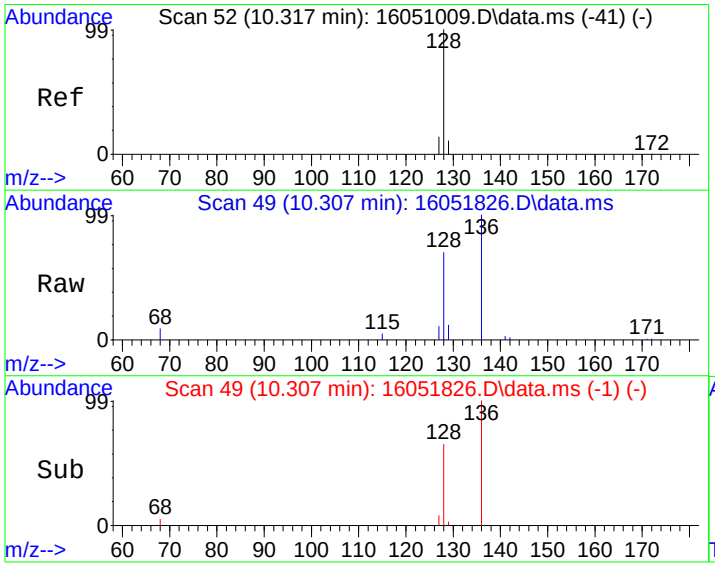
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051826.D
Acq On : 19 May 2016 12:31 am
Operator :
Sample : 1605135-46B
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 19 09:18:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

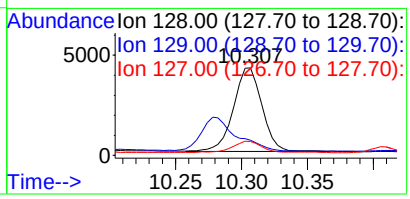




#2
Naphthalene
Concen: 18.73 ug/kg
RT: 10.307 min Scan# 49
Delta R.T. -0.003 min
Lab File: 16051826.D
Acq: 19 May 2016 12:31 am

Tgt Ion:128 Resp: 6246

Ion	Ratio	Lower	Upper
128	100		
129	13.3	0.0	31.3
127	13.0	0.0	33.6



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051830.D
Acq On : 19 May 2016 2:59 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 19 09:16:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1631750	4000.00	ug/kg	100
6) Acenaphthene-d10	12.857	164	1319311	4000.00	ug/kg	105
11) Phenanthrene-d10	14.979	188	2784459	4000.00	ug/kg	95
16) Chrysene-d12	20.987	240	2573498	4000.00	ug/kg	95
20) Perylene-d12	26.254	264	2394128	4000.00	ug/kg	96

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	363303	999.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.00%#			
17) 4-Terphenyl-d14	17.589	244	544298	999.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.98%#			

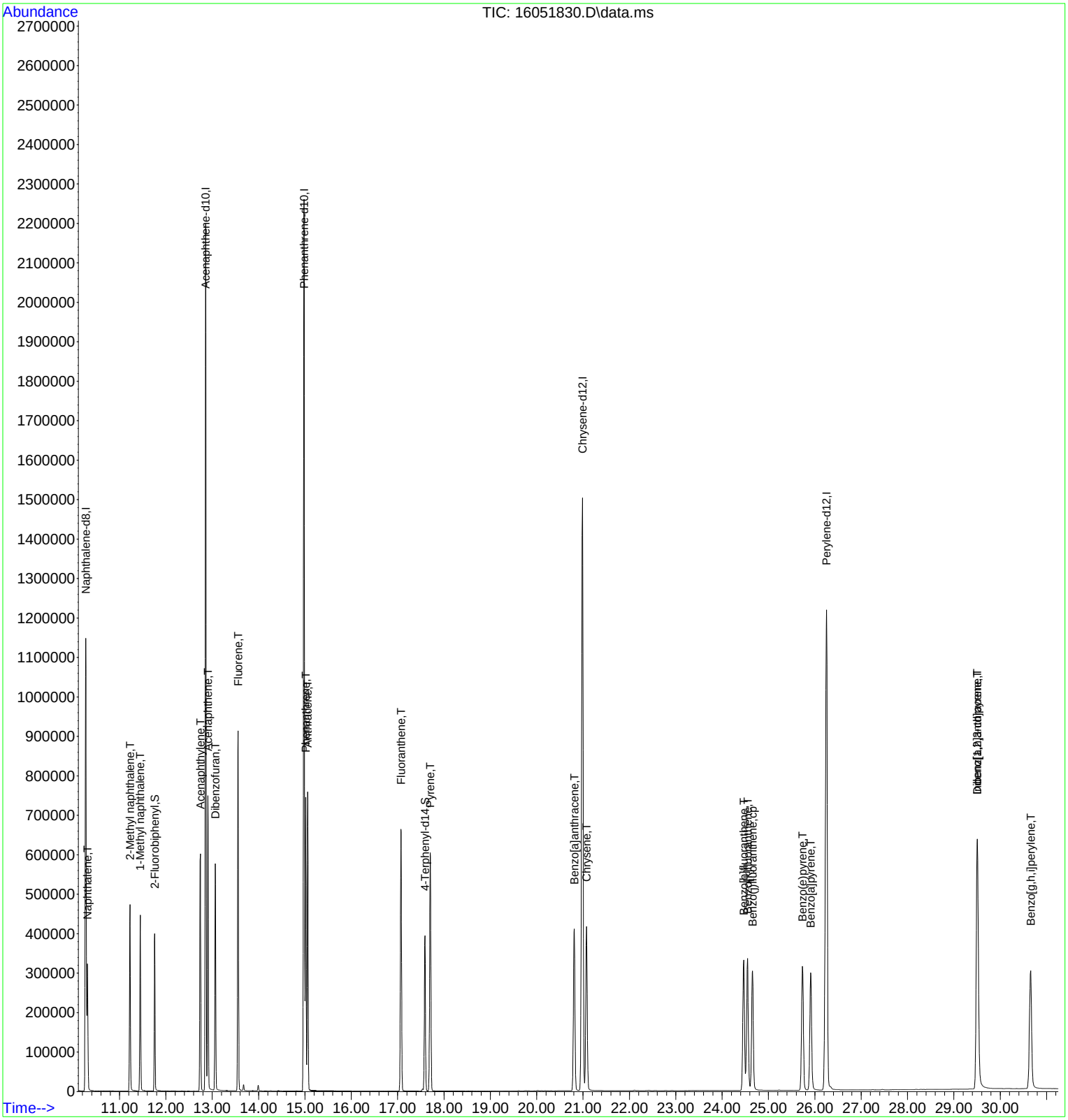
Target Compounds						Qvalue
2) Naphthalene	10.307	128	357903	979.07	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	290768	1023.19	ug/kg	100
4) 1-Methyl naphthalene	11.446	142	267657	995.33	ug/kg	100
7) Acenaphthylene	12.744	152	575333	997.67	ug/kg	99
8) Acenaphthene	12.906	153	360034	989.41	ug/kg	98
9) Dibenzofuran	13.063	168	545327	983.77	ug/kg	91
10) Fluorene	13.559	166	492027	978.26	ug/kg	100
12) Phenanthrene	15.015	178	720203	940.02	ug/kg	99
13) Anthracene	15.059	178	727233	938.06	ug/kg	99
14) Fluoranthene	17.071	202	741258	983.41	ug/kg	100
15) Pyrene	17.703	202	725670	984.46	ug/kg	98
18) Benzo[a]anthracene	20.811	228	655624	1002.53	ug/kg	99
19) Chrysene	21.075	228	607054	1004.84	ug/kg	100
21) Benzo[b]fluoranthene	24.466	252	630356	1005.29	ug/kg	100
22) Benzo[k]fluoranthene	24.547	252	586004	1036.28	ug/kg	99
23) Benzo(j)fluoranthene	24.657	252	547475	1008.23	ug/kg	99
24) Benzo(e)pyrene	25.734	252	600311	1012.62	ug/kg	99
25) Benzo[a]pyrene	25.909	252	592256	1013.62	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.513	276	732052	1018.20	ug/kg	99
27) Dibenz[a,h]anthracene	29.499	278	612851	1023.88	ug/kg	100
28) Benzo[g,h,i]perylene	30.656	276	630506	1016.87	ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051830.D
Acq On : 19 May 2016 2:59 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 19 09:16:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8_160524A
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160524A
Batch Number(s): See Run Log.	SOP: ORGANICS-PAH-01
Matrix: See Run Log.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			X
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		X
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			X
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List

EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	X
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.

Analyst: Dustin Bryan Karyn Lane Date: ***REVIEWED/APPROVED*** 5/25/2016

Second-Level Review: Date: ***By Sherri Herschmann at 12:20:29 PM, 5/31/2016*** **05/31/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160524A **Run No.:** 85980

Analytical Run Date: 5/24/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160524	1	PAH_LL_SDOD1	TUNE	R85980	5/24/2016 9:10:00 AM		
ICV-160524	1	PAH_LL_SDOD1	ICV	R85980	5/24/2016 9:47:00 AM		
LCS-75227	1	PAH_LL_SDOD1	LCS	75227	5/24/2016 10:23:00 AM		
MB-75227	1	PAH_LL_SDOD1	MBLK	75227	5/24/2016 11:04:00 AM		
1605121-35A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 11:41:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605121-36A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 12:18:00 PM		
1605121-37A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 12:56:00 PM		
1605121-38A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 1:32:00 PM		
1605121-39A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 2:10:00 PM		
1605121-40A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 2:46:00 PM		
1605121-41A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 3:24:00 PM		
1605121-42A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 4:01:00 PM		
1605121-43A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 4:38:00 PM		
1605121-44A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 5:16:00 PM		
1605121-45A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 5:54:00 PM		
1605135-01A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 6:30:00 PM		
1605135-02A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 7:08:00 PM		
1605135-03A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 7:46:00 PM		
DFTPP2-160524	1	PAH_LL_SDOD1	TUNE	R85980	5/24/2016 8:23:00 PM		
ICV2-160524	1	PAH_LL_SDOD1	ICV	R85980	5/24/2016 9:00:00 PM		
SBLK-160524	1	PAH_LL_SDOD1	SBLK	75227	5/24/2016 10:15:00 PM		
1605135-04A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 10:52:00 PM		
1605135-05A	10	PAH_LL_SDOD1	SAMP	75227	5/24/2016 11:29:00 PM		
1605135-06A	10	PAH_LL_SDOD1	SAMP	75227	5/25/2016 12:07:00 AM		
1605135-07A	10	PAH_LL_SDOD1	SAMP	75227	5/25/2016 12:44:00 AM		
1605135-08A	10	PAH_LL_SDOD1	SAMP	75227	5/25/2016 1:20:00 AM		
1605135-09A	10	PAH_LL_SDOD1	SAMP	75227	5/25/2016 1:58:00 AM		
1605121-43AMS	10	PAH_LL_SDOD1	MS	75227	5/25/2016 2:34:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

DHL Analytical, Inc.

Run ID: **GCMS8_160524A** **Run No.:** 85980

1605121-43AMSD	10	PAH_LL_SDOD1	MSD	75227	5/25/2016 3:11:00 AM		
CCV-160524	1	PAH_LL_SDOD1	CCV	R85980	5/25/2016 3:48:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\msdchem\1\sequence\160524.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160524\
Instrument Name: GCMS #8
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info		
1)	Sample	1	16052401	DFTPPPAH	DFTPP-160524
2)	Sample	2	16052402	PAH160517	ICV-160524
3)	Sample	3	16052403	PAH160517	LCS-75227
4)	Sample	4	16052404	PAH160517	MB-75227
5)	Sample	5	16052405	PAH160517	1605121-35A
6)	Sample	6	16052406	PAH160517	1605121-36A
7)	Sample	7	16052407	PAH160517	1605121-37A
8)	Sample	8	16052408	PAH160517	1605121-38A
9)	Sample	9	16052409	PAH160517	1605121-39A
10)	Sample	10	16052410	PAH160517	1605121-40A
11)	Sample	11	16052411	PAH160517	1605121-41A
12)	Sample	12	16052412	PAH160517	1605121-42A
13)	Sample	13	16052413	PAH160517	1605121-43A
14)	Sample	14	16052414	PAH160517	1605121-44A
15)	Sample	15	16052415	PAH160517	1605121-45A
16)	Sample	16	16052416	PAH160517	1605135-01A
17)	Sample	17	16052417	PAH160517	1605135-02A
18)	Sample	18	16052418	PAH160517	1605135-03A
19)	Sample	19	16052419	DFTPPPAH	DFTPP2-160524
20)	Sample	20	16052420	PAH160517	ICV2-160524
21)	Sample	21	16052421	PAH160517	SBLK
22)	Sample	22	16052422	PAH160517	SBLK-160524
23)	Sample	23	16052423	PAH160517	1605135-04A
24)	Sample	24	16052424	PAH160517	1605135-05A
25)	Sample	25	16052425	PAH160517	1605135-06A
26)	Sample	26	16052426	PAH160517	1605135-07A
27)	Sample	27	16052427	PAH160517	1605135-08A
28)	Sample	28	16052428	PAH160517	1605135-09A
29)	Sample	29	16052429	PAH160517	1605121-43AMS
30)	Sample	30	16052430	PAH160517	1605121-43AMSD
31)	Sample	31	16052431	PAH160517	CCV-160524

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 8:40:19 AM**
Digestion:
Prep End Date: **5/19/2016 11:10:00 AM**

Prep Batch **75227** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605121-35A	Soil		10.82	10	0.924	1	of	1	
1605121-36A	Soil		10.24	10	0.977	1	of	1	
1605121-37A	Soil		10.09	10	0.991	1	of	1	
1605121-38A	Soil		10.27	10	0.974	1	of	1	
1605121-39A	Soil		10.3	10	0.971	1	of	1	
1605121-40A	Soil		10.43	10	0.959	1	of	1	
1605121-41A	Soil		10.05	10	0.995	1	of	1	
1605121-42A	Soil		10.15	10	0.985	1	of	1	
1605121-43A	Soil		10.35	10	0.966	1	of	1	
1605121-43AMS	Soil		10.24	10	0.977	1	of		
1605121-43AMSD	Soil		10.12	10	0.988	1	of		
1605121-44A	Soil		10.09	10	0.991	1	of	1	
1605121-45A	Soil		10.12	10	0.988	1	of	1	
1605135-01A	Soil		10.1	10	0.990	1	of	1	
1605135-02A	Soil		10.03	10	0.997	1	of	1	
1605135-03A	Soil		10.02	10	0.998	1	of	1	
1605135-04A	Soil		10.07	10	0.993	1	of	1	
1605135-05A	Soil		10.11	10	0.989	1	of	1	
1605135-06A	Soil		10.07	10	0.993	1	of	1	
1605135-07A	Soil		10.04	10	0.996	1	of	1	
1605135-08A	Soil		10.1	10	0.990	1	of	1	
1605135-09A	Soil		10.1	10	0.990	1	of	1	
LCS-75227	Soil		10	10	1.000	1	of		
MB-75227	Soil		10	10	1.000	1	of		

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED

By Sherri Herschmann at 12:20:34 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 8:40:19 AM**
Digestion:
Prep End Date: 5/19/16 11:10 AM

Prep Batch **75227** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: mL/g

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-35A	Soil		10 .82	10	1.000	1 of 1	
1605121-36A	Soil		10 .24	10	1.000	1 of 1	
1605121-37A	Soil		10 .09	10	1.000	1 of 1	
1605121-38A	Soil		10 .27	10	1.000	1 of 1	
1605121-39A	Soil		10 .30	10	1.000	1 of 1	
1605121-40A	Soil		10 .43	10	1.000	1 of 1	
1605121-41A	Soil		10 .05	10	1.000	1 of 1	
1605121-42A	Soil		10 .15	10	1.000	1 of 1	
1605121-43A	Soil		10 .35	10	1.000	1 of 1	
1605121-43AMS	Soil		10 .24	10	1.000	1 of	
1605121-43AMSD	Soil		10 .12	10	1.000	1 of	
1605121-44A	Soil		10 .09	10	1.000	1 of 1	
1605121-45A	Soil		10 .12	10	1.000	1 of 1	
1605135-01A	Soil		10 .10	10	1.000	1 of 1	
1605135-02A	Soil		10 .03	10	1.000	1 of 1	
1605135-03A	Soil		10 .02	10	1.000	1 of 1	
1605135-04A	Soil		10 .07	10	1.000	1 of 1	
1605135-05A	Soil		10 .11	10	1.000	1 of 1	
1605135-06A	Soil		10 .07	10	1.000	1 of 1	
1605135-07A	Soil		10 .04	10	1.000	1 of 1	
1605135-08A	Soil		10 .10	10	1.000	1 of 1	
1605135-09A	Soil		10 .10	10	1.000	1 of 1	
LCS-75227	Soil		10	10	1.000	of	
MB-75227	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

5/19/16 AK 5/19/16 5/19/16

REVIEWED/APPROVED
By Sherri Herschmann at 12:21:20 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 5:00:00 PM**
Digestion: **Start: 5/16/2016 5:30:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date:

Prep Batch **75190** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-16A	Soil		0	0	#Num!	1 of 1	
1605135-17A	Soil		0	0	#Num!	1 of 1	
1605135-18A	Soil		0	0	#Num!	1 of 1	
1605135-19A	Soil		0	0	#Num!	1 of 1	
1605135-20A	Soil		0	0	#Num!	1 of 1	
1605135-21A	Soil		0	0	#Num!	1 of 1	
1605135-22A	Soil		0	0	#Num!	1 of 1	
1605135-23A	Soil		0	0	#Num!	1 of 1	
1605135-24A	Soil		0	0	#Num!	1 of 1	
1605135-25A	Soil		0	0	#Num!	1 of 1	
1605135-26A	Soil		0	0	#Num!	1 of 1	
1605135-27A	Soil		0	0	#Num!	1 of 1	
1605135-28A	Soil		0	0	#Num!	1 of 1	
1605135-29A	Soil		0	0	#Num!	1 of 1	
1605135-30A	Soil		0	0	#Num!	1 of 1	
1605135-31A	Soil		0	0	#Num!	1 of 1	
1605135-32A	Soil		0	0	#Num!	1 of 1	
1605135-33A	Soil		0	0	#Num!	1 of 1	
1605135-34A	Soil		0	0	#Num!	1 of 1	
1605135-35A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 3:00:00 PM**
Digestion: **Start: 5/13/2016 4:00:00 PM / Stop: 5/17/2016 1:30:00 PM**
Prep End Date: **5/18/2016 9:30:00 AM**

Prep Batch **75159** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-21A	Soil		0	0	#Num!	1 of 1	
1605121-22A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay MS/MSD						
1605121-23A	Soil		0	0	#Num!	1 of 1	
1605121-24A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-25A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-26A	Soil		0	0	#Num!	1 of 1	
1605121-27A	Soil		0	0	#Num!	1 of 1	
1605121-28A	Soil		0	0	#Num!	1 of 1	
1605121-29A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-30A	Soil		0	0	#Num!	1 of 1	
1605121-31A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-32A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-33A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-34A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-35A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-36A	Soil		0	0	#Num!	1 of 1	
1605121-37A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 3:00:00 PM**
Digestion: **Start: 5/13/2016 4:00:00 PM / Stop: 5/17/2016 1:30:00 PM**
Prep End Date: **5/18/2016 9:30:00 AM**

Prep Batch **75159** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-38A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						
1605121-39A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						
1605121-40A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 3:40:00 PM**
Digestion: **Start: 5/16/2016 4:45:00 PM / Stop: 5/18/2016 11:00:00 AM**
Prep End Date: **5/18/2016 3:00:00 PM**

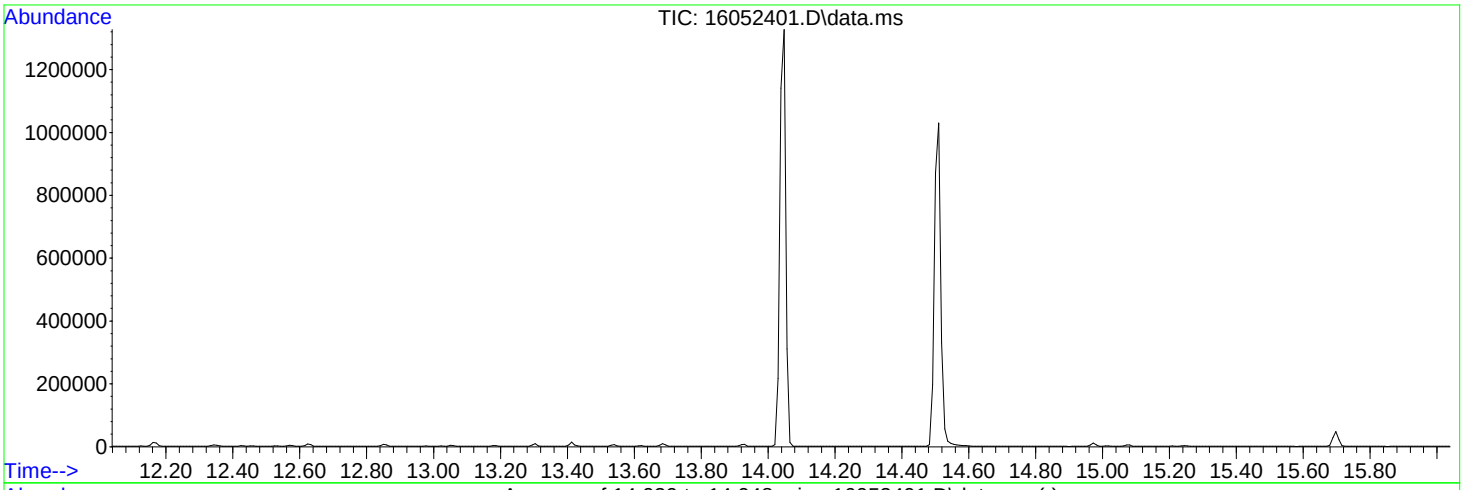
Prep Batch **75188** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-41A	Soil		0	0	#Num!	1 of 1	
1605121-42A	Soil		0	0	#Num!	1 of 1	
1605121-43A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay MS/MSD							
1605121-44A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-45A	Soil		0	0	#Num!	1 of 1	
1605135-01A	Soil		0	0	#Num!	1 of 1	
1605135-02A	Soil		0	0	#Num!	1 of 1	
1605135-03A	Soil		0	0	#Num!	1 of 1	
1605135-04A	Soil		0	0	#Num!	1 of 1	
1605135-05A	Soil		0	0	#Num!	1 of 1	
1605135-06A	Soil		0	0	#Num!	1 of 1	
1605135-07A	Soil		0	0	#Num!	1 of 1	
1605135-08A	Soil		0	0	#Num!	1 of 1	
1605135-09A	Soil		0	0	#Num!	1 of 1	
1605135-10A	Soil		0	0	#Num!	1 of 1	
1605135-11A	Soil		0	0	#Num!	1 of 1	
1605135-12A	Soil		0	0	#Num!	1 of 1	
1605135-13A	Soil		0	0	#Num!	1 of 1	
1605135-14A	Soil		0	0	#Num!	of 3	
Extra sub sampled for MS/MSD							
1605135-15A	Soil		0	0	#Num!	1 of 1	

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052401.D
Acq On : 24 May 2016 9:10 am
Operator :
Sample : DFTPP-160524
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



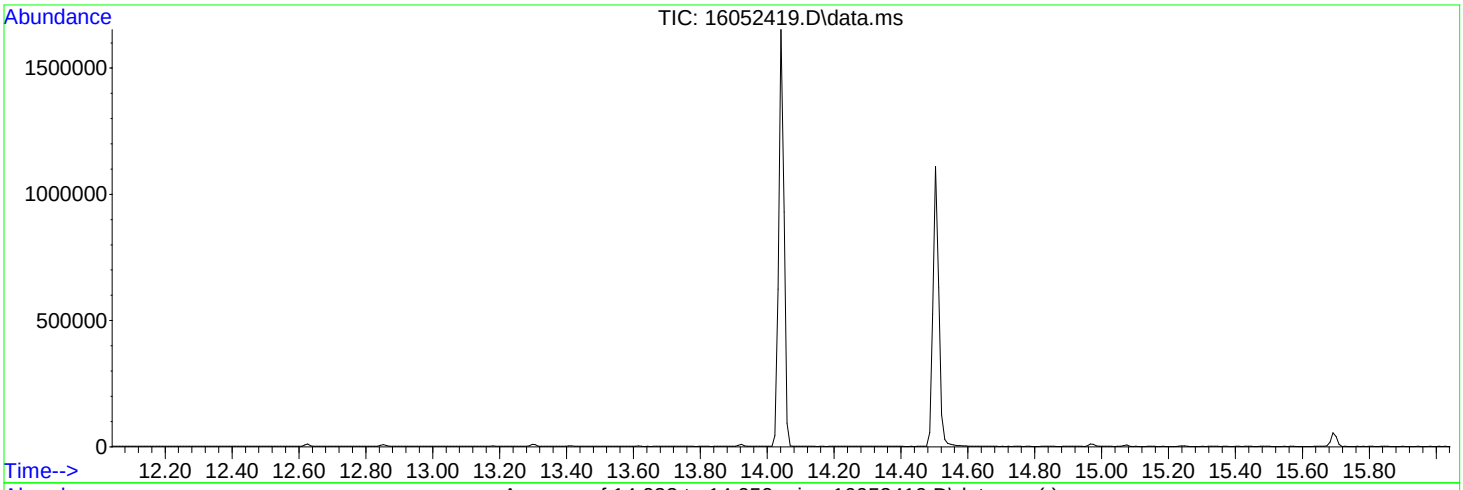
AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

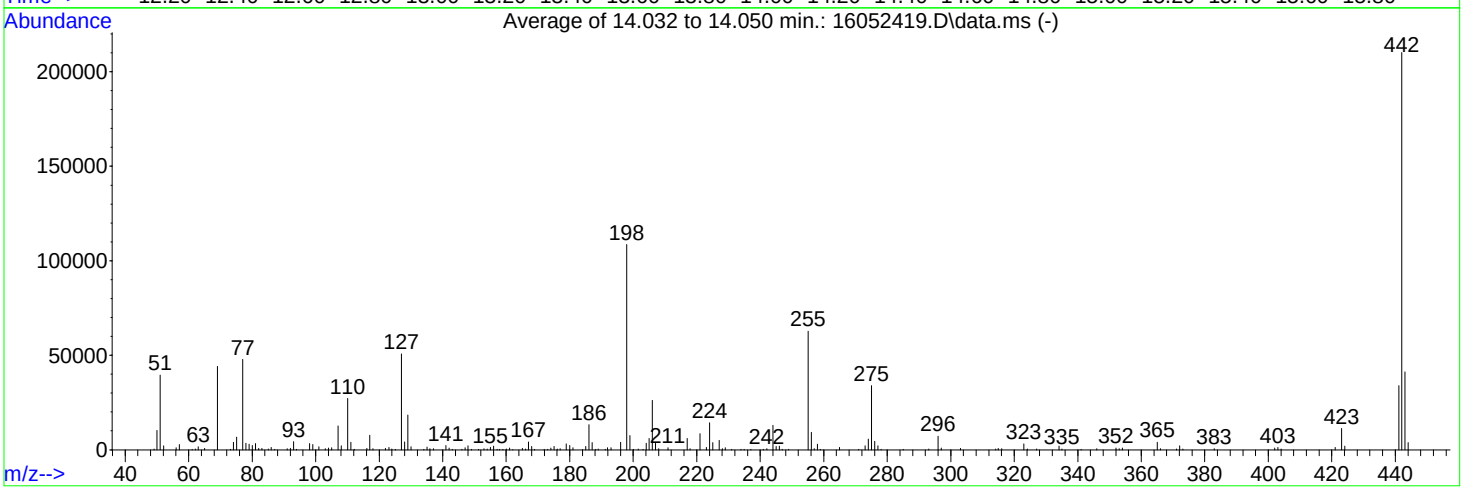
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	39.0	36413	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.8	40901	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.8	45616	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	93397	PASS
199	198	5	9	6.8	6325	PASS
275	198	10	60	30.6	28583	PASS
365	198	1	200	3.3	3036	PASS
441	442	0.01	24	15.9	24653	PASS
442	198	50	400	166.4	155410	PASS
443	442	15	24	19.9	30894	PASS

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052419.D
Acq On : 24 May 2016 8:23 pm
Operator :
Sample : DFTPP2-160524
Misc : TUNE
ALS Vial : 19 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015





AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.4	39541	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.7	44139	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.7	50749	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	108573	PASS
199	198	5	9	6.9	7471	PASS
275	198	10	60	31.3	33985	PASS
365	198	1	200	3.7	3979	PASS
441	442	0.01	24	16.2	34008	PASS
442	198	50	400	193.6	210242	PASS
443	442	15	24	19.6	41260	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052402.D
Acq On : 24 May 2016 9:47 am
Operator :
Sample : ICV-160524
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 25 08:43:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1457697	4000.00	ug/kg	89
6) Acenaphthene-d10	12.857	164	1203419	4000.00	ug/kg	96
11) Phenanthrene-d10	14.977	188	2345206	4000.00	ug/kg	80
16) Chrysene-d12	20.988	240	2181894	4000.00	ug/kg	80
20) Perylene-d12	26.247	264	2085122	4000.00	ug/kg	84

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	703098	2166.32	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 54.16%			
17) 4-Terphenyl-d14	17.587	244	907760	1965.61	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 49.14%#			

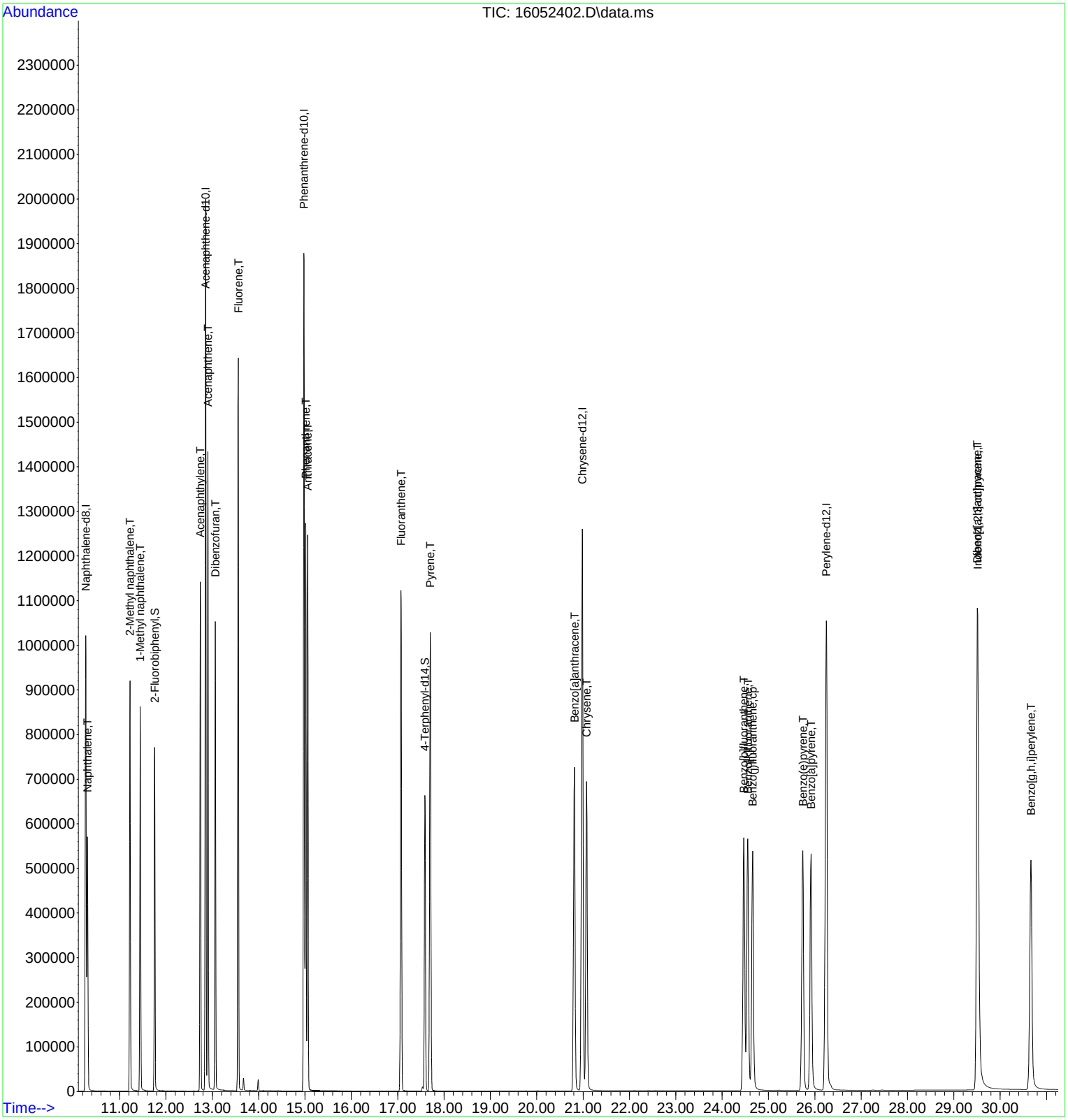
Target Compounds						Qvalue
2) Naphthalene	10.305	128	661972	2027.09	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	558062	2198.26	ug/kg	99
4) 1-Methyl naphthalene	11.445	142	515074	2144.10	ug/kg	99
7) Acenaphthylene	12.739	152	1087057	2066.57	ug/kg	100
8) Acenaphthene	12.906	153	676207	2037.25	ug/kg	99
9) Dibenzofuran	13.063	168	996417	1970.65	ug/kg	91
10) Fluorene	13.559	166	876381	1910.24	ug/kg	99
12) Phenanthrene	15.015	178	1208125	1872.22	ug/kg	100
13) Anthracene	15.059	178	1214867	1860.57	ug/kg	100
14) Fluoranthene	17.071	202	1257561	2042.22	ug/kg	99
15) Pyrene	17.703	202	1224917	2023.25	ug/kg	98
18) Benzo[a]anthracene	20.812	228	1135923	2104.88	ug/kg	100
19) Chrysene	21.076	228	1049312	2102.86	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	1131759	2119.26	ug/kg	99
22) Benzo[k]fluoranthene	24.555	252	998797	2061.30	ug/kg	99
23) Benzo(j)fluoranthene	24.657	252	954965	2066.47	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1061897	2106.77	ug/kg	100
25) Benzo[a]pyrene	25.917	252	1044202	2087.53	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.521	276	1296187	2120.02	ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	1079303	2124.66	ug/kg	100
28) Benzo[g,h,i]perylene	30.664	276	1116041	2114.92	ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052402.D
Acq On : 24 May 2016 9:47 am
Operator :
Sample : ICV-160524
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

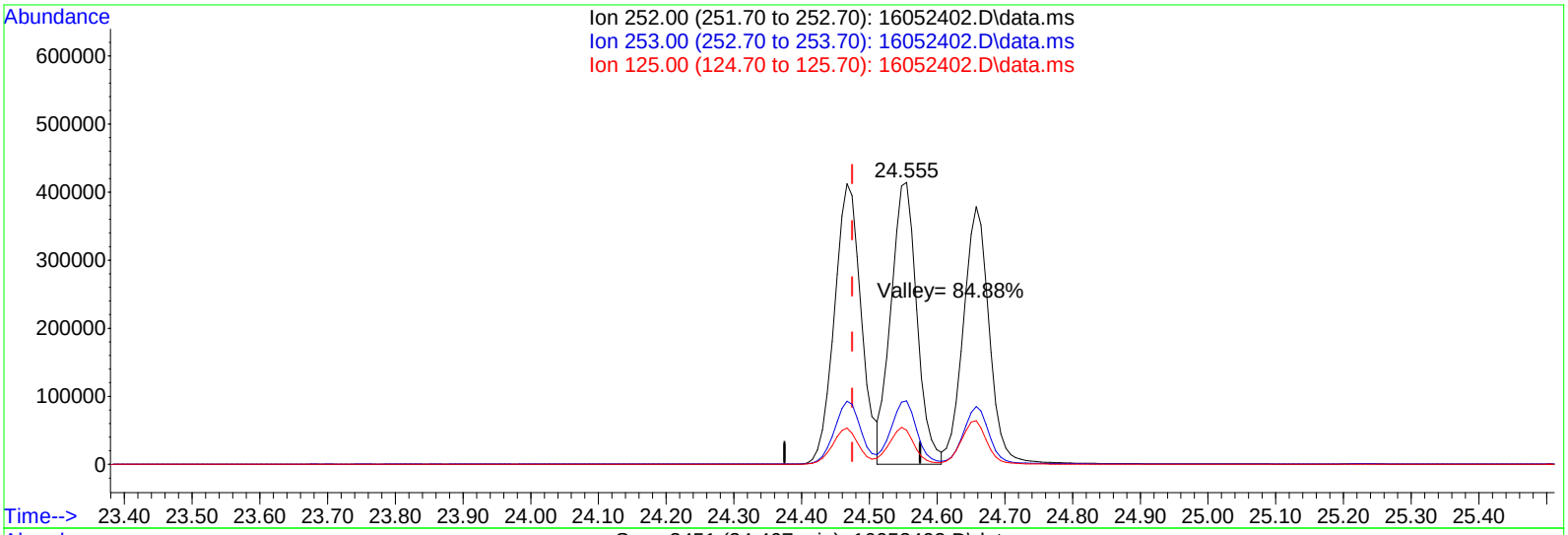
Quant Time: May 25 08:43:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

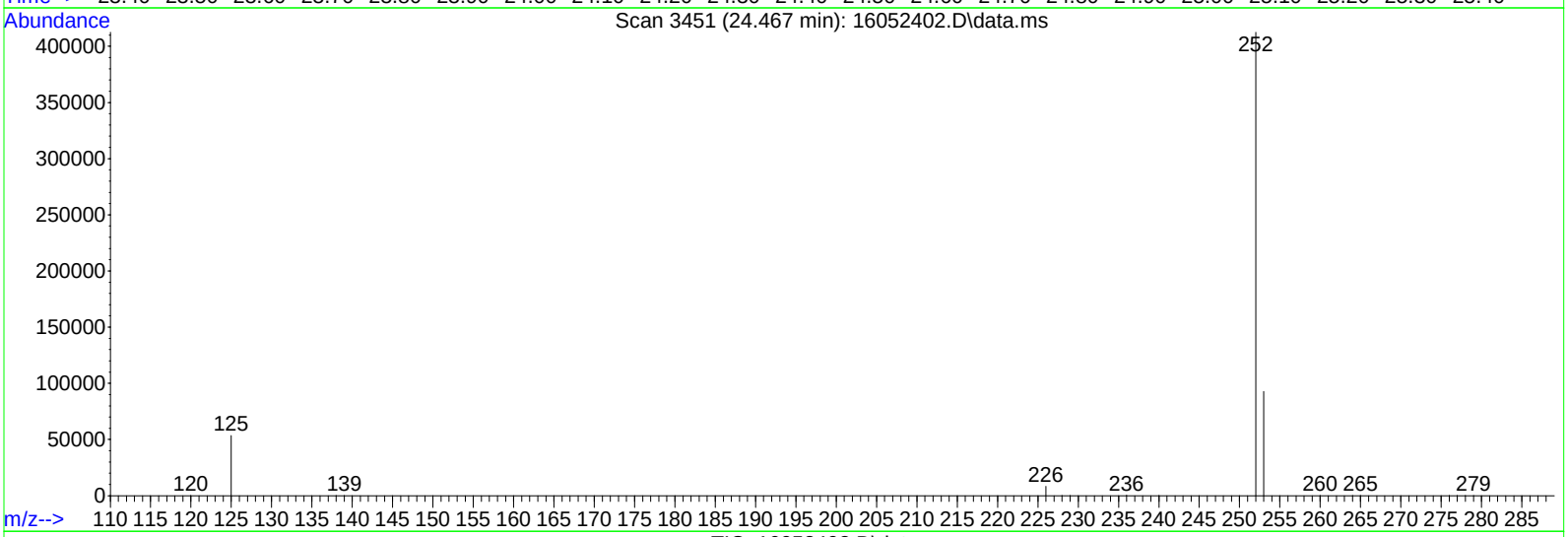


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052402.D
Acq On : 24 May 2016 9:47 am
Operator :
Sample : ICV-160524
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 24 10:18:31 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052402.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.467min (-0.008) 2119.26ug/kg

response 1131759

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.35
125.00	12.20	12.92
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052403.D
Acq On : 24 May 2016 10:23 am
Operator :
Sample : LCS-75227
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 25 08:44:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1330475	4000.00 ug/kg	82
6) Acenaphthene-d10	12.857	164	1030924	4000.00 ug/kg	82
11) Phenanthrene-d10	14.977	188	2105440	4000.00 ug/kg	72
16) Chrysene-d12	20.981	240	2219835	4000.00 ug/kg	82
20) Perylene-d12	26.247	264	2103659	4000.00 ug/kg	85

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	215265	726.68 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.17%#		
17) 4-Terphenyl-d14	17.586	244	323511	688.54 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 17.21%#		

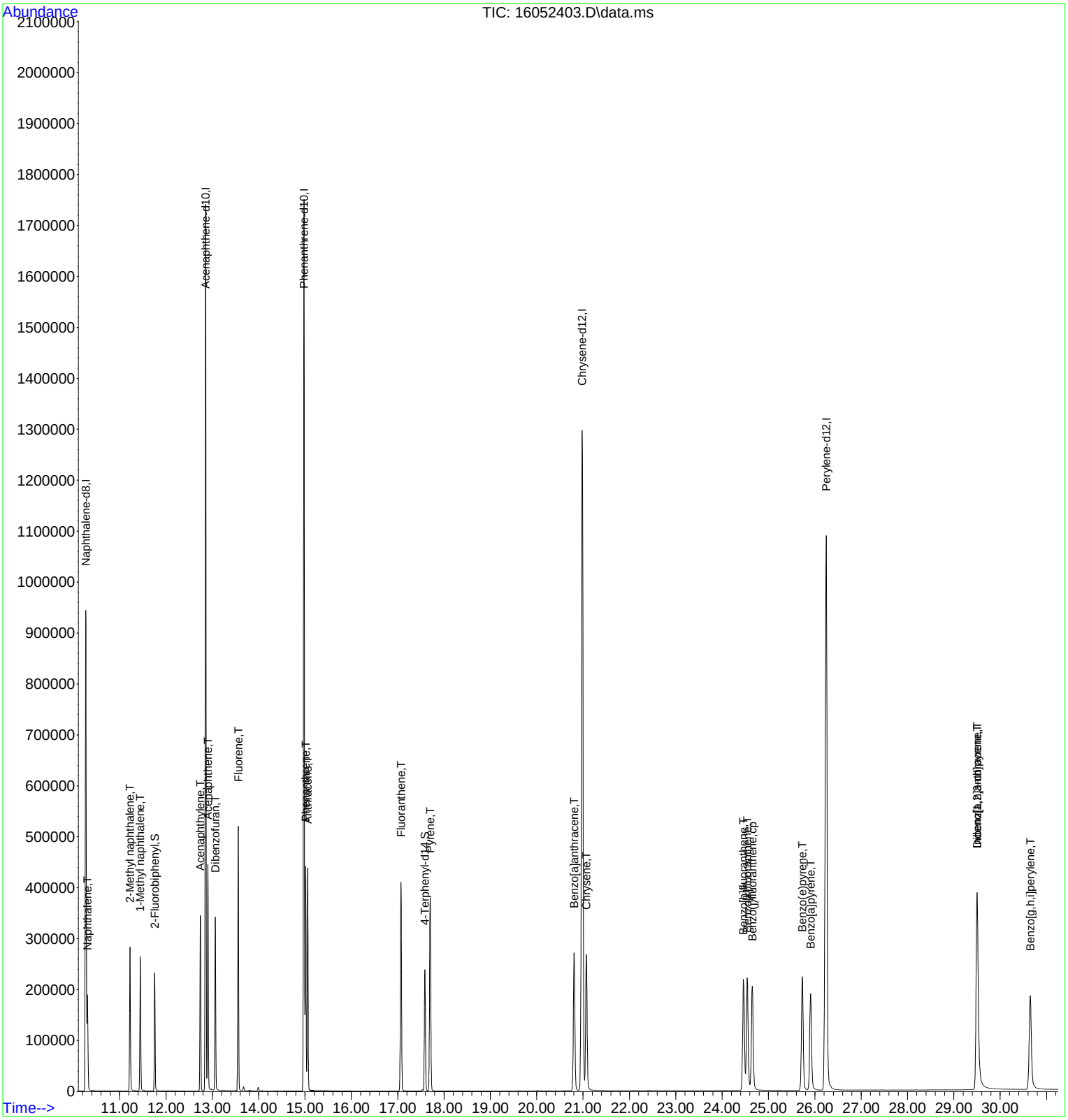
Target Compounds					Qvalue
2) Naphthalene	10.305	128	210574	706.48 ug/kg	100
3) 2-Methyl naphthalene	11.222	142	173055	746.86 ug/kg	98
4) 1-Methyl naphthalene	11.448	142	158646	723.54 ug/kg	98
7) Acenaphthylene	12.739	152	334445	742.19 ug/kg	99
8) Acenaphthene	12.906	153	208240	732.35 ug/kg	98
9) Dibenzofuran	13.063	168	320684	740.35 ug/kg	92
10) Fluorene	13.559	166	282212	718.06 ug/kg	100
12) Phenanthrene	15.015	178	418954	723.18 ug/kg	98
13) Anthracene	15.057	178	426256	727.15 ug/kg	98
14) Fluoranthene	17.070	202	461134	804.77 ug/kg	98
15) Pyrene	17.699	202	453982	810.90 ug/kg	97
18) Benzo[a]anthracene	20.805	228	426762	751.68 ug/kg	99
19) Chrysene	21.069	228	397717	758.38 ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	421225	760.56 ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	373671	748.44 ug/kg	99
23) Benzo(j)fluoranthene	24.651	252	369084	769.11 ug/kg	99
24) Benzo(e)pyrene	25.727	252	433705	829.02 ug/kg	99
25) Benzo[a]pyrene	25.910	252	387682	751.63 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	478653	752.91 ug/kg	99
27) Dibenz[a,h]anthracene	29.492	278	395045	745.51 ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	409435	746.79 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052403.D
Acq On : 24 May 2016 10:23 am
Operator :
Sample : LCS-75227
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 25 08:44:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052404.D
Acq On : 24 May 2016 11:04 am
Operator :
Sample : MB-75227
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 25 08:44:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.270	136	1530085	4000.00 ug/kg	94
6) Acenaphthene-d10	12.857	164	1155009	4000.00 ug/kg	92
11) Phenanthrene-d10	14.979	188	2095942	4000.00 ug/kg	72
16) Chrysene-d12	20.988	240	2203176	4000.00 ug/kg	81
20) Perylene-d12	26.247	264	2136503	4000.00 ug/kg	86

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	243527	714.83 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.87%#		
17) 4-Terphenyl-d14	17.587	244	326836	700.87 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 17.52%#		

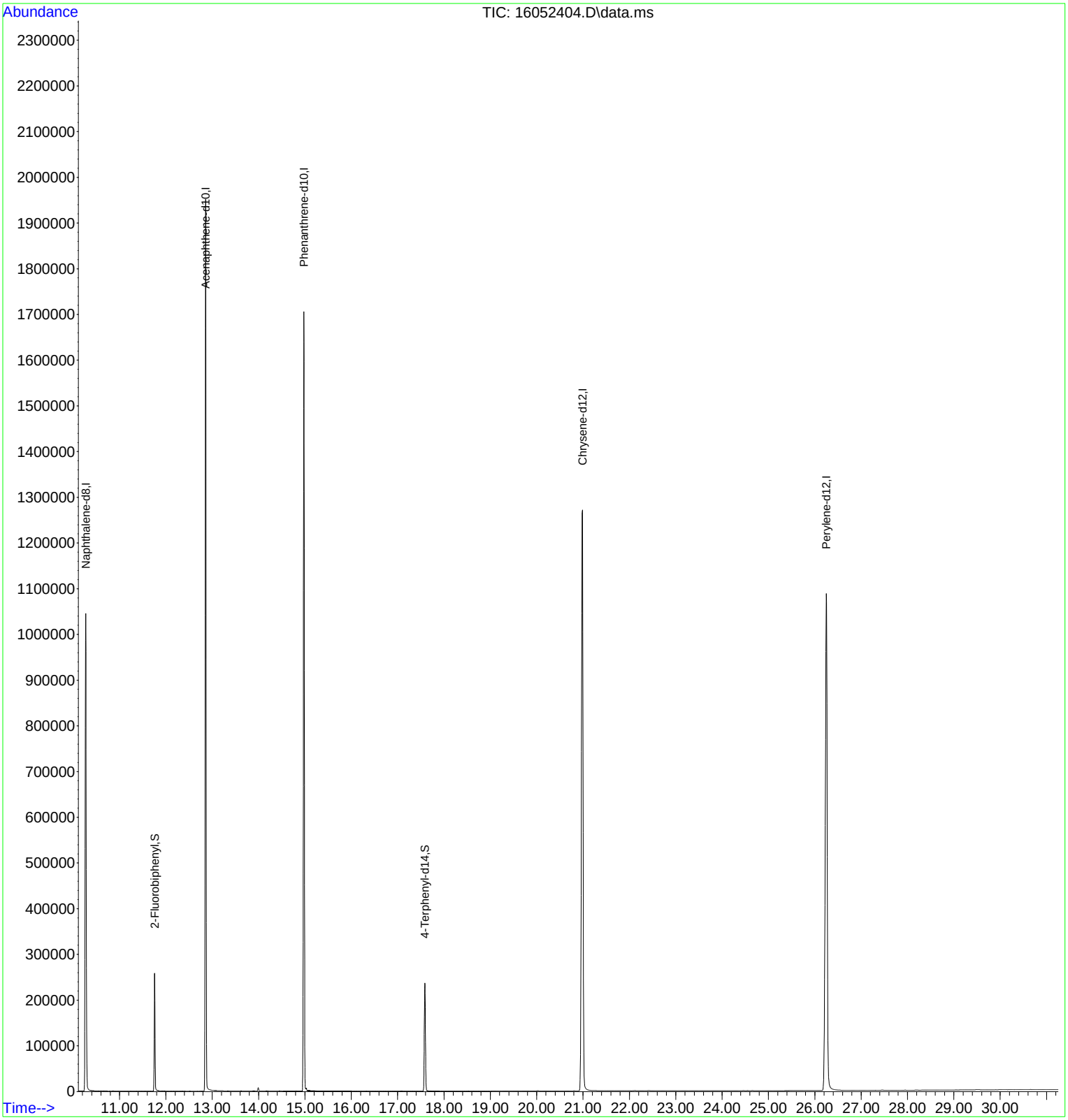
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052404.D
Acq On : 24 May 2016 11:04 am
Operator :
Sample : MB-75227
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 25 08:44:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052416.D
Acq On : 24 May 2016 6:30 pm
Operator :
Sample : 1605135-01A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 25 08:46:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.273	136	1603279	4000.00 ug/kg	98
6) Acenaphthene-d10	12.856	164	1299059	4000.00 ug/kg	104
11) Phenanthrene-d10	14.978	188	2269645	4000.00 ug/kg	78
16) Chrysene-d12	20.987	240	2178703	4000.00 ug/kg	80
20) Perylene-d12	26.247	264	2124676	4000.00 ug/kg	86

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	31790	89.05 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#		
17) 4-Terphenyl-d14	17.587	244	34519	74.85 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.87%#		

Target Compounds					Qvalue
12) Phenanthrene	15.014	178	19637	31.44 ug/kg	98
13) Anthracene	15.060	178	3489	5.52 ug/kg	98
14) Fluoranthene	17.071	202	56296	87.57 ug/kg	98
15) Pyrene	17.703	202	49236	78.21 ug/kg	96
18) Benzo[a]anthracene	20.804	228	28885	49.33 ug/kg	99
19) Chrysene	21.068	228	34136	62.82 ug/kg	100
21) Benzo[b]fluoranthene	24.459	252	33474	57.48 ug/kg	100
22) Benzo[k]fluoranthene	24.540	252	14610	27.59 ug/kg	97
23) Benzo(j)fluoranthene	24.650	252	14885	27.21 ug/kg	92
24) Benzo(e)pyrene	25.726	252	26764	47.52 ug/kg	98
25) Benzo[a]pyrene	25.910	252	33981	62.63 ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	25490	36.42 ug/kg	90
27) Dibenz[a,h]anthracene	29.492	278	5208	5.14 ug/kg	96
28) Benzo[g,h,i]perylene	30.649	276	27043	45.35 ug/kg	98

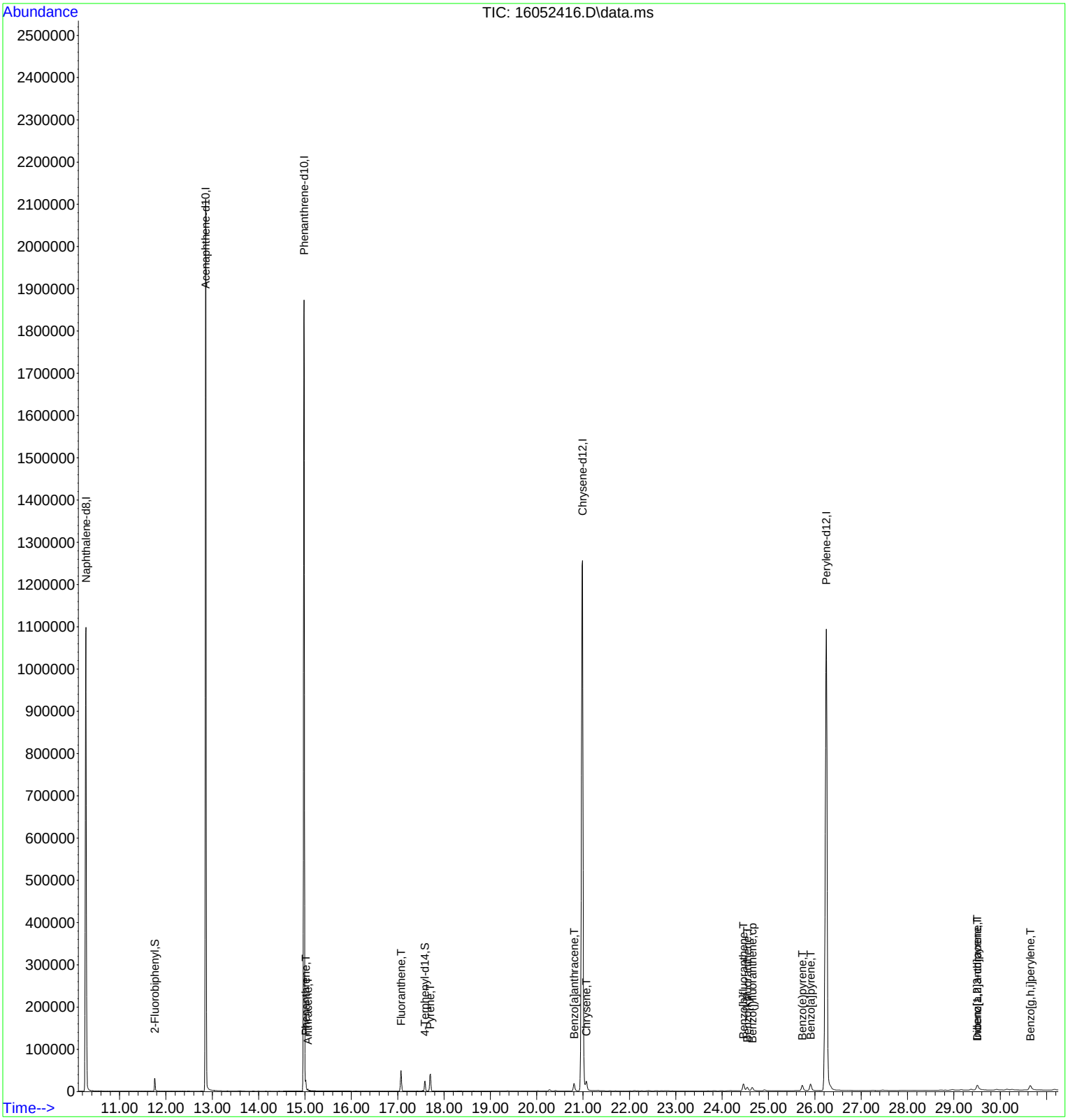
CONFIRMED
By Sherri Herschmann at 12:35:06 PM, 5/31/2016

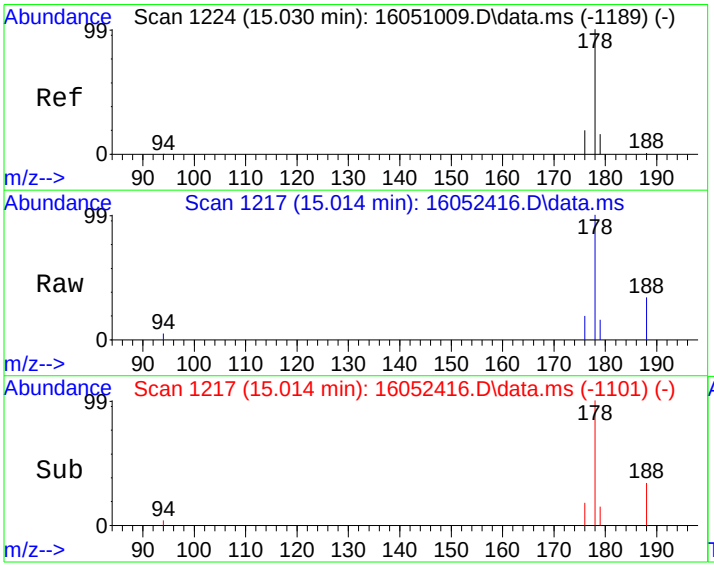
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052416.D
Acq On : 24 May 2016 6:30 pm
Operator :
Sample : 1605135-01A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 25 08:46:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

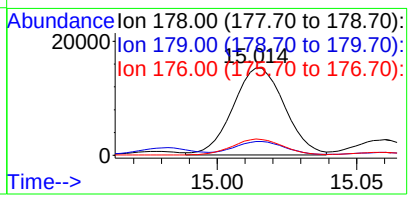


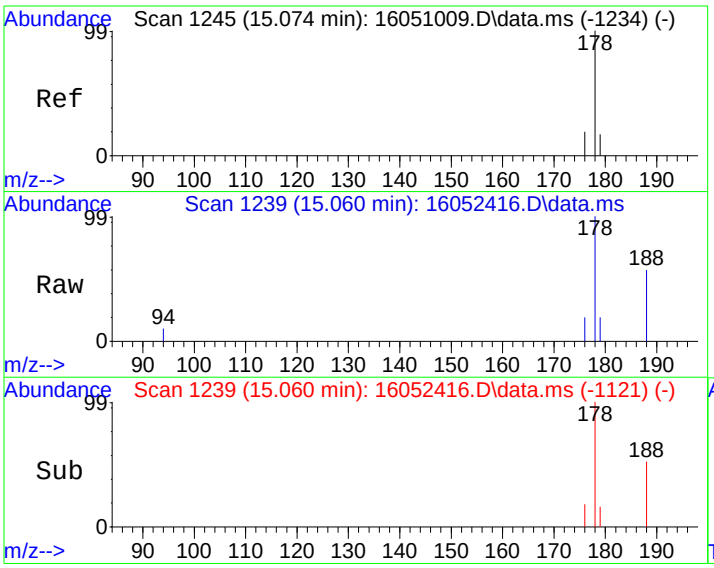


#12
Phenanthrene
Concen: 31.44 ug/kg
RT: 15.014 min Scan# 1217
Delta R.T. -0.005 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:178 Resp: 19637

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.4
176	18.7	0.0	39.0

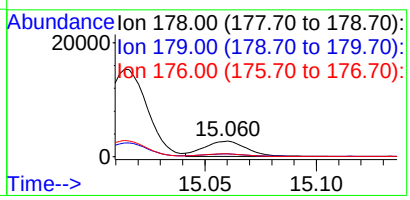


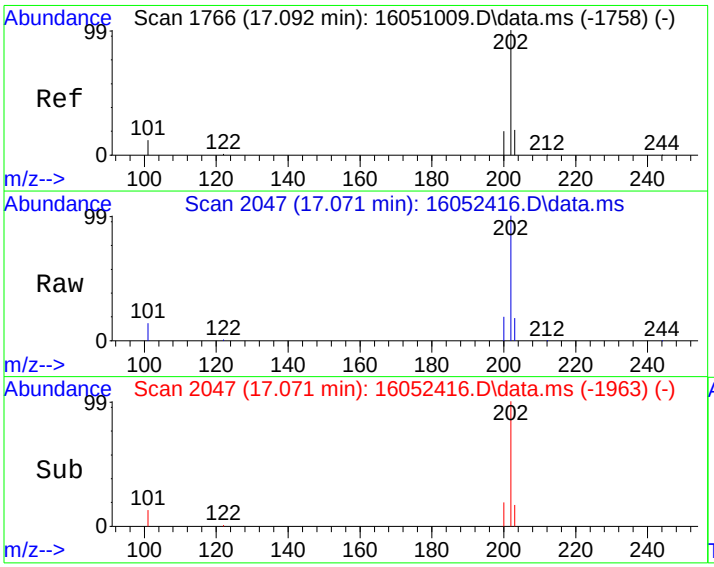


#13
Anthracene
Concen: 5.52 ug/kg
RT: 15.060 min Scan# 1239
Delta R.T. -0.001 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:178 Resp: 3489

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	36.3
176	17.7	0.0	38.5

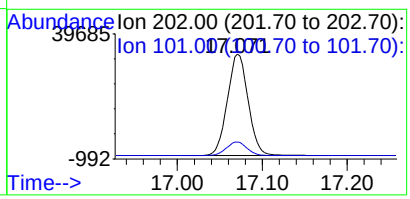


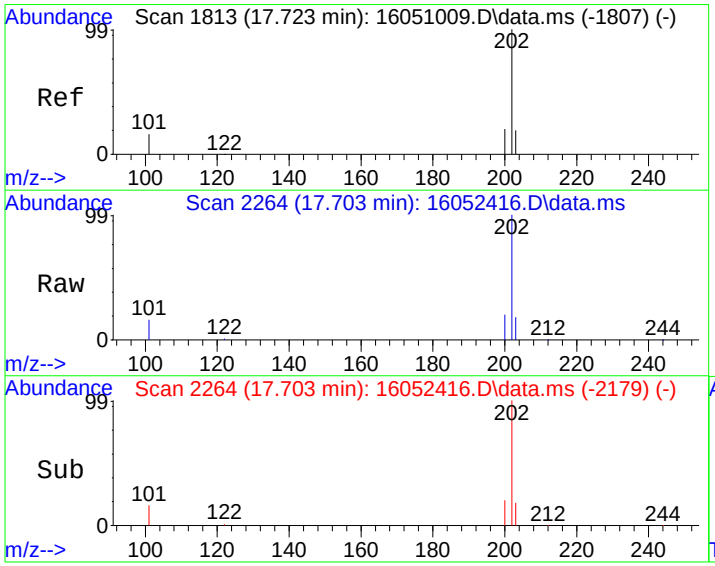


#14
Fluoranthene
Concen: 87.57 ug/kg
RT: 17.071 min Scan# 2047
Delta R.T. -0.005 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:202 Resp: 56296

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	34.4

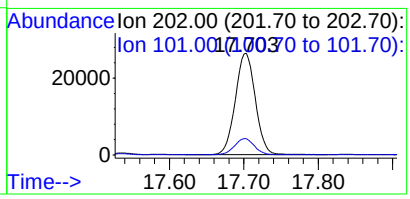


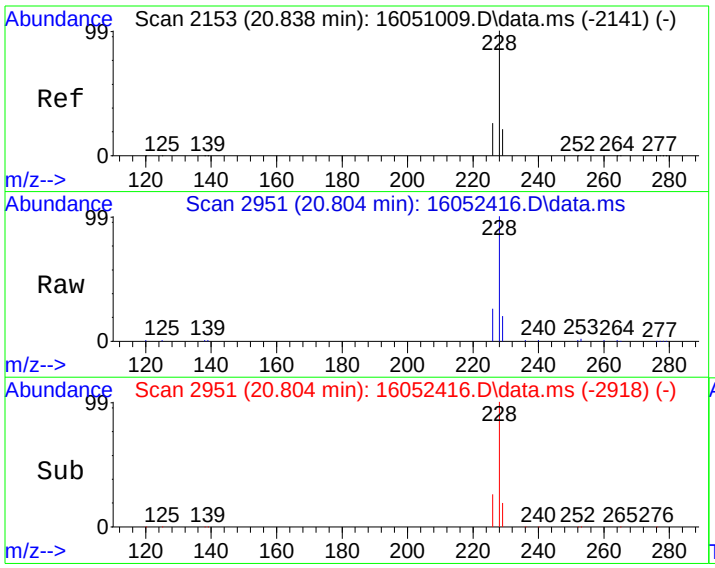


#15
Pyrene
Concen: 78.21 ug/kg
RT: 17.703 min Scan# 2264
Delta R.T. -0.003 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:202 Resp: 49236

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	37.3

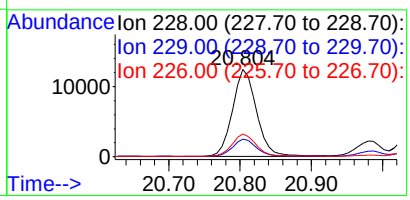


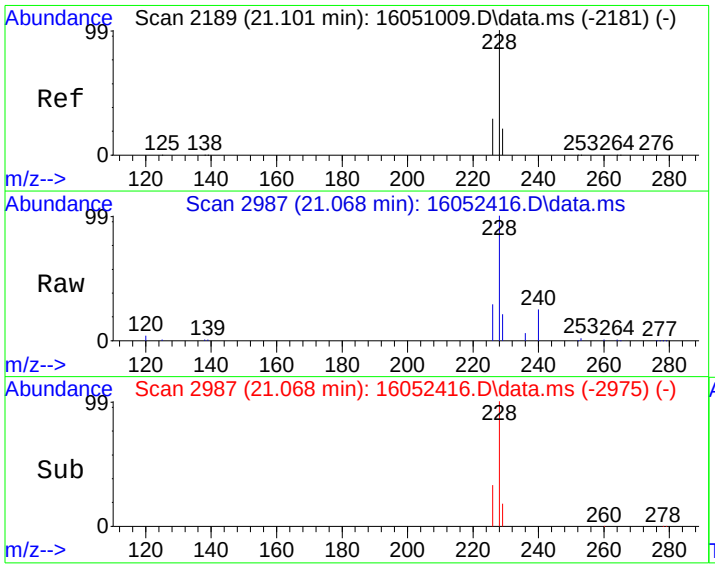


#18
Benzo[a]anthracene
Concen: 49.33 ug/kg
RT: 20.804 min Scan# 2951
Delta R.T. -0.008 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:228 Resp: 28885

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.8	5.7	45.7

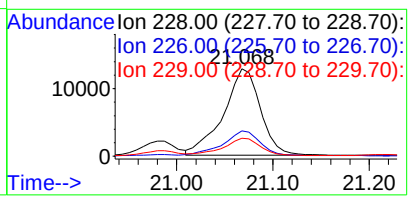


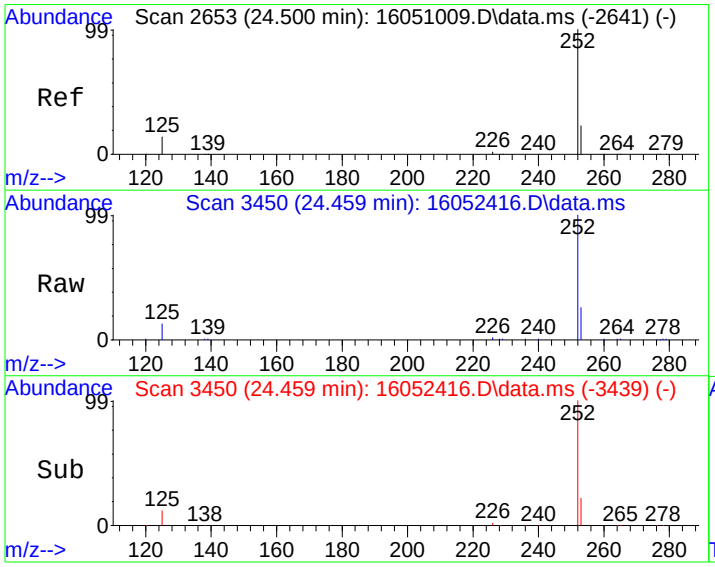


#19
Chrysene
Concen: 62.82 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:228 Resp: 34136

Ion	Ratio	Lower	Upper
228	100		
226	28.5	8.2	48.2
229	20.2	0.3	40.3

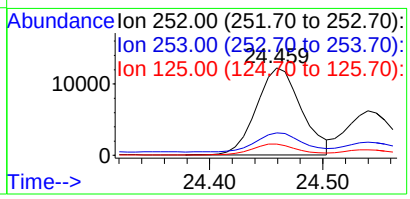


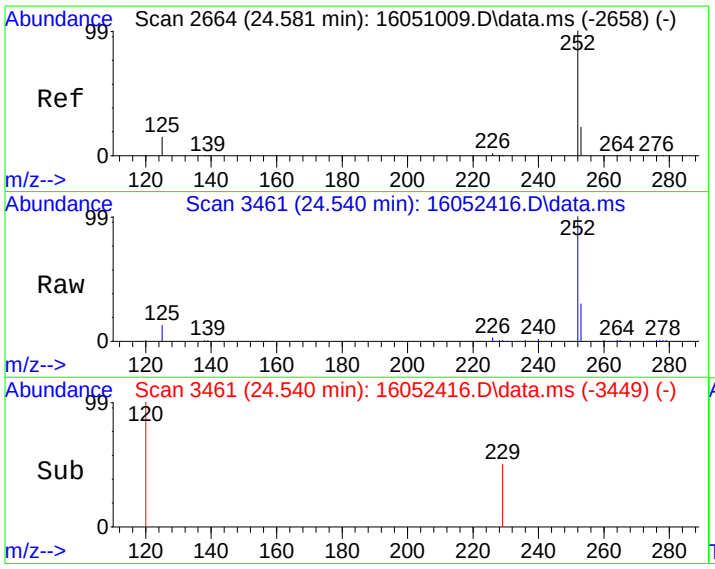


#21
Benzo[b]fluoranthene
Concen: 57.48 ug/kg
RT: 24.459 min Scan# 3450
Delta R.T. -0.016 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 33474

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	12.3	0.0	32.2

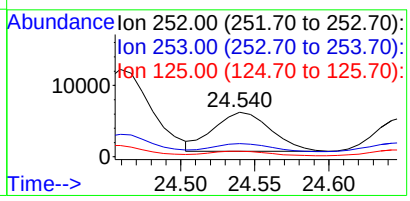


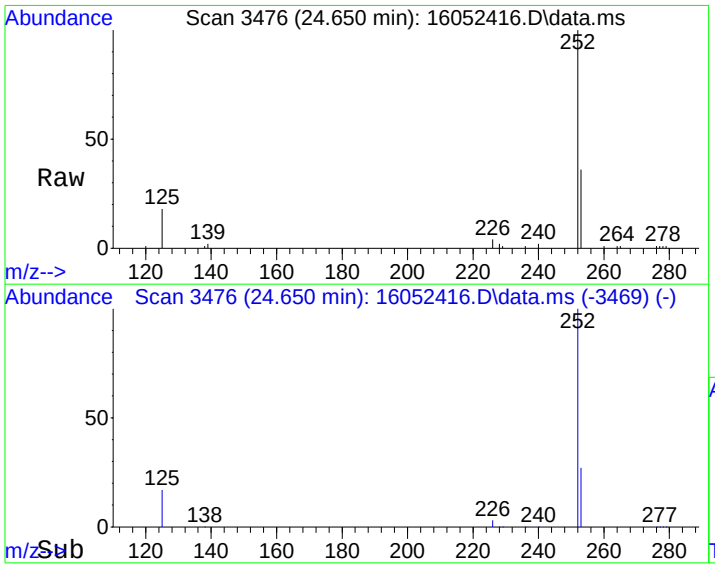


#22
Benzo[k]fluoranthene
Concen: 27.59 ug/kg
RT: 24.540 min Scan# 3461
Delta R.T. -0.015 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 14610

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.5	42.5
125	11.7	0.0	32.6

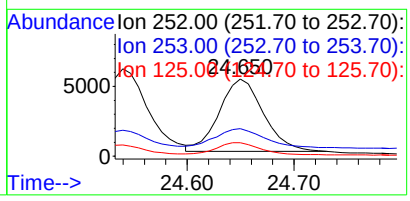


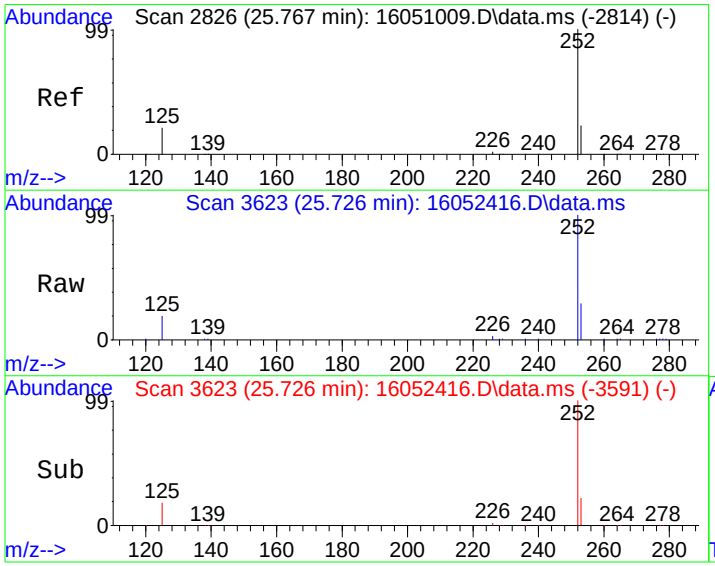


#23
Benzo(j)fluoranthene
Concen: 27.21 ug/kg
RT: 24.650 min Scan# 3476
Delta R.T. -0.015 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 14885

Ion	Ratio	Lower	Upper
252	100		
253	28.5	2.2	42.2
125	16.6	0.0	37.3

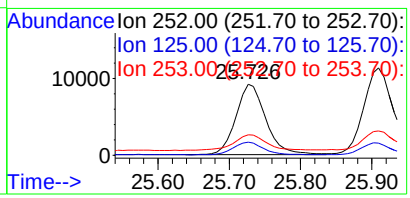


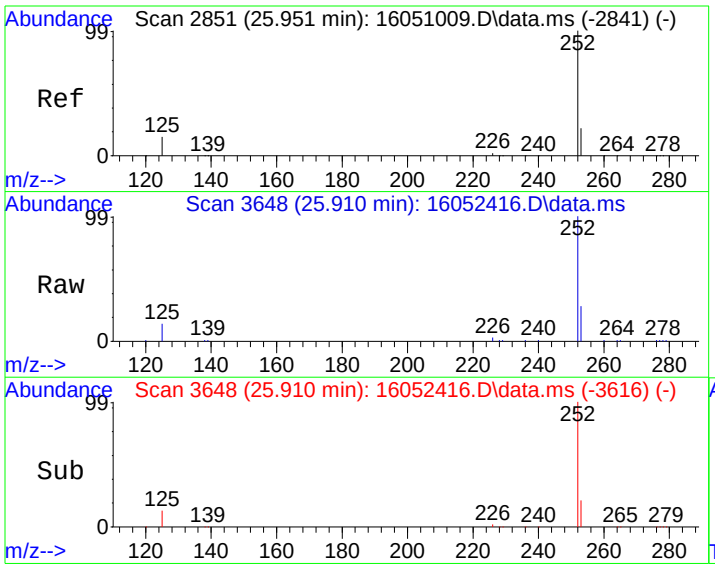


#24
Benzo(e)pyrene
Concen: 47.52 ug/kg
RT: 25.726 min Scan# 3623
Delta R.T. -0.016 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 26764

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	24.0	2.3	42.3

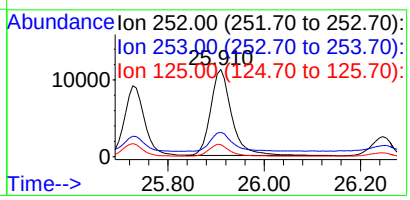


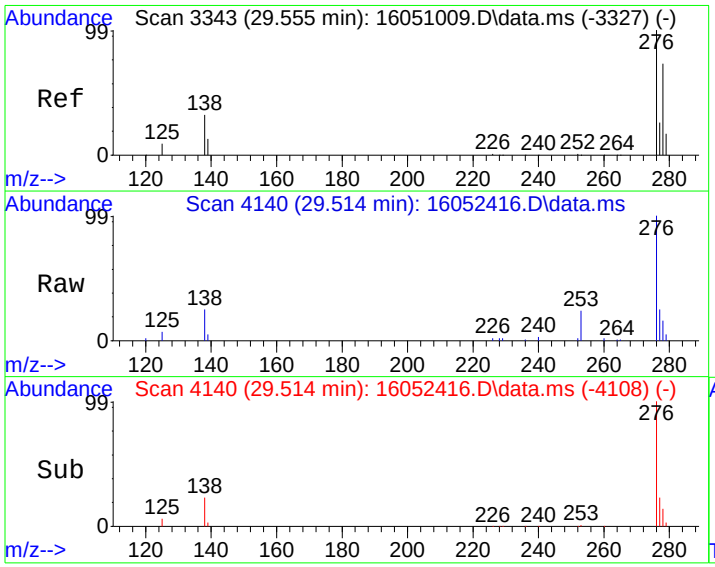


#25
Benzo[a]pyrene
Concen: 62.63 ug/kg
RT: 25.910 min Scan# 3648
Delta R.T. -0.015 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:252 Resp: 33981

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.3	42.3
125	13.3	0.0	33.5

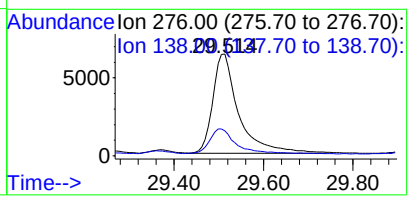


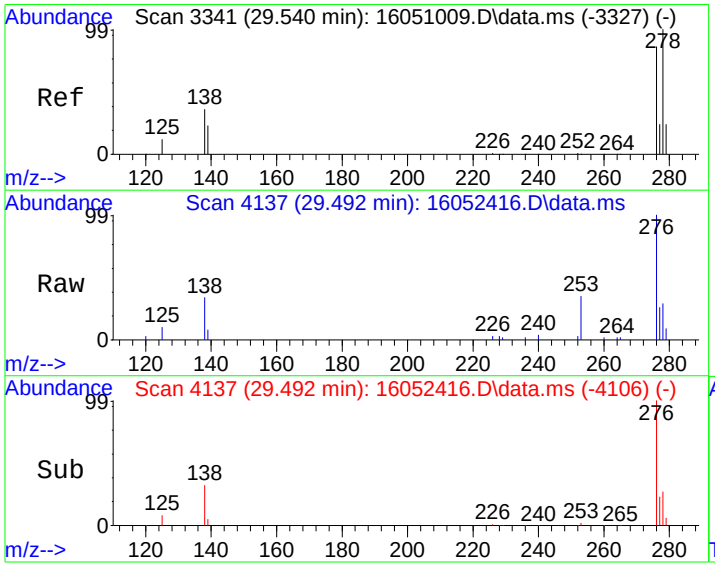


#26
Indeno[1,2,3-cd]pyrene
Concen: 36.42 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:276 Resp: 25490

Ion	Ratio	Lower	Upper
276	100		
138	22.9	8.3	48.3

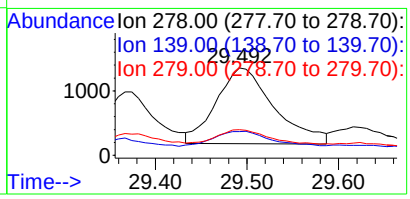


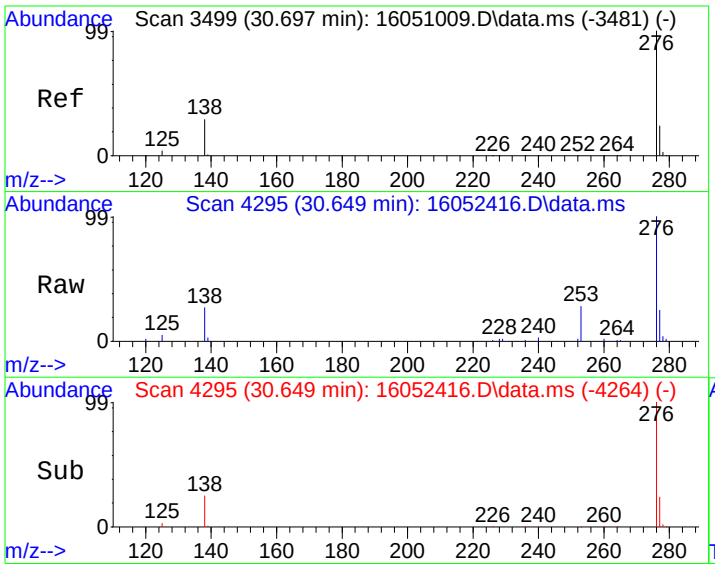


#27
Dibenz[a,h]anthracene
Concen: 5.14 ug/kg
RT: 29.492 min Scan# 4137
Delta R.T. -0.022 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:278 Resp: 5208

Ion	Ratio	Lower	Upper
278	100		
139	21.5	0.0	40.0
279	21.7	4.2	44.2

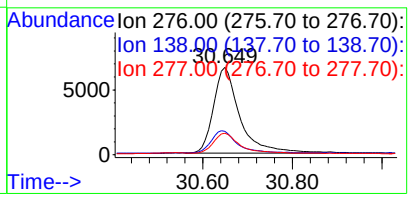




#28
Benzo[g,h,i]perylene
Concen: 45.35 ug/kg
RT: 30.649 min Scan# 4295
Delta R.T. -0.023 min
Lab File: 16052416.D
Acq: 24 May 2016 6:30 pm

Tgt Ion:276 Resp: 27043

Ion	Ratio	Lower	Upper
276	100		
138	24.9	5.8	45.8
277	23.3	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052417.D
Acq On : 24 May 2016 7:08 pm
Operator :
Sample : 1605135-02A
Misc : SAMP
ALS Vial : 17 Sample Multiplier: 10

Quant Time: May 25 08:46:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.274	136	1642939	4000.00 ug/kg	101
6) Acenaphthene-d10	12.856	164	1296747	4000.00 ug/kg	103
11) Phenanthrene-d10	14.979	188	2249808	4000.00 ug/kg	77
16) Chrysene-d12	20.987	240	2314526	4000.00 ug/kg	85
20) Perylene-d12	26.247	264	2201343	4000.00 ug/kg	89

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	32074	87.68 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.19%#		
17) 4-Terphenyl-d14	17.588	244	35936	73.35 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.83%#		

Target Compounds					Qvalue
14) Fluoranthene	17.073	202	7346	9.72 ug/kg	98
15) Pyrene	17.702	202	6478	8.40 ug/kg	96
19) Chrysene	21.075	228	4525	5.43 ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	3948	5.02 ug/kg	98
23) Benzo(j)fluoranthene	24.650	252	1778	0.32 ug/kg	92
25) Benzo[a]pyrene	25.910	252	4013	5.25 ug/kg	99

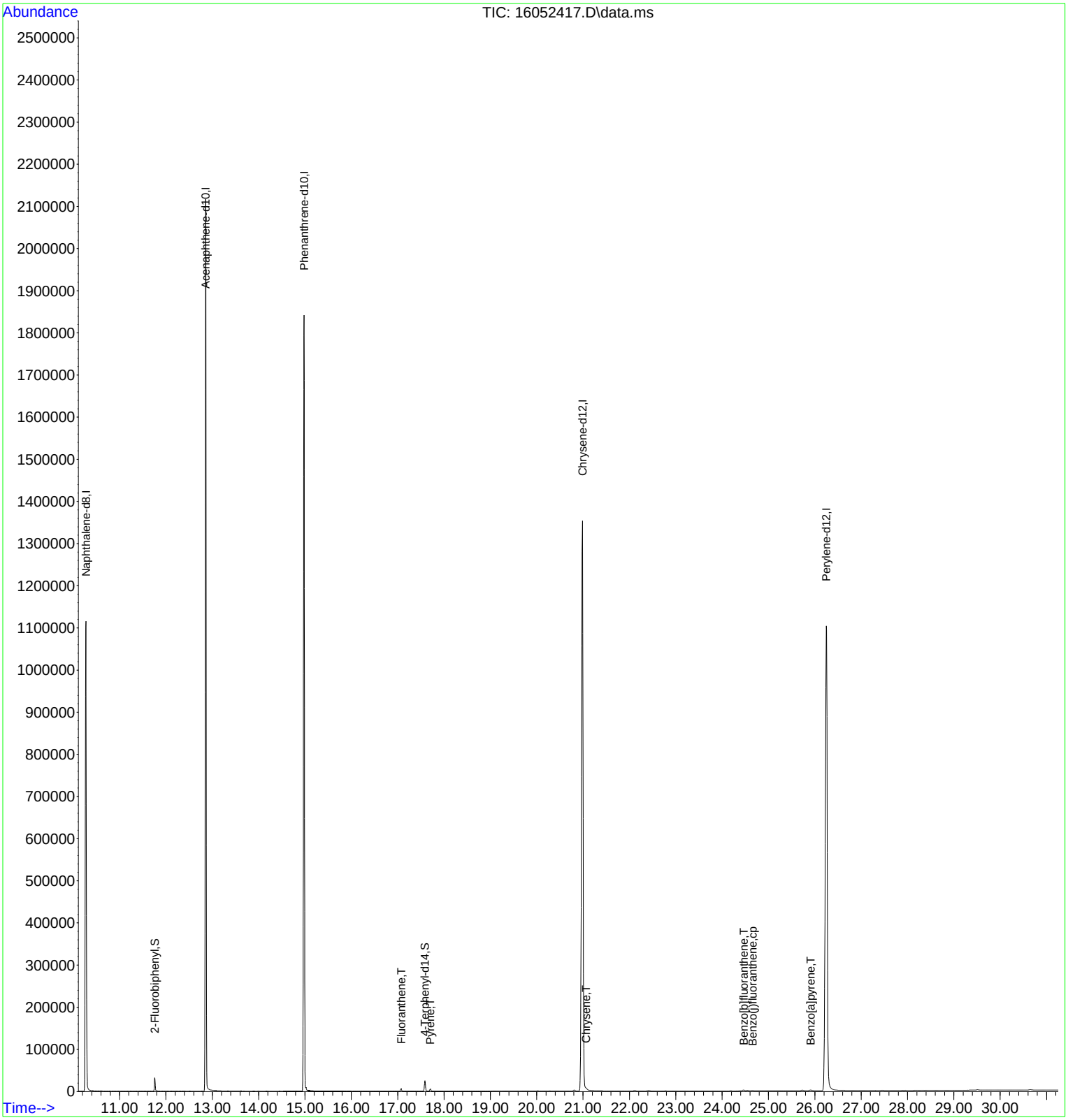
CONFIRMED
By Sherri Herschmann at 12:35:26 PM, 5/31/2016

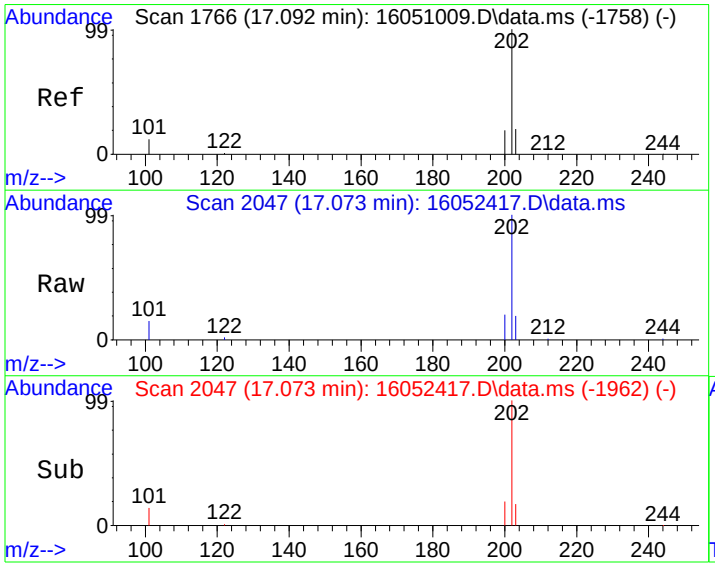
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052417.D
Acq On : 24 May 2016 7:08 pm
Operator :
Sample : 1605135-02A
Misc : SAMP
ALS Vial : 17 Sample Multiplier: 10

Quant Time: May 25 08:46:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

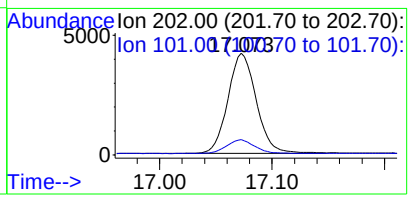


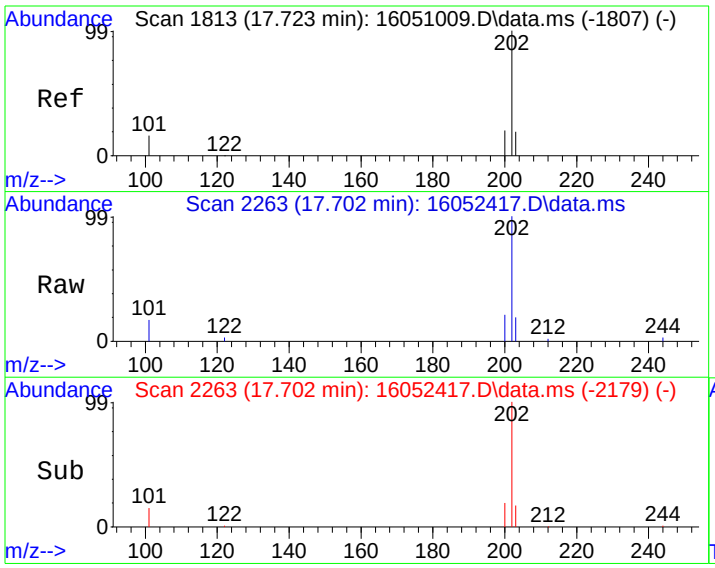


#14
Fluoranthene
Concen: 9.72 ug/kg
RT: 17.073 min Scan# 2047
Delta R.T. -0.003 min
Lab File: 16052417.D
Acq: 24 May 2016 7:08 pm

Tgt Ion:202 Resp: 7346

Ion	Ratio	Lower	Upper
202	100		
101	13.7	0.0	34.4

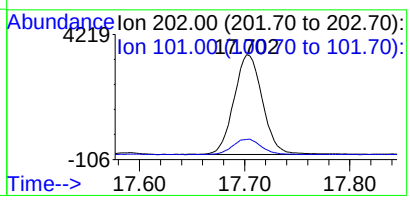


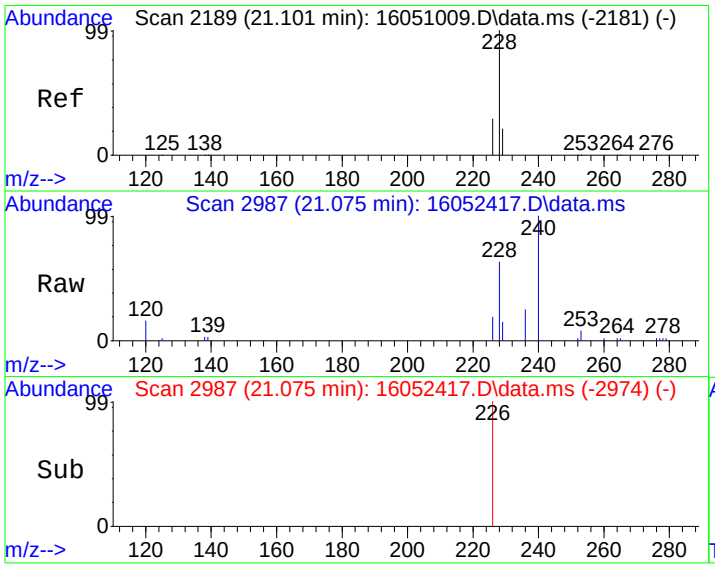


#15
Pyrene
Concen: 8.40 ug/kg
RT: 17.702 min Scan# 2263
Delta R.T. -0.004 min
Lab File: 16052417.D
Acq: 24 May 2016 7:08 pm

Tgt Ion:202 Resp: 6478

Ion	Ratio	Lower	Upper
202	100		
101	15.4	0.0	37.3

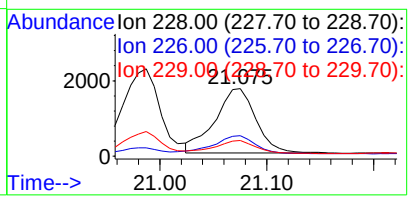


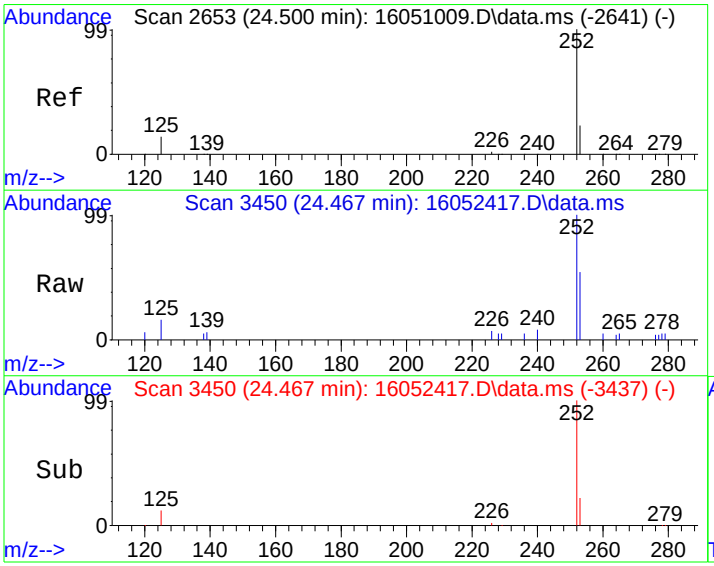


#19
Chrysene
Concen: 5.43 ug/kg
RT: 21.075 min Scan# 2987
Delta R.T. -0.008 min
Lab File: 16052417.D
Acq: 24 May 2016 7:08 pm

Tgt Ion:228 Resp: 4525

Ion	Ratio	Lower	Upper
228	100		
226	27.9	8.2	48.2
229	20.5	0.3	40.3

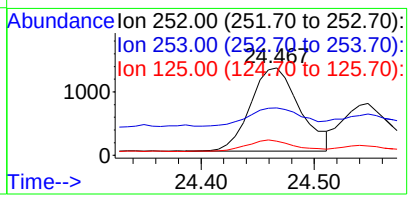


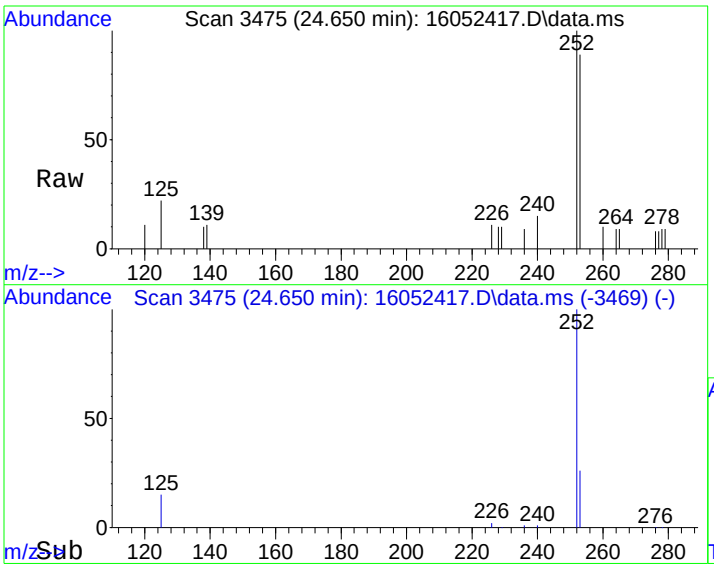


#21
Benzo[b]fluoranthene
Concen: 5.02 ug/kg
RT: 24.467 min Scan# 3450
Delta R.T. -0.008 min
Lab File: 16052417.D
Acq: 24 May 2016 7:08 pm

Tgt Ion:252 Resp: 3948

Ion	Ratio	Lower	Upper
252	100		
253	20.7	2.3	42.3
125	12.3	0.0	32.2

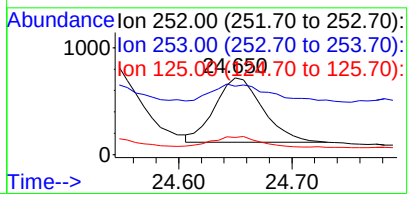


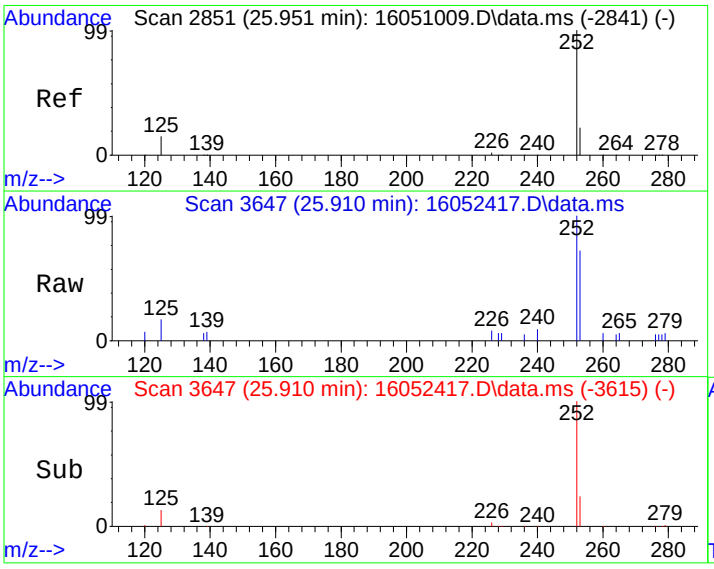


#23
Benzo(j)fluoranthene
Concen: 0.32 ug/kg
RT: 24.650 min Scan# 3475
Delta R.T. -0.015 min
Lab File: 16052417.D
Acq: 24 May 2016 7:08 pm

Tgt Ion:252 Resp: 1778

Ion	Ratio	Lower	Upper
252	100		
253	28.8	2.2	42.2
125	17.5	0.0	37.3

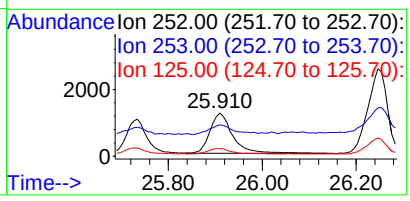




#25
Benzo[a]pyrene
Concen: 5.25 ug/kg
RT: 25.910 min Scan# 3647
Delta R.T. -0.015 min
Lab File: 16052417.D
Acq: 24 May 2016 7:08 pm

Tgt Ion:252 Resp: 4013

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.3	42.3
125	13.1	0.0	33.5



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052418.D
Acq On : 24 May 2016 7:46 pm
Operator :
Sample : 1605135-03A
Misc : SAMP
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 25 08:46:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1707755	4000.00	ug/kg	105
6) Acenaphthene-d10	12.856	164	1337899	4000.00	ug/kg	107
11) Phenanthrene-d10	14.978	188	2326823	4000.00	ug/kg	80
16) Chrysene-d12	20.987	240	2345036	4000.00	ug/kg	87
20) Perylene-d12	26.247	264	2235119	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	33314	87.61	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.19%#			
17) 4-Terphenyl-d14	17.587	244	36115	72.76	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.82%#			

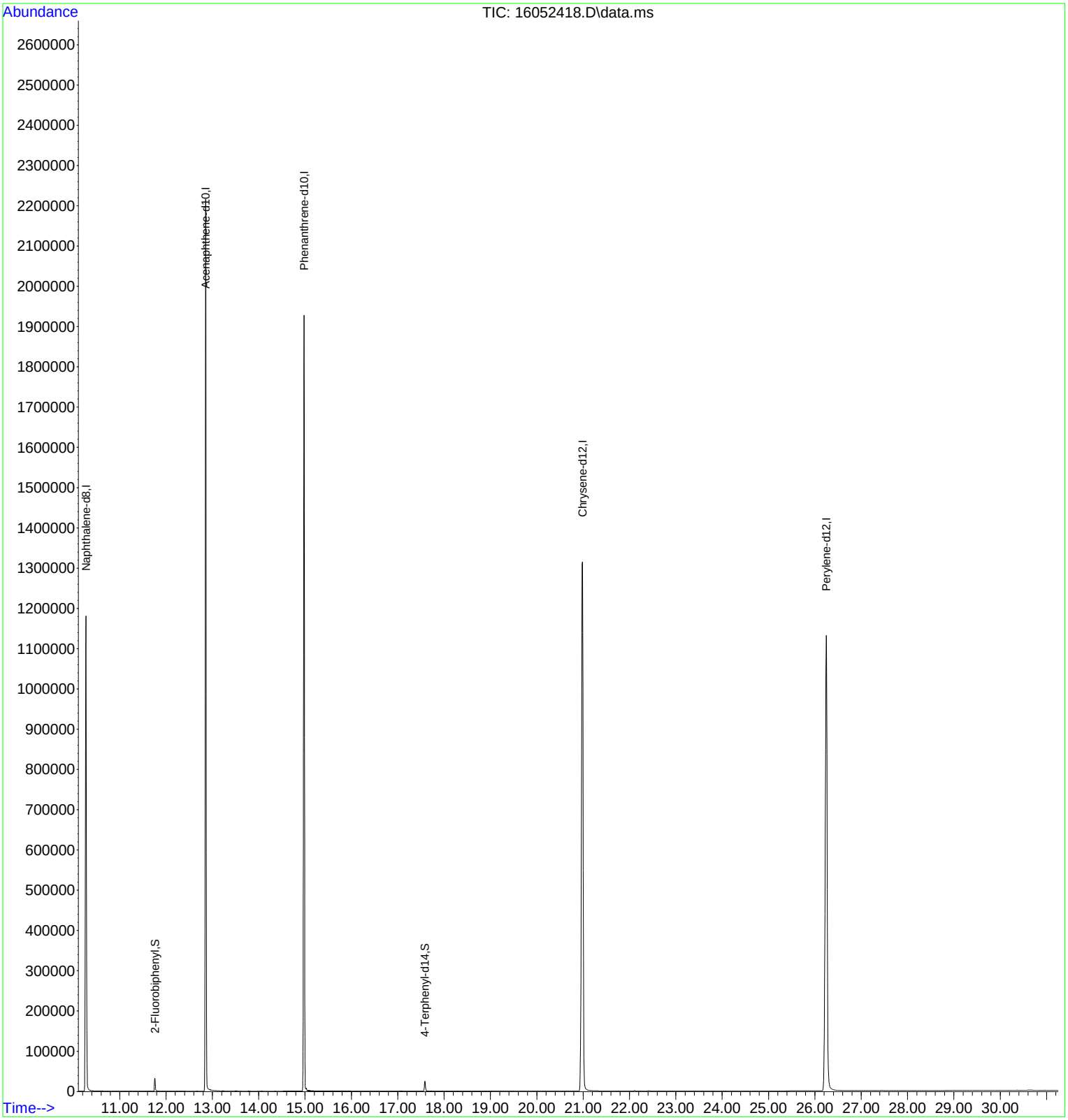
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052418.D
Acq On : 24 May 2016 7:46 pm
Operator :
Sample : 1605135-03A
Misc : SAMP
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 25 08:46:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052420.D
Acq On : 24 May 2016 9:00 pm
Operator :
Sample : ICV2-160524
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 25 08:44:06 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1494253	4000.00	ug/kg	92
6) Acenaphthene-d10	12.857	164	1251422	4000.00	ug/kg	100
11) Phenanthrene-d10	14.978	188	2366495	4000.00	ug/kg	81
16) Chrysene-d12	20.981	240	2146772	4000.00	ug/kg	79
20) Perylene-d12	26.247	264	2049858	4000.00	ug/kg	83

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	736001	2212.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 55.31%			
17) 4-Terphenyl-d14	17.587	244	906542	1995.09	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 49.88%#			

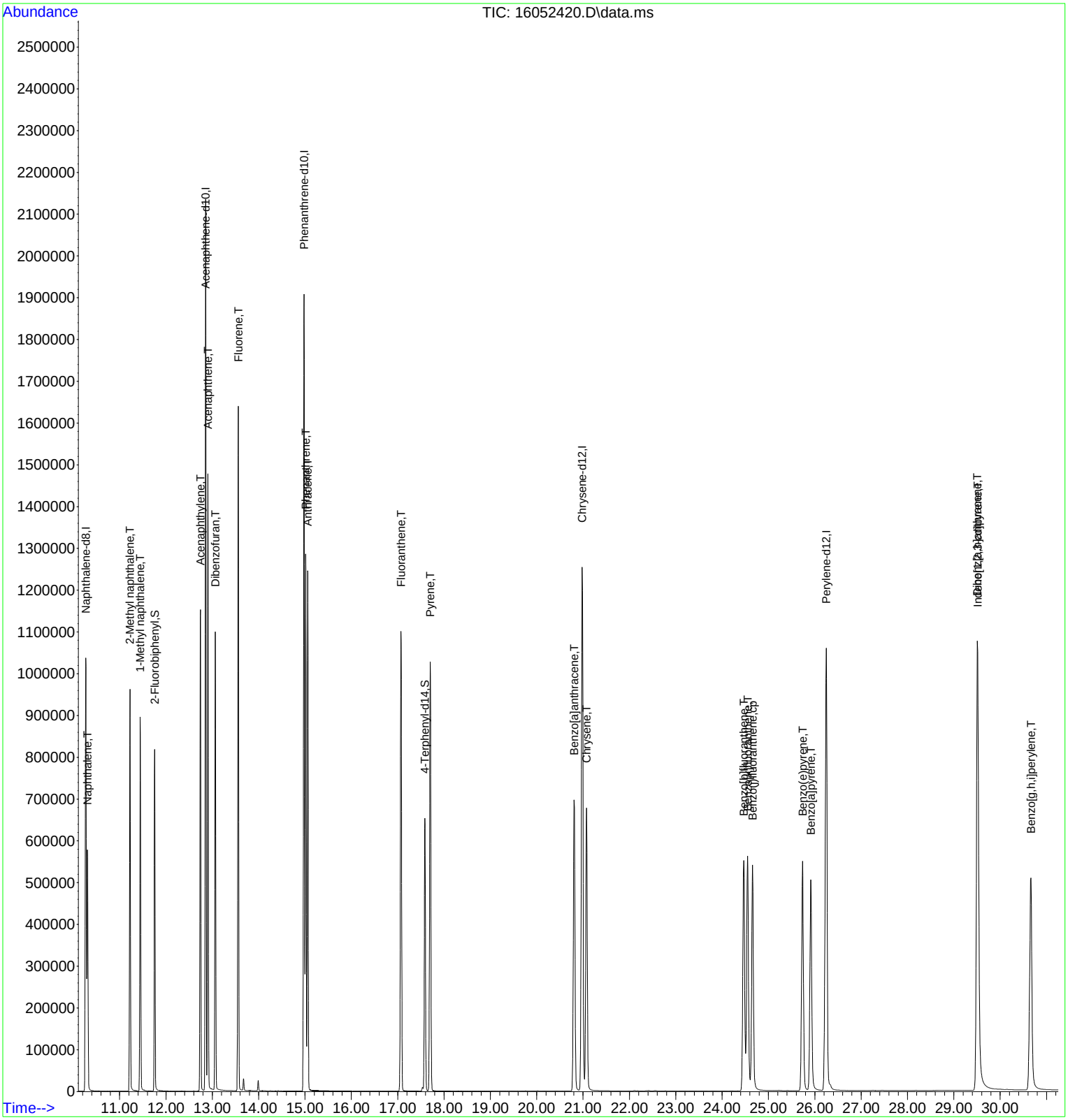
Target Compounds						Qvalue
2) Naphthalene	10.305	128	679816	2030.80	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	581218	2233.46	ug/kg	98
4) 1-Methyl naphthalene	11.445	142	535963	2176.47	ug/kg	99
7) Acenaphthylene	12.744	152	1125849	2058.22	ug/kg	99
8) Acenaphthene	12.906	153	701428	2032.18	ug/kg	99
9) Dibenzofuran	13.063	168	1028862	1956.76	ug/kg	90
10) Fluorene	13.559	166	901726	1890.09	ug/kg	99
12) Phenanthrene	15.016	178	1220581	1874.50	ug/kg	100
13) Anthracene	15.058	178	1208948	1834.85	ug/kg	100
14) Fluoranthene	17.071	202	1241817	1995.86	ug/kg	99
15) Pyrene	17.703	202	1208493	1975.93	ug/kg	98
18) Benzo[a]anthracene	20.805	228	1117064	2103.74	ug/kg	100
19) Chrysene	21.076	228	1029517	2096.64	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	1090402	2075.12	ug/kg	100
22) Benzo[k]fluoranthene	24.548	252	995221	2090.20	ug/kg	100
23) Benzo(j)fluoranthene	24.658	252	941383	2072.38	ug/kg	99
24) Benzo(e)pyrene	25.735	252	1049431	2118.38	ug/kg	99
25) Benzo[a]pyrene	25.918	252	1030344	2095.53	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1290396	2148.14	ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	1072491	2148.75	ug/kg	100
28) Benzo[g,h,i]perylene	30.664	276	1106145	2133.02	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052420.D
Acq On : 24 May 2016 9:00 pm
Operator :
Sample : ICV2-160524
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

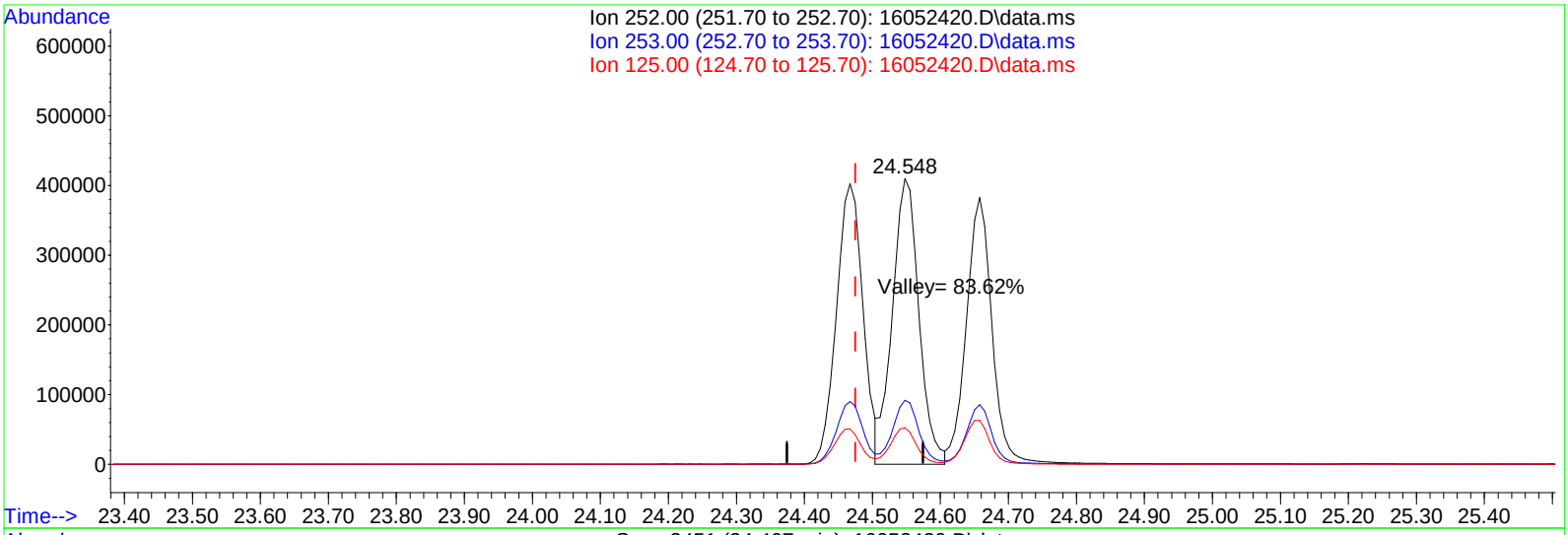
Quant Time: May 25 08:44:06 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

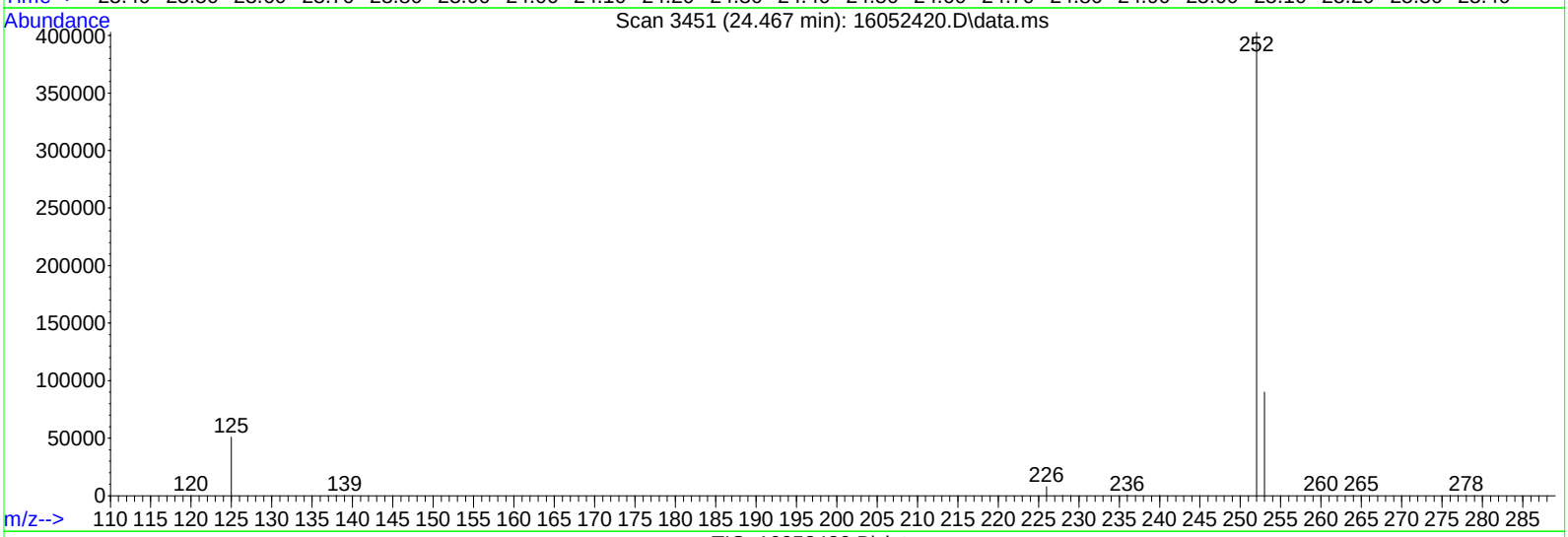


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052420.D
Acq On : 24 May 2016 9:00 pm
Operator :
Sample : ICV2-160524
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 24 21:31:47 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052420.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.467min (-0.008) 2075.12ug/kg

response 1090402

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.22
125.00	12.20	12.58
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052422.D
Acq On : 24 May 2016 10:15 pm
Operator :
Sample : SBLK-160524
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 25 08:44:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1729854	4000.00 ug/kg	106
6) Acenaphthene-d10	12.856	164	1414012	4000.00 ug/kg	113
11) Phenanthrene-d10	14.978	188	2398318	4000.00 ug/kg	82
16) Chrysene-d12	20.981	240	2366115	4000.00 ug/kg	87
20) Perylene-d12	26.248	264	2293170	4000.00 ug/kg	92

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	36	0.09 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#		
17) 4-Terphenyl-d14	17.590	244	326	0.65 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.02%#		

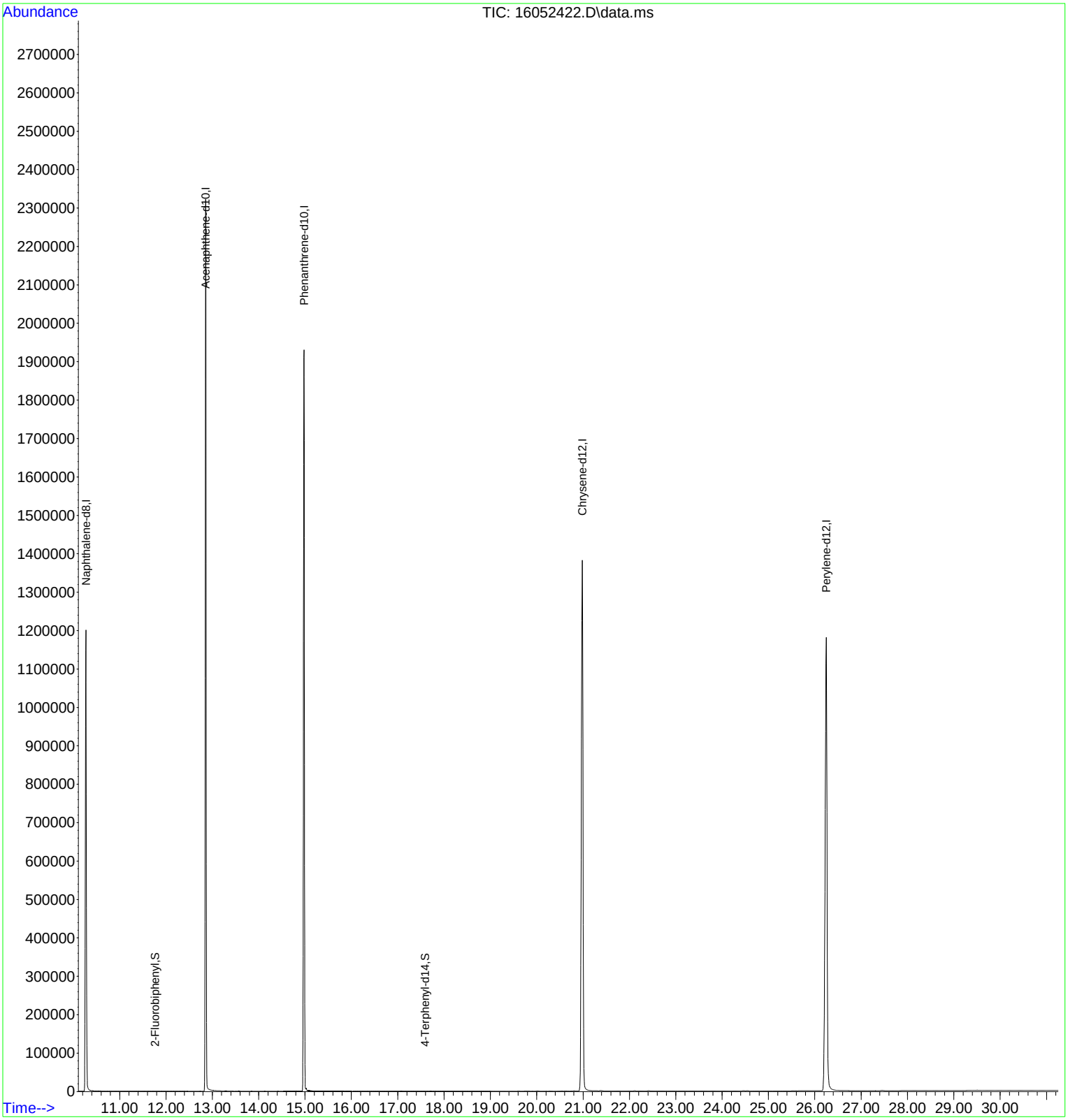
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052422.D
Acq On : 24 May 2016 10:15 pm
Operator :
Sample : SBLK-160524
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 25 08:44:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052423.D
Acq On : 24 May 2016 10:52 pm
Operator :
Sample : 1605135-04A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 25 08:46:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1630701	4000.00 ug/kg	100
6) Acenaphthene-d10	12.857	164	1302210	4000.00 ug/kg	104
11) Phenanthrene-d10	14.975	188	2245422	4000.00 ug/kg	77
16) Chrysene-d12	20.981	240	2269365	4000.00 ug/kg	84
20) Perylene-d12	26.247	264	2169397	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	31914	87.90 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.20%#	
17) 4-Terphenyl-d14	17.586	244	34965	72.79 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.82%#	

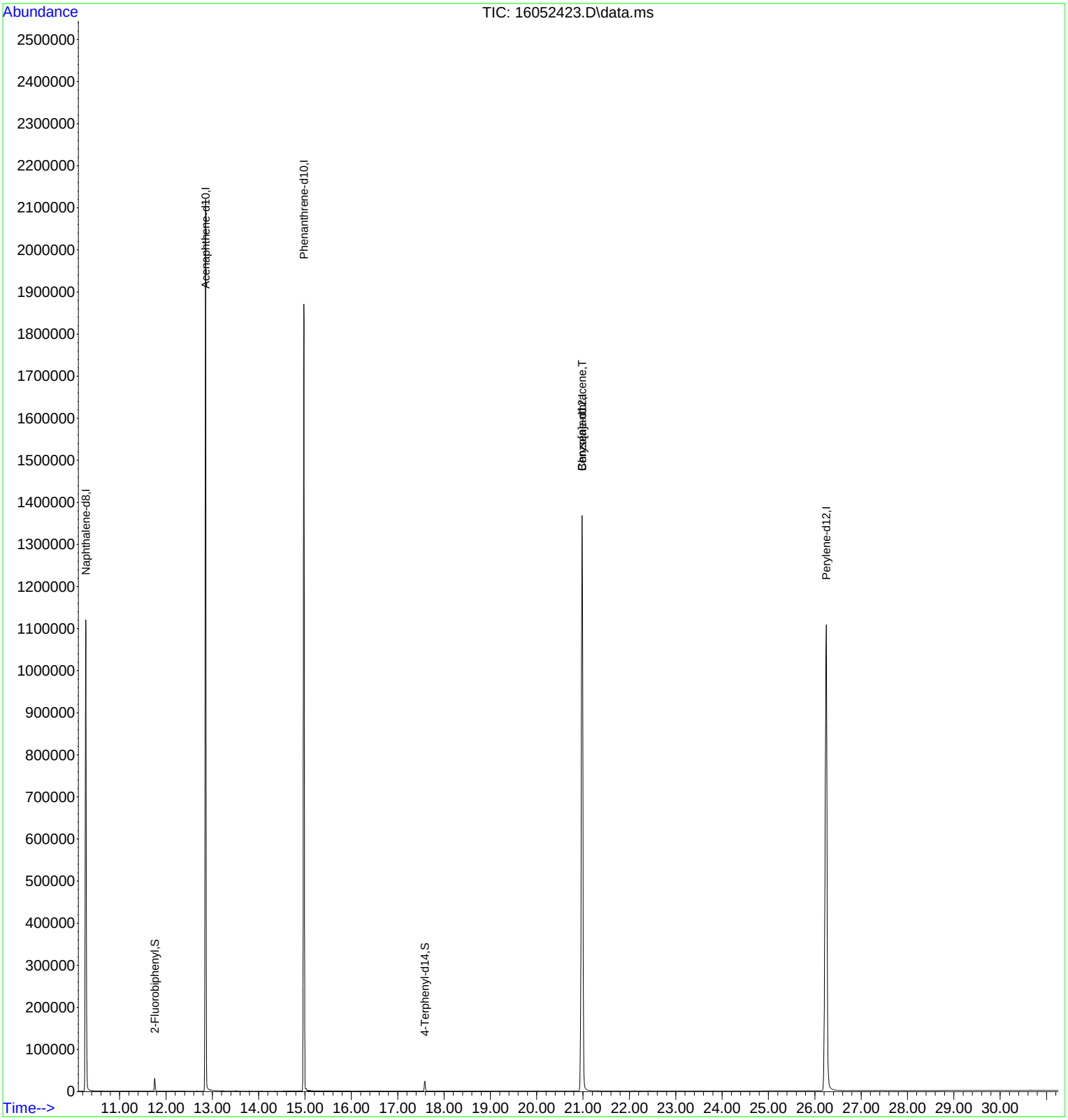
Target Compounds					Qvalue
18) Benzo[a]anthracene	20.981	228	5188	~~7.01 ug/kg~~	~~76~~

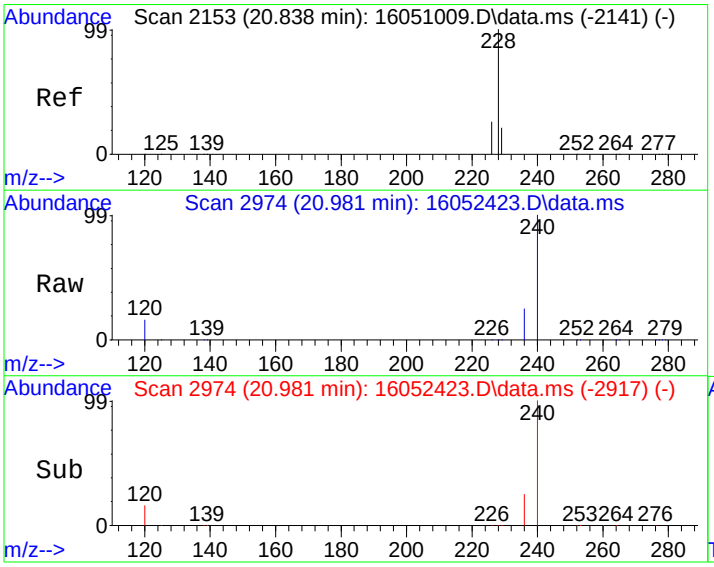
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052423.D
Acq On : 24 May 2016 10:52 pm
Operator :
Sample : 1605135-04A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 25 08:46:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

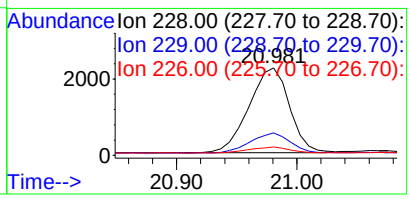




#18
Benzo[a]anthracene
Concen: 7.01 ug/kg
RT: 20.981 min Scan# 2974
Delta R.T. 0.169 min
Lab File: 16052423.D
Acq: 24 May 2016 10:52 pm

Tgt Ion:228 Resp: 5188

Ion	Ratio	Lower	Upper
228	100		
229	23.8	0.3	40.3
226	7.0	5.7	45.7



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052424.D
Acq On : 24 May 2016 11:29 pm
Operator :
Sample : 1605135-05A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 25 08:46:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.269	136	1622542	4000.00 ug/kg	100
6) Acenaphthene-d10	12.856	164	1308649	4000.00 ug/kg	104
11) Phenanthrene-d10	14.976	188	2238663	4000.00 ug/kg	77
16) Chrysene-d12	20.980	240	2247832	4000.00 ug/kg	83
20) Perylene-d12	26.247	264	2169445	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	33322	92.24 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.31%#	
17) 4-Terphenyl-d14	17.584	244	35912	75.48 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.89%#	

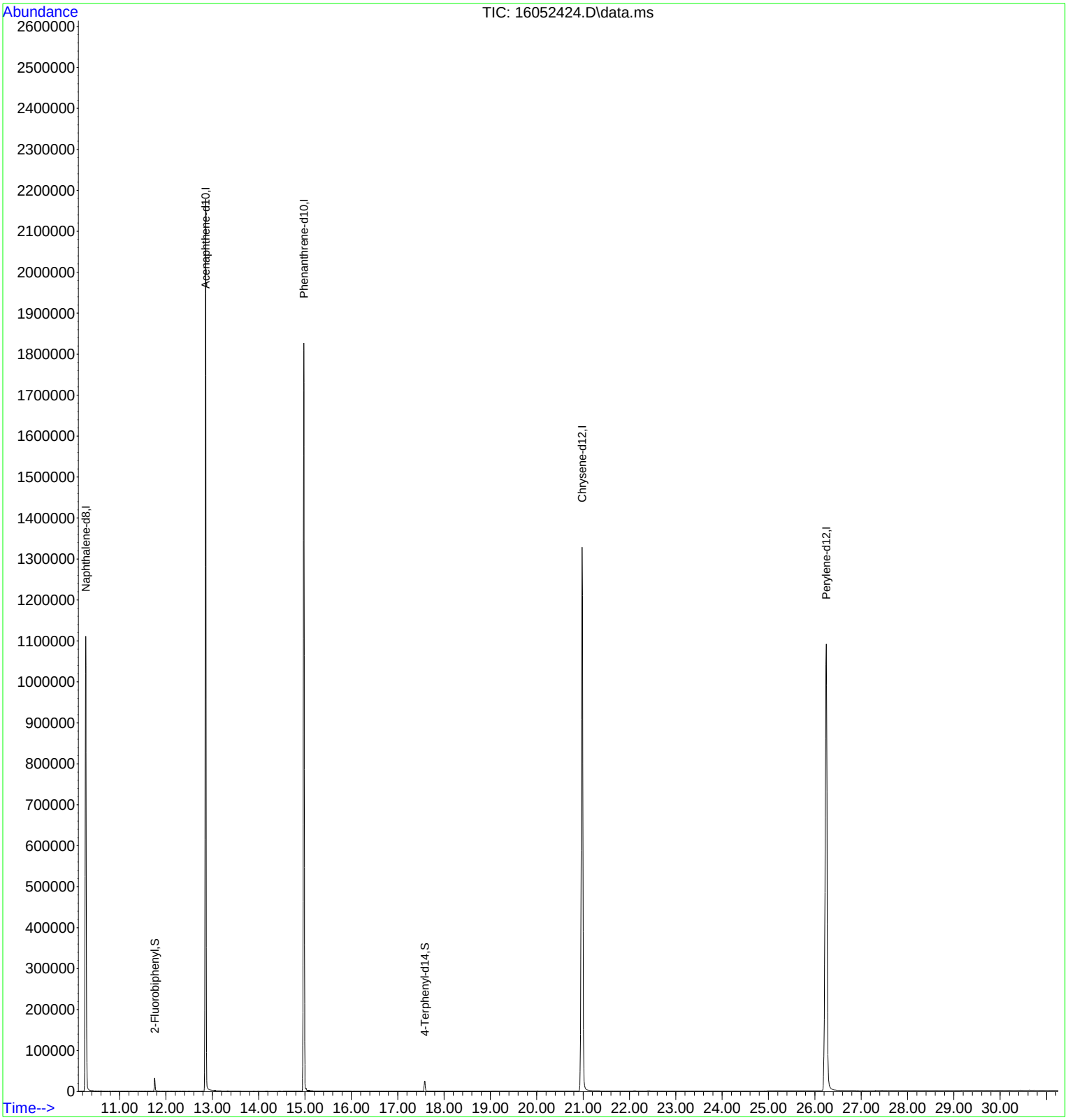
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052424.D
Acq On : 24 May 2016 11:29 pm
Operator :
Sample : 1605135-05A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 25 08:46:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052425.D
Acq On : 25 May 2016 12:07 am
Operator :
Sample : 1605135-06A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 25 08:46:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1639057	4000.00 ug/kg	101
6) Acenaphthene-d10	12.857	164	1326483	4000.00 ug/kg	106
11) Phenanthrene-d10	14.977	188	2350859	4000.00 ug/kg	80
16) Chrysene-d12	20.981	240	2325179	4000.00 ug/kg	86
20) Perylene-d12	26.247	264	2194869	4000.00 ug/kg	88

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	33560	91.96 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.30%#	
17) 4-Terphenyl-d14	17.583	244	37274	75.74 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.89%#	

Target Compounds					Qvalue
8) Acenaphthene	12.906	153	2416	6.60 ug/kg	98
12) Phenanthrene	15.012	178	57305	88.59 ug/kg	98
13) Anthracene	15.057	178	11552	17.65 ug/kg	97
14) Fluoranthene	17.067	202	178184	273.18 ug/kg	98
15) Pyrene	17.696	202	156479	245.57 ug/kg	97
18) Benzo[a]anthracene	20.805	228	93814	154.17 ug/kg	99
19) Chrysene	21.069	228	109185	194.29 ug/kg	100
21) Benzo[b]fluoranthene	24.453	252	107279	182.34 ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	46713	87.81 ug/kg	97
23) Benzo(j)fluoranthene	24.643	252	47885	91.57 ug/kg	90
24) Benzo(e)pyrene	25.727	252	83787	149.36 ug/kg	97
25) Benzo[a]pyrene	25.903	252	111642	204.24 ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.507	276	81077	118.30 ug/kg	91
27) Dibenz[a,h]anthracene	29.492	278	15720	23.68 ug/kg	95
28) Benzo[g,h,i]perylene	30.642	276	85789	145.83 ug/kg	99

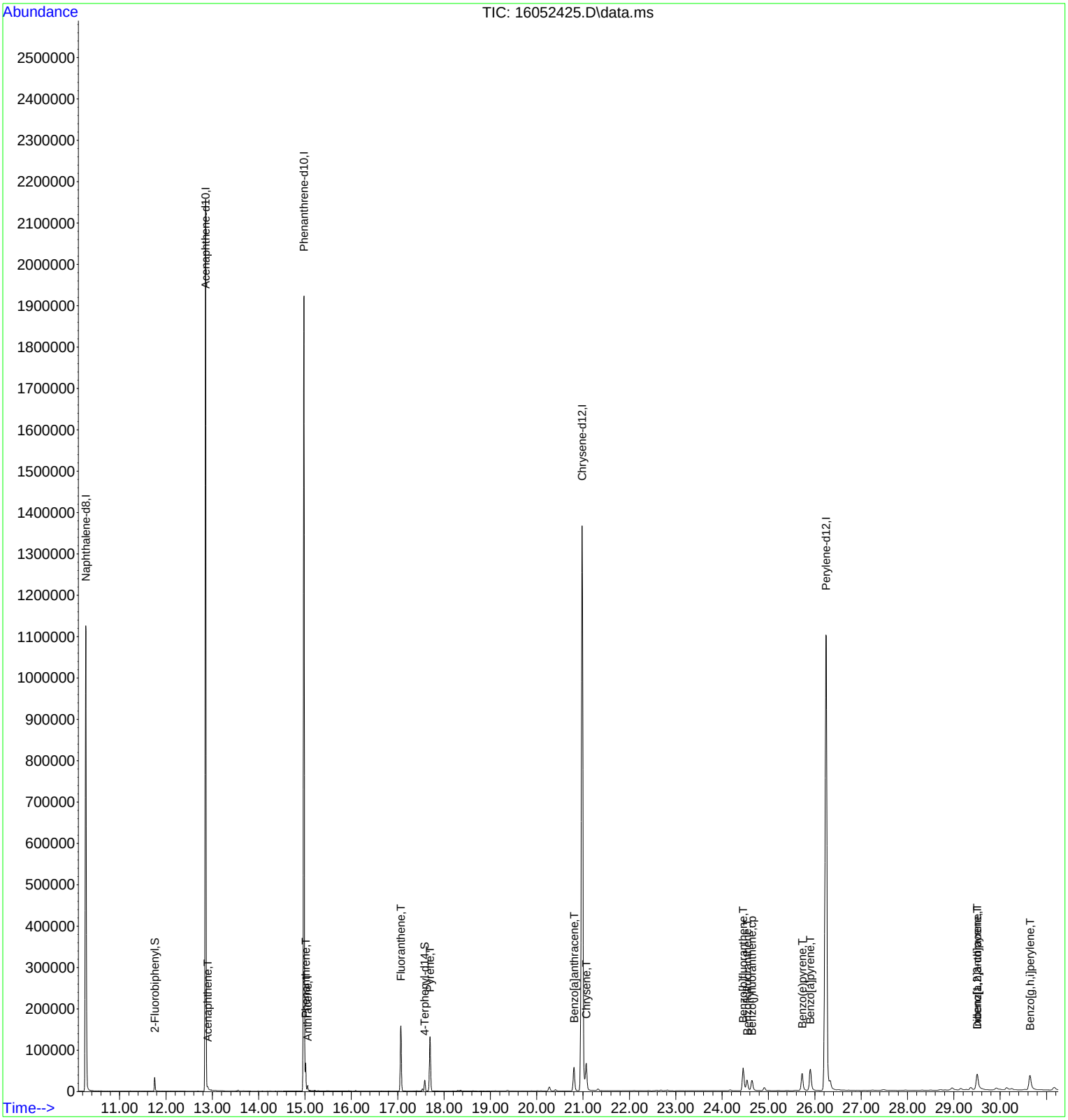
CONFIRMED
By Sherri Herschmann at 12:36:15 PM, 5/31/2016

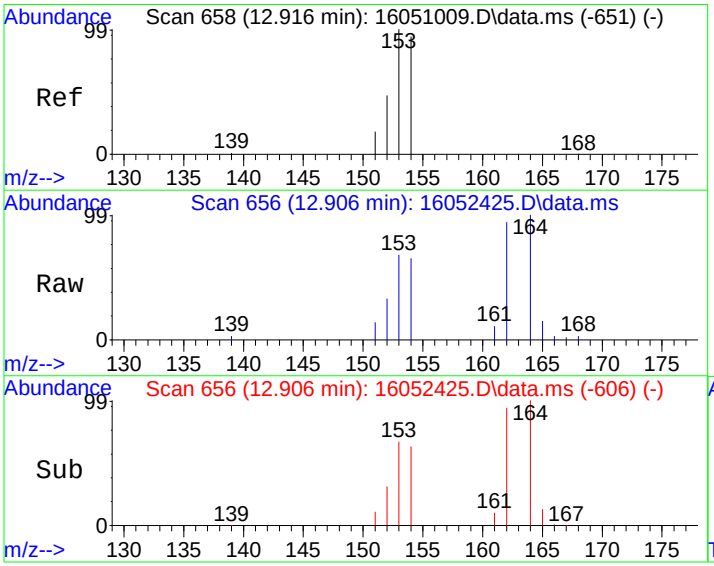
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052425.D
Acq On : 25 May 2016 12:07 am
Operator :
Sample : 1605135-06A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 25 08:46:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

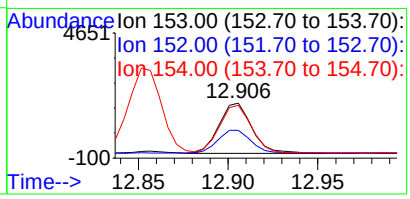


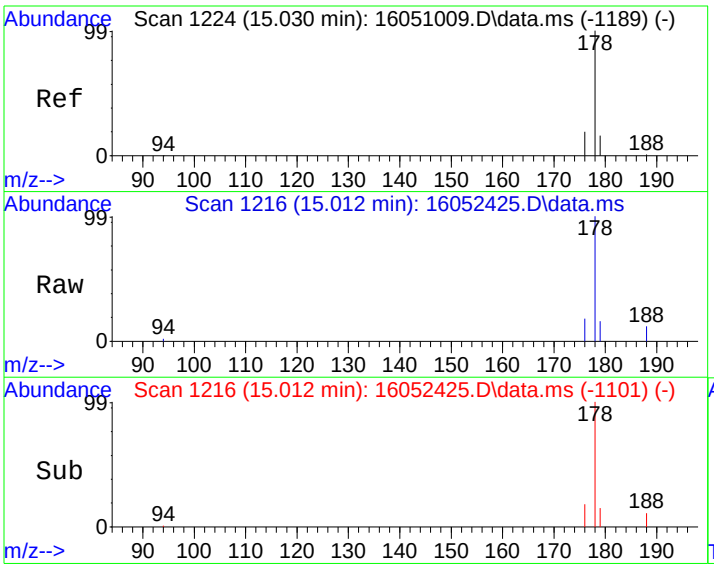


#8
Acenaphthene
Concen: 6.60 ug/kg
RT: 12.906 min Scan# 656
Delta R.T. -0.005 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:153 Resp: 2416

Ion	Ratio	Lower	Upper
153	100		
152	46.0	26.5	66.5
154	94.3	76.3	116.3

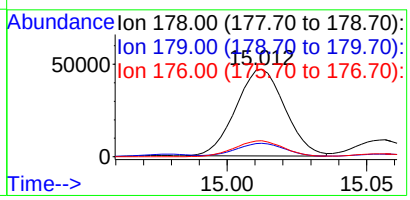


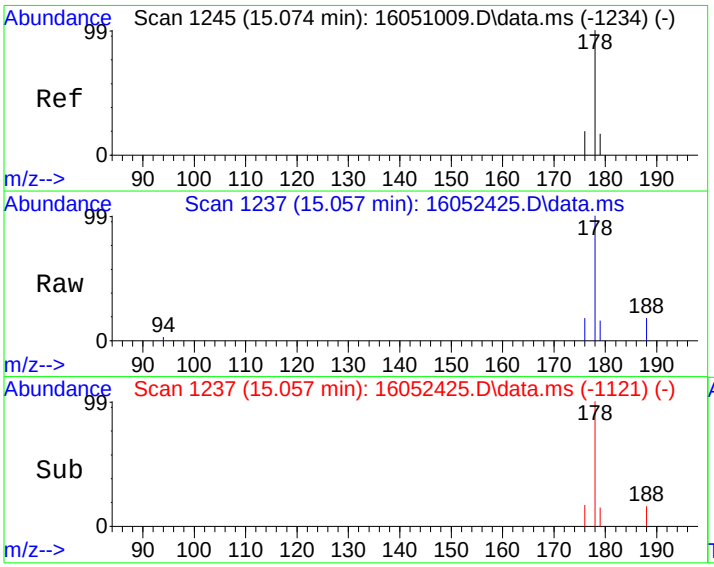


#12
Phenanthrene
Concen: 88.59 ug/kg
RT: 15.012 min Scan# 1216
Delta R.T. -0.007 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:178 Resp: 57305

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.3	0.0	39.0

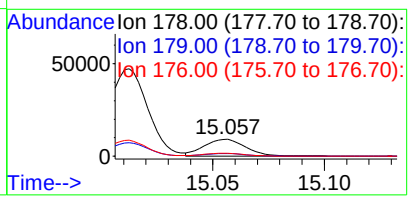


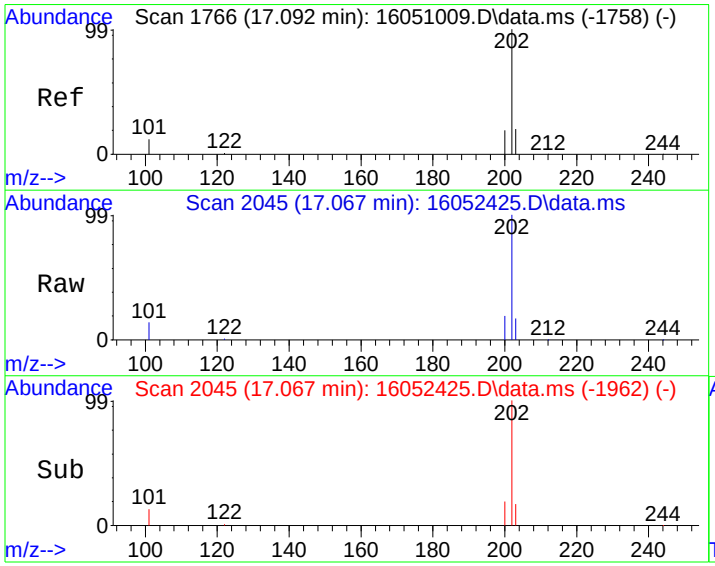


#13
Anthracene
Concen: 17.65 ug/kg
RT: 15.057 min Scan# 1237
Delta R.T. -0.005 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:178 Resp: 11552

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.3
176	17.2	0.0	38.5

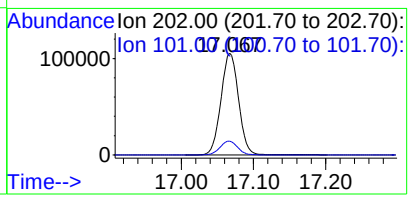


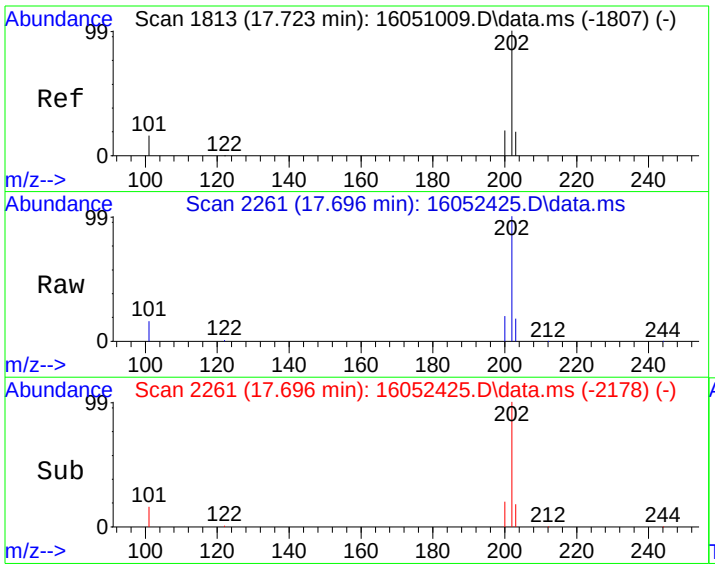


#14
Fluoranthene
Concen: 273.18 ug/kg
RT: 17.067 min Scan# 2045
Delta R.T. -0.009 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:202 Resp: 178184

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

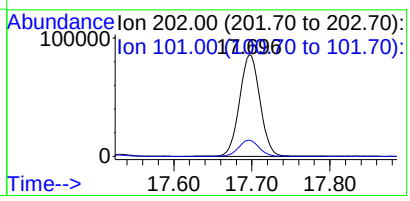


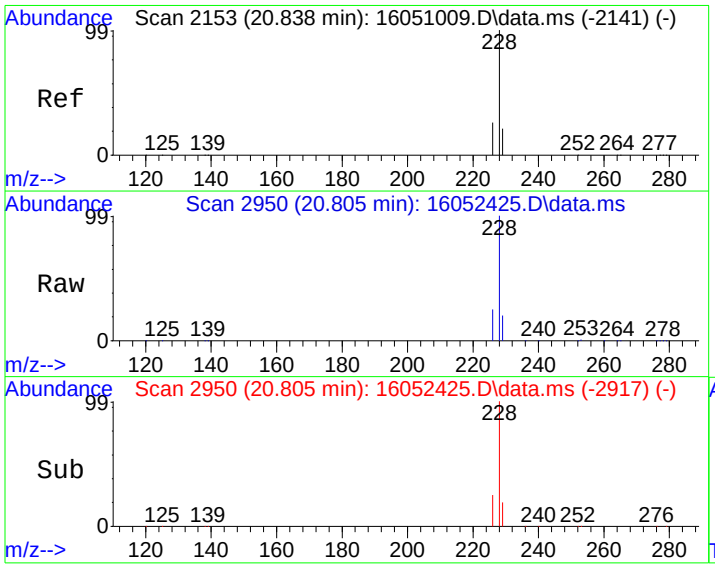


#15
Pyrene
Concen: 245.57 ug/kg
RT: 17.696 min Scan# 2261
Delta R.T. -0.010 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:202 Resp: 156479

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	37.3

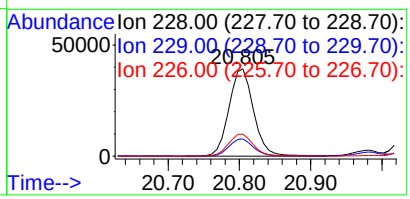


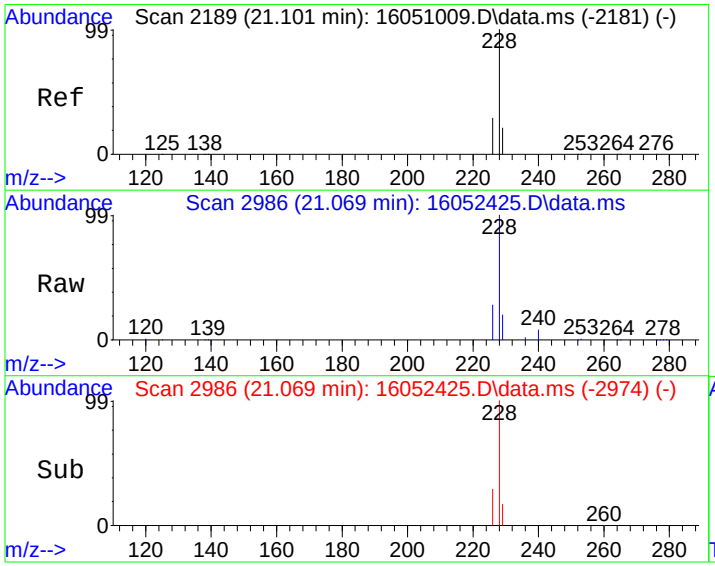


#18
Benzo[a]anthracene
Concen: 154.17 ug/kg
RT: 20.805 min Scan# 2950
Delta R.T. -0.007 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:228 Resp: 93814

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.3	5.7	45.7

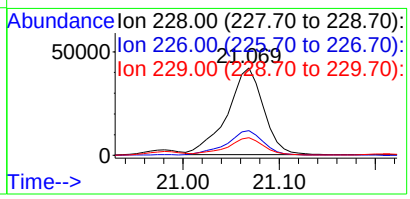


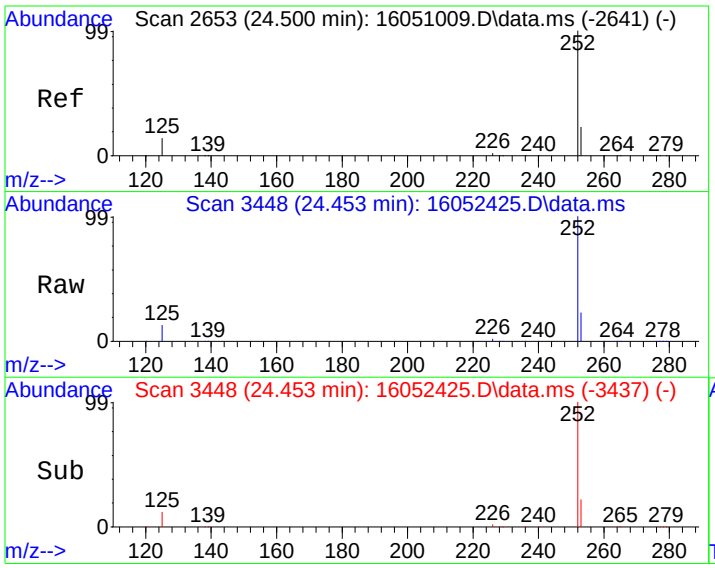


#19
Chrysene
Concen: 194.29 ug/kg
RT: 21.069 min Scan# 2986
Delta R.T. -0.014 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:228 Resp: 109185

Ion	Ratio	Lower	Upper
228	100		
226	28.1	8.2	48.2
229	20.0	0.3	40.3

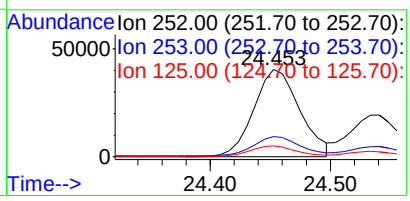


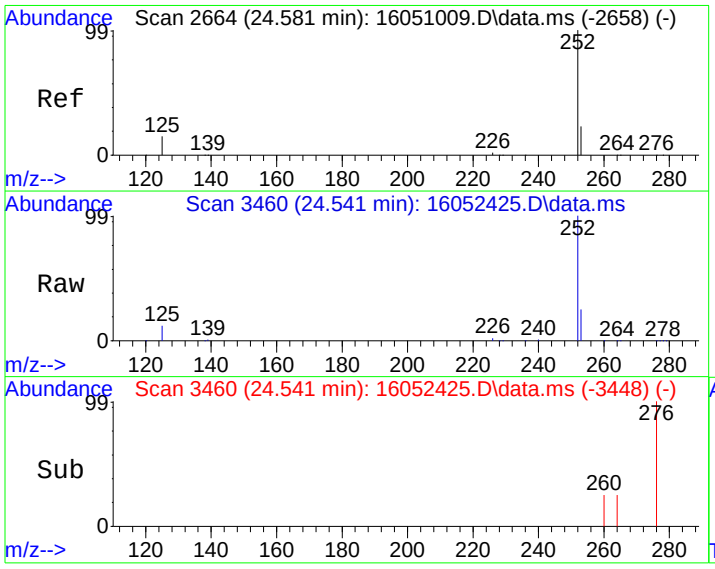


#21
Benzo[b]fluoranthene
Concen: 182.34 ug/kg
RT: 24.453 min Scan# 3448
Delta R.T. -0.022 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:252 Resp: 107279

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.3	42.3
125	12.4	0.0	32.2

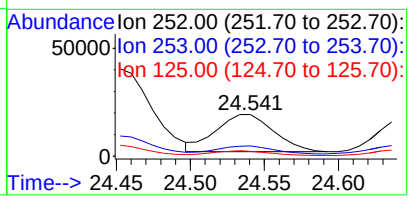


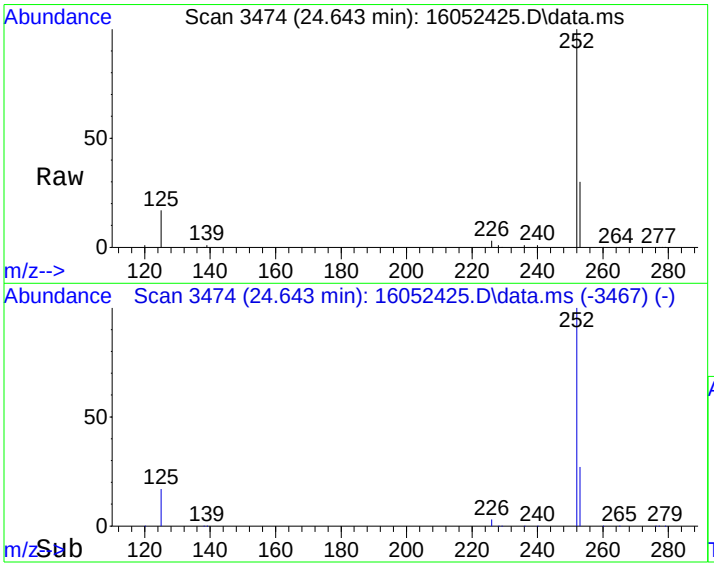


#22
Benzo[k]fluoranthene
Concen: 87.81 ug/kg
RT: 24.541 min Scan# 3460
Delta R.T. -0.014 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:252 Resp: 46713

Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.5	42.5
125	11.7	0.0	32.6

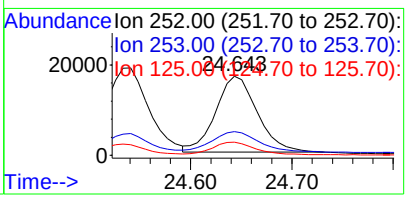


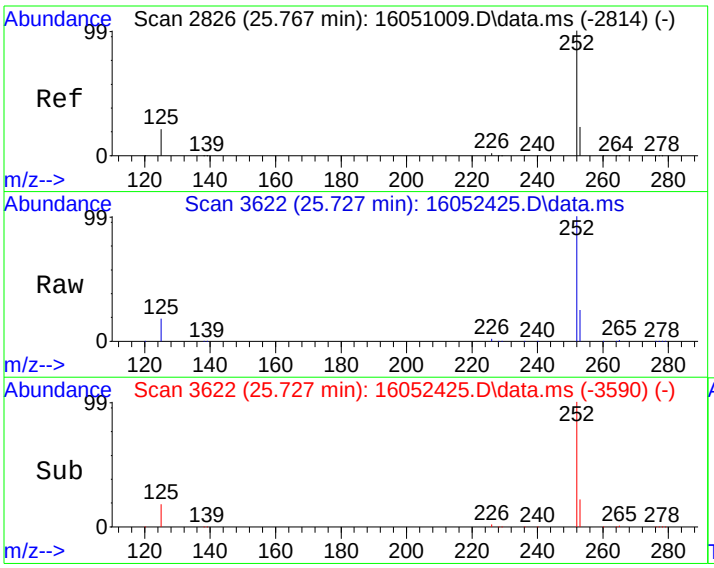


#23
Benzo(j)fluoranthene
Concen: 91.57 ug/kg
RT: 24.643 min Scan# 3474
Delta R.T. -0.022 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:252 Resp: 47885

Ion	Ratio	Lower	Upper
252	100		
253	29.8	2.2	42.2
125	16.2	0.0	37.3

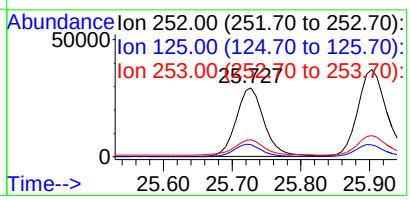


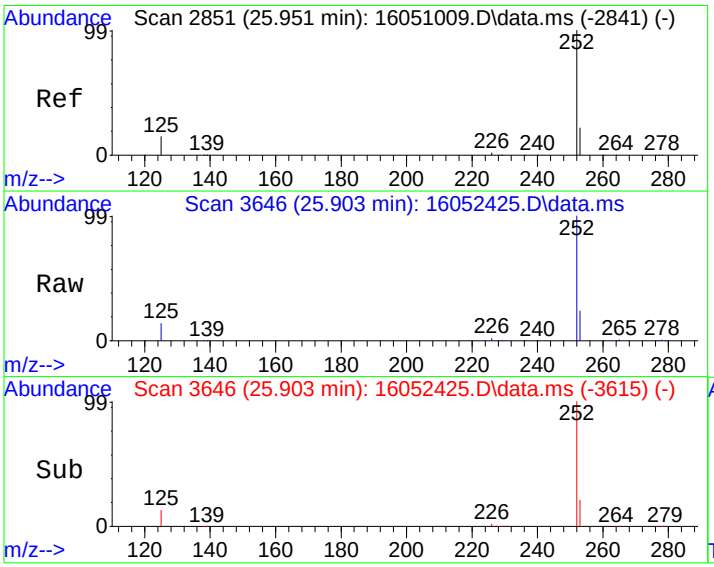


#24
Benzo(e)pyrene
Concen: 149.36 ug/kg
RT: 25.727 min Scan# 3622
Delta R.T. -0.015 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:252 Resp: 83787

Ion	Ratio	Lower	Upper
252	100		
125	17.9	0.0	38.7
253	24.4	2.3	42.3

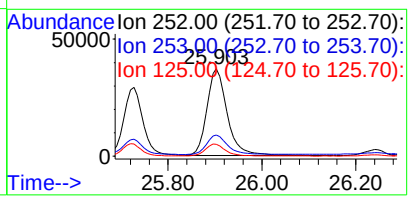


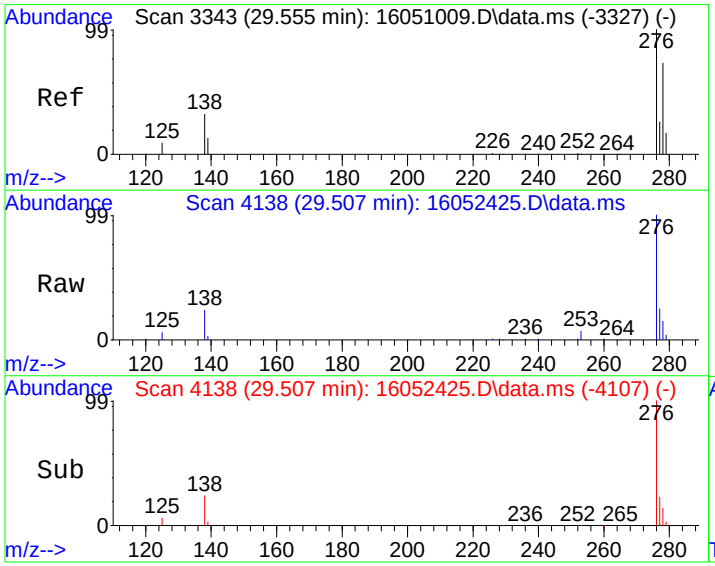


#25
Benzo[a]pyrene
Concen: 204.24 ug/kg
RT: 25.903 min Scan# 3646
Delta R.T. -0.022 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:252 Resp: 111642

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.3	42.3
125	13.5	0.0	33.5

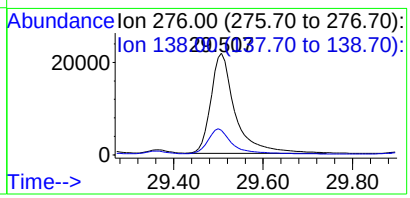


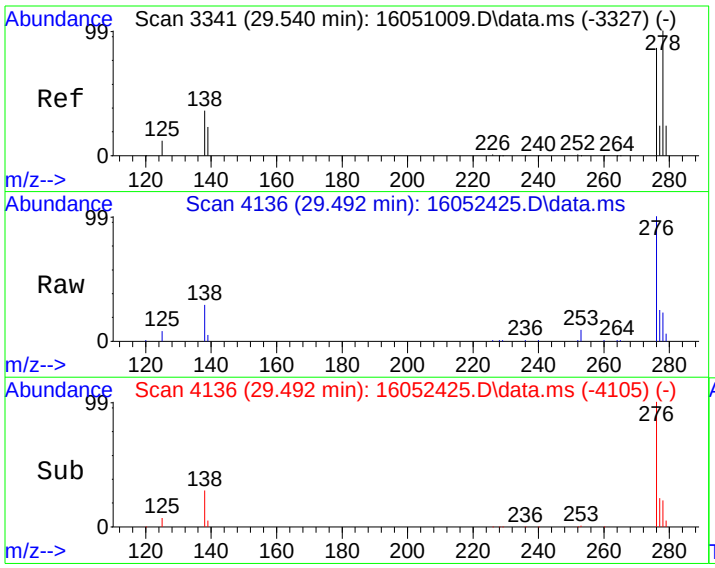


#26
Indeno[1,2,3-cd]pyrene
Concen: 118.30 ug/kg
RT: 29.507 min Scan# 4138
Delta R.T. -0.022 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:276 Resp: 81077

Ion	Ratio	Lower	Upper
276	100		
138	23.7	8.3	48.3

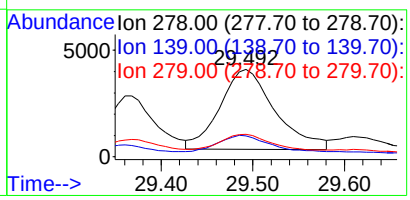


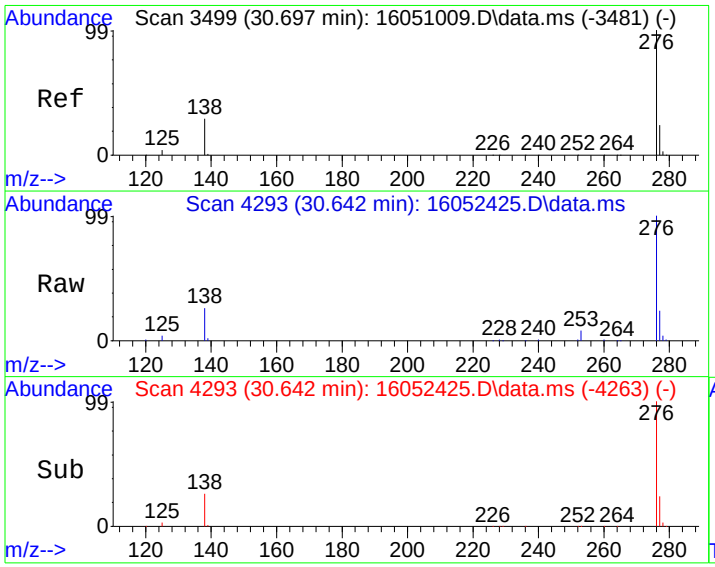


#27
Dibenz[a,h]anthracene
Concen: 23.68 ug/kg
RT: 29.492 min Scan# 4136
Delta R.T. -0.022 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:278 Resp: 15720

Ion	Ratio	Lower	Upper
278	100		
139	22.2	0.0	40.0
279	21.9	4.2	44.2

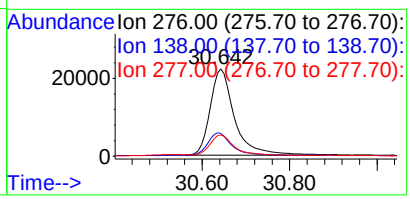




#28
Benzo[g,h,i]perylene
Concen: 145.83 ug/kg
RT: 30.642 min Scan# 4293
Delta R.T. -0.030 min
Lab File: 16052425.D
Acq: 25 May 2016 12:07 am

Tgt Ion:276 Resp: 85789

Ion	Ratio	Lower	Upper
276	100		
138	25.5	5.8	45.8
277	23.6	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052426.D
Acq On : 25 May 2016 12:44 am
Operator :
Sample : 1605135-07A
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 25 08:46:51 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1619770	4000.00 ug/kg	99
6) Acenaphthene-d10	12.857	164	1305018	4000.00 ug/kg	104
11) Phenanthrene-d10	14.975	188	2273314	4000.00 ug/kg	78
16) Chrysene-d12	20.980	240	2253879	4000.00 ug/kg	83
20) Perylene-d12	26.247	264	2161892	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	33170	91.97 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.30%#		
17) 4-Terphenyl-d14	17.583	244	36927	77.41 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.94%#		

Target Compounds					Qvalue
12) Phenanthrene	15.011	178	3681	5.88 ug/kg	98
14) Fluoranthene	17.067	202	8395	11.27 ug/kg	98
15) Pyrene	17.700	202	7101	9.31 ug/kg	96
19) Chrysene	21.068	228	4261	5.16 ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	1785	0.40 ug/kg	89
25) Benzo[a]pyrene	25.903	252	4025	5.41 ug/kg	99

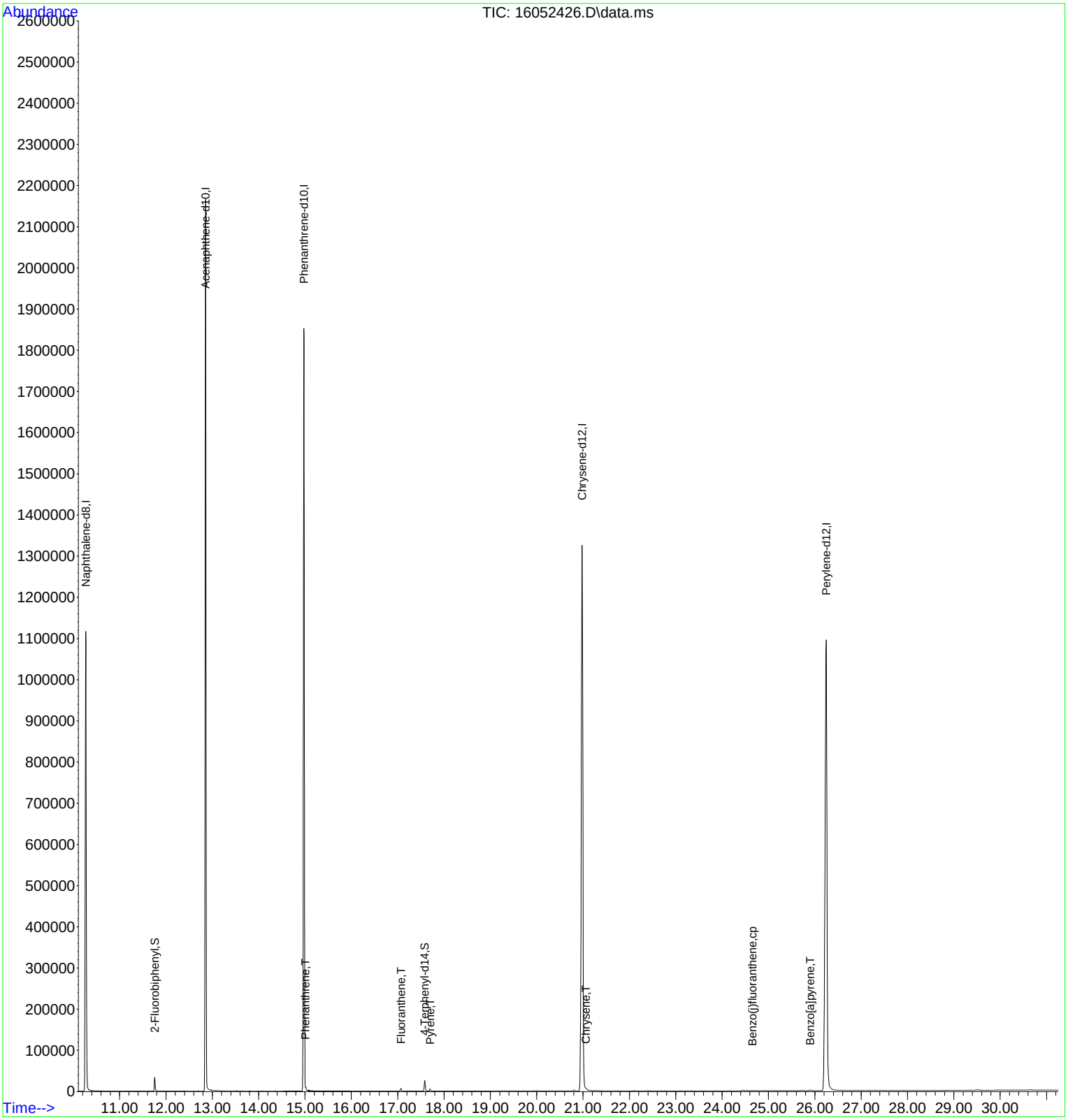
CONFIRMED
By Sherri Herschmann at 12:36:27 PM, 5/31/2016

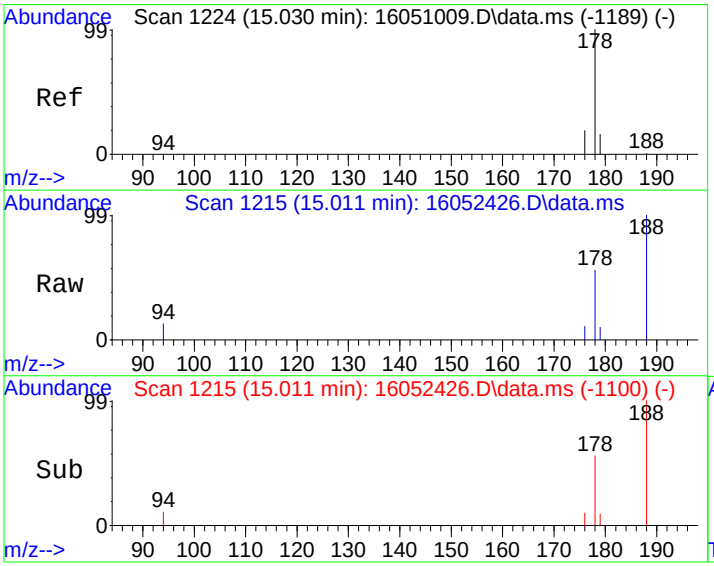
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052426.D
Acq On : 25 May 2016 12:44 am
Operator :
Sample : 1605135-07A
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 25 08:46:51 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

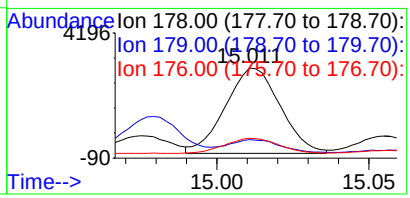


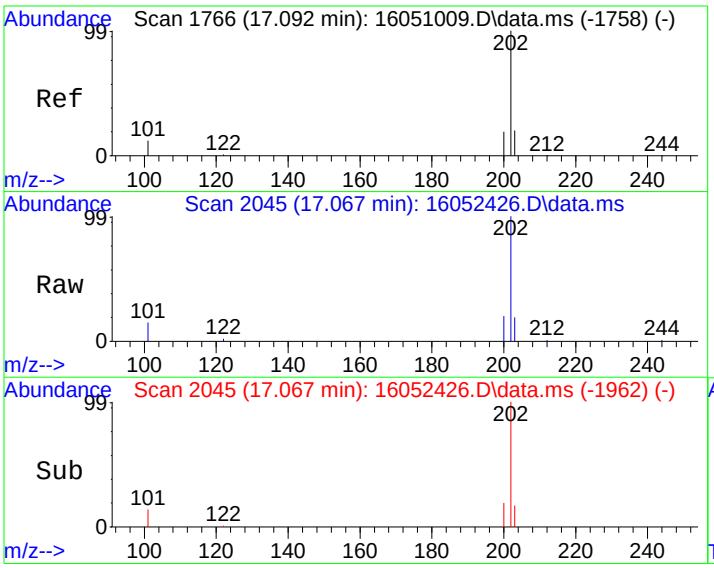


#12
Phenanthrene
Concen: 5.88 ug/kg
RT: 15.011 min Scan# 1215
Delta R.T. -0.008 min
Lab File: 16052426.D
Acq: 25 May 2016 12:44 am

Tgt Ion:178 Resp: 3681

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	36.4
176	17.9	0.0	39.0

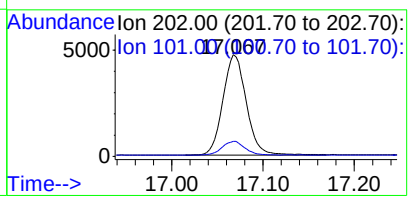


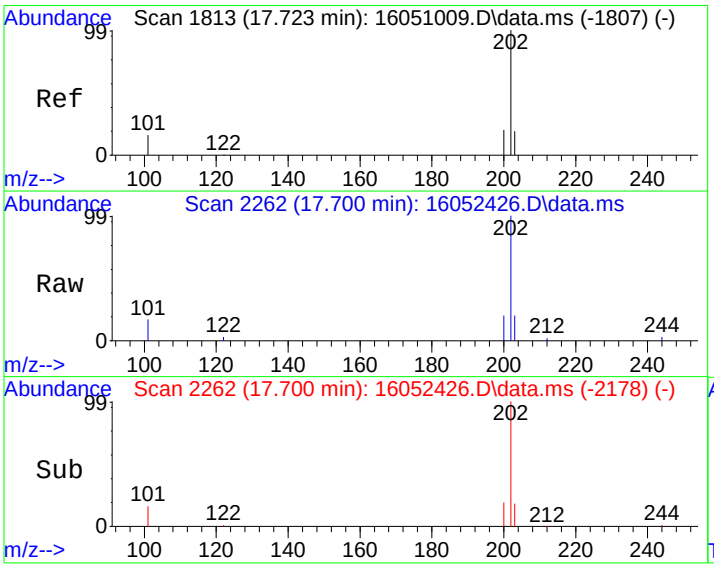


#14
Fluoranthene
Concen: 11.27 ug/kg
RT: 17.067 min Scan# 2045
Delta R.T. -0.009 min
Lab File: 16052426.D
Acq: 25 May 2016 12:44 am

Tgt Ion:202 Resp: 8395

Ion	Ratio	Lower	Upper
202	100		
101	13.8	0.0	34.4

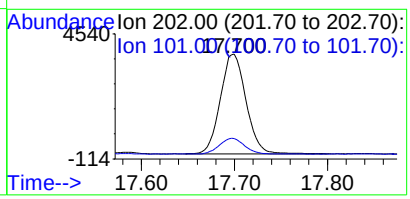


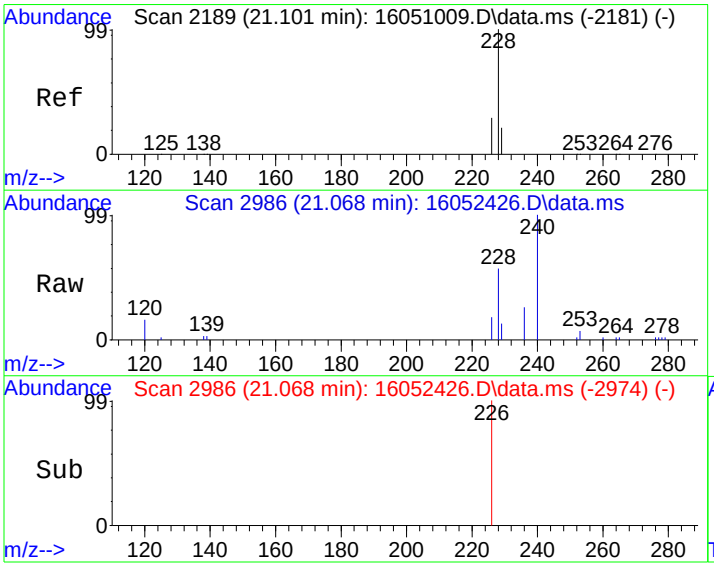


#15
Pyrene
Concen: 9.31 ug/kg
RT: 17.700 min Scan# 2262
Delta R.T. -0.006 min
Lab File: 16052426.D
Acq: 25 May 2016 12:44 am

Tgt Ion:202 Resp: 7101

Ion	Ratio	Lower	Upper
202	100		
101	15.6	0.0	37.3

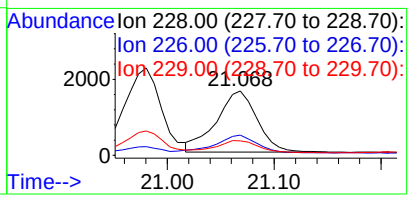


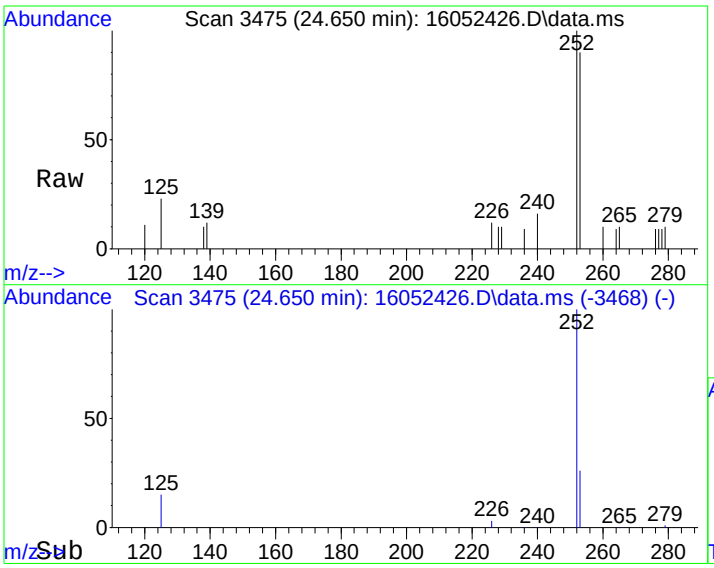


#19
Chrysene
Concen: 5.16 ug/kg
RT: 21.068 min Scan# 2986
Delta R.T. -0.015 min
Lab File: 16052426.D
Acq: 25 May 2016 12:44 am

Tgt Ion:228 Resp: 4261

Ion	Ratio	Lower	Upper
228	100		
226	28.6	8.2	48.2
229	19.3	0.3	40.3

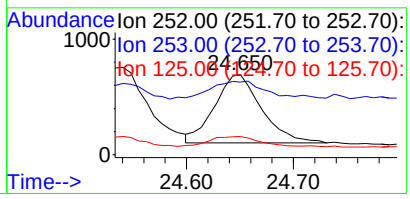


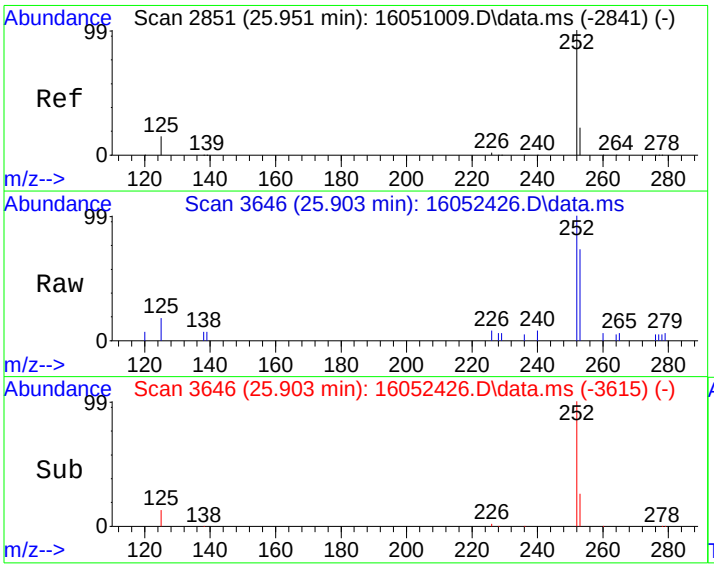


#23
Benzo(j)fluoranthene
Concen: 0.40 ug/kg
RT: 24.650 min Scan# 3475
Delta R.T. -0.015 min
Lab File: 16052426.D
Acq: 25 May 2016 12:44 am

Tgt Ion:252 Resp: 1785

Ion	Ratio	Lower	Upper
252	100		
253	31.1	2.2	42.2
125	16.5	0.0	37.3

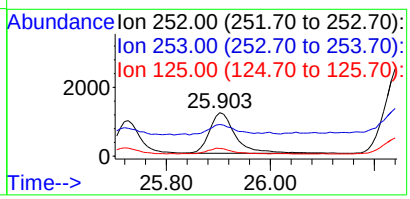




#25
Benzo[a]pyrene
Concen: 5.41 ug/kg
RT: 25.903 min Scan# 3646
Delta R.T. -0.022 min
Lab File: 16052426.D
Acq: 25 May 2016 12:44 am

Tgt Ion:252 Resp: 4025

Ion	Ratio	Lower	Upper
252	100		
253	23.1	2.3	42.3
125	13.0	0.0	33.5



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052427.D
Acq On : 25 May 2016 1:20 am
Operator :
Sample : 1605135-08A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 25 08:46:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1555669	4000.00 ug/kg	95
6) Acenaphthene-d10	12.857	164	1236674	4000.00 ug/kg	99
11) Phenanthrene-d10	14.975	188	2114751	4000.00 ug/kg	72
16) Chrysene-d12	20.981	240	2113153	4000.00 ug/kg	78
20) Perylene-d12	26.240	264	2015550	4000.00 ug/kg	81

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	30456	87.93 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.20%#		
17) 4-Terphenyl-d14	17.583	244	33152	74.12 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.85%#		

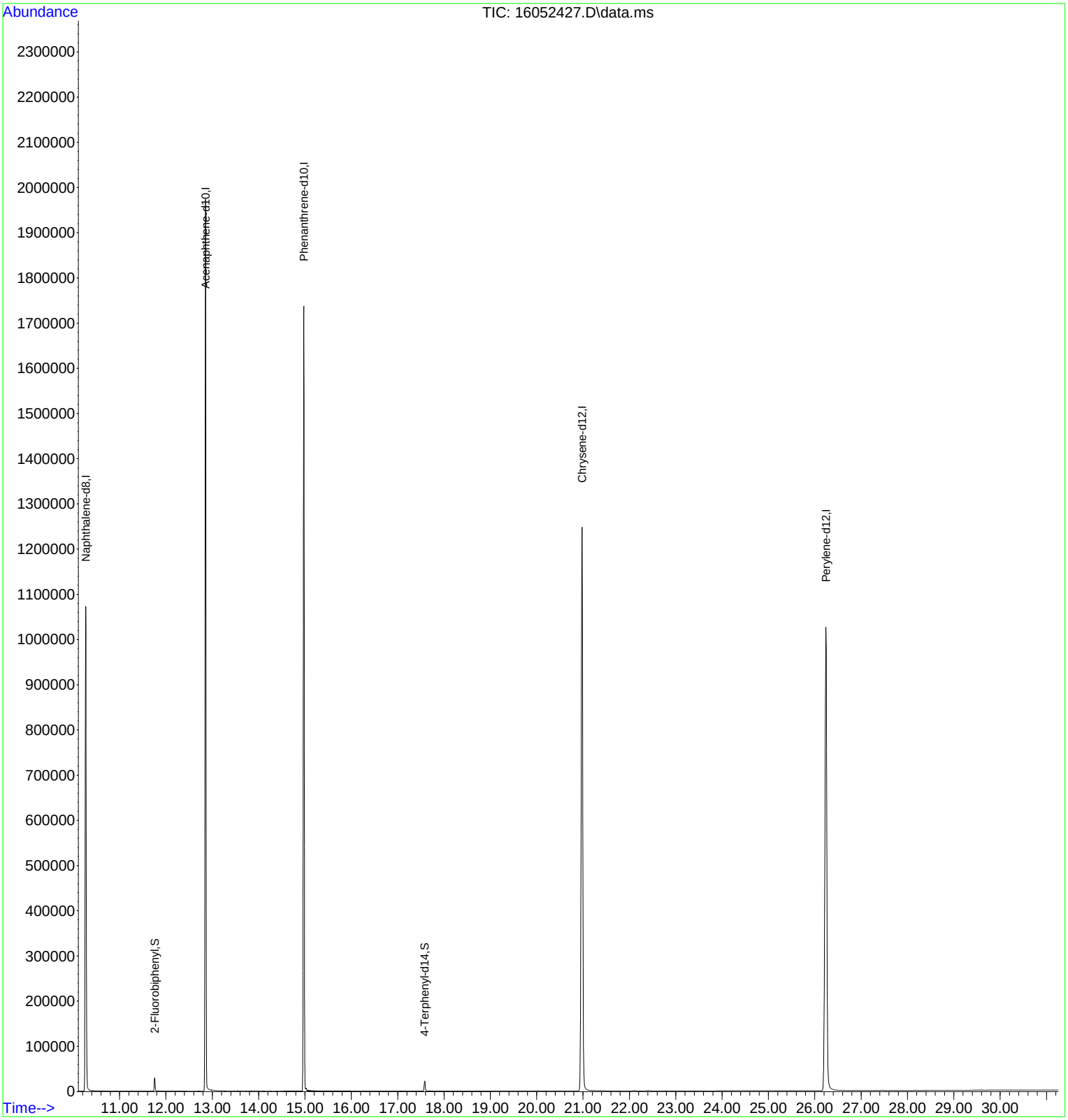
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052427.D
Acq On : 25 May 2016 1:20 am
Operator :
Sample : 1605135-08A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 25 08:46:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052428.D
Acq On : 25 May 2016 1:58 am
Operator :
Sample : 1605135-09A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 25 08:47:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.270	136	1646853	4000.00 ug/kg	101
6) Acenaphthene-d10	12.857	164	1281219	4000.00 ug/kg	102
11) Phenanthrene-d10	14.975	188	2228762	4000.00 ug/kg	76
16) Chrysene-d12	20.981	240	2287791	4000.00 ug/kg	84
20) Perylene-d12	26.248	264	2177442	4000.00 ug/kg	88

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	30303	82.64 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.07%#		
17) 4-Terphenyl-d14	17.586	244	34303	70.84 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.77%#		

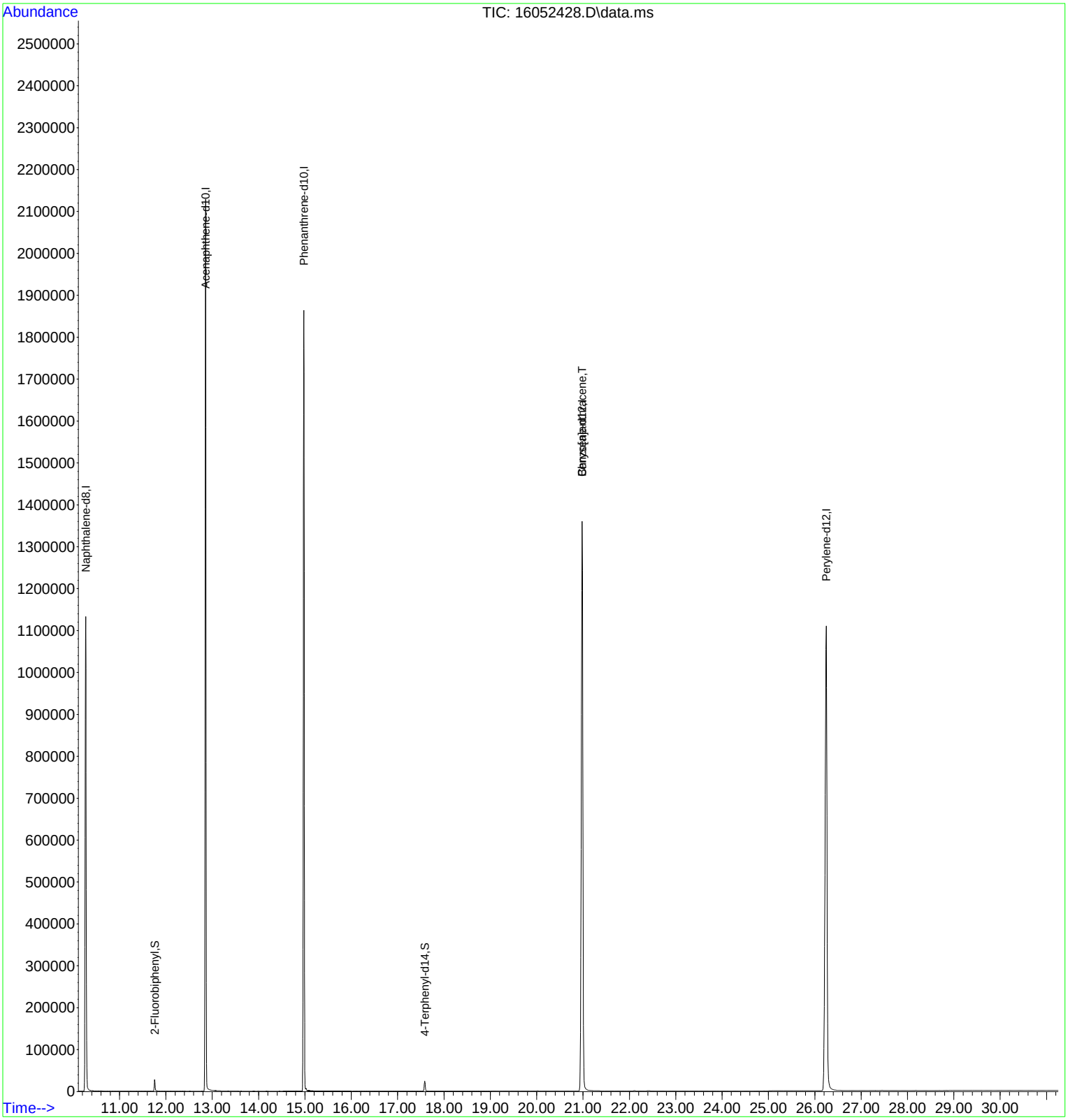
Target Compounds					Qvalue
18) Benzo[a]anthracene	20.981	228	5307	~~7.14 ug/kg~~	~~77~~

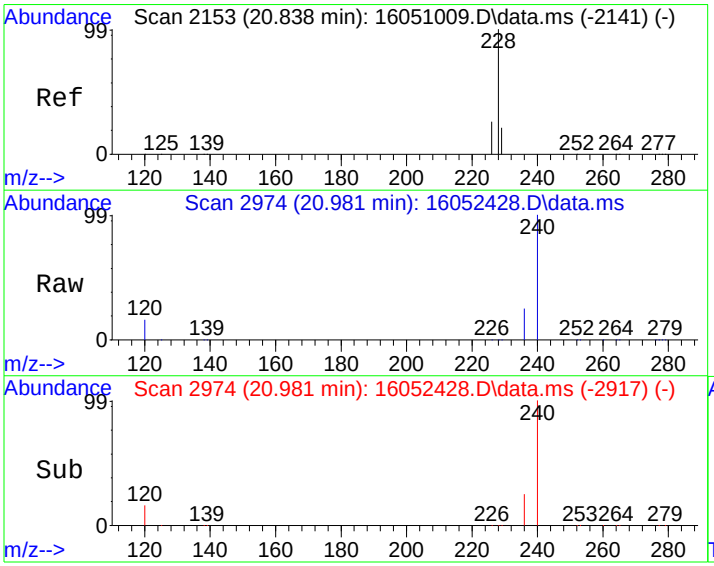
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052428.D
Acq On : 25 May 2016 1:58 am
Operator :
Sample : 1605135-09A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 25 08:47:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

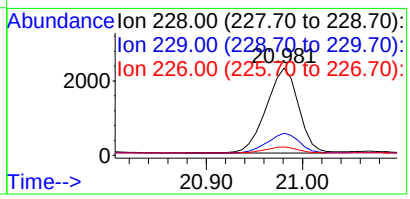




#18
Benzo[a]anthracene
Concen: 7.14 ug/kg
RT: 20.981 min Scan# 2974
Delta R.T. 0.169 min
Lab File: 16052428.D
Acq: 25 May 2016 1:58 am

Tgt Ion:228 Resp: 5307

Ion	Ratio	Lower	Upper
228	100		
229	23.4	0.3	40.3
226	7.1	5.7	45.7



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052429.D
Acq On : 25 May 2016 2:34 am
Operator :
Sample : 1605121-43AMS
Misc : MS
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 25 08:44:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1599503	4000.00	ug/kg	98
6) Acenaphthene-d10	12.857	164	1293623	4000.00	ug/kg	103
11) Phenanthrene-d10	14.977	188	2234890	4000.00	ug/kg	76
16) Chrysene-d12	20.980	240	2149762	4000.00	ug/kg	79
20) Perylene-d12	26.247	264	2079683	4000.00	ug/kg	84

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	29446	82.68	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.07%#			
17) 4-Terphenyl-d14	17.586	244	31501	69.23	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.73%#			

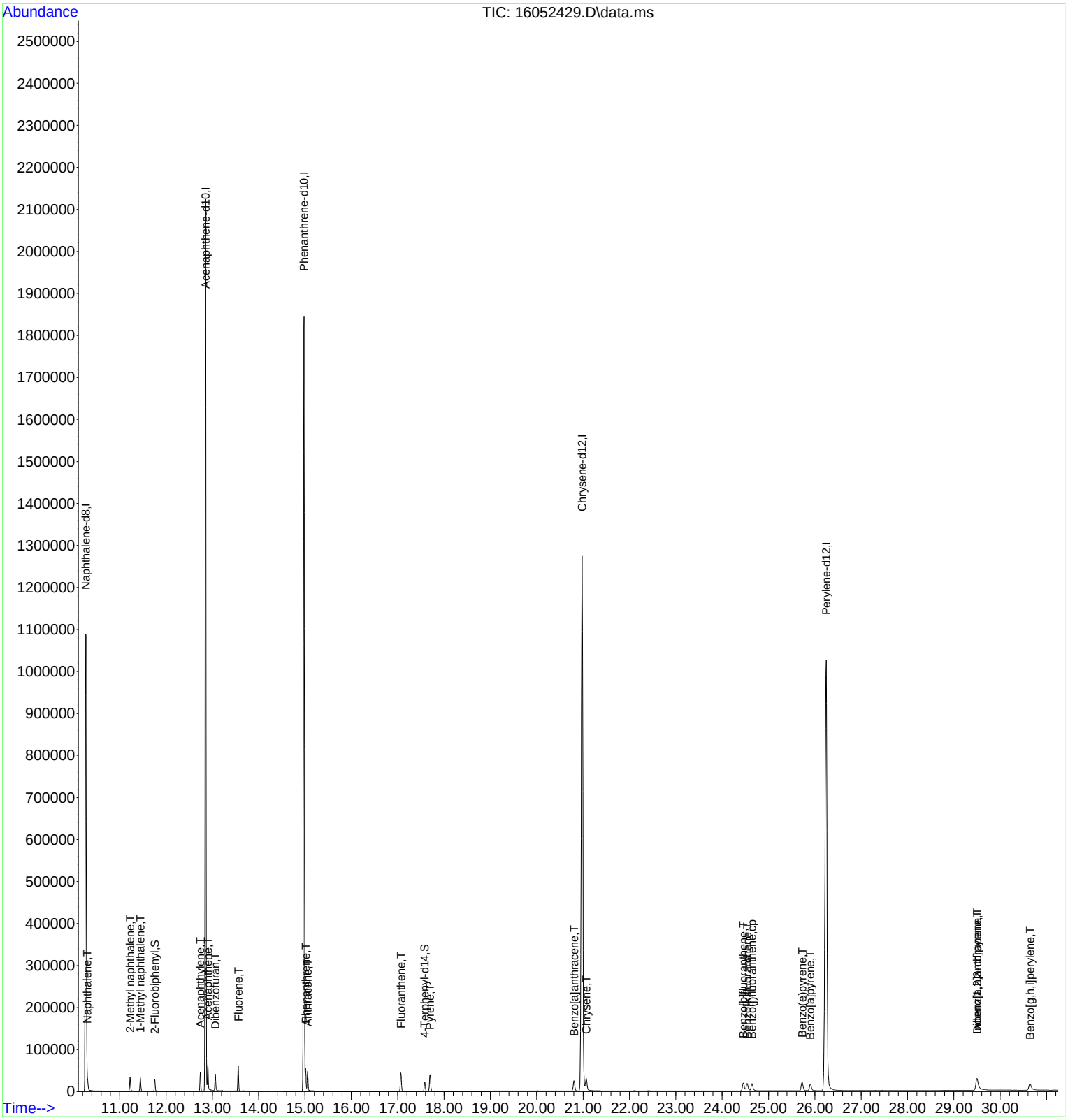
Target Compounds						Qvalue
2) Naphthalene	10.304	128	25807	72.02	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	23046	82.73	ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21455	81.39	ug/kg	98
7) Acenaphthylene	12.739	152	42863	75.80	ug/kg	99
8) Acenaphthene	12.906	153	26988	75.64	ug/kg	99
9) Dibenzofuran	13.063	168	39979	73.55	ug/kg	93
10) Fluorene	13.559	166	33530	67.99	ug/kg	99
12) Phenanthrene	15.012	178	45702	74.32	ug/kg	97
13) Anthracene	15.057	178	45214	72.66	ug/kg	98
14) Fluoranthene	17.067	202	49221	77.50	ug/kg	98
15) Pyrene	17.697	202	47898	77.24	ug/kg	97
18) Benzo[a]anthracene	20.804	228	39870	69.75	ug/kg	99
19) Chrysene	21.068	228	38400	72.01	ug/kg	99
21) Benzo[b]fluoranthene	24.459	252	37661	66.33	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	31433	62.01	ug/kg	98
23) Benzo(j)fluoranthene	24.643	252	33462	66.66	ug/kg	99
24) Benzo(e)pyrene	25.727	252	41806	77.36	ug/kg	99
25) Benzo[a]pyrene	25.902	252	36780	69.49	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.506	276	45073	68.15	ug/kg	97
27) Dibenz[a,h]anthracene	29.492	278	34409	60.64	ug/kg	99
28) Benzo[g,h,i]perylene	30.642	276	39915	69.96	ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052429.D
Acq On : 25 May 2016 2:34 am
Operator :
Sample : 1605121-43AMS
Misc : MS
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 25 08:44:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052430.D
Acq On : 25 May 2016 3:11 am
Operator :
Sample : 1605121-43AMSD
Misc : MSD
ALS Vial : 30 Sample Multiplier: 10

Quant Time: May 25 08:44:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1638457	4000.00 ug/kg	101
6) Acenaphthene-d10	12.856	164	1307736	4000.00 ug/kg	104
11) Phenanthrene-d10	14.976	188	2269709	4000.00 ug/kg	78
16) Chrysene-d12	20.980	240	2178416	4000.00 ug/kg	80
20) Perylene-d12	26.247	264	2109130	4000.00 ug/kg	85

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	29577	81.08 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.03%#		
17) 4-Terphenyl-d14	17.583	244	33026	71.63 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.79%#		

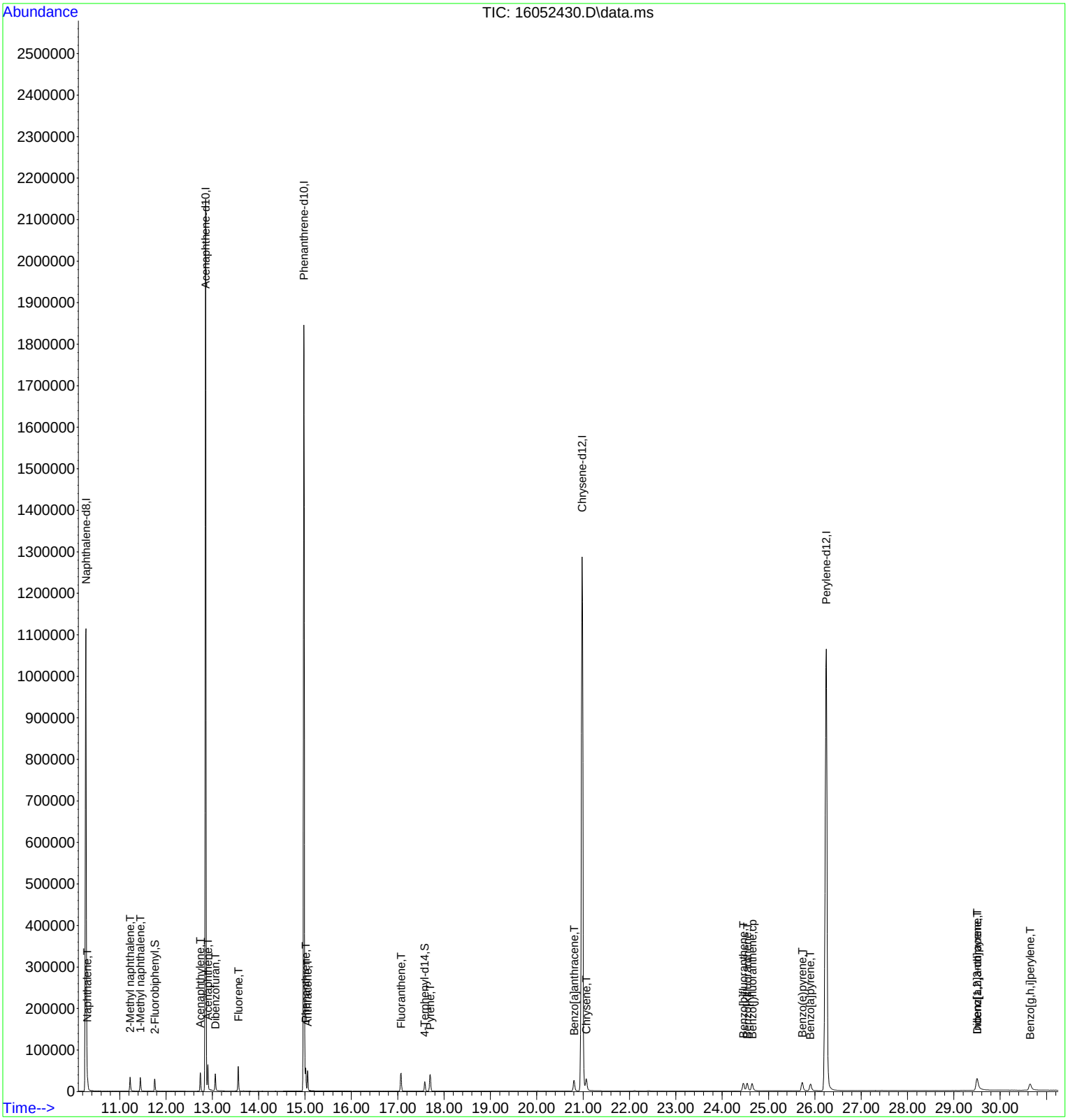
Target Compounds					Qvalue
2) Naphthalene	10.305	128	26674	72.67 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23289	81.62 ug/kg	100
4) 1-Methyl naphthalene	11.448	142	21872	81.00 ug/kg	99
7) Acenaphthylene	12.739	152	43506	76.11 ug/kg	99
8) Acenaphthene	12.906	153	27223	75.47 ug/kg	98
9) Dibenzofuran	13.063	168	40202	73.17 ug/kg	93
10) Fluorene	13.559	166	34199	68.60 ug/kg	99
12) Phenanthrene	15.012	178	47307	75.75 ug/kg	97
13) Anthracene	15.056	178	46702	73.90 ug/kg	98
14) Fluoranthene	17.070	202	50239	77.91 ug/kg	97
15) Pyrene	17.700	202	48943	77.73 ug/kg	96
18) Benzo[a]anthracene	20.804	228	41312	71.37 ug/kg	99
19) Chrysene	21.068	228	39315	72.79 ug/kg	99
21) Benzo[b]fluoranthene	24.459	252	38493	66.87 ug/kg	98
22) Benzo[k]fluoranthene	24.540	252	32279	62.81 ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	34281	67.38 ug/kg	99
24) Benzo(e)pyrene	25.727	252	42907	78.32 ug/kg	99
25) Benzo[a]pyrene	25.910	252	37618	70.09 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.506	276	45872	68.40 ug/kg	100
27) Dibenz[a,h]anthracene	29.492	278	35314	61.42 ug/kg	99
28) Benzo[g,h,i]perylene	30.649	276	40556	70.10 ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052430.D
Acq On : 25 May 2016 3:11 am
Operator :
Sample : 1605121-43AMSD
Misc : MSD
ALS Vial : 30 Sample Multiplier: 10

Quant Time: May 25 08:44:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052431.D
Acq On : 25 May 2016 3:48 am
Operator :
Sample : CCV-160524
Misc : CCV
ALS Vial : 31 Sample Multiplier: 1

Quant Time: May 25 08:44:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.269	136	1822525	4000.00 ug/kg	112
6) Acenaphthene-d10	12.856	164	1494617	4000.00 ug/kg	119
11) Phenanthrene-d10	14.978	188	2715127	4000.00 ug/kg	93
16) Chrysene-d12	20.988	240	2531072	4000.00 ug/kg	93
20) Perylene-d12	26.254	264	2428547	4000.00 ug/kg	98

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	448343	1104.87 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 27.62%#		
17) 4-Terphenyl-d14	17.587	244	526173	982.16 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.55%#		

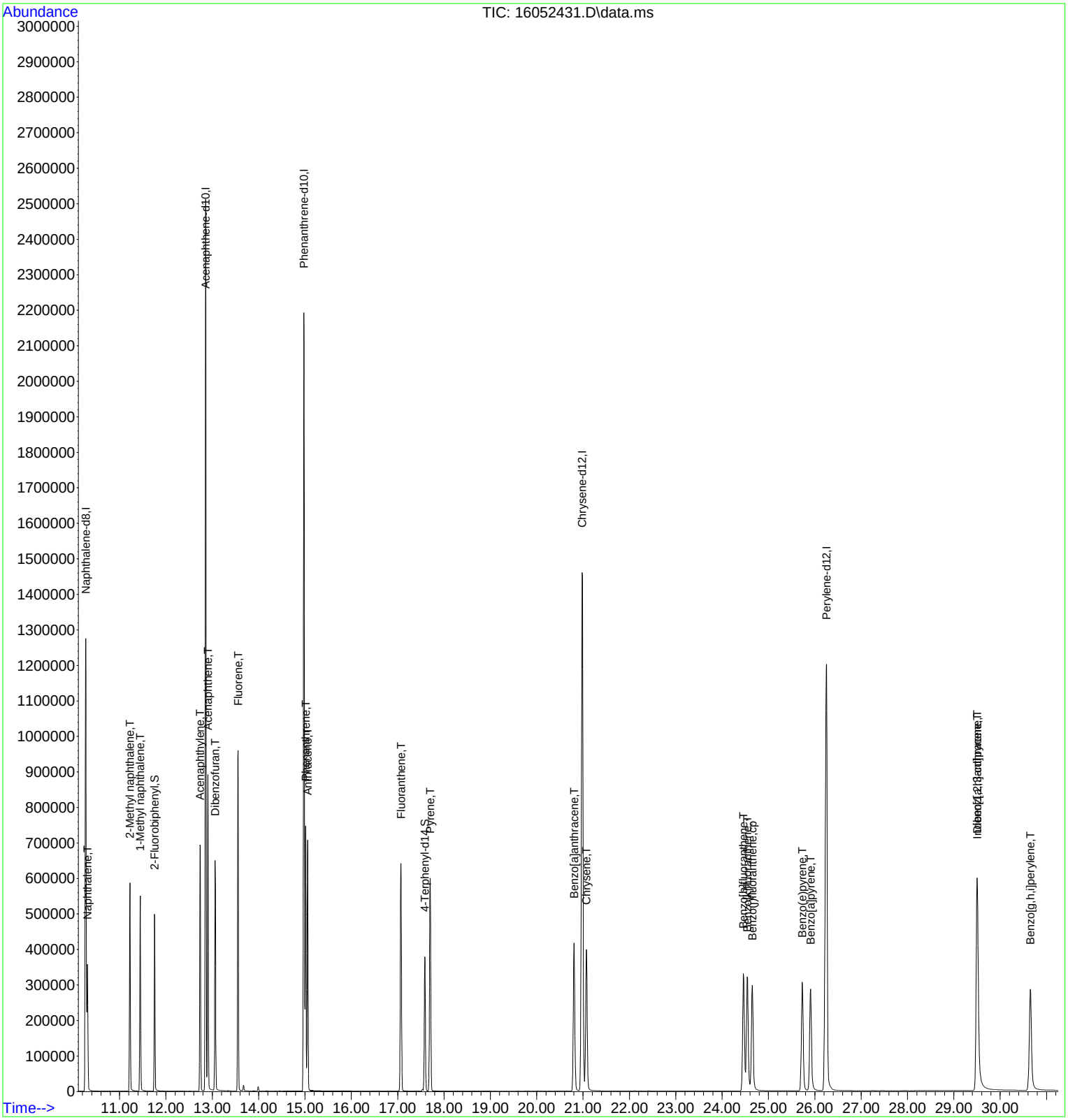
Target Compounds					Qvalue
2) Naphthalene	10.306	128	408400	1000.26 ug/kg	100
3) 2-Methyl naphthalene	11.224	142	354418	1116.62 ug/kg	100
4) 1-Methyl naphthalene	11.446	142	323536	1077.19 ug/kg	100
7) Acenaphthylene	12.738	152	672354	1029.16 ug/kg	99
8) Acenaphthene	12.905	153	414494	1005.47 ug/kg	99
9) Dibenzofuran	13.062	168	608478	968.95 ug/kg	92
10) Fluorene	13.558	166	529839	929.88 ug/kg	99
12) Phenanthrene	15.014	178	704158	942.55 ug/kg	99
13) Anthracene	15.056	178	695501	920.04 ug/kg	99
14) Fluoranthene	17.071	202	721739	981.92 ug/kg	98
15) Pyrene	17.701	202	709025	986.49 ug/kg	97
18) Benzo[a]anthracene	20.804	228	650569	1011.70 ug/kg	100
19) Chrysene	21.075	228	603587	1016.13 ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	635451	998.92 ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	558854	973.26 ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	550898	999.96 ug/kg	99
24) Benzo(e)pyrene	25.727	252	601908	1000.65 ug/kg	99
25) Benzo[a]pyrene	25.910	252	593368	1000.91 ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	737576	1011.18 ug/kg	97
27) Dibenz[a,h]anthracene	29.499	278	608552	1001.72 ug/kg	99
28) Benzo[g,h,i]perylene	30.649	276	627565	997.35 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160524\
Data File : 16052431.D
Acq On : 25 May 2016 3:48 am
Operator :
Sample : CCV-160524
Misc : CCV
ALS Vial : 31 Sample Multiplier: 1

Quant Time: May 25 08:44:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8_160525A
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160525A
Batch Number(s): See Run Log.	SOP: ORGANICS-PAH-01
Matrix: See Run Log.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List

EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	x
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	x
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)	___ Cannot reanalyze (HT out/Lack of Sample)	

General Comments and Impact on Data: **See Run Log.**

Analyst: Don Winston Date: 5/26/2016

Second-Level Review: Janice Whitt Date: 5/31/2016

REVIEWED BY
By Janice Whitt at 4:45:35 PM, 5/31/2016

DHL Analytical, Inc.

Run ID: GCMS8_160525A **Run No.:** 86005

Analytical Run Date: 5/25/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160525	1	PAH_LL_SDOD1	TUNE	R86005	5/25/2016 8:53:00 AM		
ICV-160525	1	PAH_LL_SDOD1	ICV	R86005	5/25/2016 9:31:00 AM		
LCS-75241	1	PAH_LL_SDOD1	LCS	75241	5/25/2016 10:11:00 AM		
MB-75241	1	PAH_LL_SDOD1	MBLK	75241	5/25/2016 10:48:00 AM		
1605135-10A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 11:25:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605135-11A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 12:02:00 PM		
1605135-12A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 12:41:00 PM		
1605135-13A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 1:18:00 PM		
1605135-14A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 1:56:00 PM		
1605135-15A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 2:33:00 PM		
1605135-43A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 3:10:00 PM		
1605135-44A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 3:47:00 PM		
1605135-45A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 4:24:00 PM		
1605144-13A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 5:02:00 PM		
1605144-14A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 5:38:00 PM		
1605144-15A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 6:16:00 PM		
1605144-17A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 6:53:00 PM		
1605144-18A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 7:30:00 PM		
DFTPP2-160525	1	PAH_LL_SDOD1	TUNE	R86005	5/25/2016 8:07:00 PM		
ICV2-160525	1	PAH_LL_SDOD1	ICV	R86005	5/25/2016 8:44:00 PM		
SBLK-160525	1	PAH_LL_SDOD1	SBLK	75241	5/25/2016 9:59:00 PM		
1605144-19A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 10:36:00 PM		
1605144-20A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 11:12:00 PM		
1605144-21A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 11:49:00 PM		
1605135-14AMS	10	PAH_LL_SDOD1	MS	75241	5/26/2016 12:27:00 AM		
1605135-14AMSD	10	PAH_LL_SDOD1	MSD	75241	5/26/2016 1:04:00 AM		
1605098-36A	10	PAH_LL_SDOD1	SAMP	75218	5/26/2016 1:41:00 AM		
1605098-39A	10	PAH_LL_SDOD1	SAMP	75218	5/26/2016 2:18:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

DHL Analytical, Inc.

Run ID: **GCMS8_160525A** **Run No.:** 86005

CCV-160525	1	PAH_LL_SDOD1	CCV	R86005	5/26/2016 2:55:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\msdchem\1\sequence\160525.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160525\
Instrument Name: GCMS #8
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line			Sample Name/Misc Info		
1)	Sample	1	16052501	DFTPPPAH	DFTPP-160525
2)	Sample	2	16052502	PAH160517	ICV-160525
3)	Sample	3	16052503	PAH160517	LCS-75240
4)	Sample	4	16052504	PAH160517	MB-75240
5)	Sample	5	16052505	PAH160517	1605135-10A
6)	Sample	6	16052506	PAH160517	1605135-11A
7)	Sample	7	16052507	PAH160517	1605135-12A
8)	Sample	8	16052508	PAH160517	1605135-13A
9)	Sample	9	16052509	PAH160517	1605135-14A
10)	Sample	10	16052510	PAH160517	1605135-15A
11)	Sample	11	16052511	PAH160517	1605135-43A
12)	Sample	12	16052512	PAH160517	1605135-44A
13)	Sample	13	16052513	PAH160517	1605135-45A
14)	Sample	14	16052514	PAH160517	1605144-13A
15)	Sample	15	16052515	PAH160517	1605144-14A
16)	Sample	16	16052516	PAH160517	1605144-15A
17)	Sample	17	16052517	PAH160517	1605144-17A
18)	Sample	18	16052518	PAH160517	1605144-18A
19)	Sample	19	16052519	DFTPPPAH	DFTPP2-160525
20)	Sample	20	16052520	PAH160517	ICV2-160525
21)	Sample	21	16052521	PAH160517	SBLK
22)	Sample	22	16052522	PAH160517	SBLK-160525
23)	Sample	23	16052523	PAH160517	1605144-19A
24)	Sample	24	16052524	PAH160517	1605144-20A
25)	Sample	25	16052525	PAH160517	1605144-21A
26)	Sample	26	16052526	PAH160517	1605135-14AMS
27)	Sample	27	16052527	PAH160517	1605135-14AMSD
28)	Sample	28	16052528	PAH160517	1605098-36A
29)	Sample	29	16052529	PAH160517	1605098-39A
30)	Sample	30	16052530	PAH160517	CCV-160525

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 1:57:19 PM**
Digestion:
Prep End Date: **5/19/2016 4:40:00 PM**

Prep Batch **75241** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605135-10A	Soil		10.05	10	0.995	1	of	1	
1605135-11A	Soil		10.78	10	0.928	1	of	1	
1605135-12A	Soil		10.06	10	0.994	1	of	1	
1605135-13A	Soil		10.1	10	0.990	1	of	1	
1605135-14A	Soil		10.2	10	0.980	1	of	3	
1605135-14AMS	Soil		10	10	1.000	1	of		
1605135-14AMSD	Soil		10.15	10	0.985	1	of		
1605135-15A	Soil		10.07	10	0.993	1	of	1	
1605135-43A	Soil		10.03	10	0.997	1	of	1	
1605135-44A	Soil		10.06	10	0.994	1	of	1	
1605135-45A	Soil		10.03	10	0.997	1	of	1	
1605144-13A	Soil		10.13	10	0.987	1	of	1	
1605144-14A	Soil		10.12	10	0.988	1	of	1	
1605144-15A	Soil		10	10	1.000	1	of	1	
1605144-17A	Soil		10.12	10	0.988	1	of	1	
1605144-18A	Soil		10.65	10	0.939	1	of	1	
1605144-19A	Soil		10.05	10	0.995	1	of	1	
1605144-20A	Soil		10.1	10	0.990	1	of	1	
1605144-21A	Soil		10.02	10	0.998	1	of	1	
LCS-75241	Soil		10	10	1.000	1	of		
MB-75241	Soil		10	10	1.000	1	of		

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 4:18:59 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 1:57:19 PM**
Digestion:
Prep End Date: 5/19/2016 @ 4:40 PM

Prep Batch **75241** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-10A	Soil		10 .05	10	1.000	1 of 1	
1605135-11A	Soil		10 .78	10	1.000	1 of 1	
1605135-12A	Soil		10 .06	10	1.000	1 of 1	
1605135-13A	Soil		10 .10	10	1.000	1 of 1	
1605135-14A	Soil		10 .20	10	1.000	of 3	
1605135-14AMS	Soil		10 .06	10	1.000	of	
1605135-14AMSD	Soil		10 .15	10	1.000	of	
1605135-15A	Soil		10 .07	10	1.000	1 of 1	
1605135-43A	Soil		10 .03	10	1.000	1 of 1	
1605135-44A	Soil		10 .00	10	1.000	1 of 1	
1605135-45A	Soil		10 .03	10	1.000	1 of 1	
1605144-13A	Soil		10 .13	10	1.000	1 of 1	
1605144-14A	Soil		10 .12	10	1.000	1 of 1	
1605144-15A	Soil		10 .00	10	1.000	1 of 1	
1605144-17A	Soil		10 .12	10	1.000	1 of 1	
1605144-18A	Soil		10 .05	10	1.000	1 of 1	
1605144-19A	Soil		10 .05	10	1.000	1 of 1	
1605144-20A	Soil		10 .10	10	1.000	1 of 1	
1605144-21A	Soil		10 .02	10	1.000	1 of 1	
LCS-75241	Soil		10	10	1.000	of	
MB-75241	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 4:18:56 PM, 5/31/2016

5/19/16

AR 05/19/16

5/19/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 3:40:00 PM**
Digestion: **Start: 5/16/2016 4:45:00 PM / Stop: 5/18/2016 11:00:00 AM**
Prep End Date: **5/18/2016 3:00:00 PM**

Prep Batch **75188** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-41A	Soil		0	0	#Num!	1 of 1	
1605121-42A	Soil		0	0	#Num!	1 of 1	
1605121-43A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay MS/MSD							
1605121-44A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-45A	Soil		0	0	#Num!	1 of 1	
1605135-01A	Soil		0	0	#Num!	1 of 1	
1605135-02A	Soil		0	0	#Num!	1 of 1	
1605135-03A	Soil		0	0	#Num!	1 of 1	
1605135-04A	Soil		0	0	#Num!	1 of 1	
1605135-05A	Soil		0	0	#Num!	1 of 1	
1605135-06A	Soil		0	0	#Num!	1 of 1	
1605135-07A	Soil		0	0	#Num!	1 of 1	
1605135-08A	Soil		0	0	#Num!	1 of 1	
1605135-09A	Soil		0	0	#Num!	1 of 1	
1605135-10A	Soil		0	0	#Num!	1 of 1	
1605135-11A	Soil		0	0	#Num!	1 of 1	
1605135-12A	Soil		0	0	#Num!	1 of 1	
1605135-13A	Soil		0	0	#Num!	1 of 1	
1605135-14A	Soil		0	0	#Num!	of 3	
Extra sub sampled for MS/MSD							
1605135-15A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 4:22:34 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 2:17:28 PM**
Digestion: **Start: 5/17/2016 5:00:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date: **5/18/2016 10:00:00 AM**

Prep Batch **75212** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

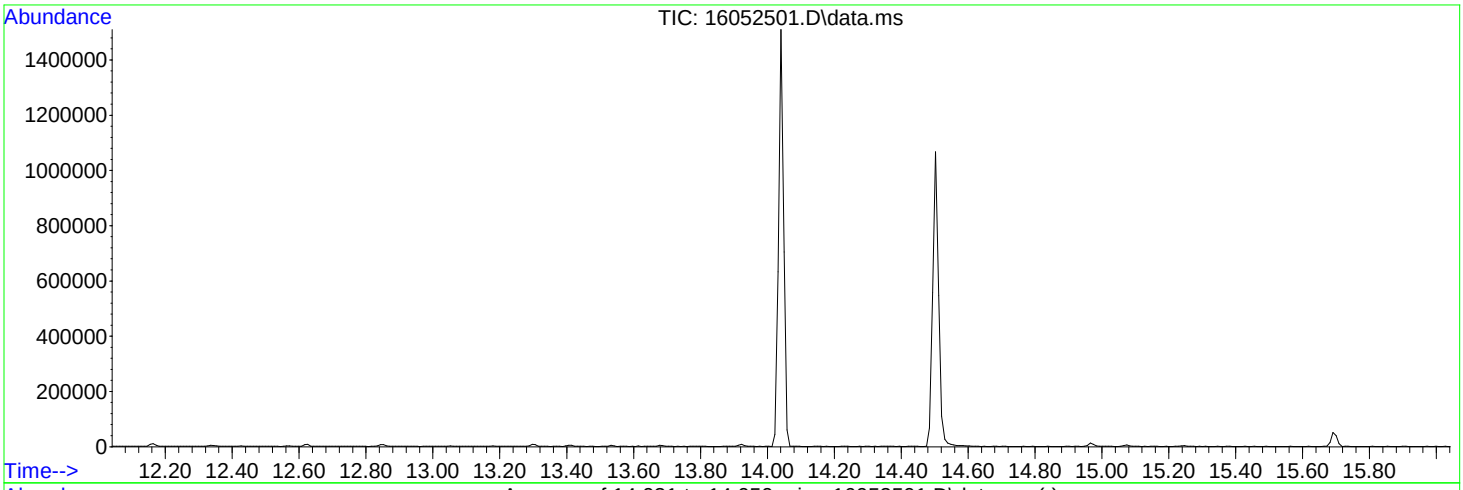
Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-43A	Soil		0	0	#Num!	1 of 1	
Subsampled extra for MS/MSD							
1605135-44A	Soil		0	0	#Num!	1 of 1	
1605135-45A	Soil		0	0	#Num!	1 of 1	
1605144-13A	Soil		0	0	#Num!	1 of 1	
Subsampled extra MS/MSD							
1605144-14A	Soil		0	0	#Num!	1 of 1	
1605144-15A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 4:22:36 PM, 5/31/2016

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052501.D
Acq On : 25 May 2016 8:53 am
Operator :
Sample : DFTPP-160525
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

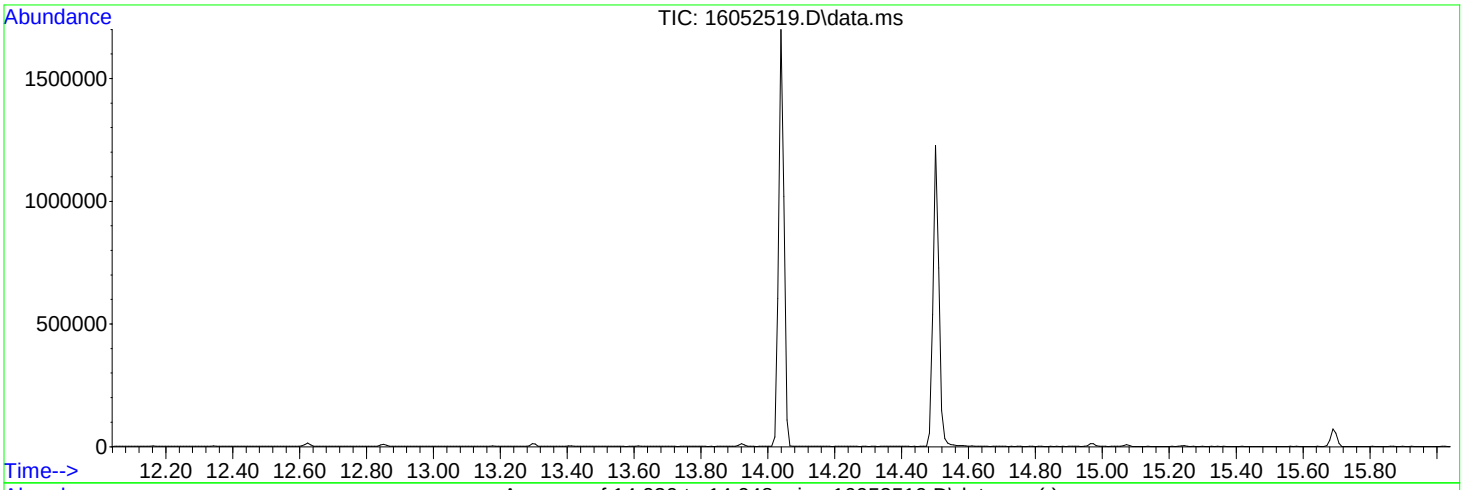
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.4	34181	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.1	38708	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.5	44912	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	96589	PASS
199	198	5	9	6.9	6644	PASS
275	198	10	60	31.3	30208	PASS
365	198	1	200	3.7	3576	PASS
441	442	0.01	24	16.2	30808	PASS
442	198	50	400	197.1	190405	PASS
443	442	15	24	19.6	37297	PASS

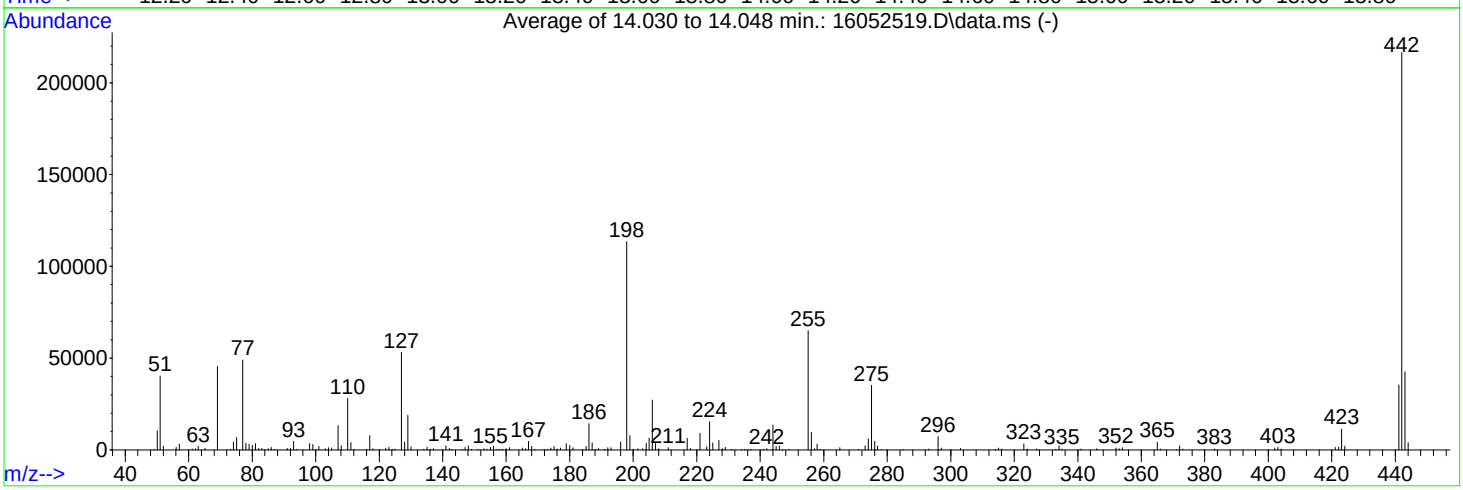
REVIEWED BY
By Janice Whitt at 4:22:39 PM, 5/31/2016

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052519.D
Acq On : 25 May 2016 8:07 pm
Operator :
Sample : DFTPP2-160525
Misc : TUNE
ALS Vial : 19 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015





AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.4	40180	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.0	45389	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.8	53149	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	113477	PASS
199	198	5	9	6.8	7728	PASS
275	198	10	60	30.9	35072	PASS
365	198	1	200	3.6	4032	PASS
441	442	0.01	24	16.3	35275	PASS
442	198	50	400	190.9	216600	PASS
443	442	15	24	19.6	42516	PASS

REVIEWED BY
By Janice Whitt at 4:22:45 PM, 5/31/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052502.D
Acq On : 25 May 2016 9:31 am
Operator :
Sample : ICV-160525
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 25 15:49:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1461647	4000.00	ug/kg	90
6) Acenaphthene-d10	12.856	164	1227683	4000.00	ug/kg	98
11) Phenanthrene-d10	14.974	188	2343674	4000.00	ug/kg	80
16) Chrysene-d12	20.980	240	2251506	4000.00	ug/kg	83
20) Perylene-d12	26.247	264	2147295	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.752	172	722975	2221.54	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 55.54%			
17) 4-Terphenyl-d14	17.586	244	926637	1944.45	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.61%#			

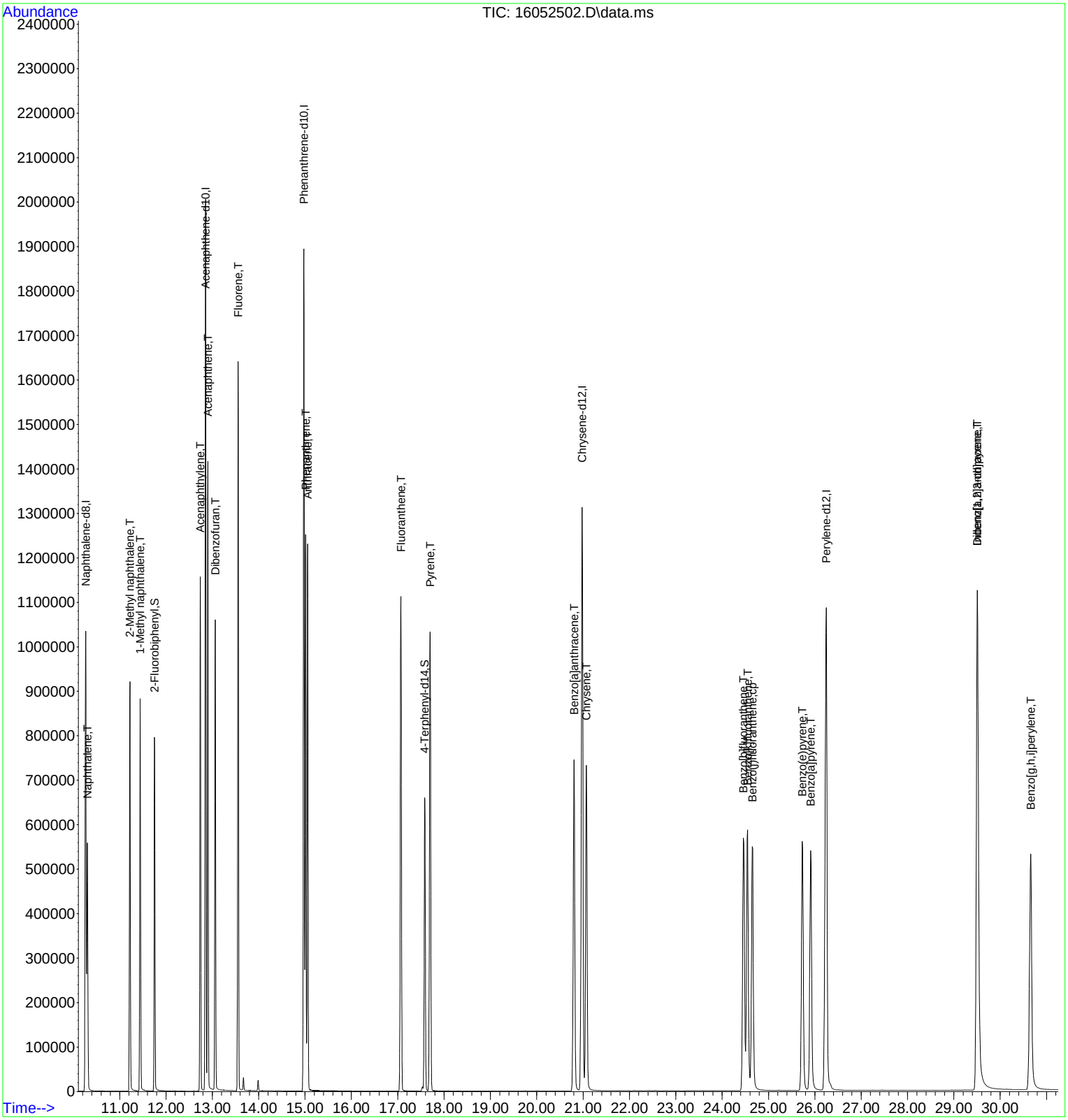
Target Compounds						Qvalue
2) Naphthalene	10.304	128	666393	2035.11	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	573828	2254.25	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	524824	2178.78	ug/kg	99
7) Acenaphthylene	12.739	152	1106441	2061.85	ug/kg	100
8) Acenaphthene	12.905	153	690106	2038.03	ug/kg	99
9) Dibenzofuran	13.063	168	1011668	1961.27	ug/kg	98
10) Fluorene	13.554	166	888356	1898.08	ug/kg	100
12) Phenanthrene	15.012	178	1207793	1872.92	ug/kg	100
13) Anthracene	15.056	178	1210578	1855.22	ug/kg	100
14) Fluoranthene	17.067	202	1271086	2067.00	ug/kg	99
15) Pyrene	17.700	202	1247644	2064.16	ug/kg	98
18) Benzo[a]anthracene	20.805	228	1178703	2117.26	ug/kg	100
19) Chrysene	21.068	228	1081869	2100.98	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	1158667	2106.28	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	1025492	2054.91	ug/kg	100
23) Benzo(j)fluoranthene	24.658	252	1000503	2104.00	ug/kg	99
24) Benzo(e)pyrene	25.727	252	1099003	2117.76	ug/kg	100
25) Benzo[a]pyrene	25.910	252	1086115	2109.17	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	1333492	2117.79	ug/kg	96
27) Dibenz[a,h]anthracene	29.507	278	1106542	2114.74	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	1143981	2104.66	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052502.D
Acq On : 25 May 2016 9:31 am
Operator :
Sample : ICV-160525
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

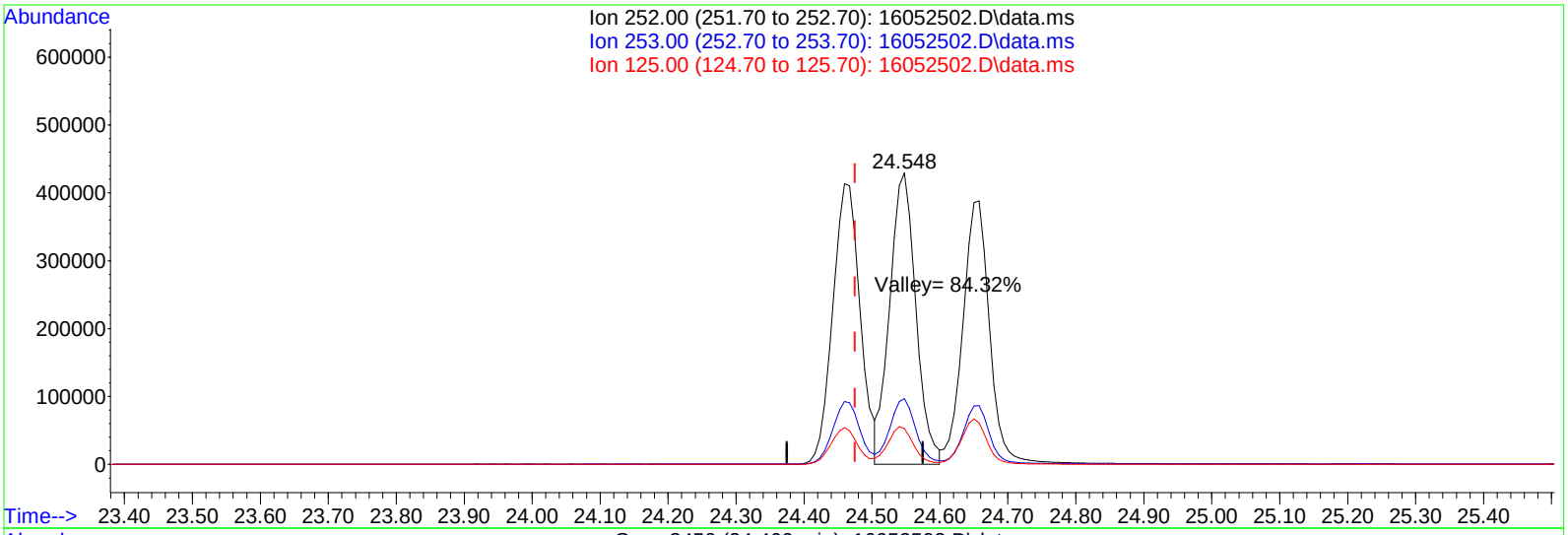
Quant Time: May 25 15:49:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

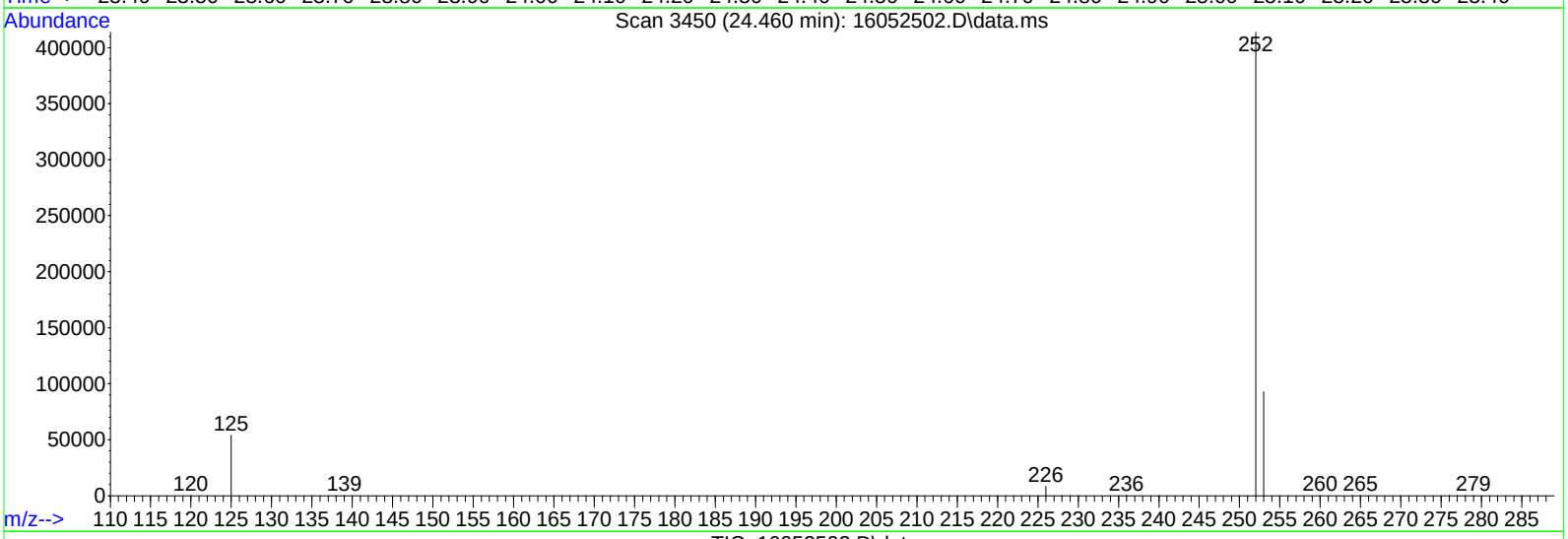


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052502.D
Acq On : 25 May 2016 9:31 am
Operator :
Sample : ICV-160525
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 25 15:49:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052502.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.460min (-0.015) 2106.28ug/kg

response 1158667

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.32
125.00	12.20	13.01
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052503.D
Acq On : 25 May 2016 10:11 am
Operator :
Sample : LCS-75241
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 25 16:01:14 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1377827	4000.00 ug/kg	85
6) Acenaphthene-d10	12.856	164	1020324	4000.00 ug/kg	81
11) Phenanthrene-d10	14.974	188	2014624	4000.00 ug/kg	69
16) Chrysene-d12	20.980	240	2217671	4000.00 ug/kg	82
20) Perylene-d12	26.246	264	2076653	4000.00 ug/kg	84

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	248921	811.41 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.29%#		
17) 4-Terphenyl-d14	17.584	244	357238	761.06 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 19.03%#		

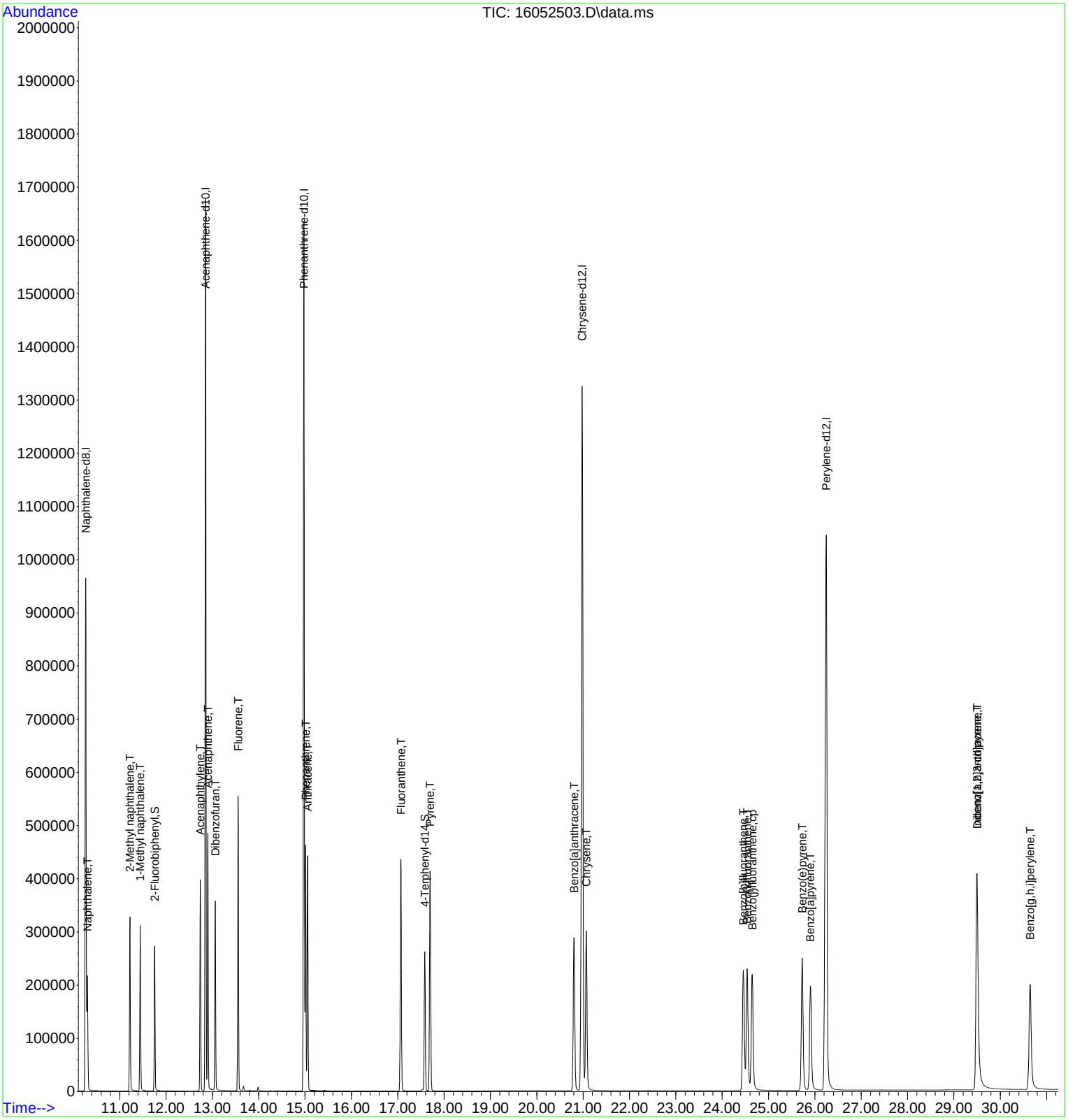
Target Compounds					Qvalue
2) Naphthalene	10.304	128	247639	802.28 ug/kg	100
3) 2-Methyl naphthalene	11.221	142	199482	831.33 ug/kg	100
4) 1-Methyl naphthalene	11.443	142	183431	807.83 ug/kg	99
7) Acenaphthylene	12.738	152	366428	821.61 ug/kg	99
8) Acenaphthene	12.905	153	227174	807.24 ug/kg	99
9) Dibenzofuran	13.062	168	338219	788.94 ug/kg	100
10) Fluorene	13.553	166	294288	756.57 ug/kg	99
12) Phenanthrene	15.012	178	432770	780.71 ug/kg	98
13) Anthracene	15.054	178	430952	768.31 ug/kg	98
14) Fluoranthene	17.068	202	492019	899.95 ug/kg	98
15) Pyrene	17.697	202	486629	910.73 ug/kg	97
18) Benzo[a]anthracene	20.804	228	467518	825.87 ug/kg	99
19) Chrysene	21.068	228	434176	830.29 ug/kg	99
21) Benzo[b]fluoranthene	24.459	252	450904	825.90 ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	406828	826.55 ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	403639	853.85 ug/kg	99
24) Benzo(e)pyrene	25.726	252	474267	920.34 ug/kg	99
25) Benzo[a]pyrene	25.902	252	407255	800.57 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.506	276	512582	818.08 ug/kg	98
27) Dibenz[a,h]anthracene	29.491	278	422341	808.84 ug/kg	99
28) Benzo[g,h,i]perylene	30.649	276	437539	809.66 ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052503.D
Acq On : 25 May 2016 10:11 am
Operator :
Sample : LCS-75241
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 25 16:01:14 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052504.D
Acq On : 25 May 2016 10:48 am
Operator :
Sample : MB-75241
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 25 16:01:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.269	136	1444229	4000.00 ug/kg	89
6) Acenaphthene-d10	12.856	164	1150181	4000.00 ug/kg	92
11) Phenanthrene-d10	14.974	188	2155478	4000.00 ug/kg	74
16) Chrysene-d12	20.981	240	2267486	4000.00 ug/kg	84
20) Perylene-d12	26.240	264	2158786	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	259448	806.84 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.17%#		
17) 4-Terphenyl-d14	17.581	244	357629	745.16 ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.63%#		

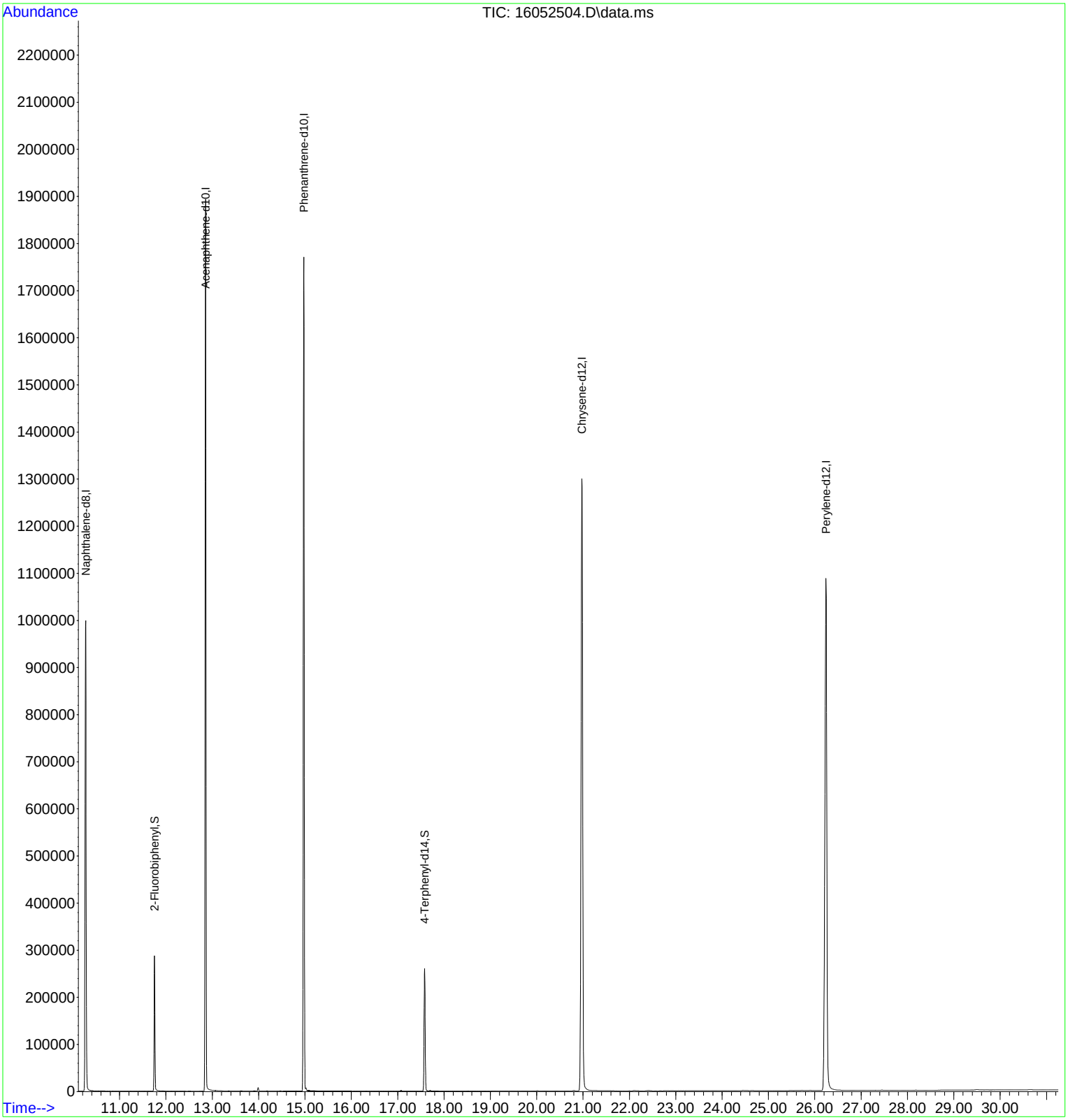
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052504.D
Acq On : 25 May 2016 10:48 am
Operator :
Sample : MB-75241
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 25 16:01:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052505.D
Acq On : 25 May 2016 11:25 am
Operator :
Sample : 1605135-10A
Misc : SAMP
ALS Vial : 5 Sample Multiplier: 10

Quant Time: May 25 15:49:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1562265	4000.00	ug/kg	96
6) Acenaphthene-d10	12.852	164	1258887	4000.00	ug/kg	100
11) Phenanthrene-d10	14.975	188	2175733	4000.00	ug/kg	74
16) Chrysene-d12	20.980	240	2205941	4000.00	ug/kg	81
20) Perylene-d12	26.239	264	2100432	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	31391	90.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.26%#			
17) 4-Terphenyl-d14	17.583	244	35533	76.10	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.90%#			

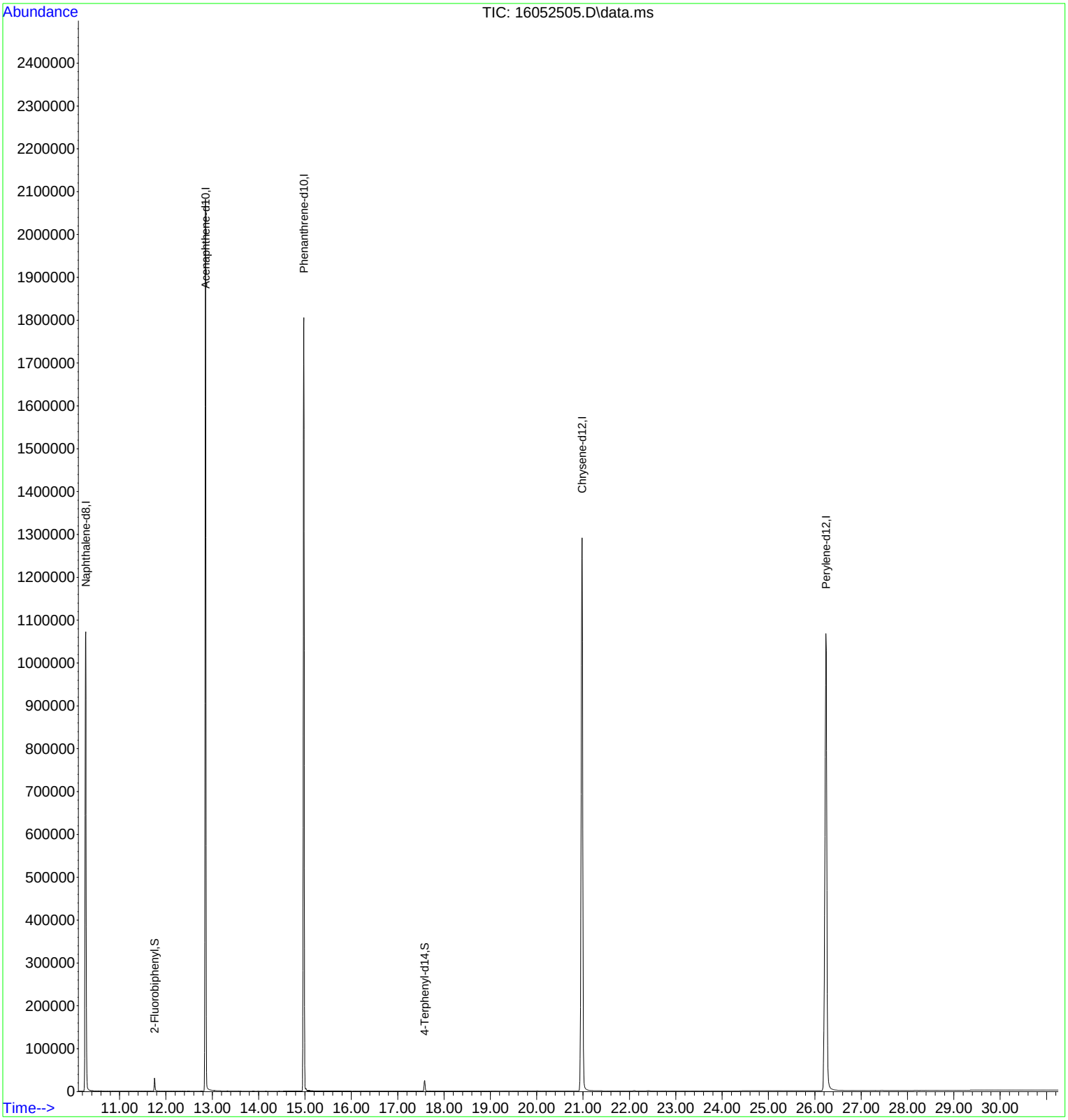
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052505.D
Acq On : 25 May 2016 11:25 am
Operator :
Sample : 1605135-10A
Misc : SAMP
ALS Vial : 5 Sample Multiplier: 10

Quant Time: May 25 15:49:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052506.D
Acq On : 25 May 2016 12:02 pm
Operator :
Sample : 1605135-11A
Misc : SAMP
ALS Vial : 6 Sample Multiplier: 10

Quant Time: May 25 15:49:54 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1576227	4000.00	ug/kg	97
6) Acenaphthene-d10	12.856	164	1294865	4000.00	ug/kg	103
11) Phenanthrene-d10	14.974	188	2247708	4000.00	ug/kg	77
16) Chrysene-d12	20.980	240	2272417	4000.00	ug/kg	84
20) Perylene-d12	26.239	264	2151745	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	33398	95.16	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.38%#			
17) 4-Terphenyl-d14	17.581	244	37650	78.28	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.96%#			

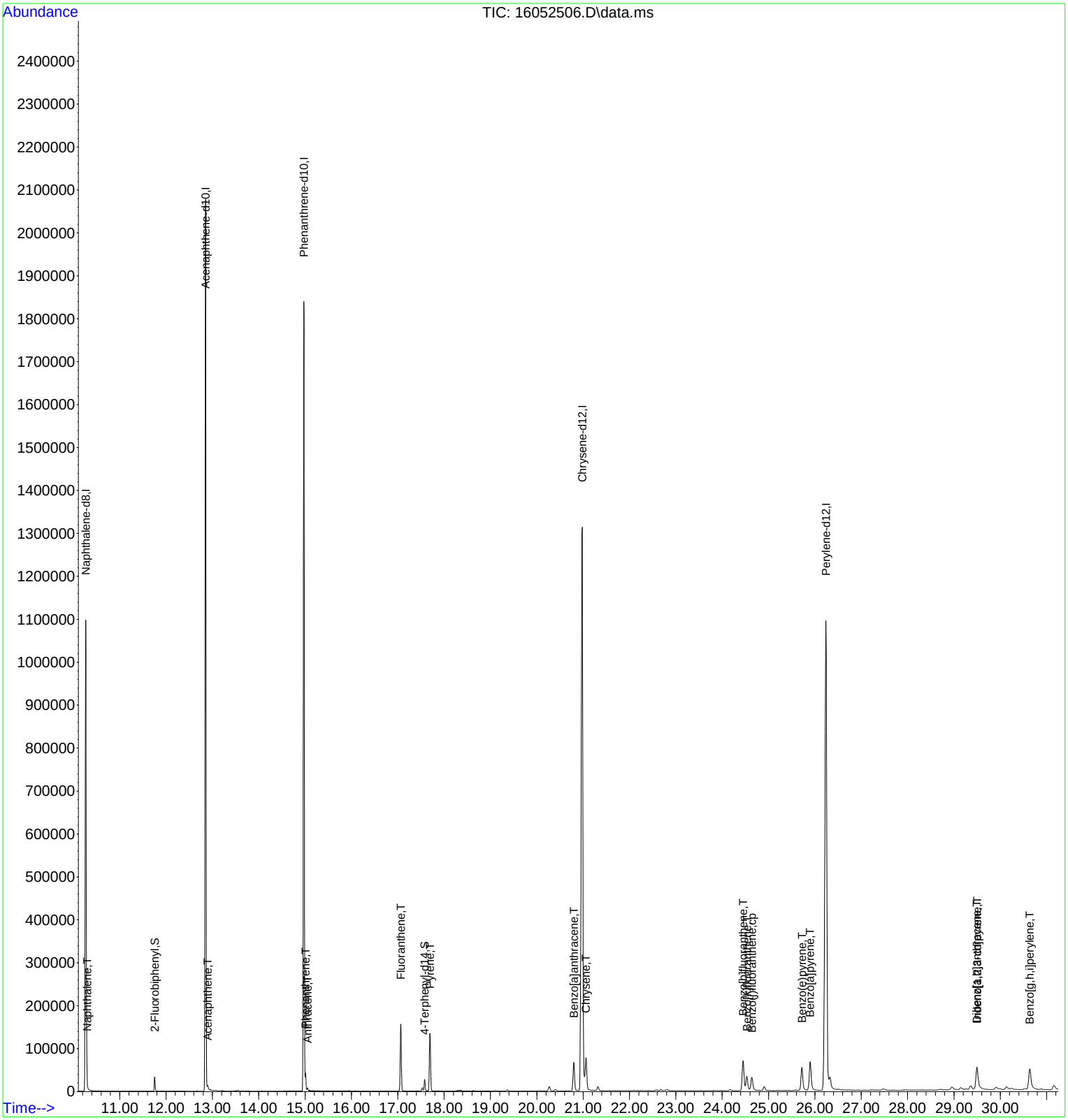
Target Compounds						Qvalue
2) Naphthalene	10.304	128	2379	6.74	ug/kg	100
8) Acenaphthene	12.905	153	3537	9.90	ug/kg	99
12) Phenanthrene	15.009	178	34141	55.20	ug/kg	98
13) Anthracene	15.054	178	6384	10.20	ug/kg	97
14) Fluoranthene	17.065	202	172353	276.41	ug/kg	97
15) Pyrene	17.694	202	160598	263.88	ug/kg	97
18) Benzo[a]anthracene	20.797	228	106253	179.05	ug/kg	99
19) Chrysene	21.060	228	129226	236.09	ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	140222	243.96	ug/kg	99
22) Benzo[k]fluoranthene	24.532	252	58362	112.25	ug/kg	97
23) Benzo(j)fluoranthene	24.642	252	58966	115.89	ug/kg	90
24) Benzo(e)pyrene	25.719	252	108466	198.22	ug/kg	97
25) Benzo[a]pyrene	25.895	252	144682	270.94	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.499	276	107632	161.34	ug/kg	92
27) Dibenz[a,h]anthracene	29.484	278	16616	25.88	ug/kg	96
28) Benzo[g,h,i]perylene	30.642	276	116846	204.01	ug/kg	97

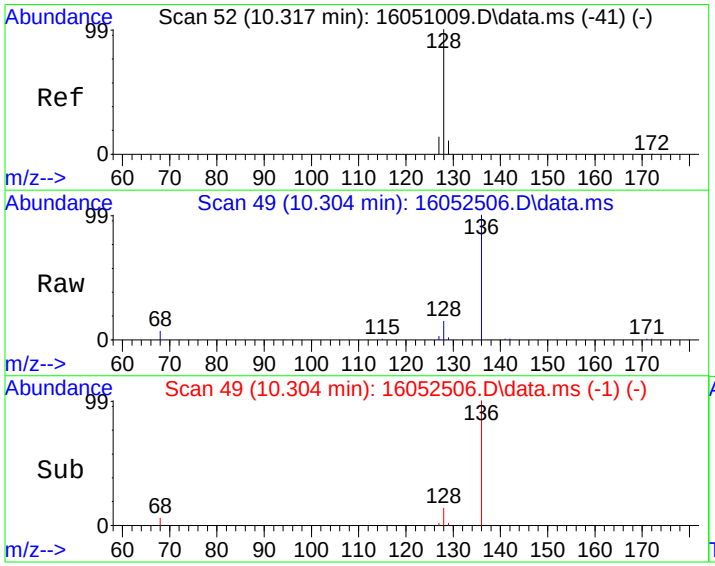
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052506.D
Acq On : 25 May 2016 12:02 pm
Operator :
Sample : 1605135-11A
Misc : SAMP
ALS Vial : 6 Sample Multiplier: 10

Quant Time: May 25 15:49:54 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

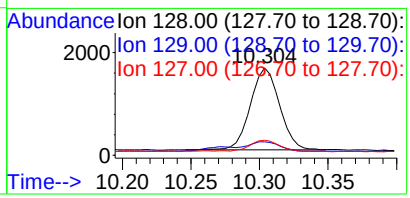


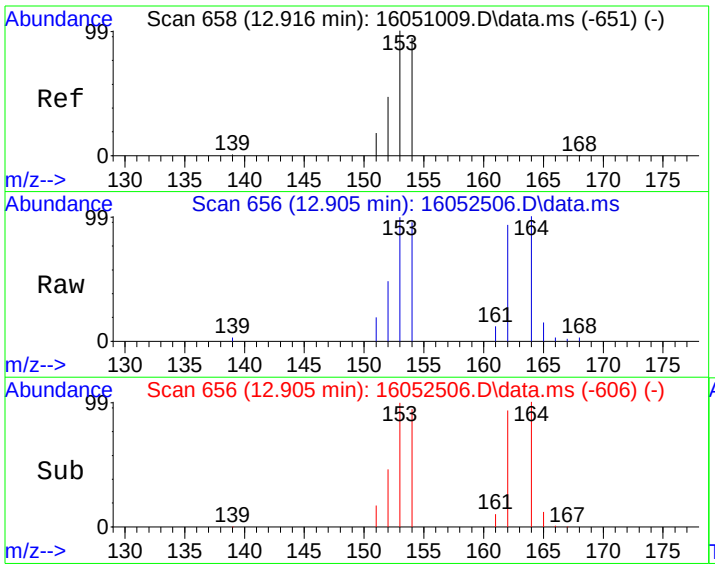


#2
Naphthalene
Concen: 6.74 ug/kg
RT: 10.304 min Scan# 49
Delta R.T. -0.006 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:128 Resp: 2379

Ion	Ratio	Lower	Upper
128	100		
129	11.1	0.0	31.3
127	13.6	0.0	33.6

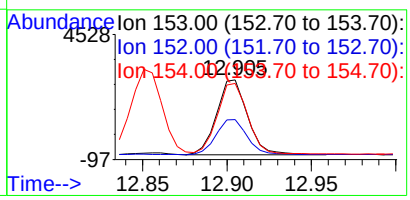


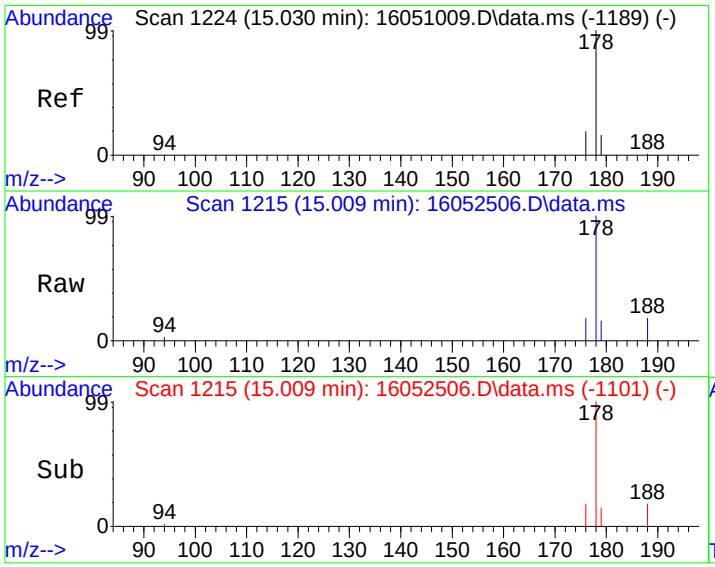


#8
Acenaphthene
Concen: 9.90 ug/kg
RT: 12.905 min Scan# 656
Delta R.T. -0.006 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:153 Resp: 3537

Ion	Ratio	Lower	Upper
153	100		
152	46.9	26.5	66.5
154	94.5	76.3	116.3

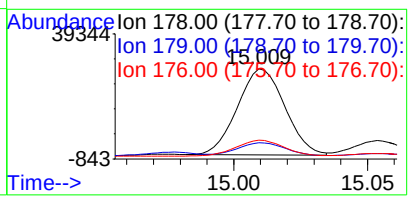


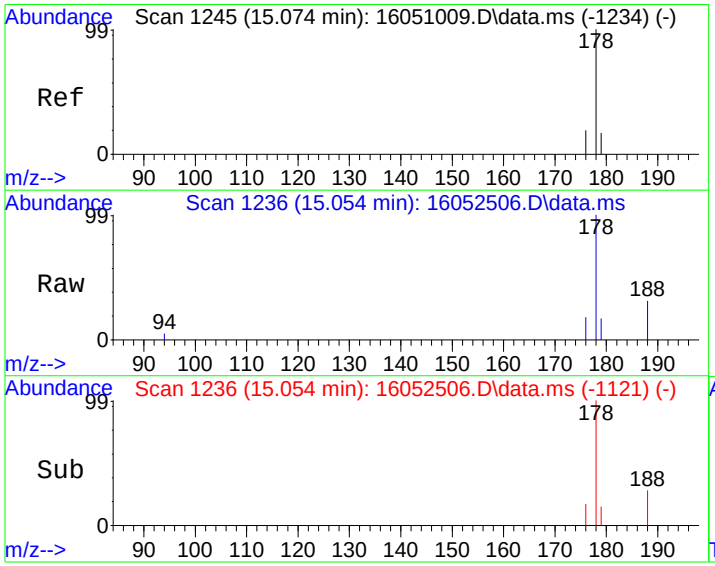


#12
Phenanthrene
Concen: 55.20 ug/kg
RT: 15.009 min Scan# 1215
Delta R.T. -0.010 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:178 Resp: 34141

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.5	0.0	39.0

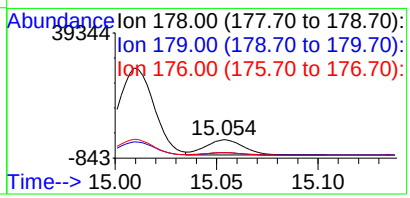


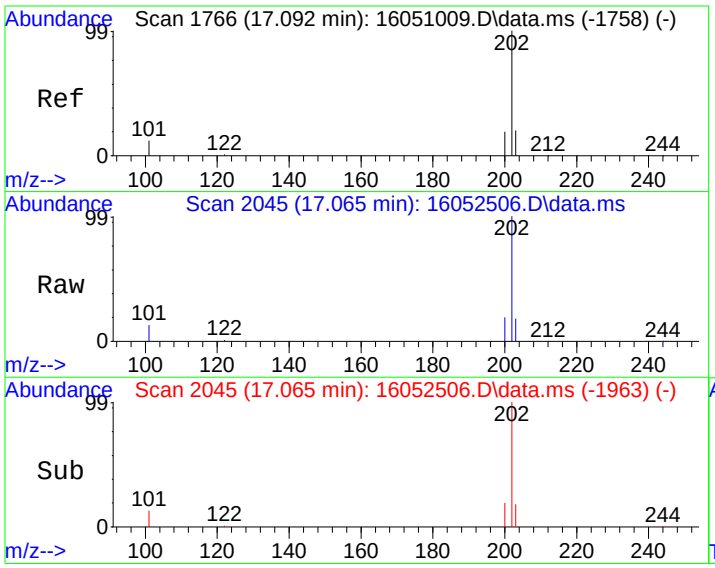


#13
Anthracene
Concen: 10.20 ug/kg
RT: 15.054 min Scan# 1236
Delta R.T. -0.008 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:178 Resp: 6384

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.3
176	16.8	0.0	38.5

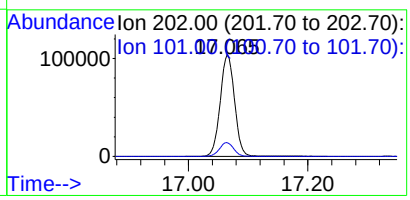


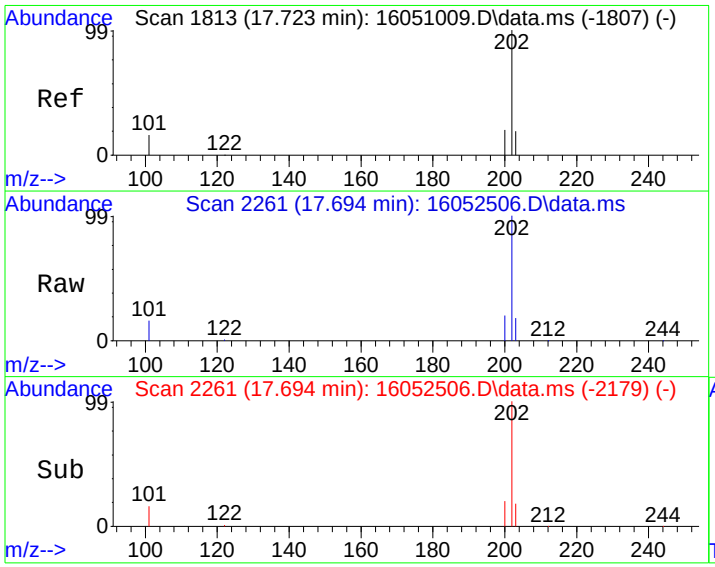


#14
Fluoranthene
Concen: 276.41 ug/kg
RT: 17.065 min Scan# 2045
Delta R.T. -0.011 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:202 Resp: 172353

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	34.4

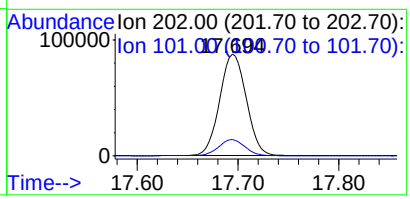


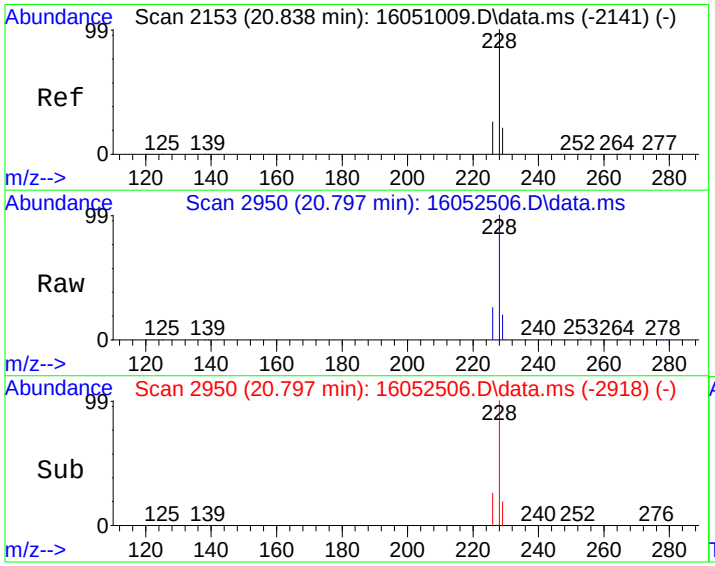


#15
Pyrene
Concen: 263.88 ug/kg
RT: 17.694 min Scan# 2261
Delta R.T. -0.012 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:202 Resp: 160598

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

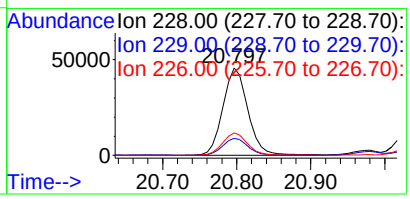


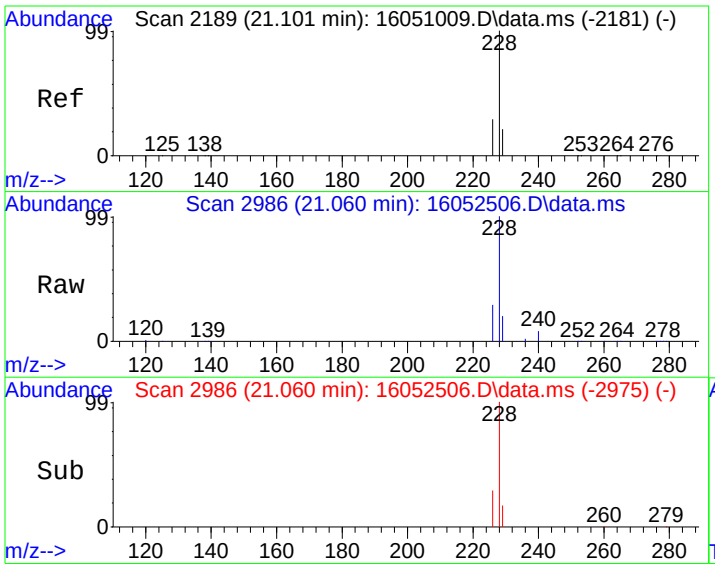


#18
Benzo[a]anthracene
Concen: 179.05 ug/kg
RT: 20.797 min Scan# 2950
Delta R.T. -0.015 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:228 Resp: 106253

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.3	40.3
226	25.6	5.7	45.7

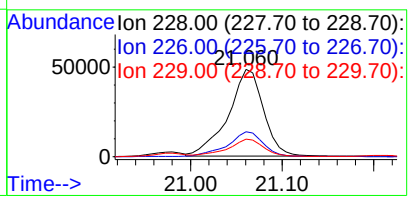


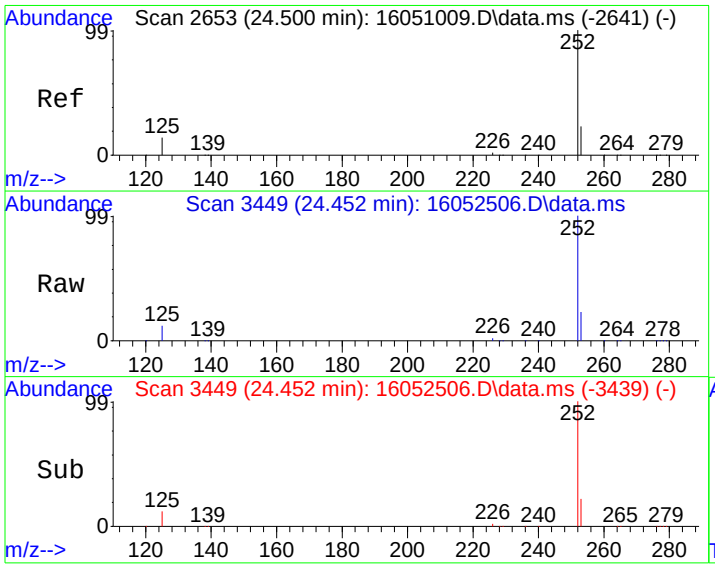


#19
Chrysene
Concen: 236.09 ug/kg
RT: 21.060 min Scan# 2986
Delta R.T. -0.023 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:228 Resp: 129226

Ion	Ratio	Lower	Upper
228	100		
226	28.4	8.2	48.2
229	19.9	0.3	40.3

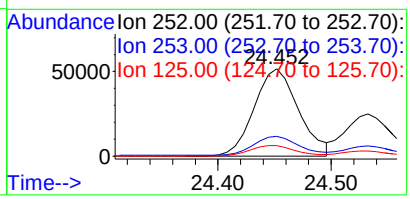


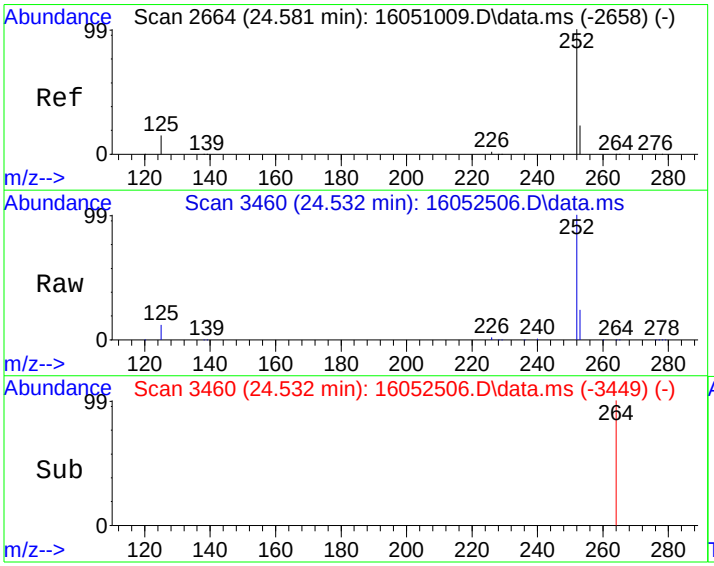


#21
Benzo[b]fluoranthene
Concen: 243.96 ug/kg
RT: 24.452 min Scan# 3449
Delta R.T. -0.023 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:252 Resp: 140222

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.3	42.3
125	12.0	0.0	32.2

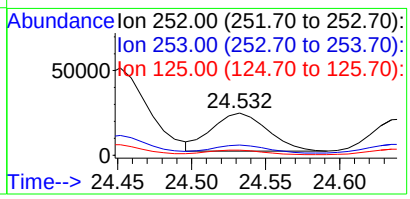


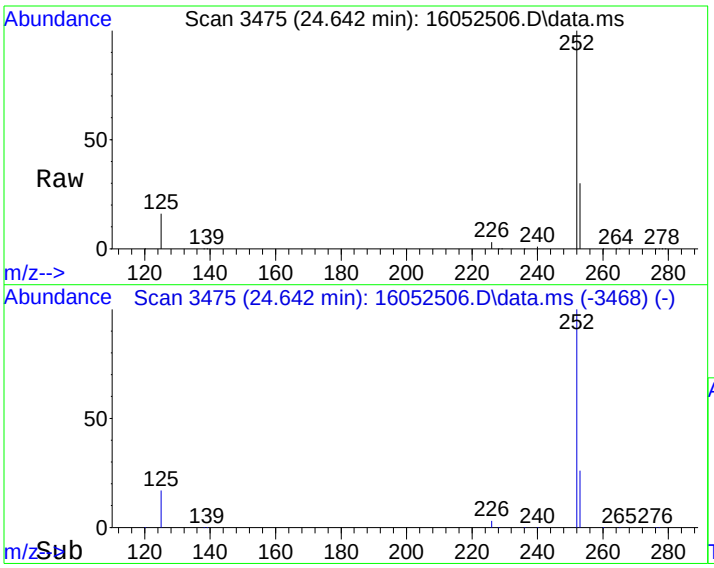


#22
Benzo[k]fluoranthene
Concen: 112.25 ug/kg
RT: 24.532 min Scan# 3460
Delta R.T. -0.023 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:252 Resp: 58362

Ion	Ratio	Lower	Upper
252	100		
253	20.4	2.5	42.5
125	12.1	0.0	32.6

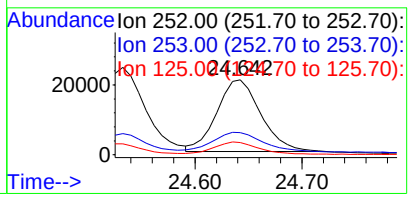


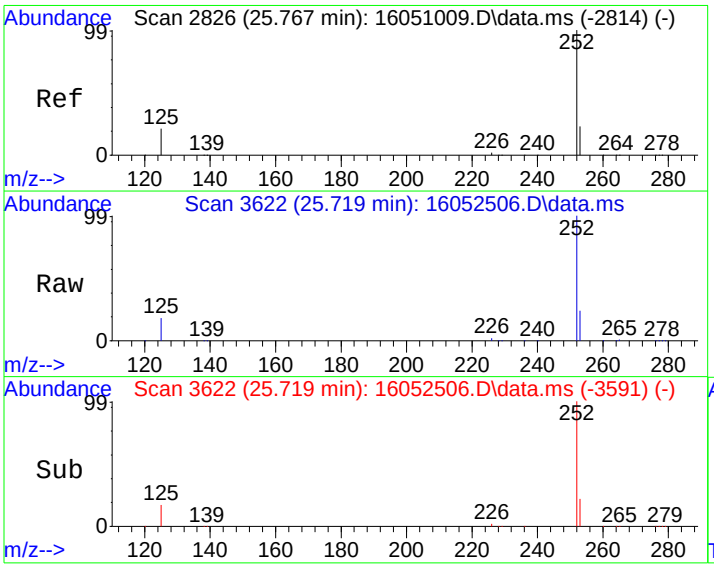


#23
Benzo(j)fluoranthene
Concen: 115.89 ug/kg
RT: 24.642 min Scan# 3475
Delta R.T. -0.023 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:252 Resp: 58966

Ion	Ratio	Lower	Upper
252	100		
253	30.2	2.2	42.2
125	16.7	0.0	37.3

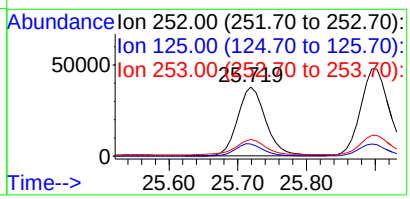


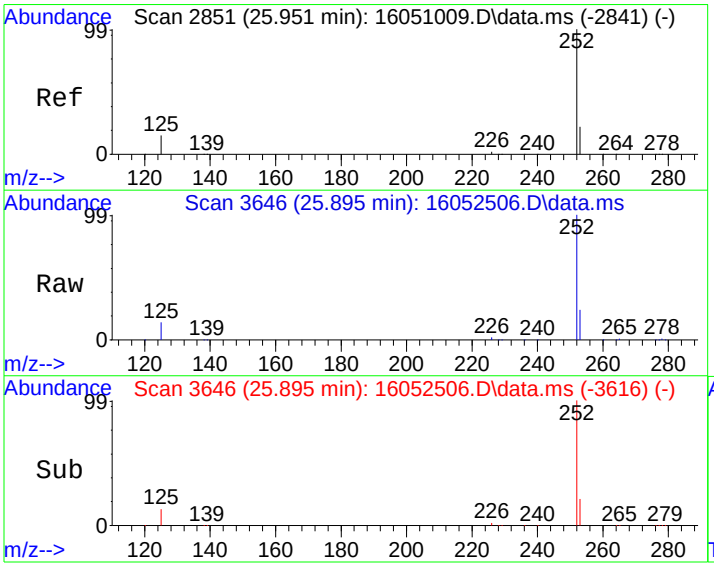


#24
Benzo(e)pyrene
Concen: 198.22 ug/kg
RT: 25.719 min Scan# 3622
Delta R.T. -0.023 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:252 Resp: 108466

Ion	Ratio	Lower	Upper
252	100		
125	17.8	0.0	38.7
253	23.8	2.3	42.3

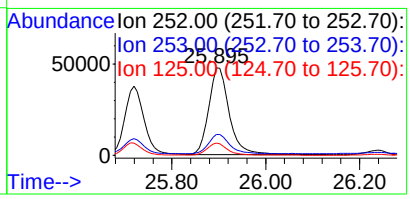


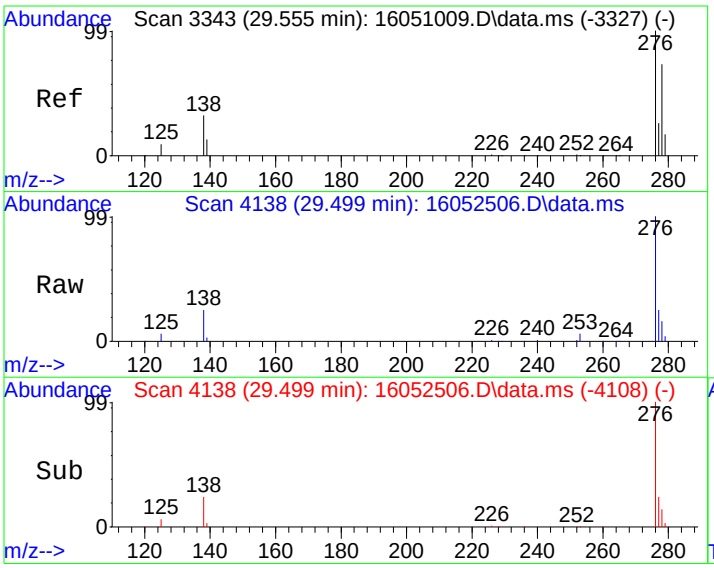


#25
Benzo[a]pyrene
Concen: 270.94 ug/kg
RT: 25.895 min Scan# 3646
Delta R.T. -0.030 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:252 Resp: 144682

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.3	42.3
125	13.8	0.0	33.5

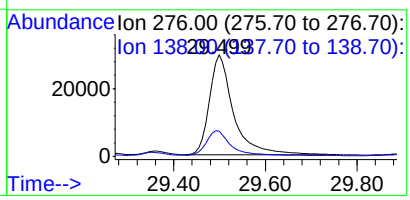


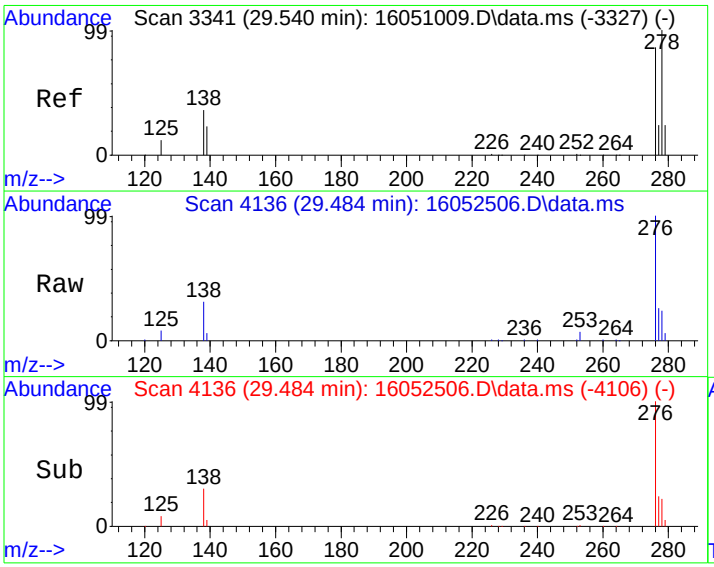


#26
Indeno[1,2,3-cd]pyrene
Concen: 161.34 ug/kg
RT: 29.499 min Scan# 4138
Delta R.T. -0.030 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:276 Resp: 107632

Ion	Ratio	Lower	Upper
276	100		
138	24.3	8.3	48.3

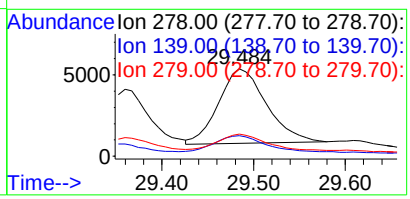


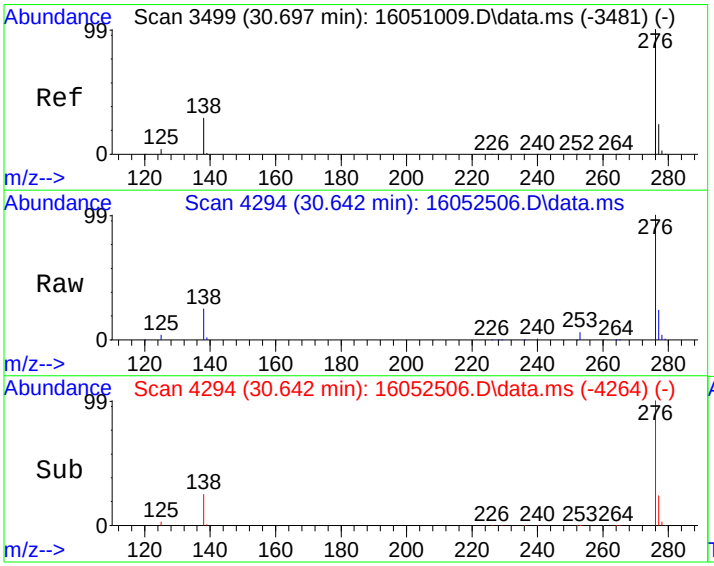


#27
Dibenz[a,h]anthracene
Concen: 25.88 ug/kg
RT: 29.484 min Scan# 4136
Delta R.T. -0.030 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:278 Resp: 16616

Ion	Ratio	Lower	Upper
278	100		
139	22.2	0.0	40.0
279	22.6	4.2	44.2

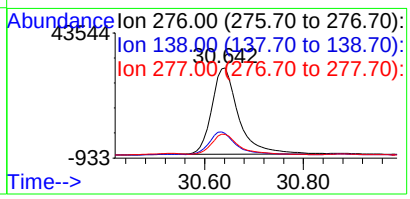




#28
Benzo[g,h,i]perylene
Concen: 204.01 ug/kg
RT: 30.642 min Scan# 4294
Delta R.T. -0.030 min
Lab File: 16052506.D
Acq: 25 May 2016 12:02 pm

Tgt Ion:276 Resp: 116846

Ion	Ratio	Lower	Upper
276	100		
138	24.4	5.8	45.8
277	23.2	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052507.D
Acq On : 25 May 2016 12:41 pm
Operator :
Sample : 1605135-12A
Misc : SAMP
ALS Vial : 7 Sample Multiplier: 10

Quant Time: May 25 15:50:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.264	136	1590104	4000.00 ug/kg	98
6) Acenaphthene-d10	12.852	164	1263722	4000.00 ug/kg	101
11) Phenanthrene-d10	14.973	188	2174387	4000.00 ug/kg	74
16) Chrysene-d12	20.973	240	2221619	4000.00 ug/kg	82
20) Perylene-d12	26.233	264	2159900	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	32055	90.54 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.26%#		
17) 4-Terphenyl-d14	17.578	244	36301	77.20 ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.93%#		

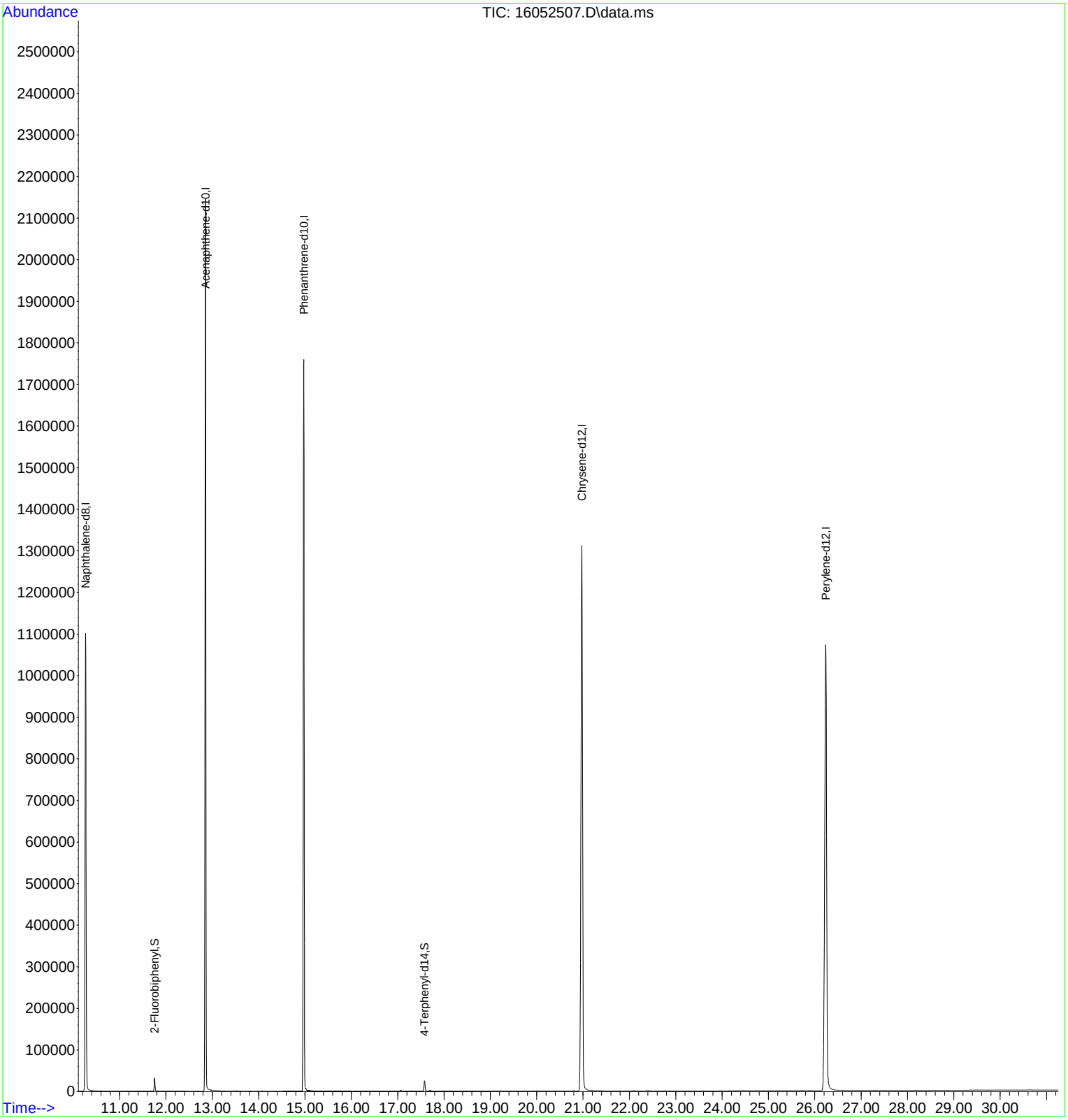
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052507.D
Acq On : 25 May 2016 12:41 pm
Operator :
Sample : 1605135-12A
Misc : SAMP
ALS Vial : 7 Sample Multiplier: 10

Quant Time: May 25 15:50:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052508.D
Acq On : 25 May 2016 1:18 pm
Operator :
Sample : 1605135-13A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 25 15:50:06 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.266	136	1659156	4000.00 ug/kg	102
6) Acenaphthene-d10	12.852	164	1321610	4000.00 ug/kg	105
11) Phenanthrene-d10	14.973	188	2247184	4000.00 ug/kg	77
16) Chrysene-d12	20.973	240	2316336	4000.00 ug/kg	85
20) Perylene-d12	26.239	264	2218959	4000.00 ug/kg	89

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	31095	84.17 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.10%#	
17) 4-Terphenyl-d14	17.580	244	34817	71.01 ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.78%#	

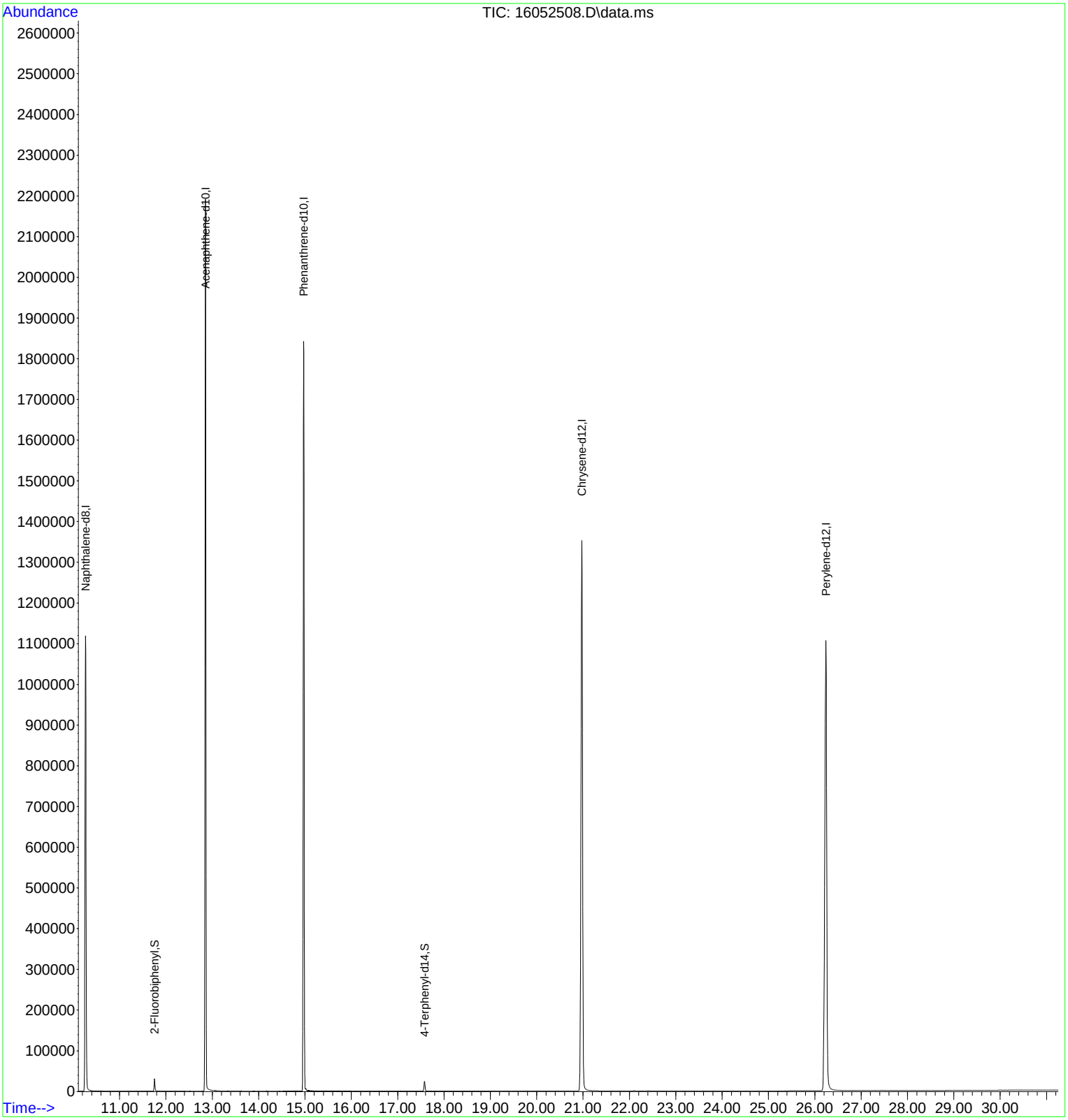
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052508.D
Acq On : 25 May 2016 1:18 pm
Operator :
Sample : 1605135-13A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 25 15:50:06 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052509.D
Acq On : 25 May 2016 1:56 pm
Operator :
Sample : 1605135-14A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 10

Quant Time: May 25 15:50:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1546903	4000.00 ug/kg	95
6) Acenaphthene-d10	12.852	164	1242841	4000.00 ug/kg	99
11) Phenanthrene-d10	14.973	188	2136715	4000.00 ug/kg	73
16) Chrysene-d12	20.980	240	2181522	4000.00 ug/kg	80
20) Perylene-d12	26.240	264	2102809	4000.00 ug/kg	85

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	29947	86.95 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.17%#		
17) 4-Terphenyl-d14	17.583	244	32825	71.09 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.78%#		

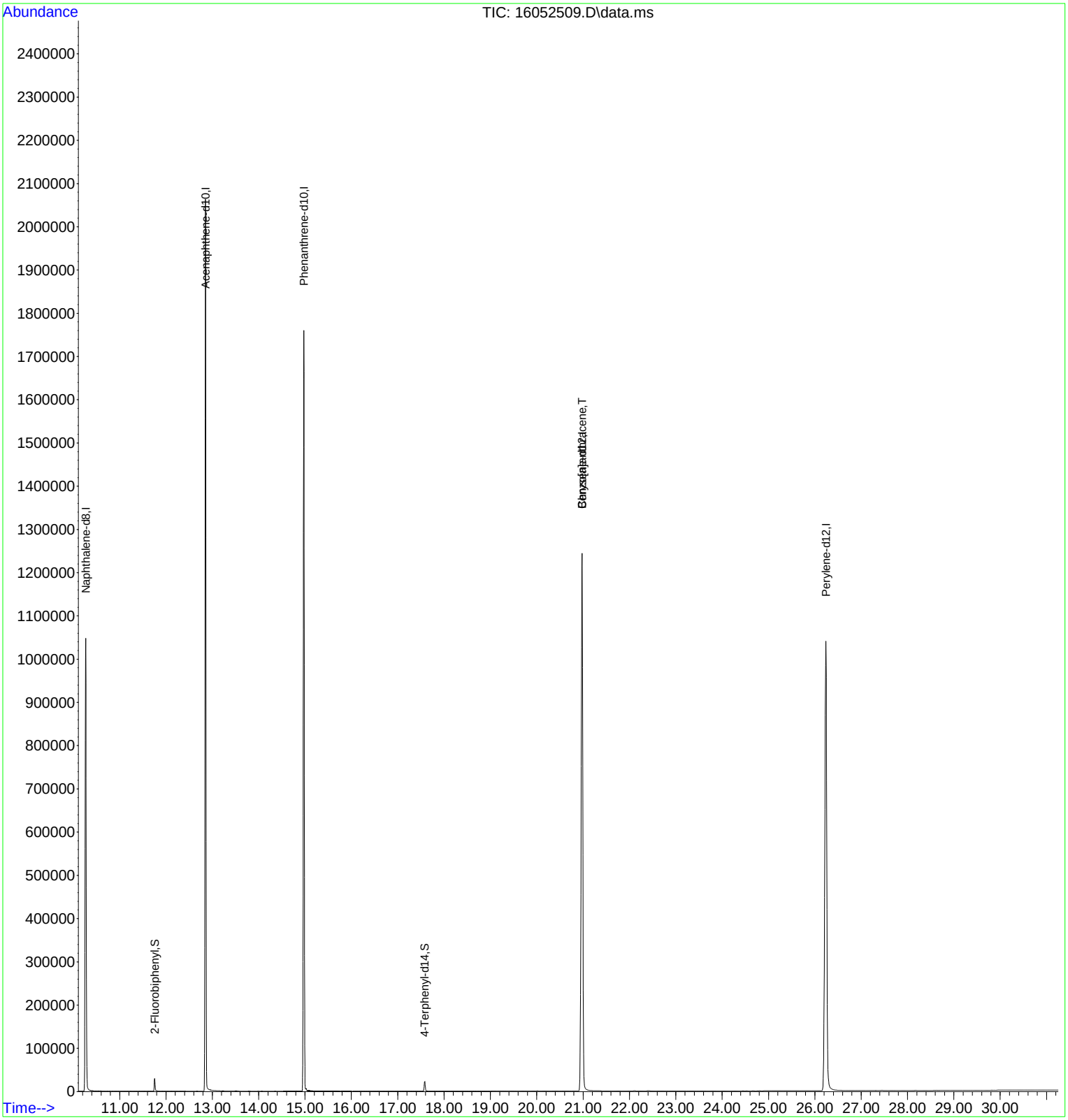
Target Compounds					Qvalue
18) Benzo[a]anthracene	20.980	228	5021	~~7.07 ug/kg~~	~~77~~

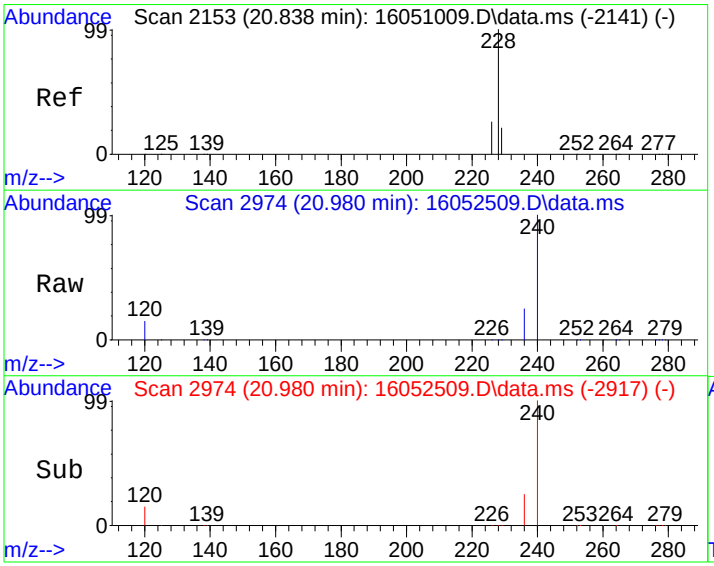
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052509.D
Acq On : 25 May 2016 1:56 pm
Operator :
Sample : 1605135-14A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 10

Quant Time: May 25 15:50:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

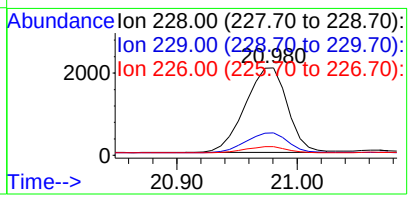




#18
Benzo[a]anthracene
Concen: 7.07 ug/kg
RT: 20.980 min Scan# 2974
Delta R.T. 0.168 min
Lab File: 16052509.D
Acq: 25 May 2016 1:56 pm

Tgt Ion:228 Resp: 5021

Ion	Ratio	Lower	Upper
228	100		
229	23.6	0.3	40.3
226	7.3	5.7	45.7



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052510.D
Acq On : 25 May 2016 2:33 pm
Operator :
Sample : 1605135-15A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 25 15:50:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.270	136	1603928	4000.00 ug/kg	98
6) Acenaphthene-d10	12.857	164	1282132	4000.00 ug/kg	102
11) Phenanthrene-d10	14.977	188	2192530	4000.00 ug/kg	75
16) Chrysene-d12	20.980	240	2234577	4000.00 ug/kg	82
20) Perylene-d12	26.240	264	2133374	4000.00 ug/kg	86

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	32228	90.24 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.26%#		
17) 4-Terphenyl-d14	17.583	244	35757	75.60 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#		

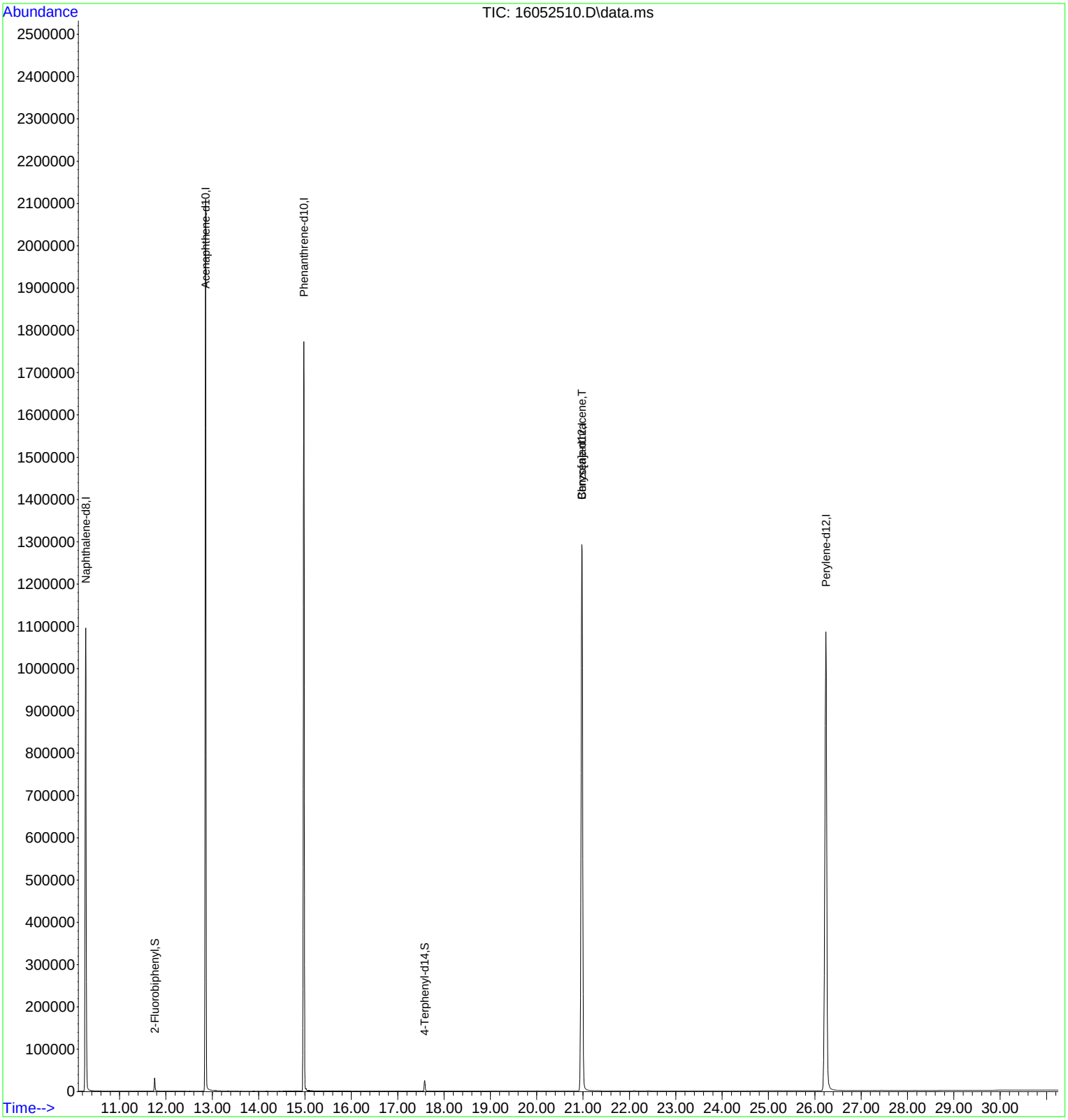
Target Compounds					Qvalue
18) Benzo[a]anthracene	20.973	228	5136	~~7.06 ug/kg~~	~~77~~

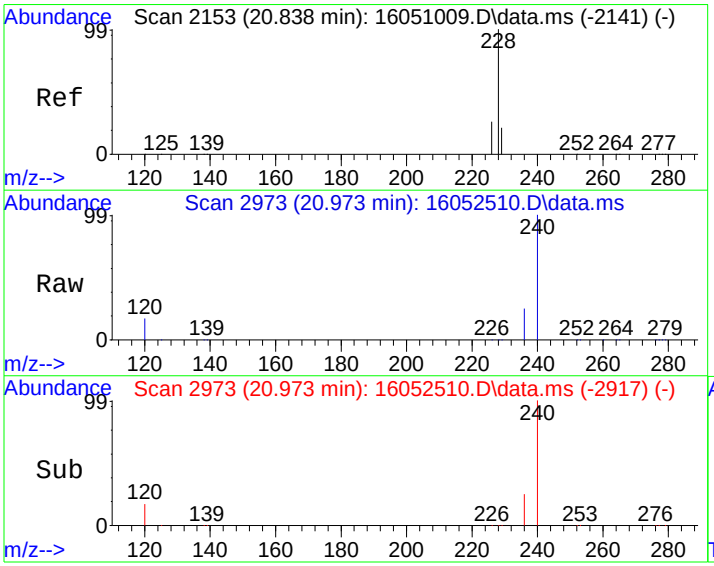
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052510.D
Acq On : 25 May 2016 2:33 pm
Operator :
Sample : 1605135-15A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 25 15:50:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

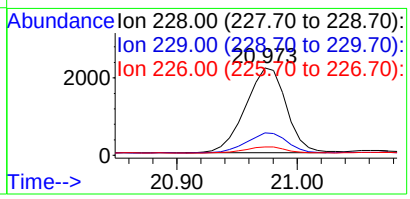




#18
Benzo[a]anthracene
Concen: 7.06 ug/kg
RT: 20.973 min Scan# 2973
Delta R.T. 0.161 min
Lab File: 16052510.D
Acq: 25 May 2016 2:33 pm

Tgt Ion:228 Resp: 5136

Ion	Ratio	Lower	Upper
228	100		
229	23.5	0.3	40.3
226	7.2	5.7	45.7



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052511.D
Acq On : 25 May 2016 3:10 pm
Operator :
Sample : 1605135-43A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 25 15:50:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.270	136	1493101	4000.00 ug/kg	92
6) Acenaphthene-d10	12.856	164	1198542	4000.00 ug/kg	96
11) Phenanthrene-d10	14.974	188	2039685	4000.00 ug/kg	70
16) Chrysene-d12	20.980	240	2102803	4000.00 ug/kg	78
20) Perylene-d12	26.239	264	2013246	4000.00 ug/kg	81

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	31995	96.24 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.41%#		
17) 4-Terphenyl-d14	17.584	244	35372	79.47 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.99%#		

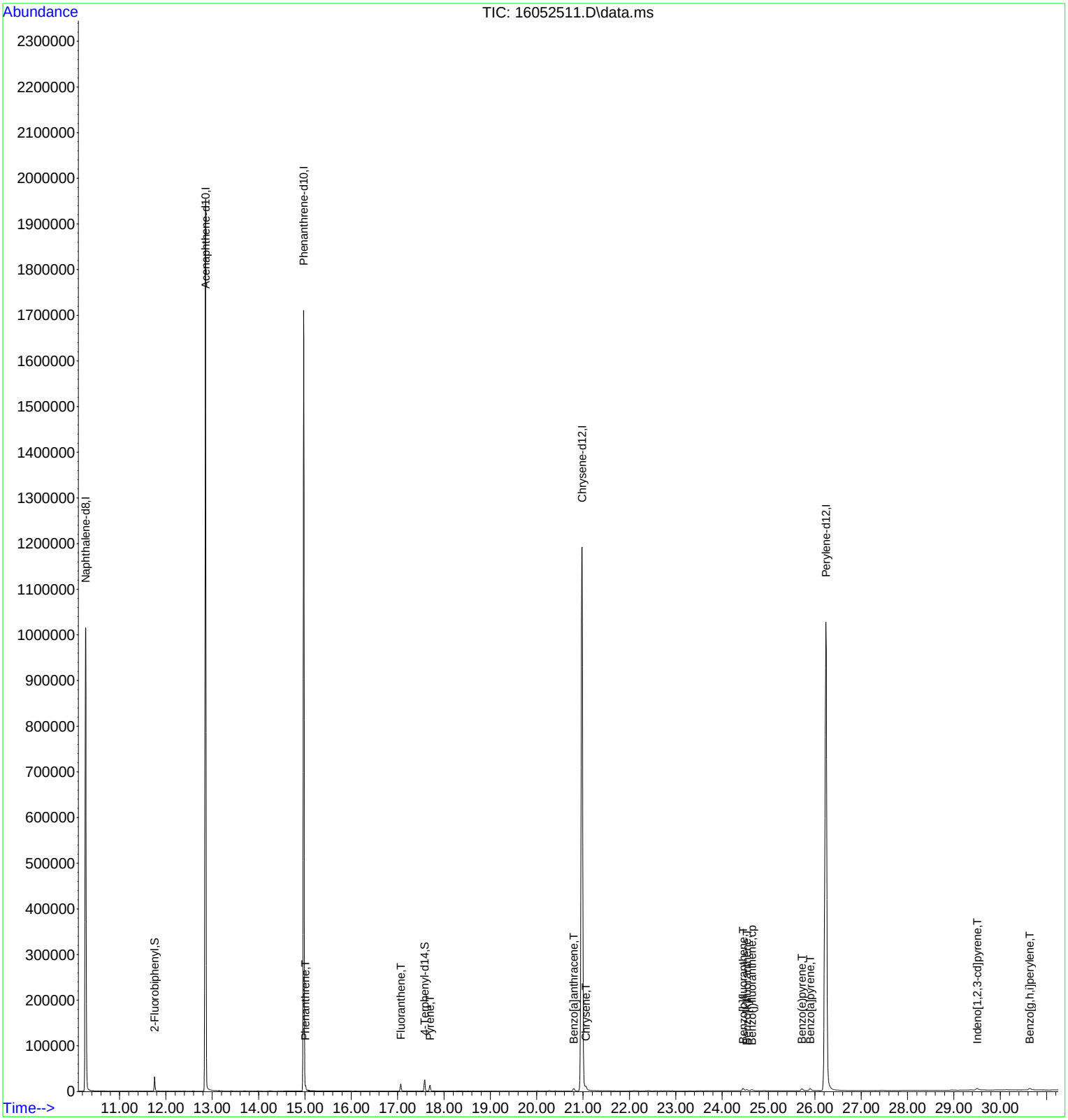
Target Compounds					Qvalue
12) Phenanthrene	15.012	178	6518	11.61 ug/kg	97
14) Fluoranthene	17.068	202	18564	30.79 ug/kg	96
15) Pyrene	17.697	202	16316	27.38 ug/kg	95
18) Benzo[a]anthracene	20.797	228	9357	15.35 ug/kg	99
19) Chrysene	21.060	228	11684	20.49 ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	11644	20.00 ug/kg	99
22) Benzo[k]fluoranthene	24.532	252	4384	7.98 ug/kg	94
23) Benzo(j)fluoranthene	24.642	252	4765	7.08 ug/kg	91
24) Benzo(e)pyrene	25.719	252	9485	16.21 ug/kg	94
25) Benzo[a]pyrene	25.902	252	11088	20.16 ug/kg	97
26) Indeno[1,2,3-cd]pyrene	29.499	276	8729	11.33 ug/kg	92
28) Benzo[g,h,i]perylene	30.642	276	9800	15.46 ug/kg	95

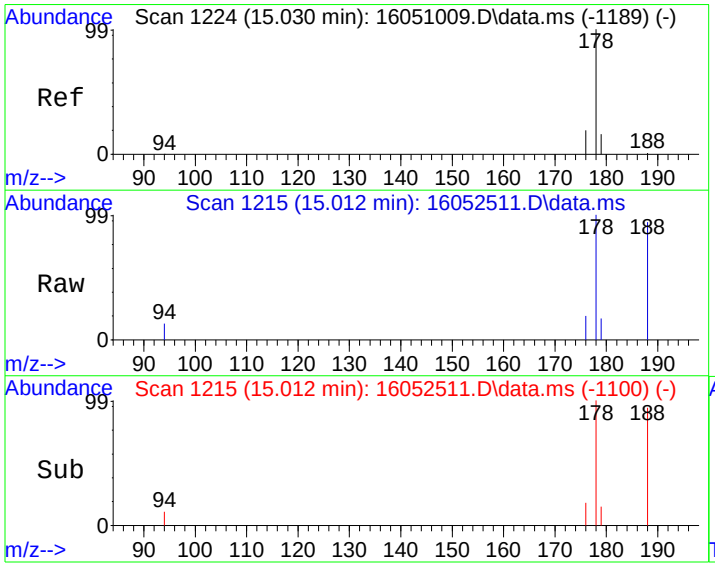
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052511.D
Acq On : 25 May 2016 3:10 pm
Operator :
Sample : 1605135-43A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 25 15:50:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

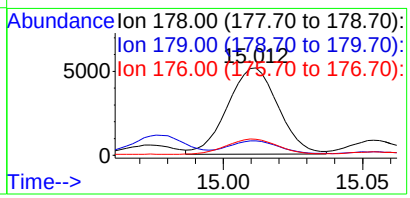


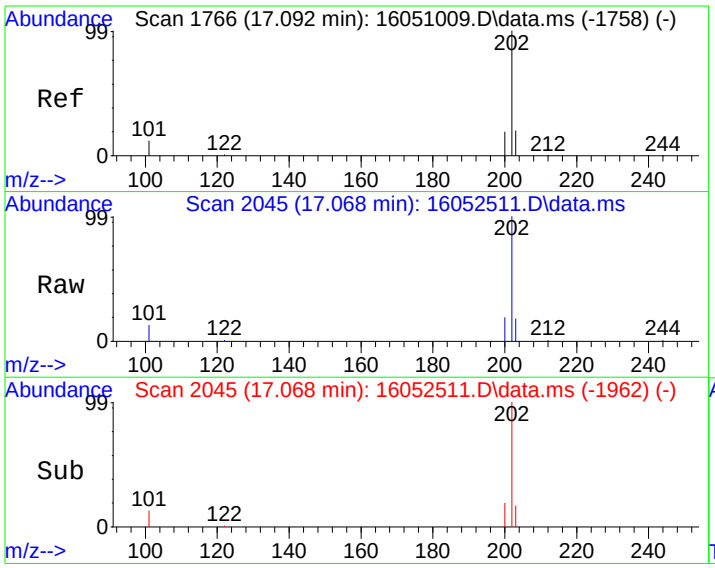


#12
Phenanthrene
Concen: 11.61 ug/kg
RT: 15.012 min Scan# 1215
Delta R.T. -0.007 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:178 Resp: 6518

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.4
176	17.9	0.0	39.0

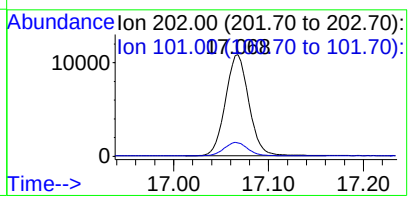


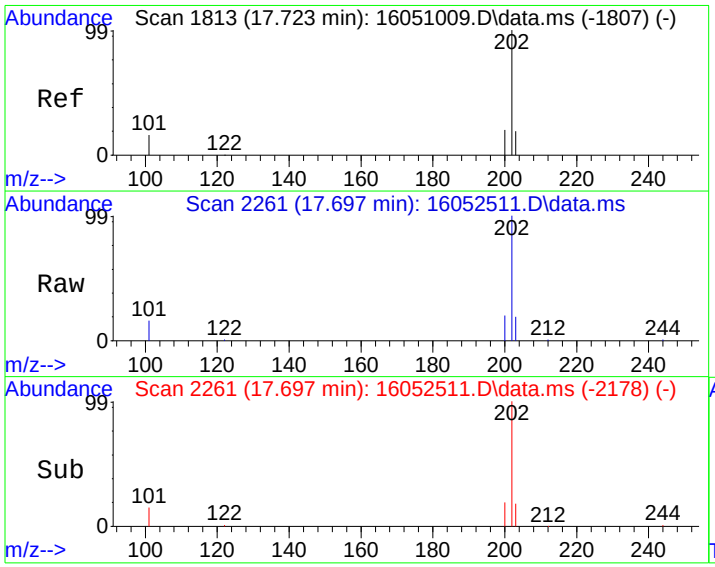


#14
Fluoranthene
Concen: 30.79 ug/kg
RT: 17.068 min Scan# 2045
Delta R.T. -0.008 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:202 Resp: 18564

Ion	Ratio	Lower	Upper
202	100		
101	12.8	0.0	34.4

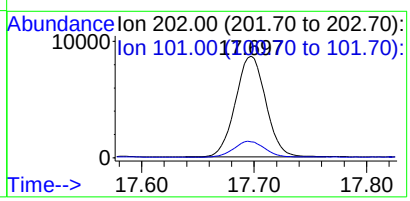


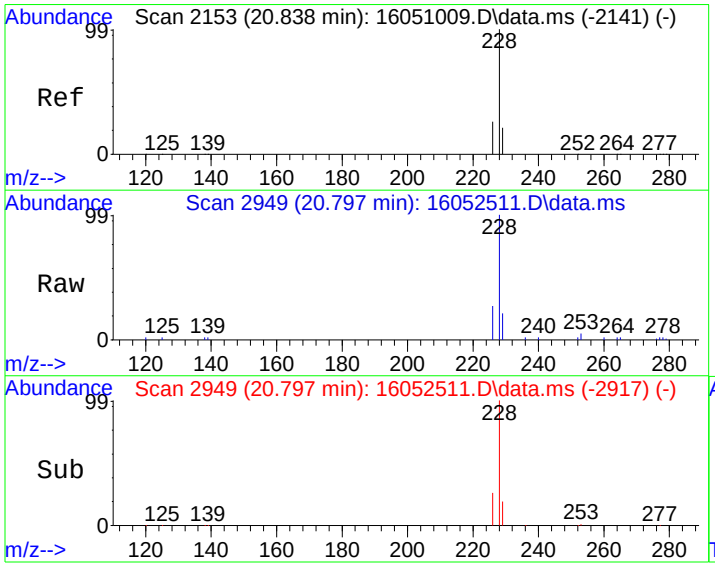


#15
Pyrene
Concen: 27.38 ug/kg
RT: 17.697 min Scan# 2261
Delta R.T. -0.009 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:202 Resp: 16316

Ion	Ratio	Lower	Upper
202	100		
101	15.2	0.0	37.3

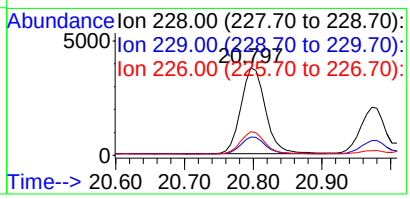


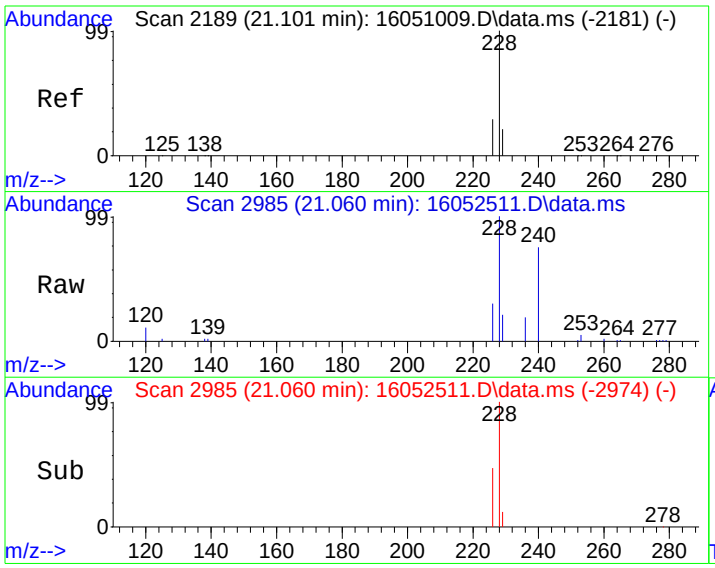


#18
Benzo[a]anthracene
Concen: 15.35 ug/kg
RT: 20.797 min Scan# 2949
Delta R.T. -0.015 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:228 Resp: 9357

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.9	5.7	45.7

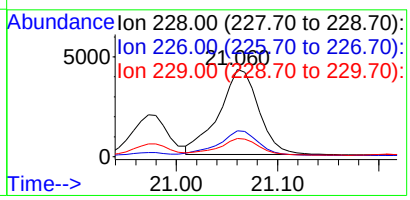


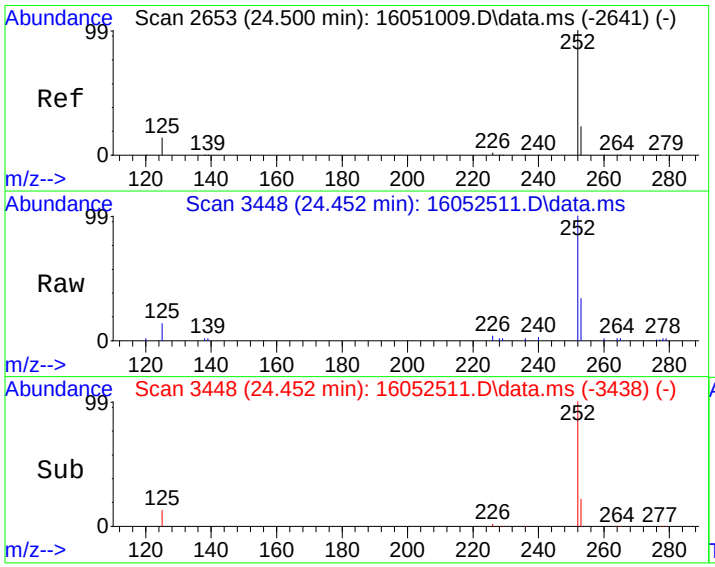


#19
Chrysene
Concen: 20.49 ug/kg
RT: 21.060 min Scan# 2985
Delta R.T. -0.023 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:228 Resp: 11684

Ion	Ratio	Lower	Upper
228	100		
226	28.7	8.2	48.2
229	19.6	0.3	40.3

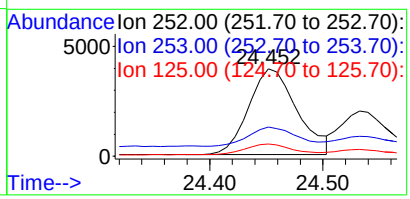


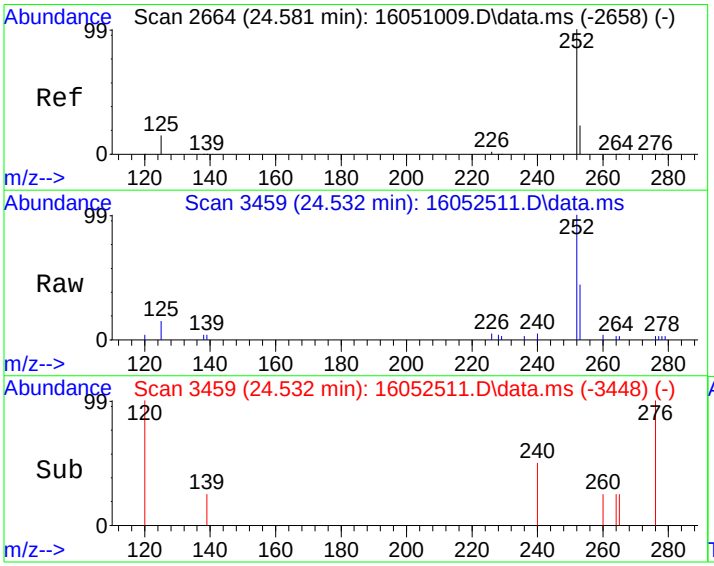


#21
Benzo[b]fluoranthene
Concen: 20.00 ug/kg
RT: 24.452 min Scan# 3448
Delta R.T. -0.023 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:252 Resp: 11644

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.3	42.3
125	12.6	0.0	32.2

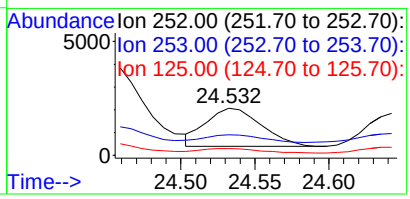


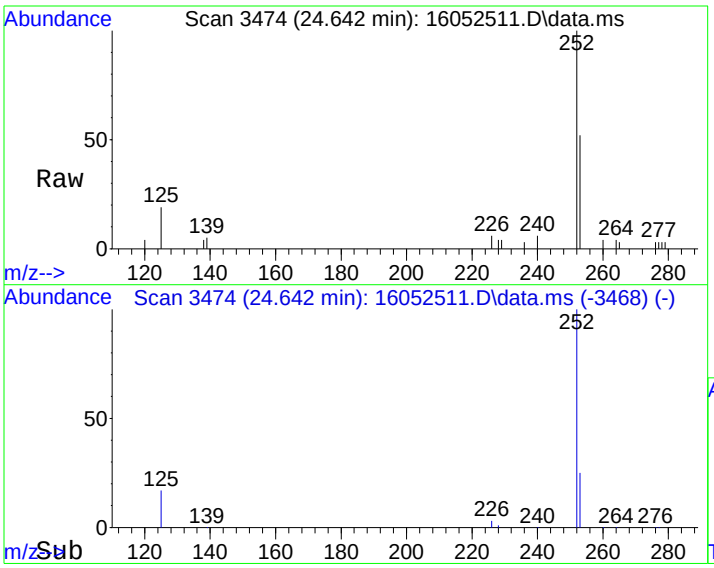


#22
Benzo[k]fluoranthene
Concen: 7.98 ug/kg
RT: 24.532 min Scan# 3459
Delta R.T. -0.023 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:252 Resp: 4384

Ion	Ratio	Lower	Upper
252	100		
253	18.4	2.5	42.5
125	11.8	0.0	32.6

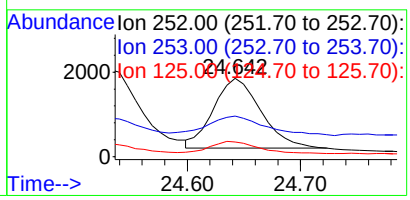


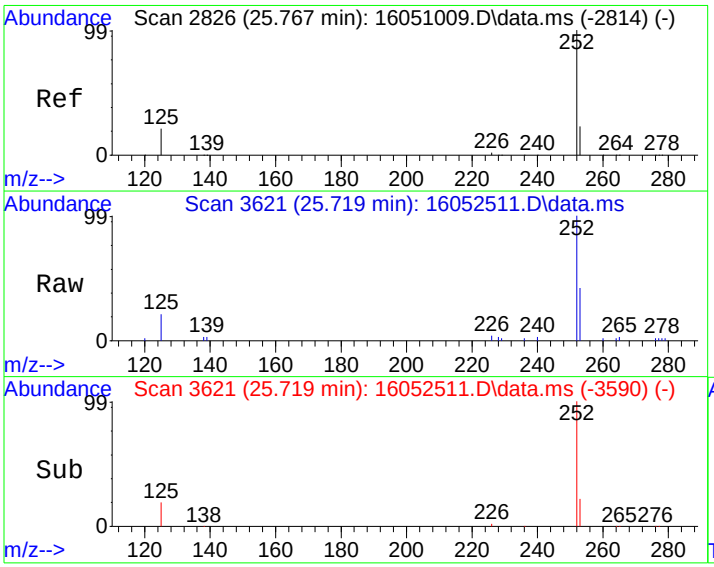


#23
Benzo(j)fluoranthene
Concen: 7.08 ug/kg
RT: 24.642 min Scan# 3474
Delta R.T. -0.023 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:252 Resp: 4765

Ion	Ratio	Lower	Upper
252	100		
253	30.2	2.2	42.2
125	17.2	0.0	37.3

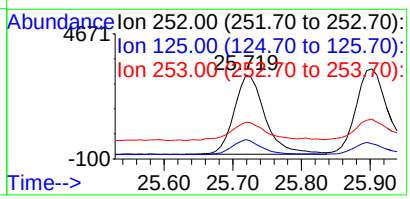


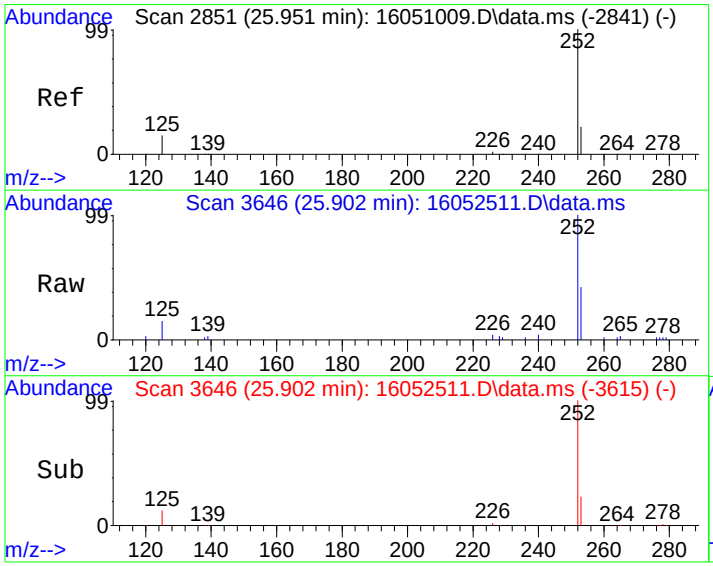


#24
Benzo(e)pyrene
Concen: 16.21 ug/kg
RT: 25.719 min Scan# 3621
Delta R.T. -0.023 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:252 Resp: 9485

Ion	Ratio	Lower	Upper
252	100		
125	17.7	0.0	38.7
253	26.7	2.3	42.3

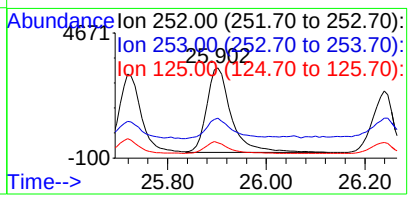


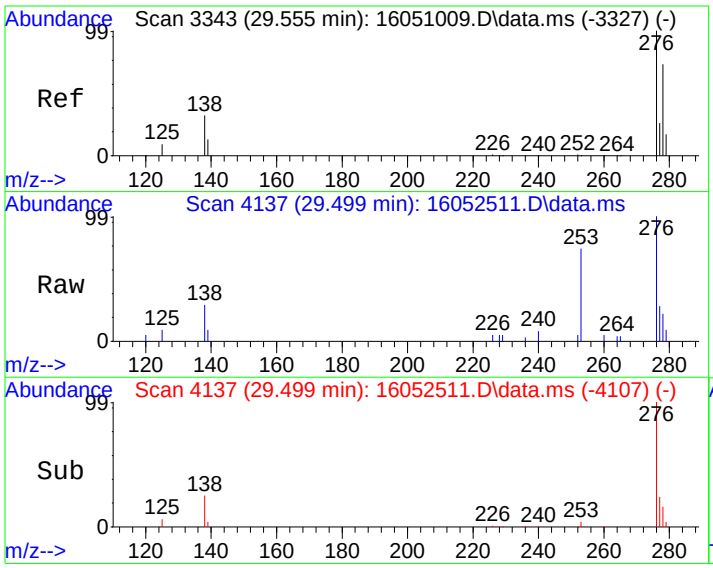


#25
Benzo[a]pyrene
Concen: 20.16 ug/kg
RT: 25.902 min Scan# 3646
Delta R.T. -0.023 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:252 Resp: 11088

Ion	Ratio	Lower	Upper
252	100		
253	24.0	2.3	42.3
125	12.7	0.0	33.5

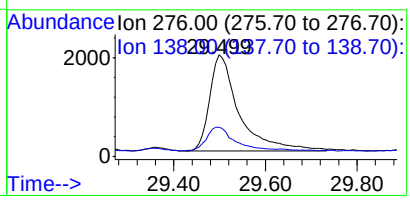


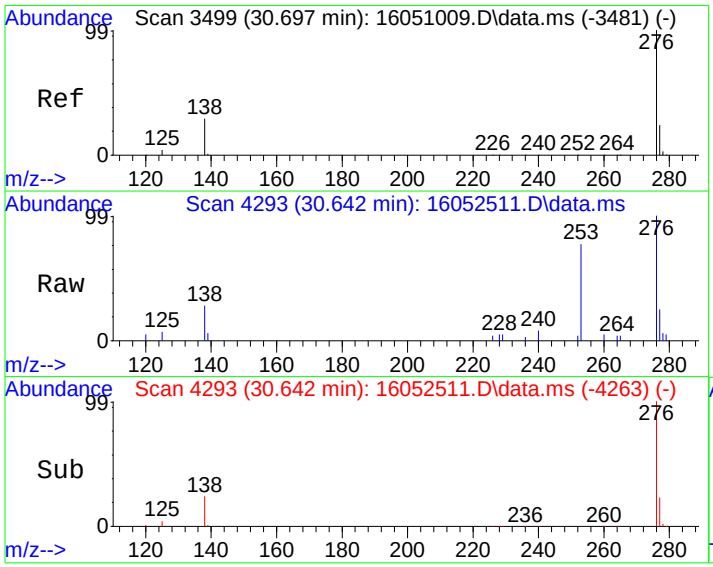


#26
Indeno[1,2,3-cd]pyrene
Concen: 11.33 ug/kg
RT: 29.499 min Scan# 4137
Delta R.T. -0.030 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:276 Resp: 8729

Ion	Ratio	Lower	Upper
276	100		
138	24.3	8.3	48.3

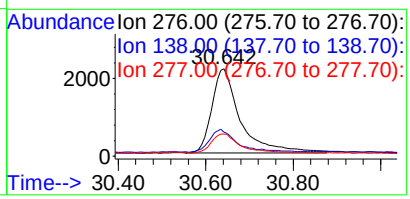




#28
Benzo[g,h,i]perylene
Concen: 15.46 ug/kg
RT: 30.642 min Scan# 4293
Delta R.T. -0.030 min
Lab File: 16052511.D
Acq: 25 May 2016 3:10 pm

Tgt Ion:276 Resp: 9800

Ion	Ratio	Lower	Upper
276	100		
138	23.5	5.8	45.8
277	22.1	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052512.D
Acq On : 25 May 2016 3:47 pm
Operator :
Sample : 1605135-44A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 26 08:54:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.270	136	1656462	4000.00 ug/kg	102
6) Acenaphthene-d10	12.852	164	1325342	4000.00 ug/kg	106
11) Phenanthrene-d10	14.975	188	2270307	4000.00 ug/kg	78
16) Chrysene-d12	20.980	240	2337584	4000.00 ug/kg	86
20) Perylene-d12	26.247	264	2263490	4000.00 ug/kg	91

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	33204	90.03 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.25%#		
17) 4-Terphenyl-d14	17.584	244	36033	72.83 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.82%#		

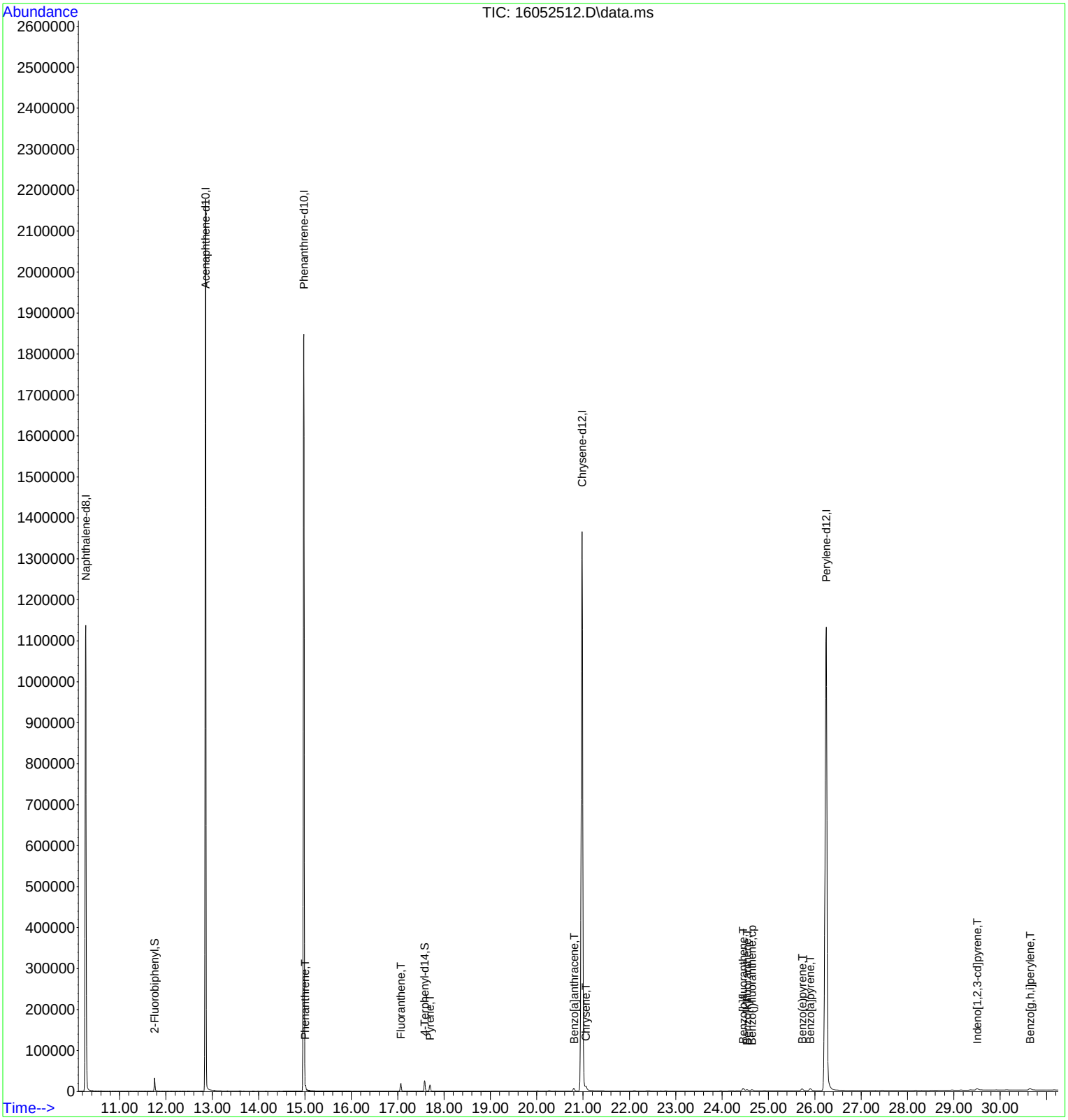
Target Compounds					Qvalue
12) Phenanthrene	15.011	178	7863	12.59 ug/kg	97
14) Fluoranthene	17.068	202	21951	32.83 ug/kg	97
15) Pyrene	17.697	202	19106	28.92 ug/kg	97
18) Benzo[a]anthracene	20.805	228	10821	16.04 ug/kg	99
19) Chrysene	21.068	228	13543	21.48 ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	13500	20.68 ug/kg	99
22) Benzo[k]fluoranthene	24.533	252	5305	8.67 ug/kg	96
23) Benzo(j)fluoranthene	24.643	252	5786	7.90 ug/kg	94
24) Benzo(e)pyrene	25.727	252	11012	16.82 ug/kg	93
25) Benzo[a]pyrene	25.903	252	12902	20.94 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	10247	11.96 ug/kg	89
28) Benzo[g,h,i]perylene	30.642	276	11466	16.22 ug/kg	99

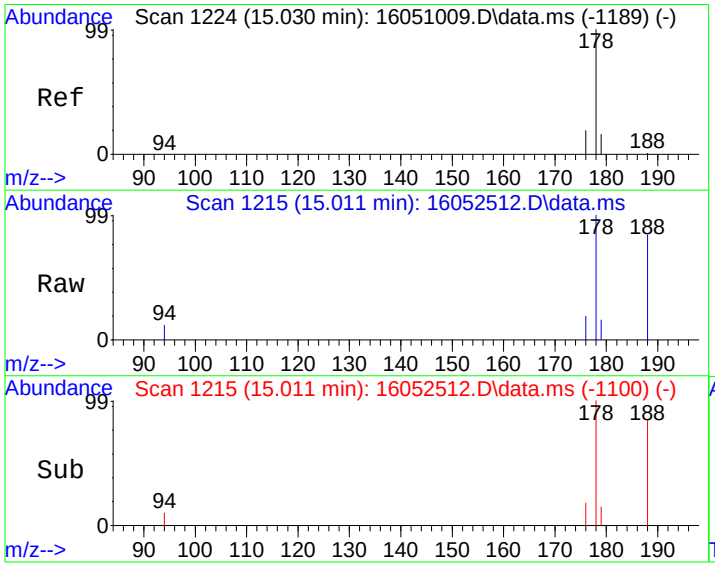
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052512.D
Acq On : 25 May 2016 3:47 pm
Operator :
Sample : 1605135-44A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 26 08:54:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

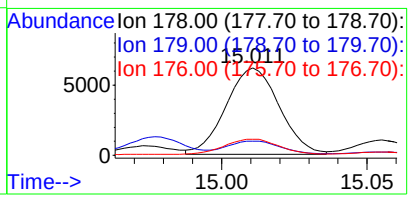


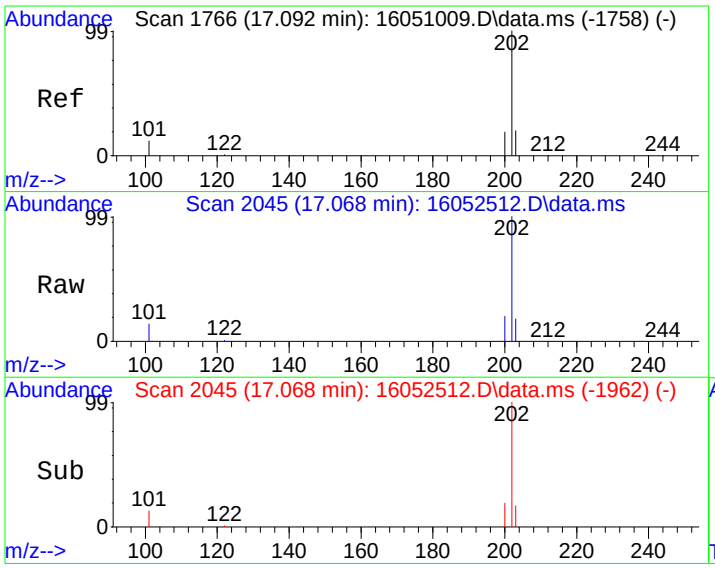


#12
Phenanthrene
Concen: 12.59 ug/kg
RT: 15.011 min Scan# 1215
Delta R.T. -0.008 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:178 Resp: 7863

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	17.8	0.0	39.0

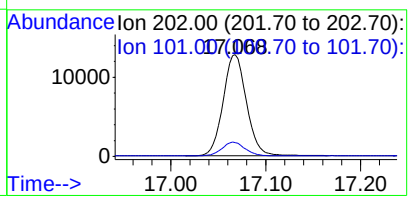


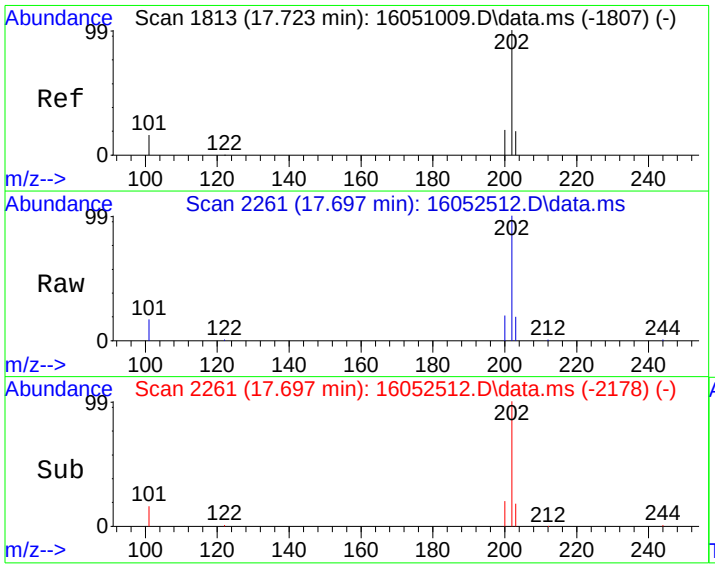


#14
Fluoranthene
Concen: 32.83 ug/kg
RT: 17.068 min Scan# 2045
Delta R.T. -0.008 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:202 Resp: 21951

Ion	Ratio	Lower	Upper
202	100		
101	13.1	0.0	34.4

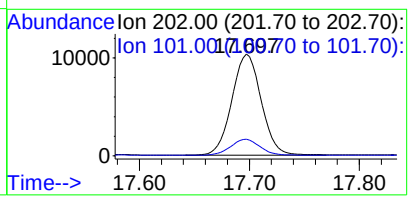


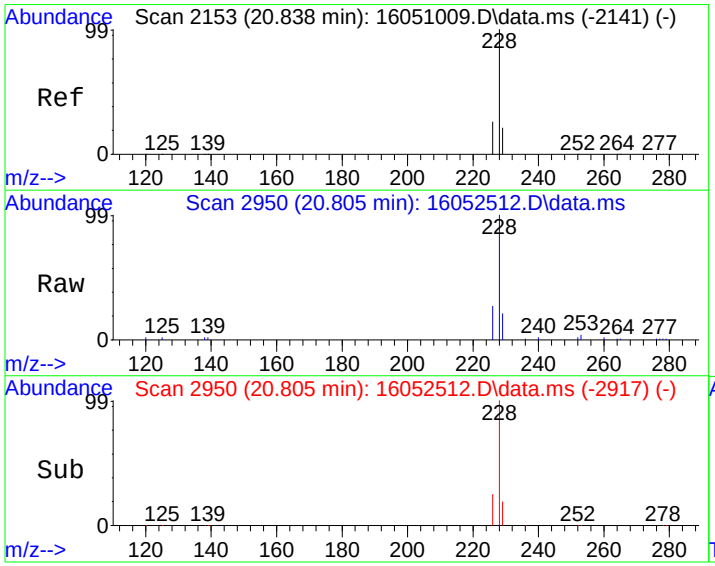


#15
Pyrene
Concen: 28.92 ug/kg
RT: 17.697 min Scan# 2261
Delta R.T. -0.009 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:202 Resp: 19106

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

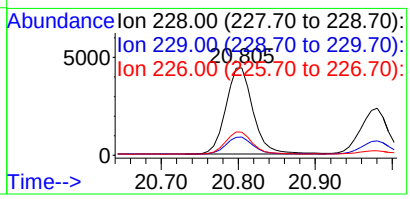


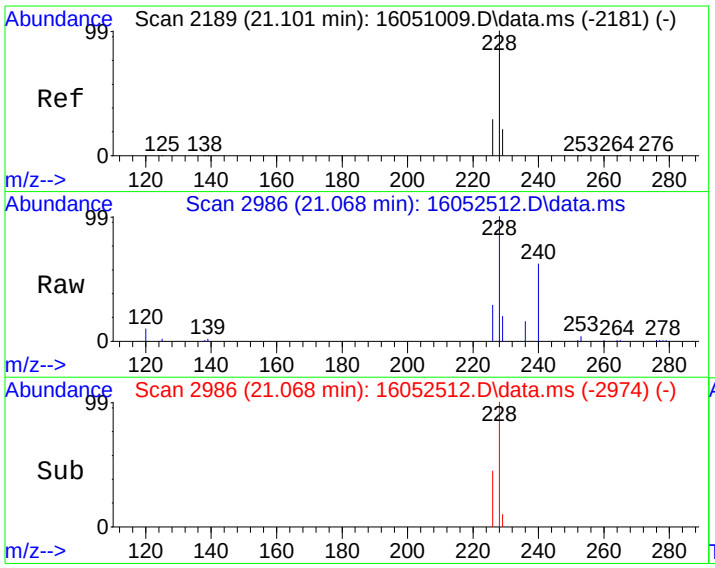


#18
Benzo[a]anthracene
Concen: 16.04 ug/kg
RT: 20.805 min Scan# 2950
Delta R.T. -0.007 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:228 Resp: 10821

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.3	40.3
226	25.5	5.7	45.7

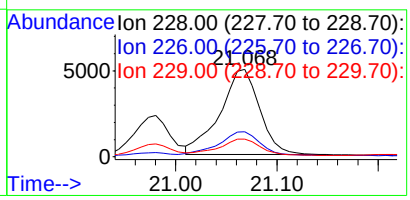


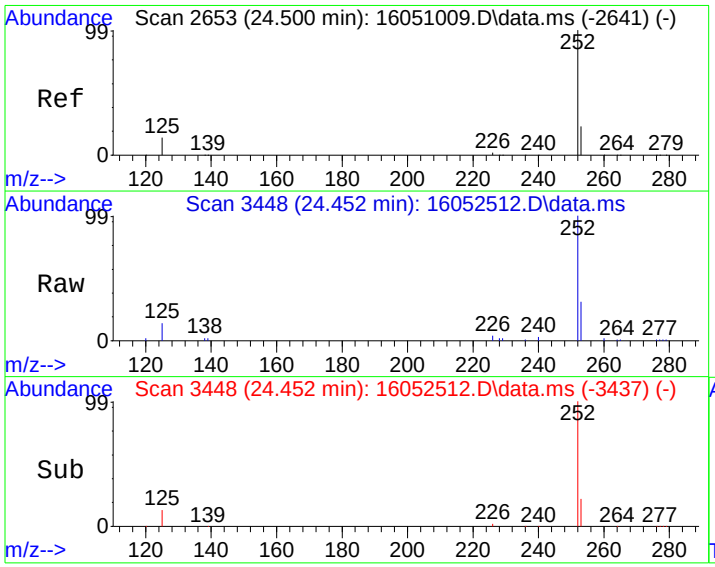


#19
Chrysene
Concen: 21.48 ug/kg
RT: 21.068 min Scan# 2986
Delta R.T. -0.015 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:228 Resp: 13543

Ion	Ratio	Lower	Upper
228	100		
226	27.8	8.2	48.2
229	19.1	0.3	40.3

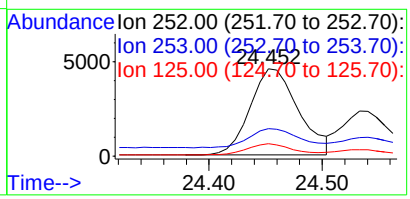


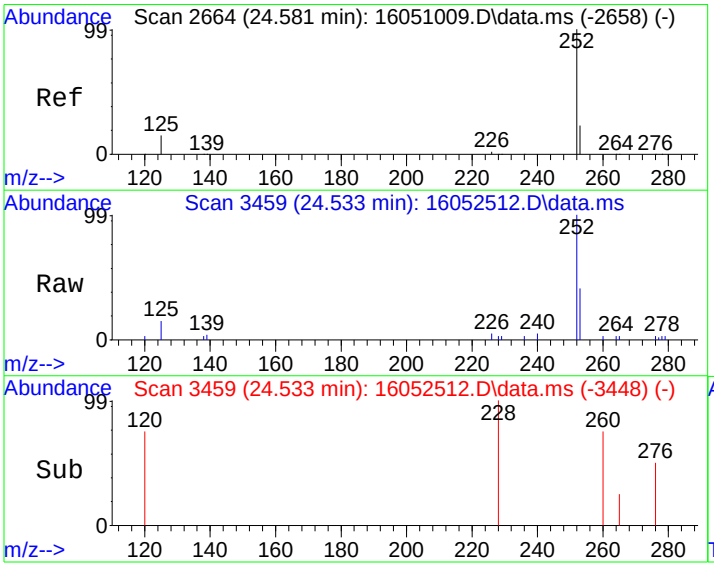


#21
Benzo[b]fluoranthene
Concen: 20.68 ug/kg
RT: 24.452 min Scan# 3448
Delta R.T. -0.023 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:252 Resp: 13500

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.3	42.3
125	12.9	0.0	32.2

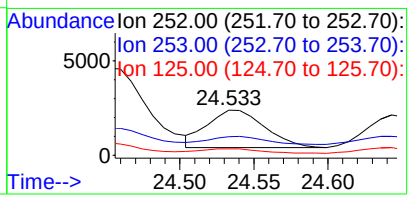


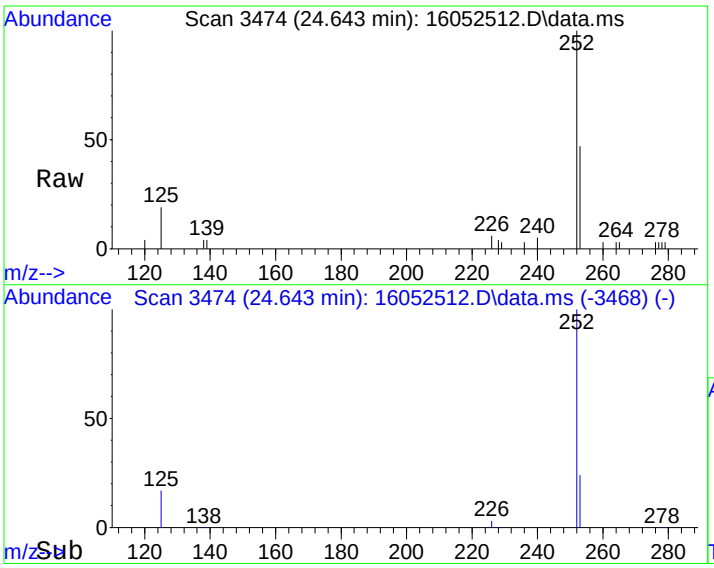


#22
Benzo[k]fluoranthene
Concen: 8.67 ug/kg
RT: 24.533 min Scan# 3459
Delta R.T. -0.022 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:252 Resp: 5305

Ion	Ratio	Lower	Upper
252	100		
253	20.1	2.5	42.5
125	11.8	0.0	32.6

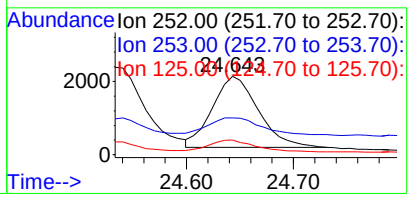


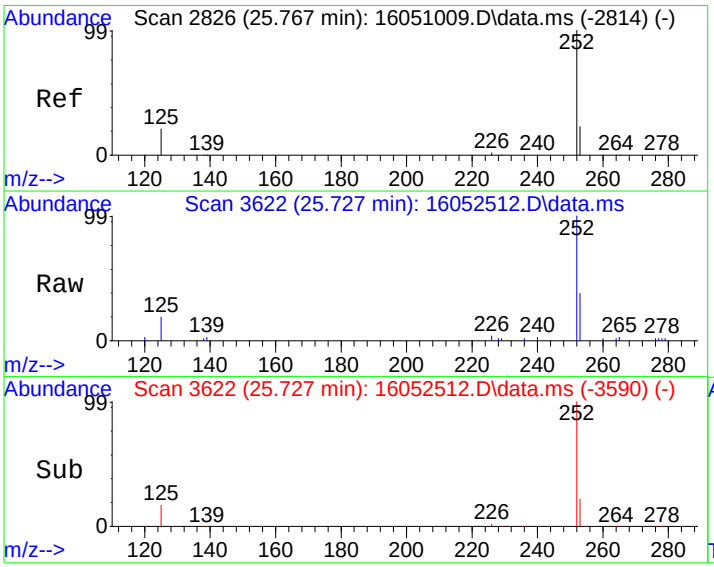


#23
Benzo(j)fluoranthene
Concen: 7.90 ug/kg
RT: 24.643 min Scan# 3474
Delta R.T. -0.022 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:252 Resp: 5786

Ion	Ratio	Lower	Upper
252	100		
253	26.3	2.2	42.2
125	16.3	0.0	37.3

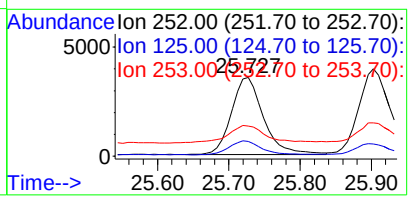


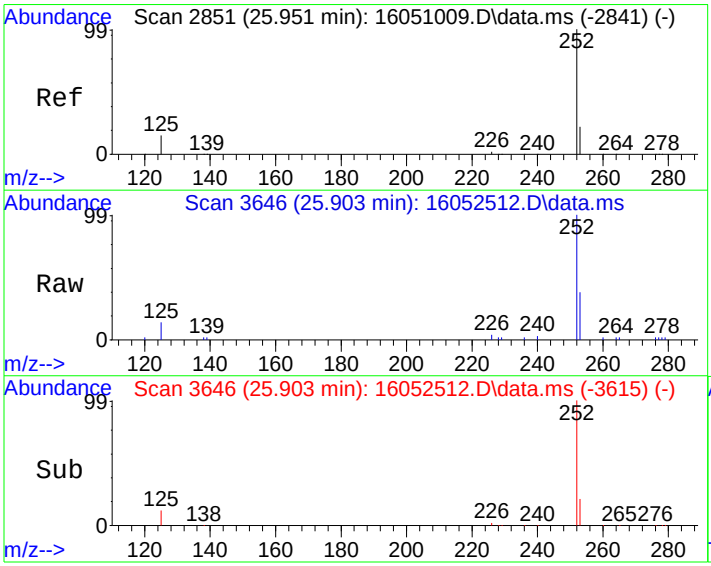


#24
Benzo(e)pyrene
Concen: 16.82 ug/kg
RT: 25.727 min Scan# 3622
Delta R.T. -0.015 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:252 Resp: 11012

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	28.0	2.3	42.3

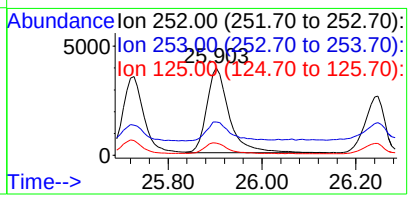


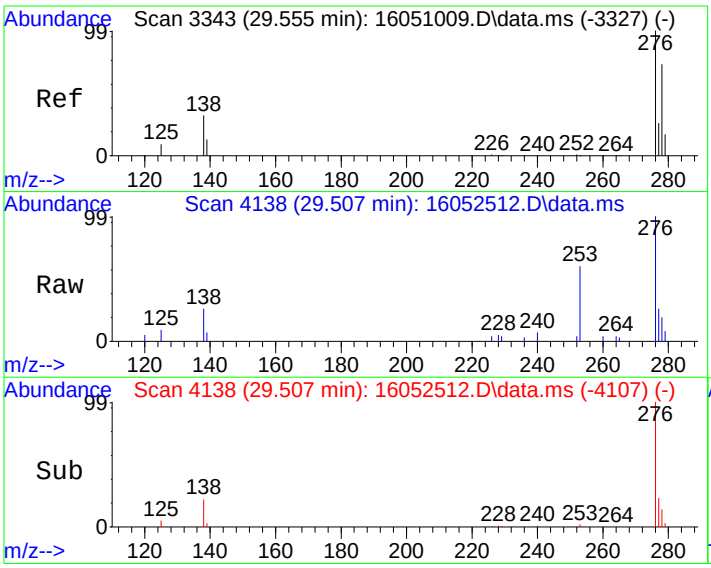


#25
Benzo[a]pyrene
Concen: 20.94 ug/kg
RT: 25.903 min Scan# 3646
Delta R.T. -0.022 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:252 Resp: 12902

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.3	42.3
125	12.6	0.0	33.5

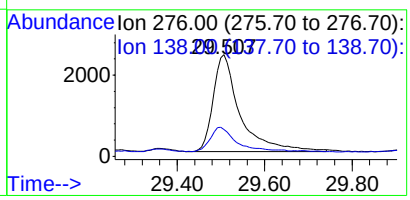


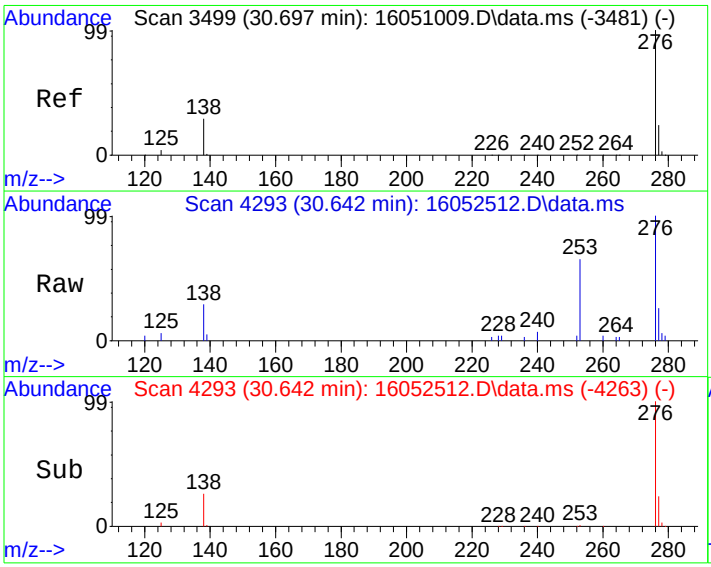


#26
Indeno[1,2,3-cd]pyrene
Concen: 11.96 ug/kg
RT: 29.507 min Scan# 4138
Delta R.T. -0.022 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:276 Resp: 10247

Ion	Ratio	Lower	Upper
276	100		
138	22.7	8.3	48.3

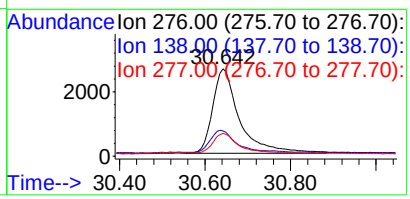




#28
Benzo[g,h,i]perylene
Concen: 16.22 ug/kg
RT: 30.642 min Scan# 4293
Delta R.T. -0.030 min
Lab File: 16052512.D
Acq: 25 May 2016 3:47 pm

Tgt Ion:276 Resp: 11466

Ion	Ratio	Lower	Upper
276	100		
138	25.4	5.8	45.8
277	23.6	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052513.D
Acq On : 25 May 2016 4:24 pm
Operator :
Sample : 1605135-45A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 26 08:54:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1609695	4000.00 ug/kg	99
6) Acenaphthene-d10	12.856	164	1281323	4000.00 ug/kg	102
11) Phenanthrene-d10	14.978	188	2226742	4000.00 ug/kg	76
16) Chrysene-d12	20.980	240	2263749	4000.00 ug/kg	84
20) Perylene-d12	26.247	264	2171936	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	32557	90.84 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.27%#		
17) 4-Terphenyl-d14	17.584	244	36617	76.42 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.91%#		

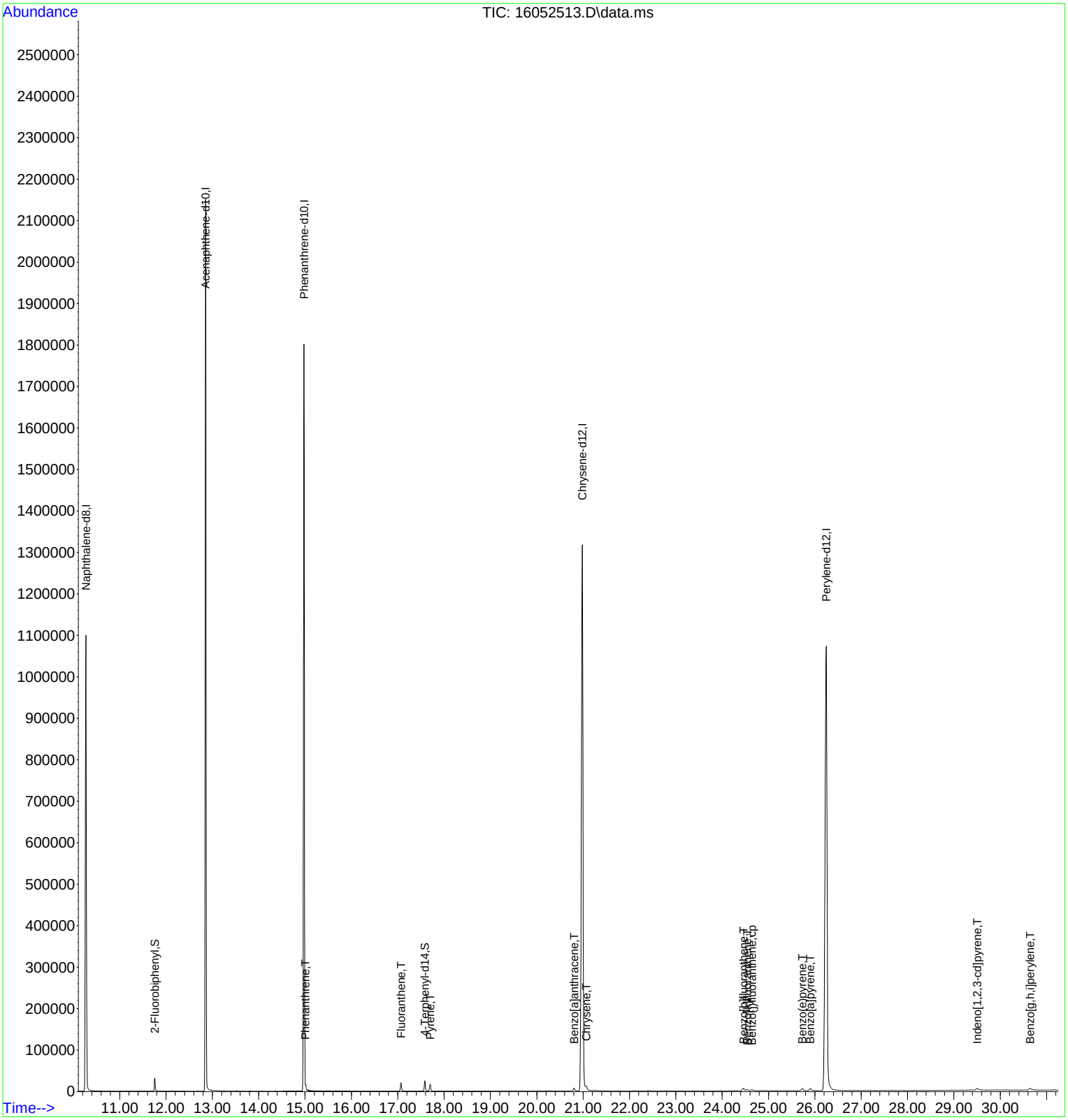
Target Compounds					Qvalue
12) Phenanthrene	15.014	178	9150	14.93 ug/kg	98
14) Fluoranthene	17.068	202	24034	36.90 ug/kg	98
15) Pyrene	17.701	202	20692	32.17 ug/kg	96
18) Benzo[a]anthracene	20.804	228	11389	17.59 ug/kg	99
19) Chrysene	21.068	228	14134	23.36 ug/kg	99
21) Benzo[b]fluoranthene	24.459	252	13655	21.89 ug/kg	98
22) Benzo[k]fluoranthene	24.540	252	5385	9.24 ug/kg	95
23) Benzo(j)fluoranthene	24.650	252	5892	8.58 ug/kg	93
24) Benzo(e)pyrene	25.727	252	11080	17.76 ug/kg	95
25) Benzo[a]pyrene	25.903	252	12975	22.05 ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.506	276	10324	12.70 ug/kg	93
28) Benzo[g,h,i]perylene	30.642	276	11572	17.21 ug/kg	99

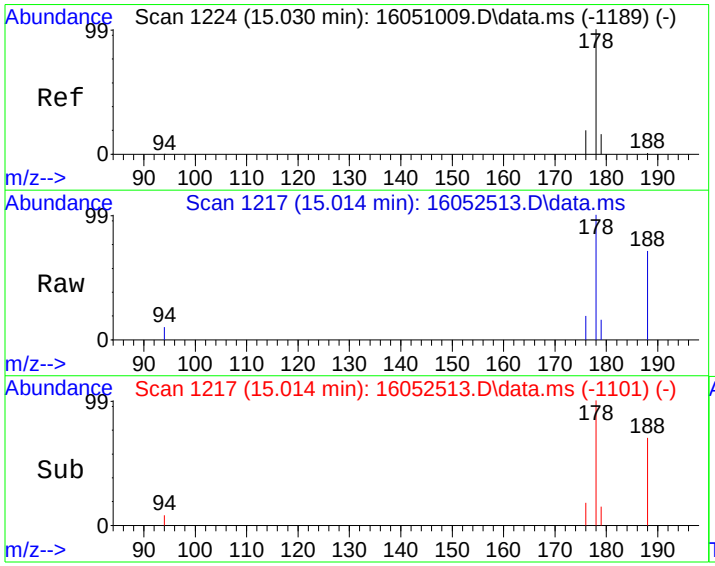
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052513.D
Acq On : 25 May 2016 4:24 pm
Operator :
Sample : 1605135-45A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 26 08:54:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

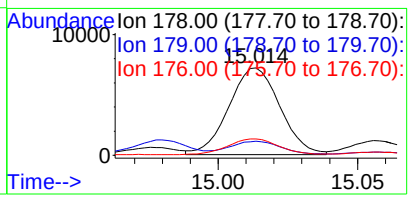


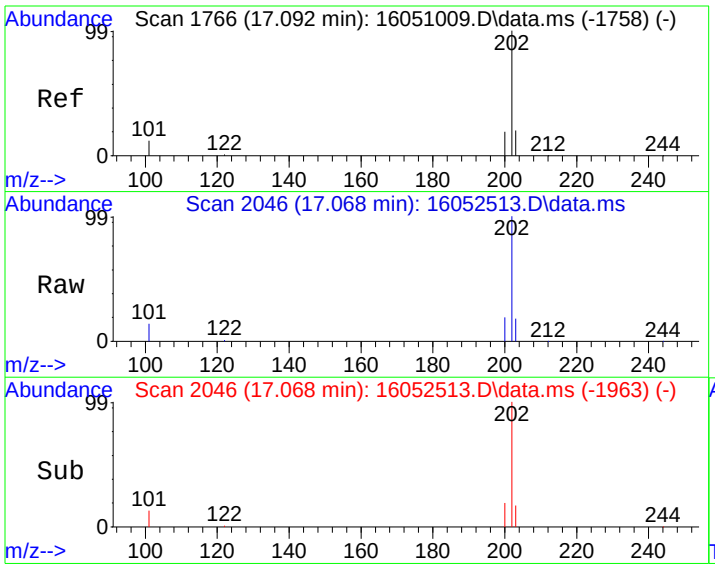


#12
Phenanthrene
Concen: 14.93 ug/kg
RT: 15.014 min Scan# 1217
Delta R.T. -0.006 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:178 Resp: 9150

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.3	0.0	39.0

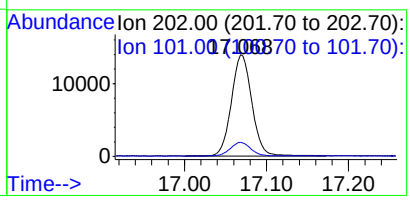


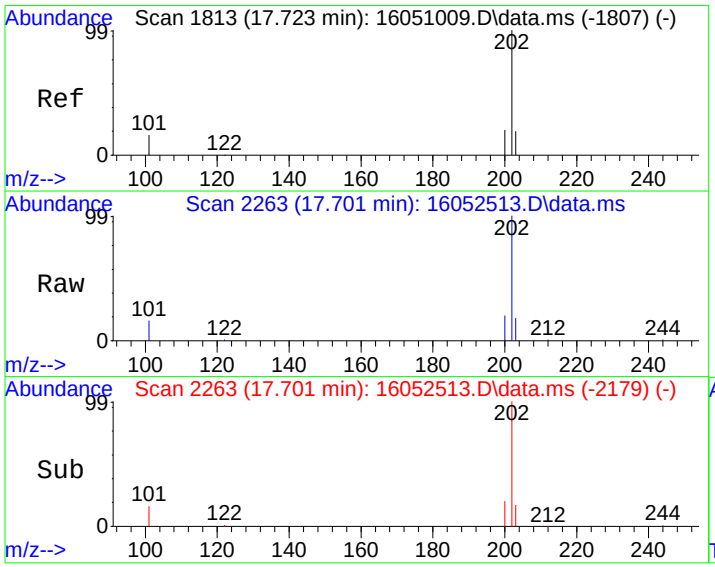


#14
Fluoranthene
Concen: 36.90 ug/kg
RT: 17.068 min Scan# 2046
Delta R.T. -0.008 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:202 Resp: 24034

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	34.4

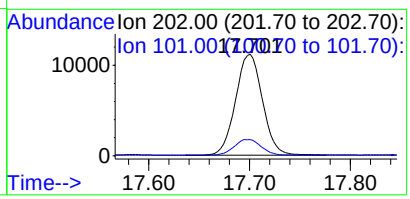


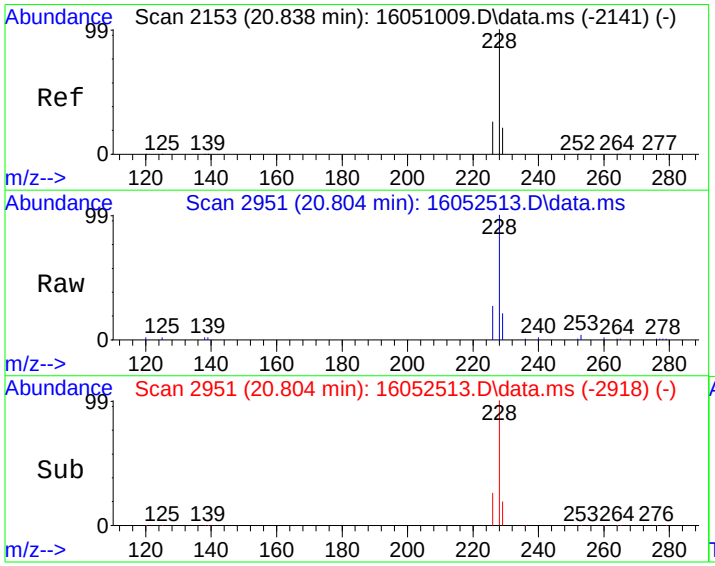


#15
Pyrene
Concen: 32.17 ug/kg
RT: 17.701 min Scan# 2263
Delta R.T. -0.005 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:202 Resp: 20692

Ion	Ratio	Lower	Upper
202	100		
101	15.6	0.0	37.3

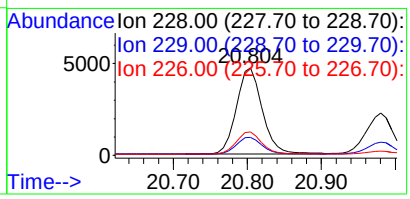


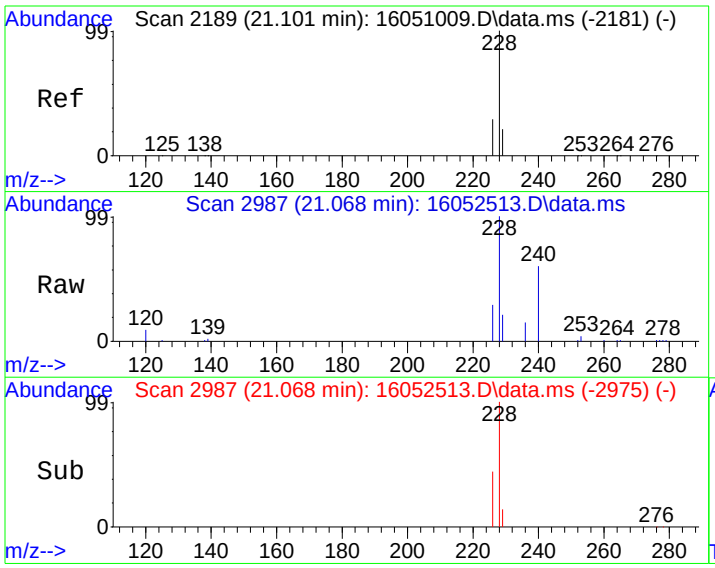


#18
Benzo[a]anthracene
Concen: 17.59 ug/kg
RT: 20.804 min Scan# 2951
Delta R.T. -0.008 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:228 Resp: 11389

Ion	Ratio	Lower	Upper
228	100		
229	19.3	0.3	40.3
226	25.9	5.7	45.7

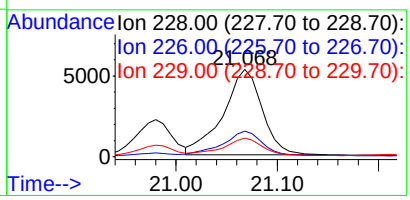


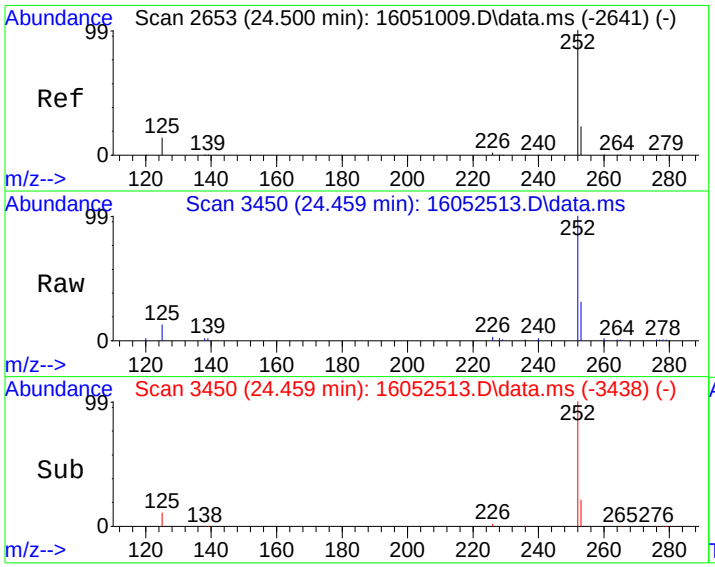


#19
Chrysene
Concen: 23.36 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:228 Resp: 14134

Ion	Ratio	Lower	Upper
228	100		
226	28.6	8.2	48.2
229	20.1	0.3	40.3

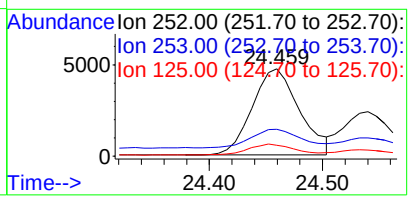


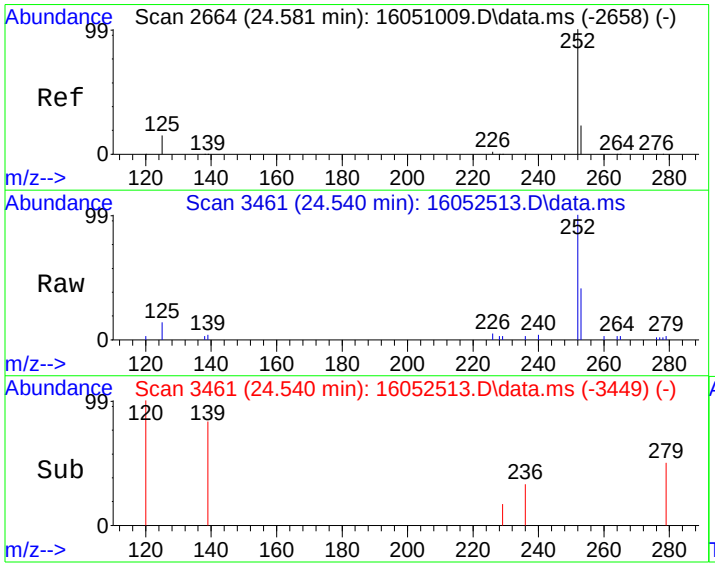


#21
Benzo[b]fluoranthene
Concen: 21.89 ug/kg
RT: 24.459 min Scan# 3450
Delta R.T. -0.016 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:252 Resp: 13655

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.3	42.3
125	11.2	0.0	32.2

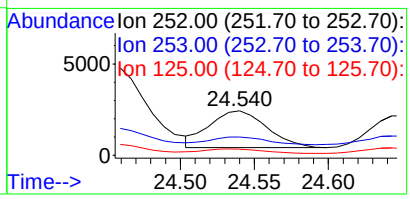


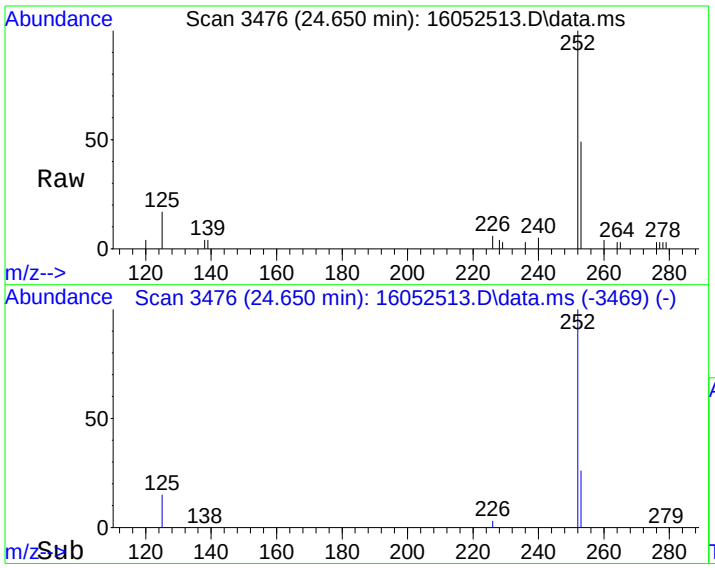


#22
Benzo[k]fluoranthene
Concen: 9.24 ug/kg
RT: 24.540 min Scan# 3461
Delta R.T. -0.015 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:252 Resp: 5385

Ion	Ratio	Lower	Upper
252	100		
253	19.9	2.5	42.5
125	10.7	0.0	32.6

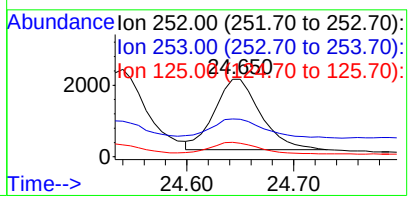


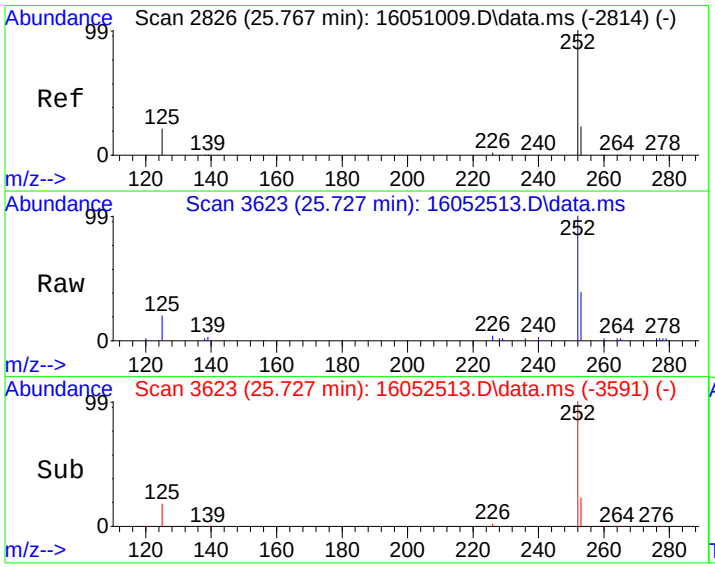


#23
Benzo(j)fluoranthene
Concen: 8.58 ug/kg
RT: 24.650 min Scan# 3476
Delta R.T. -0.015 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:252 Resp: 5892

Ion	Ratio	Lower	Upper
252	100		
253	28.4	2.2	42.2
125	17.2	0.0	37.3

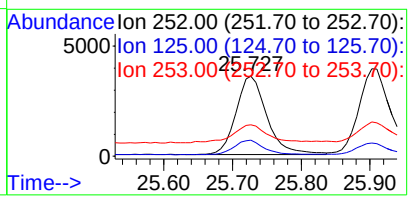


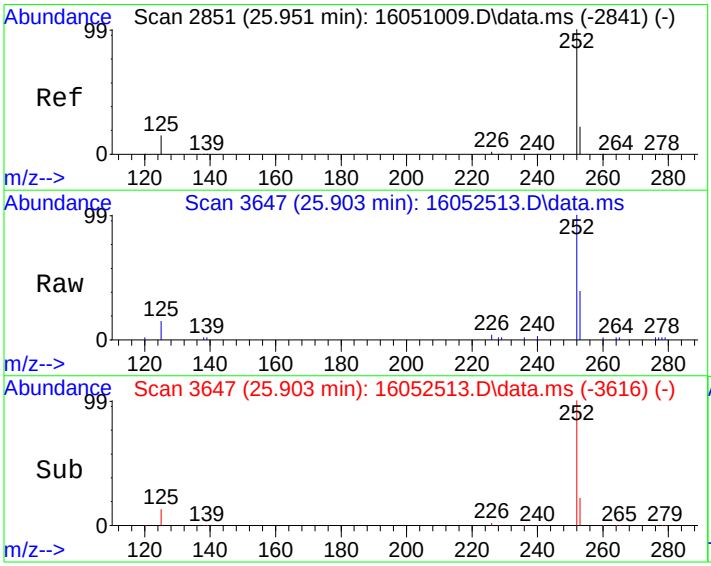


#24
Benzo(e)pyrene
Concen: 17.76 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:252 Resp: 11080

Ion	Ratio	Lower	Upper
252	100		
125	17.8	0.0	38.7
253	26.2	2.3	42.3

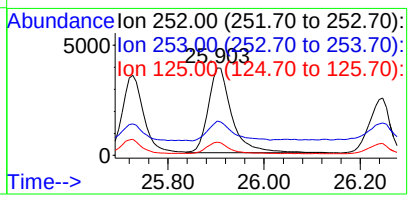


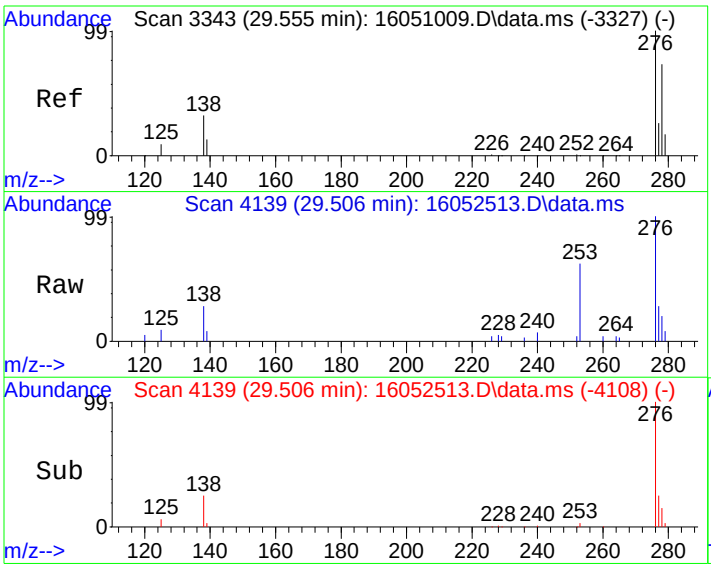


#25
Benzo[a]pyrene
Concen: 22.05 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:252 Resp: 12975

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.3	42.3
125	13.5	0.0	33.5

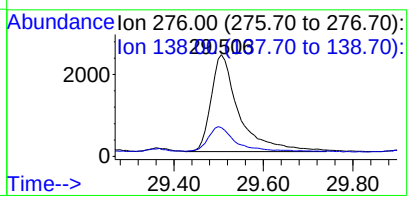


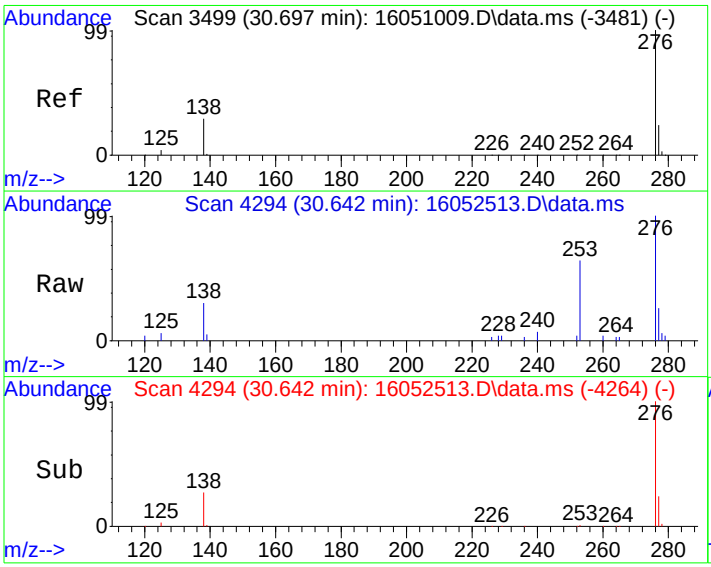


#26
Indeno[1,2,3-cd]pyrene
Concen: 12.70 ug/kg
RT: 29.506 min Scan# 4139
Delta R.T. -0.023 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:276 Resp: 10324

Ion	Ratio	Lower	Upper
276	100		
138	24.4	8.3	48.3

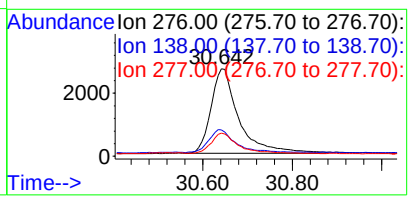




#28
Benzo[g,h,i]perylene
Concen: 17.21 ug/kg
RT: 30.642 min Scan# 4294
Delta R.T. -0.030 min
Lab File: 16052513.D
Acq: 25 May 2016 4:24 pm

Tgt Ion:276 Resp: 11572

Ion	Ratio	Lower	Upper
276	100		
138	26.8	5.8	45.8
277	24.1	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052520.D
Acq On : 25 May 2016 8:44 pm
Operator :
Sample : ICV2-160525
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 26 08:52:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1494885	4000.00 ug/kg	92
6) Acenaphthene-d10	12.856	164	1264223	4000.00 ug/kg	101
11) Phenanthrene-d10	14.976	188	2389176	4000.00 ug/kg	82
16) Chrysene-d12	20.980	240	2196591	4000.00 ug/kg	81
20) Perylene-d12	26.246	264	2100898	4000.00 ug/kg	85

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	742841	2231.83 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	55.80%	
17) 4-Terphenyl-d14	17.587	244	926153	1992.02 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	49.80%#	

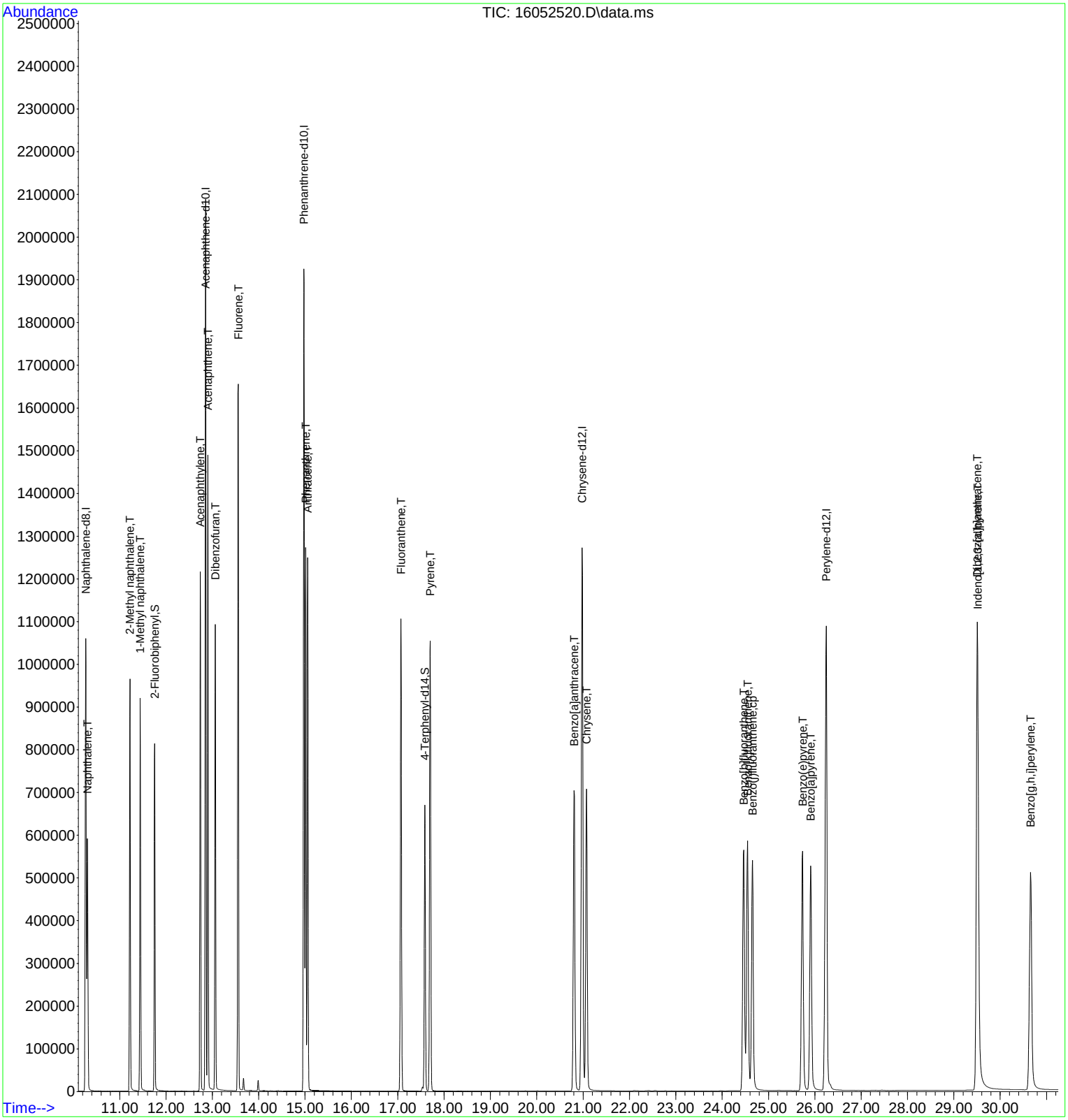
Target Compounds					Qvalue
2) Naphthalene	10.304	128	684059	2042.61 ug/kg	100
3) 2-Methyl naphthalene	11.222	142	587543	2256.81 ug/kg	99
4) 1-Methyl naphthalene	11.444	142	541490	2197.99 ug/kg	100
7) Acenaphthylene	12.738	152	1141279	2065.30 ug/kg	100
8) Acenaphthene	12.905	153	703753	2018.27 ug/kg	99
9) Dibenzofuran	13.062	168	1040854	1959.53 ug/kg	92
10) Fluorene	13.558	166	909821	1887.75 ug/kg	98
12) Phenanthrene	15.014	178	1233688	1876.65 ug/kg	100
13) Anthracene	15.058	178	1218362	1831.59 ug/kg	99
14) Fluoranthene	17.071	202	1260500	2007.31 ug/kg	99
15) Pyrene	17.700	202	1238813	2007.81 ug/kg	98
18) Benzo[a]anthracene	20.804	228	1149249	2115.89 ug/kg	100
19) Chrysene	21.075	228	1066450	2123.95 ug/kg	100
21) Benzo[b]fluoranthene	24.466	252	1128791	2096.90 ug/kg	100
22) Benzo[k]fluoranthene	24.547	252	1011092	2071.33 ug/kg	99
23) Benzo(j)fluoranthene	24.657	252	968859	2081.46 ug/kg	100
24) Benzo(e)pyrene	25.734	252	1081161	2129.95 ug/kg	99
25) Benzo[a]pyrene	25.909	252	1058487	2100.63 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.521	276	1313826	2133.34 ug/kg	98
27) Dibenz[a,h]anthracene	29.506	278	1092077	2134.12 ug/kg	99
28) Benzo[g,h,i]perylene	30.656	276	1125373	2116.67 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052520.D
Acq On : 25 May 2016 8:44 pm
Operator :
Sample : ICV2-160525
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

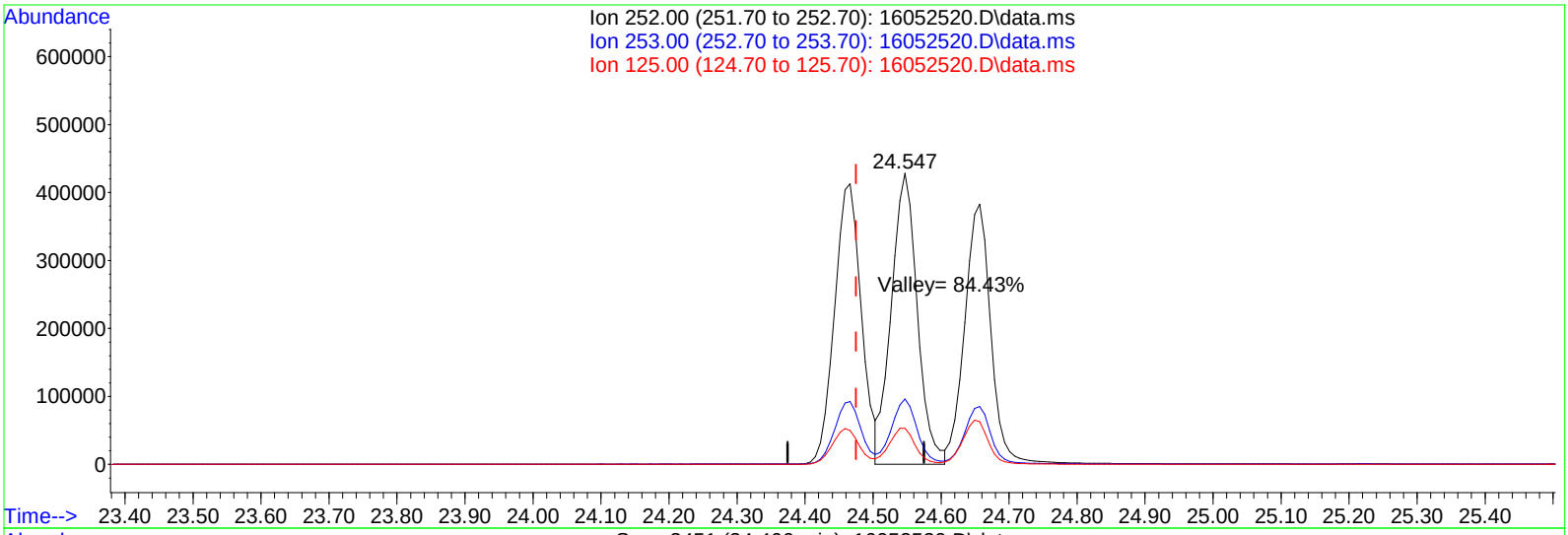
Quant Time: May 26 08:52:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

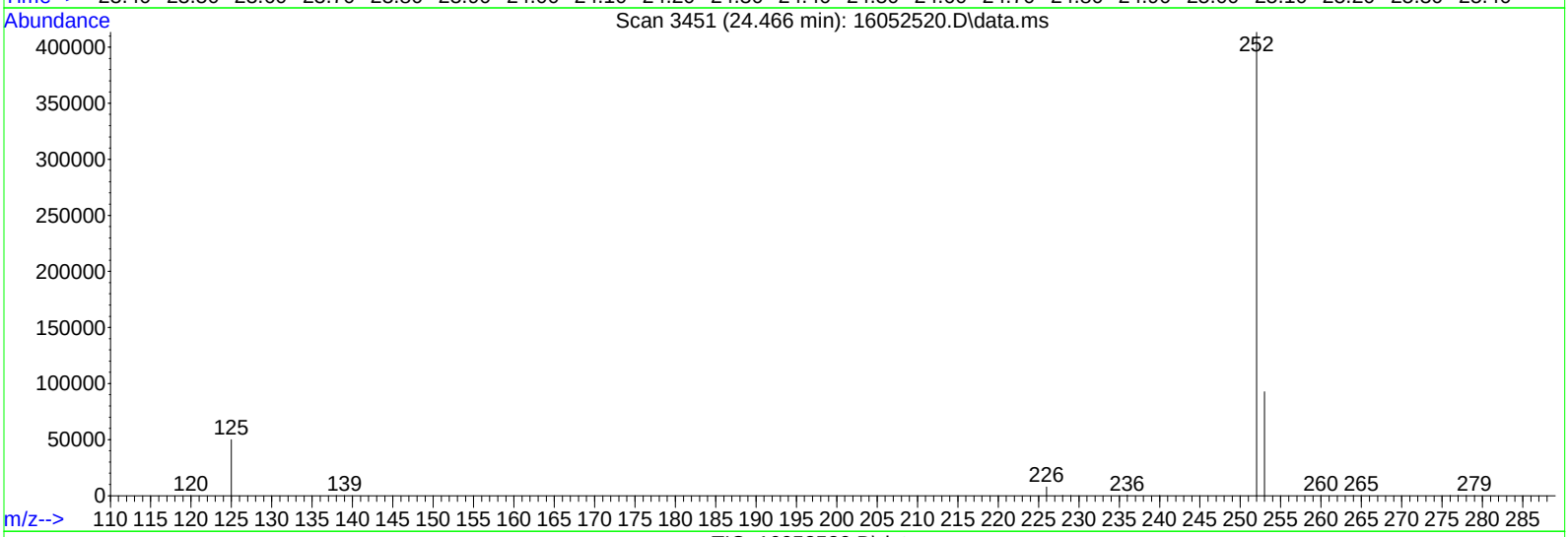


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052520.D
Acq On : 25 May 2016 8:44 pm
Operator :
Sample : ICV2-160525
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 25 21:16:10 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052520.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.466min (-0.009) 2096.90ug/kg

response 1128791

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.30
125.00	12.20	12.08
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052522.D
Acq On : 25 May 2016 9:59 pm
Operator :
Sample : SBLK-160525
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 26 08:52:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1332571	4000.00	ug/kg	82
6) Acenaphthene-d10	12.851	164	1091779	4000.00	ug/kg	87
11) Phenanthrene-d10	14.972	188	1861067	4000.00	ug/kg	64
16) Chrysene-d12	20.973	240	1766225	4000.00	ug/kg	65
20) Perylene-d12	26.232	264	1703661	4000.00	ug/kg	69

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	46	0.16	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.586	244	156	0.42	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

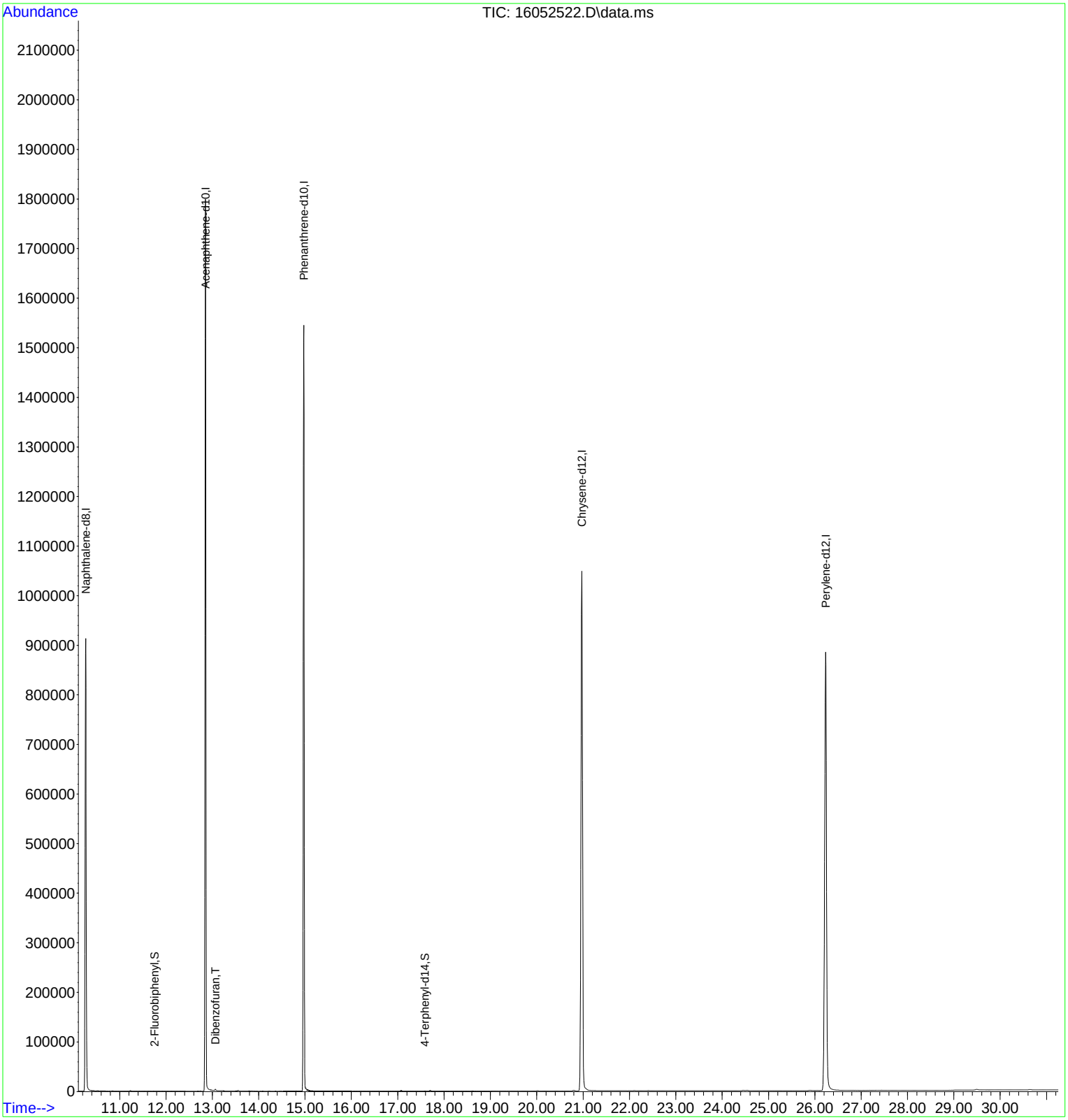
Target Compounds						Qvalue
9) Dibenzofuran	13.063	168	3254	7.09	ug/kg	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052522.D
Acq On : 25 May 2016 9:59 pm
Operator :
Sample : SBLK-160525
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 26 08:52:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052526.D
Acq On : 26 May 2016 12:27 am
Operator :
Sample : 1605135-14AMS
Misc : MS
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 26 08:52:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1667312	4000.00	ug/kg	102
6) Acenaphthene-d10	12.857	164	1329017	4000.00	ug/kg	106
11) Phenanthrene-d10	14.975	188	2301887	4000.00	ug/kg	79
16) Chrysene-d12	20.981	240	2316922	4000.00	ug/kg	85
20) Perylene-d12	26.240	264	2193820	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	32536	87.64	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.19%#			
17) 4-Terphenyl-d14	17.584	244	35806	73.01	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.83%#			

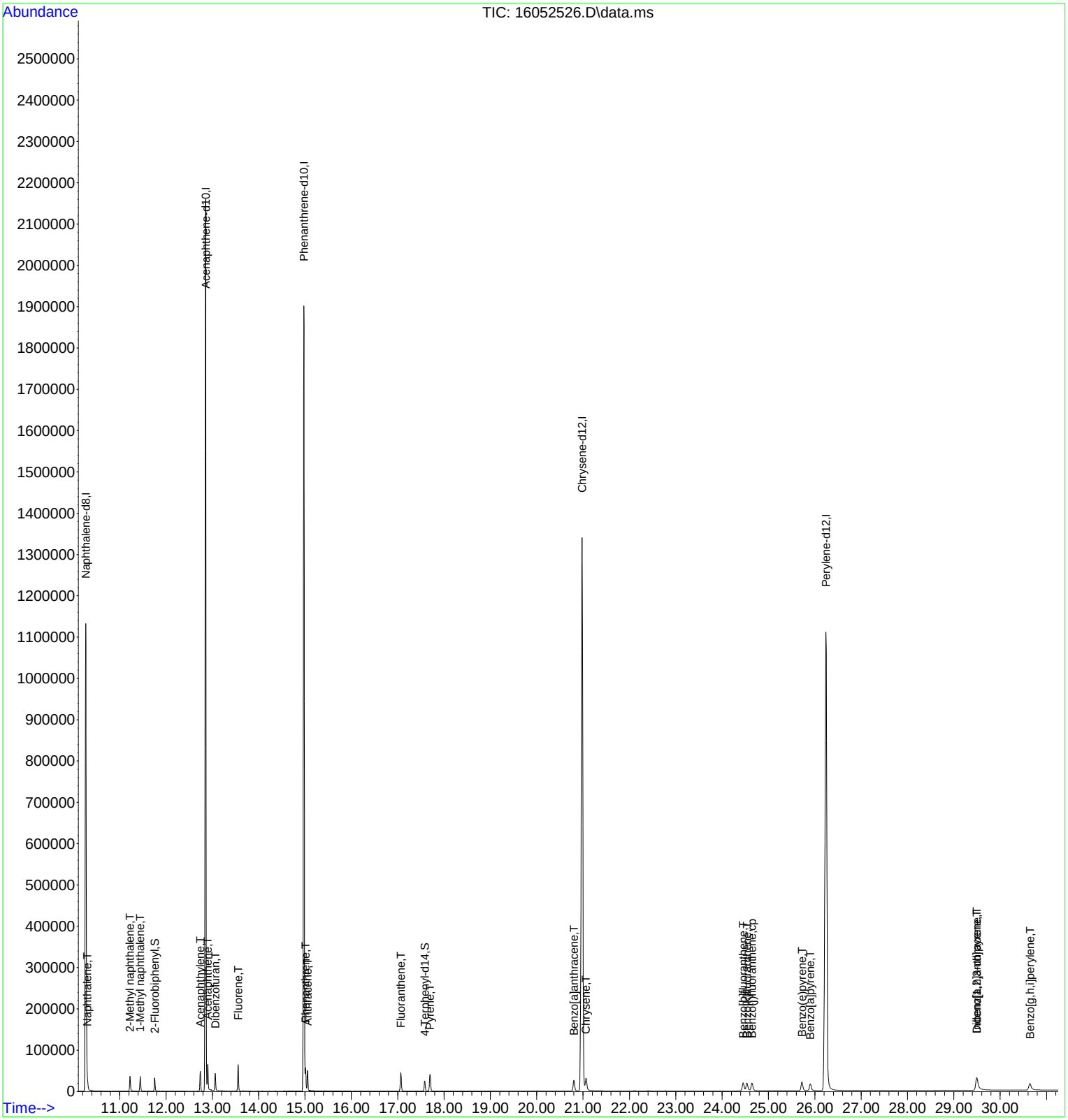
Target Compounds						Qvalue
2) Naphthalene	10.305	128	27124	72.62	ug/kg	99
3) 2-Methyl naphthalene	11.222	142	24368	83.92	ug/kg	96
4) 1-Methyl naphthalene	11.444	142	22493	81.86	ug/kg	99
7) Acenaphthylene	12.739	152	45589	78.48	ug/kg	99
8) Acenaphthene	12.901	153	28394	77.46	ug/kg	97
9) Dibenzofuran	13.063	168	42144	75.47	ug/kg	98
10) Fluorene	13.554	166	35482	70.03	ug/kg	98
12) Phenanthrene	15.010	178	48111	75.96	ug/kg	97
13) Anthracene	15.055	178	47025	73.37	ug/kg	98
14) Fluoranthene	17.068	202	51339	78.51	ug/kg	97
15) Pyrene	17.697	202	50097	78.47	ug/kg	96
18) Benzo[a]anthracene	20.798	228	43202	70.14	ug/kg	99
19) Chrysene	21.069	228	40828	71.00	ug/kg	99
21) Benzo[b]fluoranthene	24.453	252	40434	67.54	ug/kg	99
22) Benzo[k]fluoranthene	24.533	252	33431	62.53	ug/kg	98
23) Benzo(j)fluoranthene	24.643	252	36131	68.31	ug/kg	98
24) Benzo(e)pyrene	25.720	252	44394	77.89	ug/kg	99
25) Benzo[a]pyrene	25.903	252	37215	66.56	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.500	276	46990	67.32	ug/kg	99
27) Dibenz[a,h]anthracene	29.485	278	36996	61.89	ug/kg	99
28) Benzo[g,h,i]perylene	30.643	276	41088	68.19	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052526.D
Acq On : 26 May 2016 12:27 am
Operator :
Sample : 1605135-14AMS
Misc : MS
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 26 08:52:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052527.D
Acq On : 26 May 2016 1:04 am
Operator :
Sample : 1605135-14AMSD
Misc : MSD
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 26 08:52:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1651635	4000.00 ug/kg	101
6) Acenaphthene-d10	12.856	164	1302306	4000.00 ug/kg	104
11) Phenanthrene-d10	14.976	188	2228867	4000.00 ug/kg	76
16) Chrysene-d12	20.980	240	2310573	4000.00 ug/kg	85
20) Perylene-d12	26.247	264	2216809	4000.00 ug/kg	89

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	32852	89.33 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#		
17) 4-Terphenyl-d14	17.584	244	36180	73.98 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.85%#		

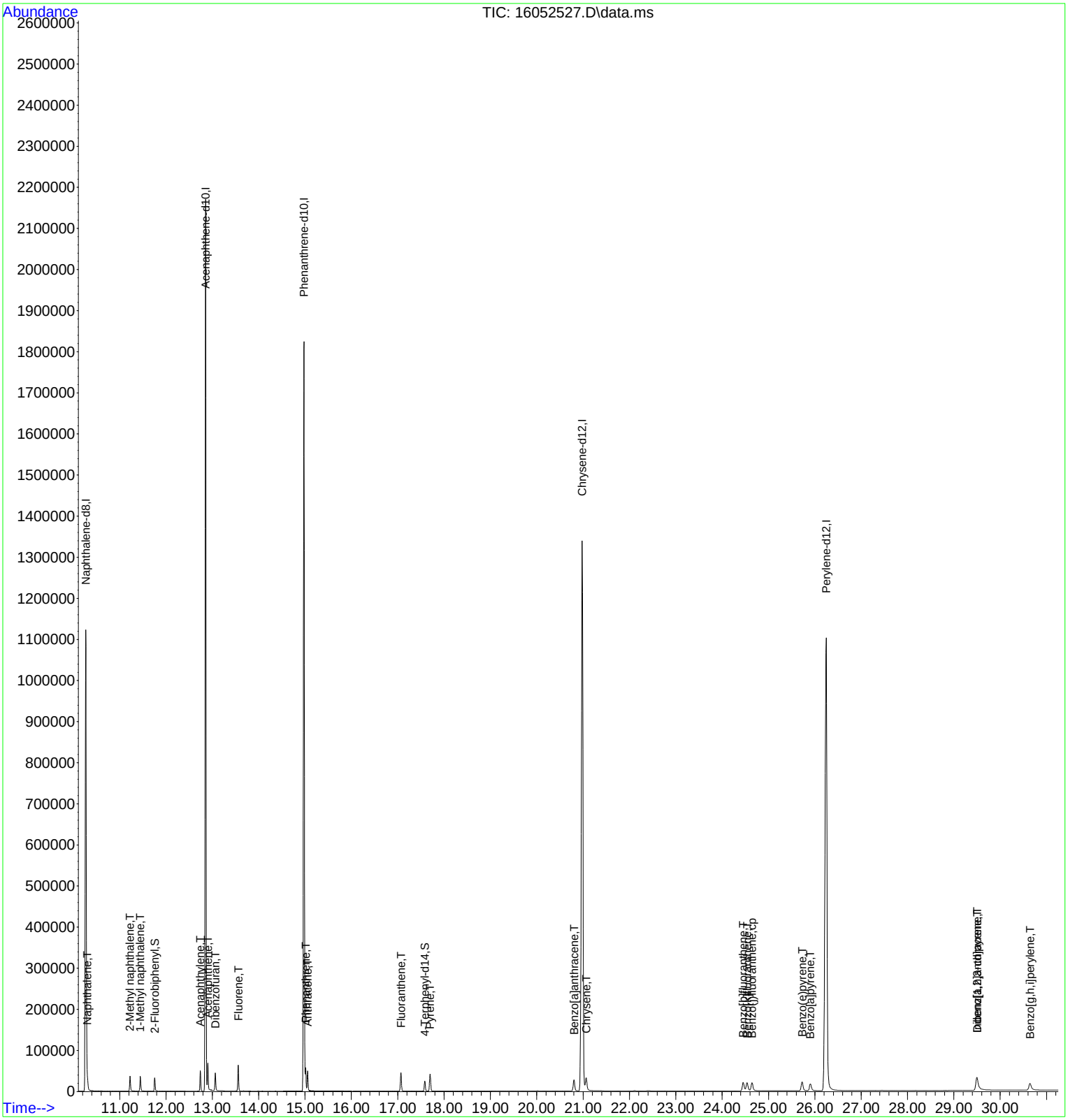
Target Compounds					Qvalue
2) Naphthalene	10.304	128	28551	77.16 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	25478	88.58 ug/kg	99
4) 1-Methyl naphthalene	11.448	142	23543	86.49 ug/kg	99
7) Acenaphthylene	12.738	152	47191	82.90 ug/kg	99
8) Acenaphthene	12.905	153	29370	81.77 ug/kg	99
9) Dibenzofuran	13.063	168	42937	78.47 ug/kg	94
10) Fluorene	13.558	166	36021	72.55 ug/kg	99
12) Phenanthrene	15.012	178	48107	78.44 ug/kg	97
13) Anthracene	15.054	178	47280	76.19 ug/kg	98
14) Fluoranthene	17.068	202	51738	81.81 ug/kg	97
15) Pyrene	17.698	202	51033	82.68 ug/kg	96
18) Benzo[a]anthracene	20.804	228	44481	72.48 ug/kg	99
19) Chrysene	21.068	228	42224	73.74 ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	41910	69.33 ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	34896	64.63 ug/kg	98
23) Benzo(j)fluoranthene	24.643	252	37655	70.56 ug/kg	99
24) Benzo(e)pyrene	25.727	252	46090	80.10 ug/kg	99
25) Benzo[a]pyrene	25.903	252	38683	68.53 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.499	276	48777	69.24 ug/kg	98
27) Dibenz[a,h]anthracene	29.492	278	38465	63.82 ug/kg	99
28) Benzo[g,h,i]perylene	30.642	276	42637	70.11 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052527.D
Acq On : 26 May 2016 1:04 am
Operator :
Sample : 1605135-14AMSD
Misc : MSD
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 26 08:52:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052530.D
Acq On : 26 May 2016 2:55 am
Operator :
Sample : CCV-160525
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 26 08:52:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1875325	4000.00 ug/kg	115
6) Acenaphthene-d10	12.856	164	1539094	4000.00 ug/kg	123
11) Phenanthrene-d10	14.978	188	2805100	4000.00 ug/kg	96
16) Chrysene-d12	20.987	240	2687223	4000.00 ug/kg	99
20) Perylene-d12	26.254	264	2544373	4000.00 ug/kg	102

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	462827	1108.45 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 27.71%#		
17) 4-Terphenyl-d14	17.584	244	558281	981.54 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.54%#		

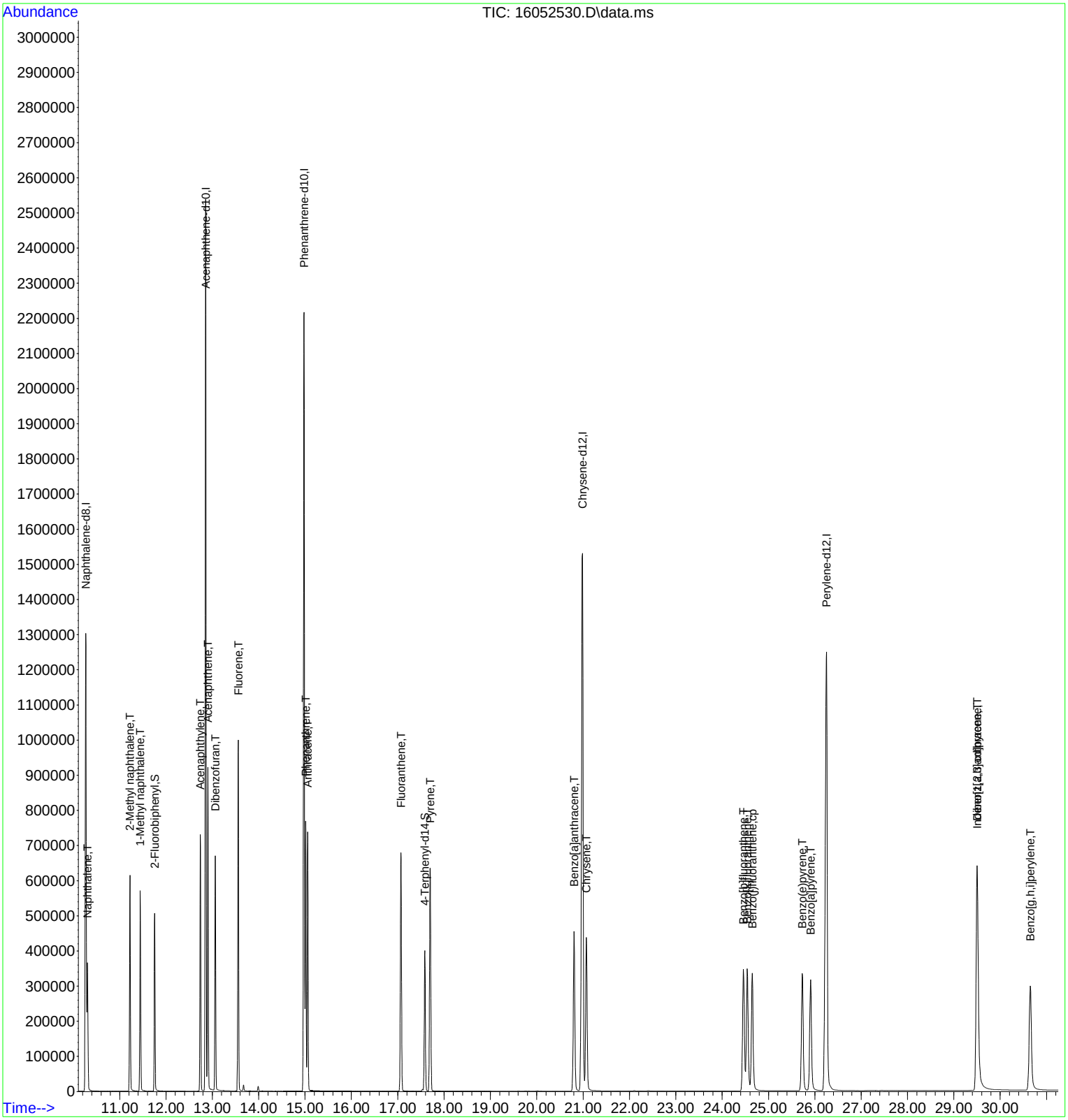
Target Compounds					Qvalue
2) Naphthalene	10.304	128	419632	998.83 ug/kg	100
3) 2-Methyl naphthalene	11.221	142	366484	1122.13 ug/kg	99
4) 1-Methyl naphthalene	11.444	142	337591	1092.34 ug/kg	99
7) Acenaphthylene	12.738	152	695535	1033.88 ug/kg	99
8) Acenaphthene	12.905	153	426987	1005.85 ug/kg	99
9) Dibenzofuran	13.062	168	630442	974.91 ug/kg	94
10) Fluorene	13.558	166	543082	925.58 ug/kg	99
12) Phenanthrene	15.014	178	724960	939.27 ug/kg	99
13) Anthracene	15.058	178	718686	920.22 ug/kg	99
14) Fluoranthene	17.068	202	760167	1001.61 ug/kg	99
15) Pyrene	17.701	202	747957	1007.82 ug/kg	97
18) Benzo[a]anthracene	20.804	228	698634	1023.62 ug/kg	99
19) Chrysene	21.068	228	642432	1018.74 ug/kg	100
21) Benzo[b]fluoranthene	24.459	252	680004	1020.75 ug/kg	100
22) Benzo[k]fluoranthene	24.540	252	595704	990.49 ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	584622	1013.18 ug/kg	99
24) Benzo(e)pyrene	25.727	252	645929	1025.54 ug/kg	99
25) Benzo[a]pyrene	25.910	252	629826	1014.28 ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	777859	1018.02 ug/kg	97
27) Dibenz[a,h]anthracene	29.499	278	644267	1012.52 ug/kg	98
28) Benzo[g,h,i]perylene	30.649	276	659869	1001.03 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052530.D
Acq On : 26 May 2016 2:55 am
Operator :
Sample : CCV-160525
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 26 08:52:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8
Calibration Curve
For

DHL Work Order
1605135

CAL ID: 660

Method 8270 PAH Calibration Curve Sheet

Instrument ID: GCMS #8 **Calibration File Name:** PP160517.CAL

Target Concentration	Solvent Amount mL	Standard Preparation Stocks and Surrogate (µL/mL)	Final Volume mL
5 ppb	0.999	0.001 mL of 5000 ppb	1
10 ppb	0.998	0.002 mL of 5000 ppb	1
50 ppb	0.990	0.01 mL of 5000 ppb	1
100 ppb	0.980	0.02 mL of 5000 ppb	1
500 ppb	0.900	0.10 mL of 5000 ppb	1
1000 ppb	0.800	0.20 mL of 5000 ppb	1
2000 ppb	0.600	0.40 mL of 5000 ppb	1
5000 ppb	----	PAHCAL160510	10
SSCV 2500 ppb	0.500	0.50 mL of PAHSSCV160510-1	1
SSCV 2500 ppb	----	PAHSSCV160510-2	1

Standards Used for the Calibration Curve

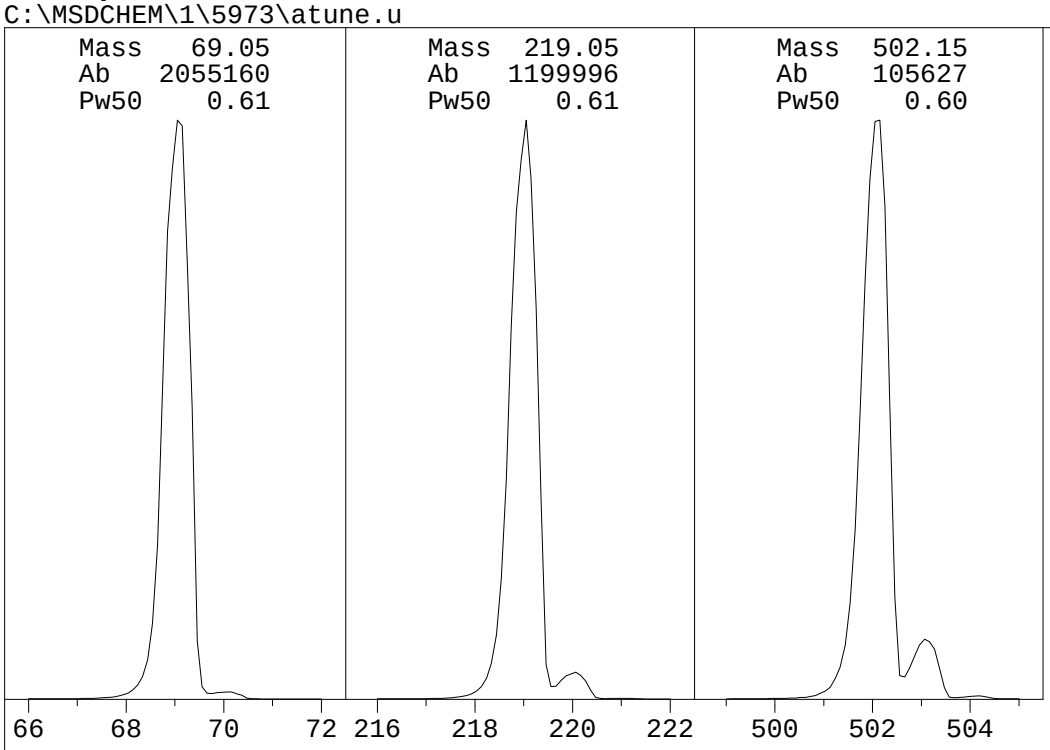
Primary Stock STDs	DHL Standard ID	Second Source (SS) Stock STDs	DHL Standard ID
5 PPM (5000 PPB) PAH CAL STD	**PAHCAL160510**	5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160510-1**
		5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160510-2**

Review Item	Acceptance Criteria	Yes	No	N/A	2nd Level Review
1. Are all standards within expiration dates?	Primary Stocks = 1 year Intermediate Standards = 6 months	X			X
2. Are all manual integrations listed on MI tracking form? **(DoD Projects only)**	Manual Integration Tracking Form			X	X
3. Does the tune and resolution check meet criteria?	Benzo(b) / Benzo(k)phenanthrene Valley > 50% See Tune Eval Report	X			X
4. Does the ICAL curve meet criteria? Use average CF only if %RSD < 15%	%RSD < 15% COD ≥ 0.990	X			X
5. Has the low point been reprocessed under the new ICAL curve and meets criteria?	70-130% recovery	X			X
6. Has the SSCV been analyzed and meets criteria?	80-120% recovery	X			X

Analyst: Karyn Lane Date: 05/18/16

Second-Level Review: Date: 05/19/2016

Tue May 17 15:37:19 2016 Instrument: GCMS #8
C:\MSDCHEM\1\5973\atune.u

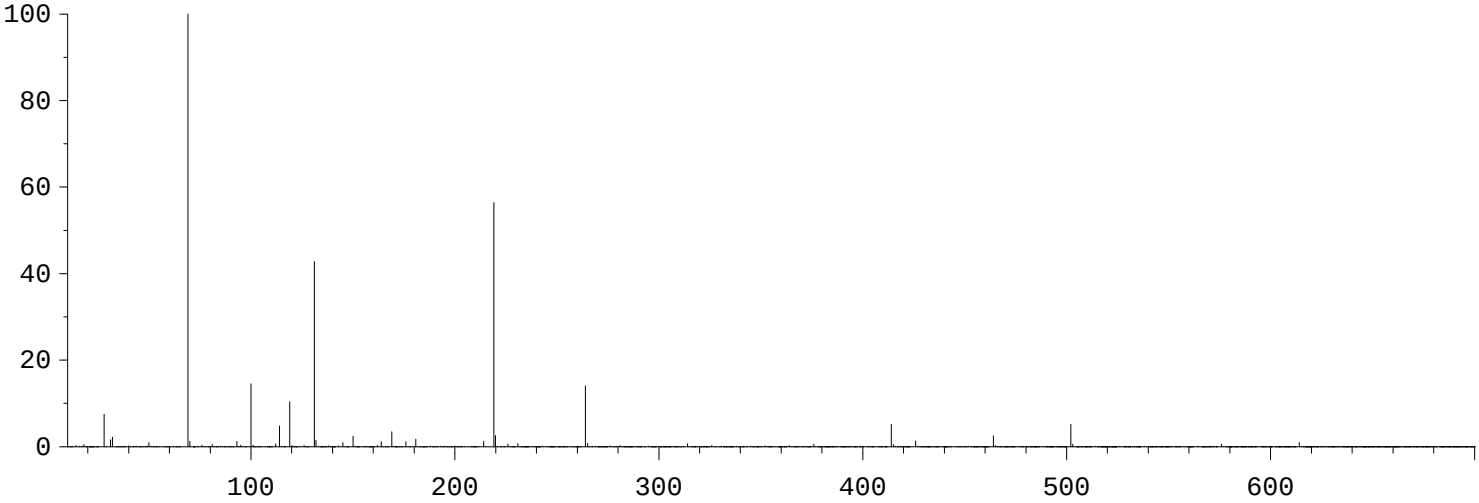


Ion Pol	POS	MassGain	48
		MassOffs	-11
Emission	34.6	AmuGain	2098
EIEnrgy	69.9	AmuOffs	132
Filament	2	Wid219	-0.001
		DC Pol	NEG
Repeller	37.83		
IonFcus	95.9	HEDEnab	ON
EntLens	12.0	EMVolts	1506
EntOffs	19.33		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10

Zones:

MS Source	230	Foreline	41
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 0 Step: 0.10
862 peaks Base: 69.05 Abundance: 1927168



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	1927168	100.00	70.05	23616	1.23
219.05	1086464	56.38	219.95	49704	4.57
502.05	98928	5.13	503.05	10766	10.88

Air/Water Check: H20~0.48% N2~7.48% O2~2.21% CO2~0.12% N2/H2O~1565.94%

Column Flow: Front: 0 Back: 1.887 ml/min. Interface Temp: 310

Ramp Criteria:
Ion Focus Maximum 125 volts using ion 219; EM Gain 34065
Repeller Maximum 38 volts using ion 502;

MassGain Values @Samples: 45@3 45@2 45@1 45@0 48@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	19.3	19.3	19.3	19.3	19.3	19.3	19.3

Response Factor Report GCMS #8

Method Path : C:\msdchem\1\METHODS\
Method File : PAH160517.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Wed May 18 08:55:04 2016
Response Via : Initial Calibration

Calibration Files
1 =16051715.D 2 =16051716.D 3 =16051717.D 4 =16051718.D 5 =16051719.D 6 =16051720.D 7 =16051721.D
8 =16051722.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD	Fit	RSD/CF	Constant	Linear	Quad
1)	I	Naphthalene-d8	----------ISTD----------														
2)	T	Naphthalene	0.971	0.931	0.909	0.923	0.896	0.882	0.854	0.803	0.896	5.70	A	0.0570	0.0000	0.8961	0.0000
3)	T	2-Methyl napht...	0.668	0.737	0.723	0.752	0.728	0.704	0.661	0.601	0.697	7.19	A	0.0719	0.0000	0.6966	0.0000
4)	T	1-Methyl napht...	0.697	0.702	0.687	0.699	0.676	0.648	0.610	0.555	0.659	7.98	A	0.0798	0.0000	0.6592	0.0000
5)	S	2-Fluorobiphenyl	0.930	0.951	0.942	0.982	0.925	0.877	0.808	0.711	0.891	10.09	A	0.1009	0.0000	0.8906	0.0000
6)	I	Acenaphthene-d10	----------ISTD----------														
7)	T	Acenaphthylene	1.873	1.811	1.779	1.812	1.778	1.749	1.659	1.526	1.748	6.23	A	0.0623	0.0000	1.7484	0.0000
8)	T	Acenaphthene	1.167	1.152	1.126	1.146	1.113	1.099	1.051	0.972	1.103	5.81	A	0.0581	0.0000	1.1033	0.0000
9)	T	Dibenzofuran	1.723	1.773	1.714	1.766	1.706	1.690	1.606	1.468	1.681	5.96	A	0.0596	0.0000	1.6806	0.0000
10)	T	Fluorene	1.574	1.580	1.544	1.570	1.557	1.539	1.475	1.360	1.525	4.88	A	0.0488	0.0000	1.5249	0.0000
11)	I	Phenanthrene-d10	----------ISTD----------														
12)	T	Phenanthrene	1.343	1.225	1.137	1.093	1.075	1.049	0.987	0.896	1.101	12.58	A	0.1258	0.0000	1.1006	0.0000
13)	T	Anthracene	1.350	1.221	1.143	1.125	1.092	1.066	1.009	0.903	1.114	12.07	A	0.1207	0.0000	1.1137	0.0000
14)	T	Fluoranthene	1.583	1.275	1.196	1.123	1.107	1.088	1.044	0.963	1.172	16.25	*Q	1.0000	0.0006	1.1096	-0.1184
15)	T	Pyrene	1.586	1.256	1.180	1.100	1.074	1.064	1.028	0.961	1.156	16.94	*Q	1.0000	0.0006	1.0802	-0.0964
16)	I	Chrysene-d12	----------ISTD----------														
17)	S	4-Terphenyl-d14	0.872	0.888	0.864	0.856	0.860	0.858	0.821	0.754	0.847	4.97	A	0.0497	0.0000	0.8466	0.0000
18)	T	Benzo[a]anthra...	1.506	1.204	1.026	1.022	1.027	1.032	0.987	0.920	1.091	17.03	*Q	0.9999	0.0005	1.0384	-0.0949
19)	T	Chrysene	1.521	1.202	0.989	0.969	0.955	0.951	0.910	0.854	1.044	20.85	*Q	1.0000	0.0007	0.9573	-0.0833
20)	I	Perylene-d12	----------ISTD----------														
21)	T	Benzo[b]fluora...	1.525	1.225	1.056	1.050	1.055	1.058	1.026	0.966	1.120	15.99	*Q	1.0000	0.0005	1.0659	-0.0797
22)	T	Benzo[k]fluora...	1.318	1.047	0.912	0.909	0.937	0.953	0.939	0.886	0.987	14.39	*Q	0.9999	0.0003	0.9587	-0.0575
23)	cp	Benzo(j)fluora...	1.597	1.138	0.982	0.939	0.908	0.923	0.883	0.833	1.025	24.19	#*Q	0.9999	0.0007	0.9226	-0.0727
24)	T	Benzo(e)pyrene	1.554	1.244	1.042	1.019	0.993	1.003	0.966	0.907	1.091	19.34	*Q	1.0000	0.0006	1.0086	-0.0814
25)	T	Benzo[a]pyrene	1.491	1.168	1.005	0.982	0.978	0.983	0.962	0.916	1.061	17.79	*Q	1.0000	0.0005	0.9888	-0.0580
26)	T	Indeno[1,2,3-c...	1.996	1.545	1.257	1.238	1.216	1.208	1.175	1.102	1.342	21.92	*Q	1.0000	0.0009	1.2223	-0.0964
27)	T	Dibenz[a,h]ant...	2.036	1.480	1.029	1.030	1.006	1.007	0.982	0.912	1.185	32.52	*Q	0.9999	0.0011	1.0172	-0.0844
28)	T	Benzo[g,h,i]pe...	1.728	1.360	1.090	1.080	1.051	1.040	1.013	0.954	1.164	22.12	*Q	1.0000	0.0008	1.0532	-0.0802

(#) = Out of Range

Sequence Name: C:\msdchem\1\sequence\160517.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160517\
Instrument Name: GCMS #8
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

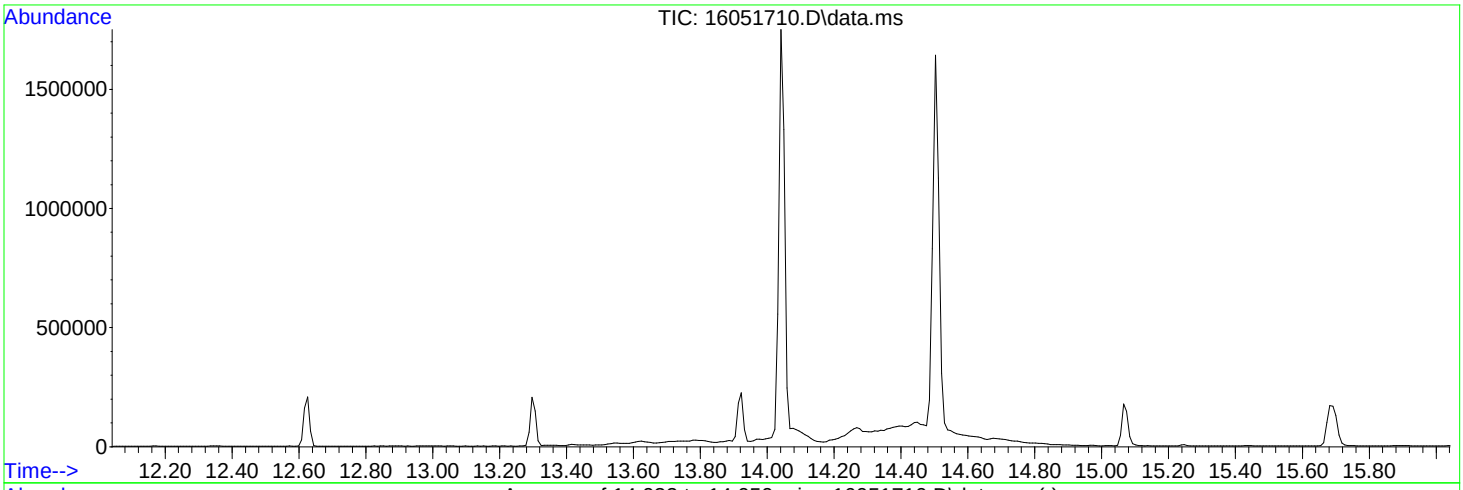
On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

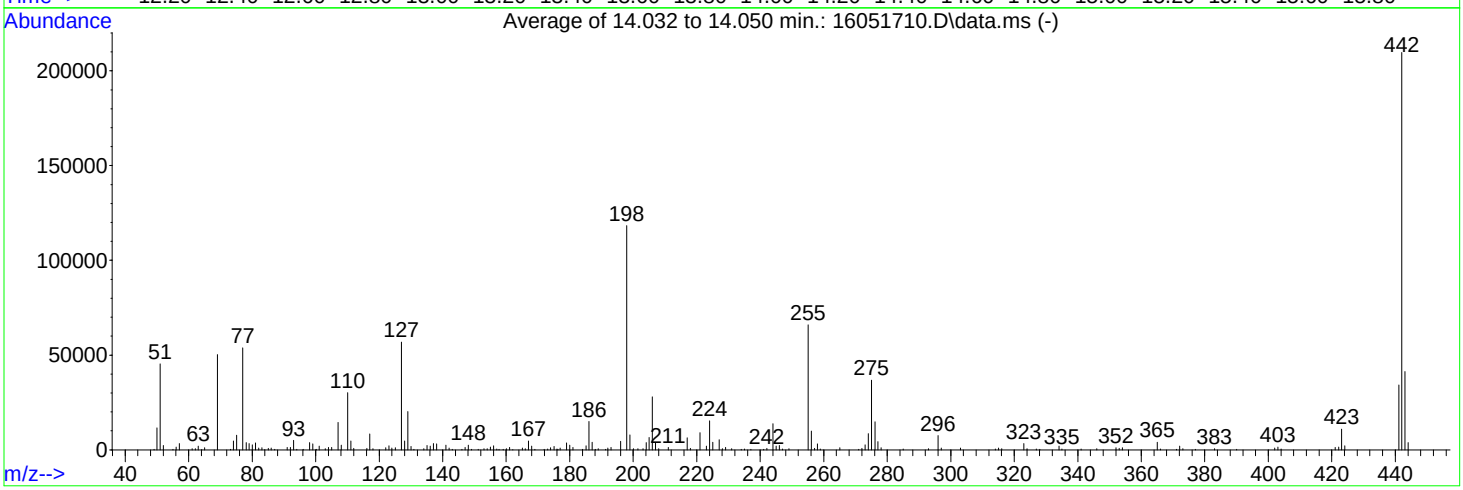
Line			Sample Name/Misc Info		
1)	Sample	1	16051601	DFTPPPCB	DFTPP-160517
2)	Sample	2	16051602	1660-160511	ICV-160517
3)	Sample	3	16051703	1660-160511	LCS-75186
4)	Sample	4	16051704	1660-160511	LCSD-75186
5)	Sample	5	16051705	1660-160511	MB-75186
6)	Sample	6	16051706	1660-160511	1605115-01B
7)	Sample	7	16051707	1660-160511	1605115-02B
8)	Sample	1	16051708	DFTPPPAH	DFTPP-160517
9)	Sample	2	16051709	PAH160510	ICV-160517
10)	Sample	1	16051710	DFTPPPAH	DFTPP-160517
11)	Sample	2	16051711	PAH160510	ICV-160517
12)	Sample	3	16051712	PAH160510	SBLK
13)	Sample	3	16051713	PAH160510	SBLK
14)	Sample	3	16051714	PAH160510	SBLK
15)	Sample	4	16051715	PAH160510	P1-160517 5
16)	Sample	5	16051716	PAH160510	P2-160517 10
17)	Sample	6	16051717	PAH160510	P3-160517 50
18)	Sample	7	16051718	PAH160510	P4-160517 100
19)	Sample	8	16051719	PAH160510	P5-160517 500
20)	Sample	9	16051720	PAH160510	P6-160517 1000
21)	Sample	10	16051721	PAH160510	P7-160517 2000
22)	Sample	11	16051722	PAH160510	P8-160517 5000
23)	Sample	12	16051723	PAH160510	SSCV-160517
24)	Sample	13	16051724	PAH160510	SSCV-160517

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051710.D
Acq On : 17 May 2016 1:34 pm
Operator :
Sample : DFTPP-160517
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015





AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.3	45352	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.4	50218	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.0	56837	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	118309	PASS
199	198	5	9	6.7	7917	PASS
275	198	10	60	31.0	36677	PASS
365	198	1	200	3.4	4059	PASS
441	442	0.01	24	16.3	34164	PASS
442	198	50	400	177.3	209768	PASS
443	442	15	24	19.7	41255	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051715.D
Acq On : 17 May 2016 4:58 pm
Operator :
Sample : P1-160517 5
Misc : CAL1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 14:55:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.276	136	1615408	4000.00 ug/kg	99
6) Acenaphthene-d10	12.862	164	1299470	4000.00 ug/kg	104
11) Phenanthrene-d10	14.983	188	2692201	4000.00 ug/kg	92
16) Chrysene-d12	20.996	240	2729963	4000.00 ug/kg	101
20) Perylene-d12	26.262	264	2530056	4000.00 ug/kg	102

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	1877	5.22 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.13%#		
17) 4-Terphenyl-d14	17.598	244	2976	5.15 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.13%#		

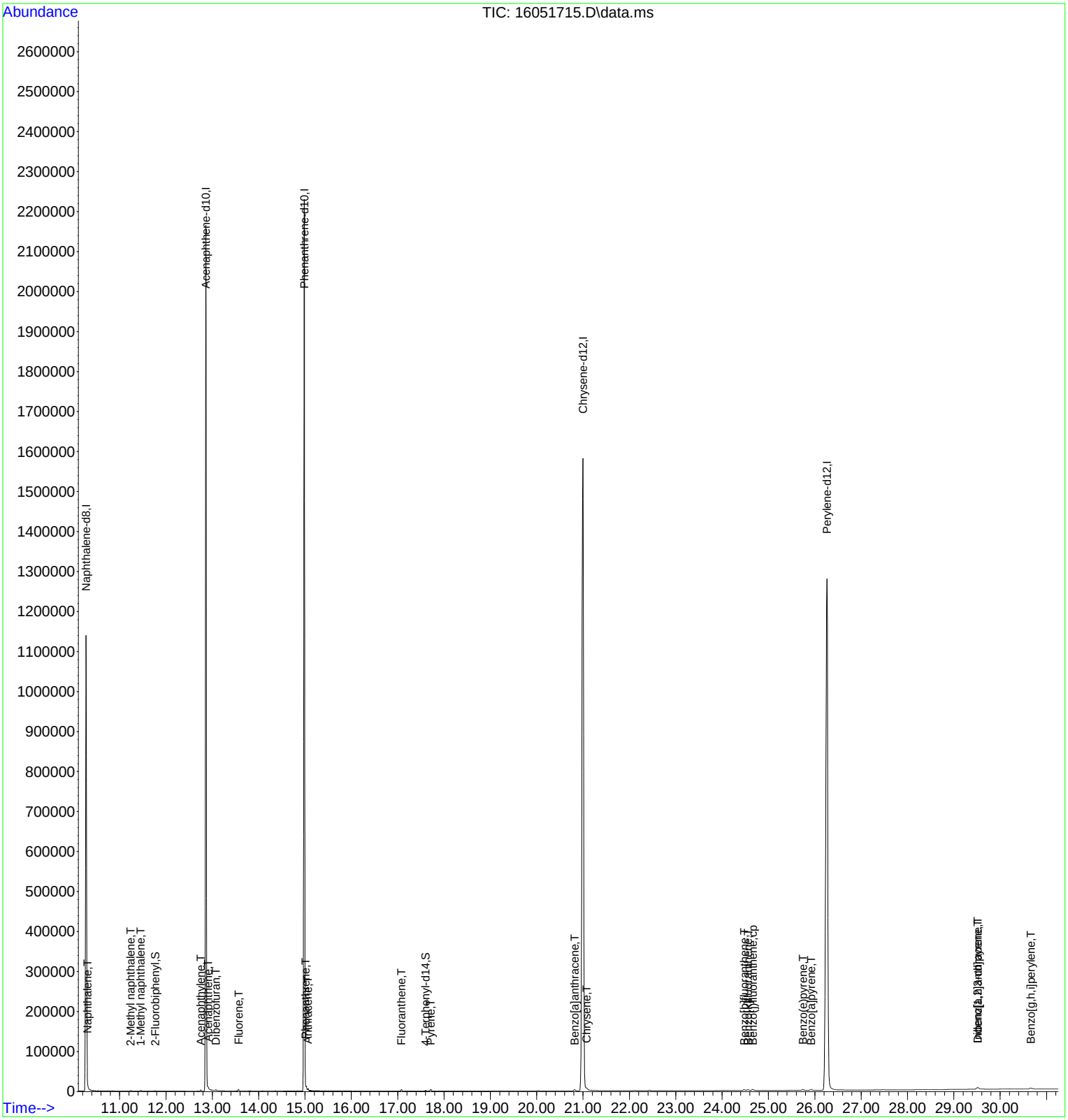
Target Compounds					Qvalue
2) Naphthalene	10.313	128	1960	5.42 ug/kg	99
3) 2-Methyl naphthalene	11.234	142	1349	4.80 ug/kg	100
4) 1-Methyl naphthalene	11.457	142	1407	5.29 ug/kg	95
7) Acenaphthylene	12.749	152	3043	5.36 ug/kg	98
8) Acenaphthene	12.911	153	1895	5.29 ug/kg	96
9) Dibenzofuran	13.073	168	2799	5.13 ug/kg	93
10) Fluorene	13.564	166	2556	5.16 ug/kg	99
12) Phenanthrene	15.019	178	4521	6.10 ug/kg	97
13) Anthracene	15.063	178	4542	6.06 ug/kg	98
14) Fluoranthene	17.079	202	5328	5.09 ug/kg	100
15) Pyrene	17.709	202	5338	5.08 ug/kg	96
18) Benzo[a]anthracene	20.812	228	5140	5.45 ug/kg	99
19) Chrysene	21.083	228	5190	5.21 ug/kg	98
21) Benzo[b]fluoranthene	24.475	252	4824	5.45 ug/kg	98
22) Benzo[k]fluoranthene	24.556	252	4169	5.77 ug/kg	98
23) Benzo(j)fluoranthene	24.665	252	5051	5.48 ug/kg	98
24) Benzo(e)pyrene	25.742	252	4914	5.22 ug/kg	97
25) Benzo[a]pyrene	25.918	252	4715	5.41 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.522	276	6312	5.30 ug/kg	97
27) Dibenz[a,h]anthracene	29.507	278	6440	5.51 ug/kg	98
28) Benzo[g,h,i]perylene	30.657	276	5466	5.18 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051715.D
Acq On : 17 May 2016 4:58 pm
Operator :
Sample : P1-160517 5
Misc : CAL1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 14:55:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051716.D
Acq On : 17 May 2016 5:34 pm
Operator :
Sample : P2-160517 10
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 14:21:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.277	136	1669821	4000.00 ug/kg	102
6) Acenaphthene-d10	12.862	164	1410989	4000.00 ug/kg	113
11) Phenanthrene-d10	14.983	188	2926710	4000.00 ug/kg	100
16) Chrysene-d12	20.995	240	2655348	4000.00 ug/kg	98
20) Perylene-d12	26.262	264	2418020	4000.00 ug/kg	97

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.766	172	3970	10.68 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.27%#		
17) 4-Terphenyl-d14	17.595	244	5897	10.49 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.26%#		

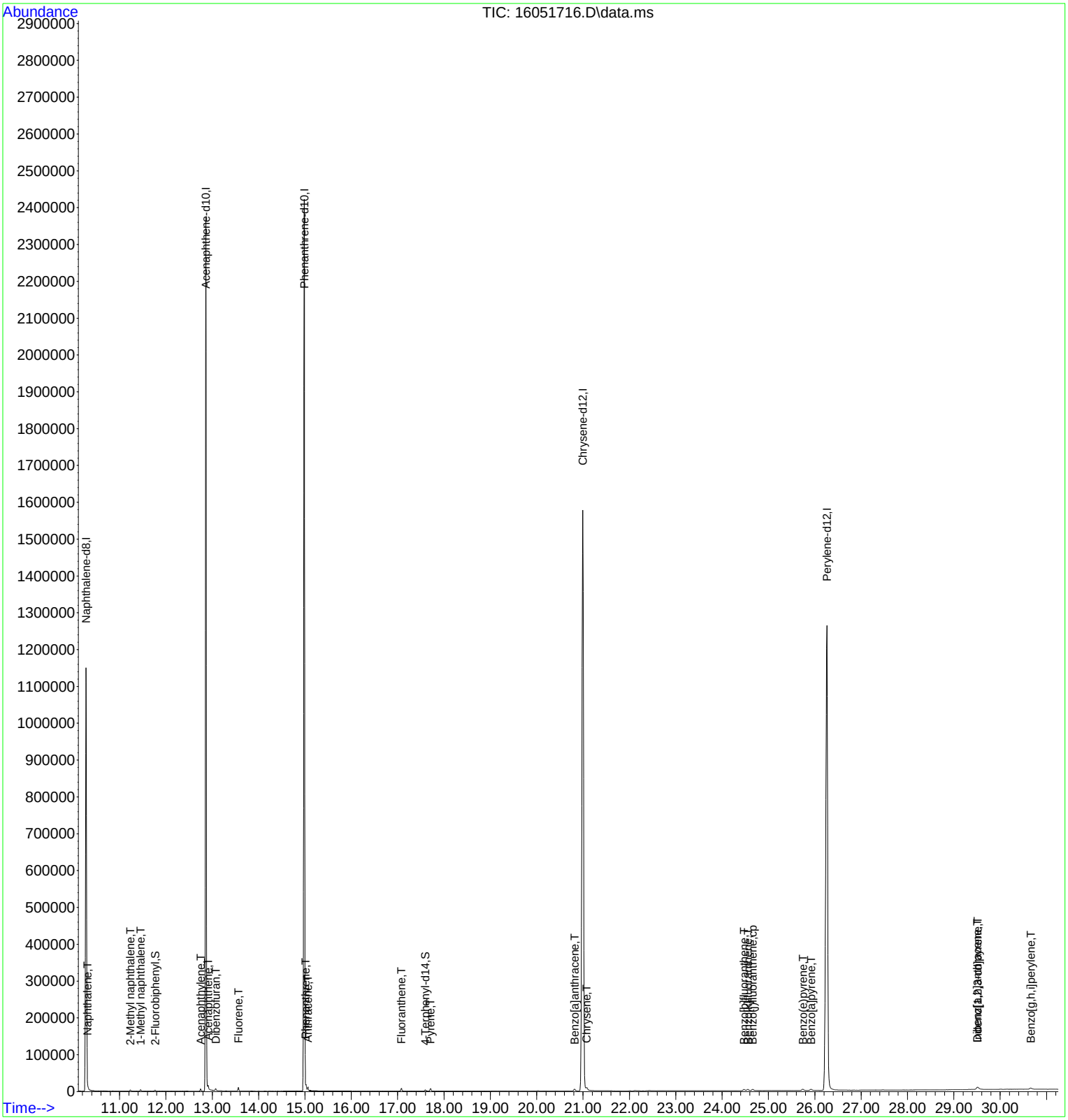
Target Compounds					Qvalue
2) Naphthalene	10.314	128	3887	10.39 ug/kg	99
3) 2-Methyl naphthalene	11.231	142	3075	10.57 ug/kg	100
4) 1-Methyl naphthalene	11.453	142	2932	10.65 ug/kg	98
7) Acenaphthylene	12.749	152	6390	10.36 ug/kg	98
8) Acenaphthene	12.911	153	4063	10.44 ug/kg	98
9) Dibenzofuran	13.073	168	6254	10.55 ug/kg	99
10) Fluorene	13.564	166	5573	10.36 ug/kg	99
12) Phenanthrene	15.019	178	8966	11.13 ug/kg	98
13) Anthracene	15.063	178	8936	10.97 ug/kg	98
14) Fluoranthene	17.079	202	9332	9.45 ug/kg	98
15) Pyrene	17.708	202	9188	9.36 ug/kg	98
18) Benzo[a]anthracene	20.820	228	7990	9.79 ug/kg	98
19) Chrysene	21.083	228	7982	9.83 ug/kg	98
21) Benzo[b]fluoranthene	24.475	252	7404	9.78 ug/kg	99
22) Benzo[k]fluoranthene	24.555	252	6327	9.81 ug/kg	96
23) Benzo(j)fluoranthene	24.658	252	6882	9.16 ug/kg	99
24) Benzo(e)pyrene	25.742	252	7518	9.85 ug/kg	95
25) Benzo[a]pyrene	25.918	252	7061	9.69 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.522	276	9340	9.78 ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	8949	10.05 ug/kg	98
28) Benzo[g,h,i]perylene	30.657	276	8222	9.89 ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051716.D
Acq On : 17 May 2016 5:34 pm
Operator :
Sample : P2-160517 10
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 14:21:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051717.D
Acq On : 17 May 2016 6:12 pm
Operator :
Sample : P3-160517 50
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 14:21:53 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1691963	4000.00	ug/kg	104
6) Acenaphthene-d10	12.861	164	1420682	4000.00	ug/kg	113
11) Phenanthrene-d10	14.984	188	2974690	4000.00	ug/kg	102
16) Chrysene-d12	20.995	240	2826915	4000.00	ug/kg	104
20) Perylene-d12	26.262	264	2545051	4000.00	ug/kg	102

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	19916	52.87	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.32%#			
17) 4-Terphenyl-d14	17.596	244	30536	51.03	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.28%#			

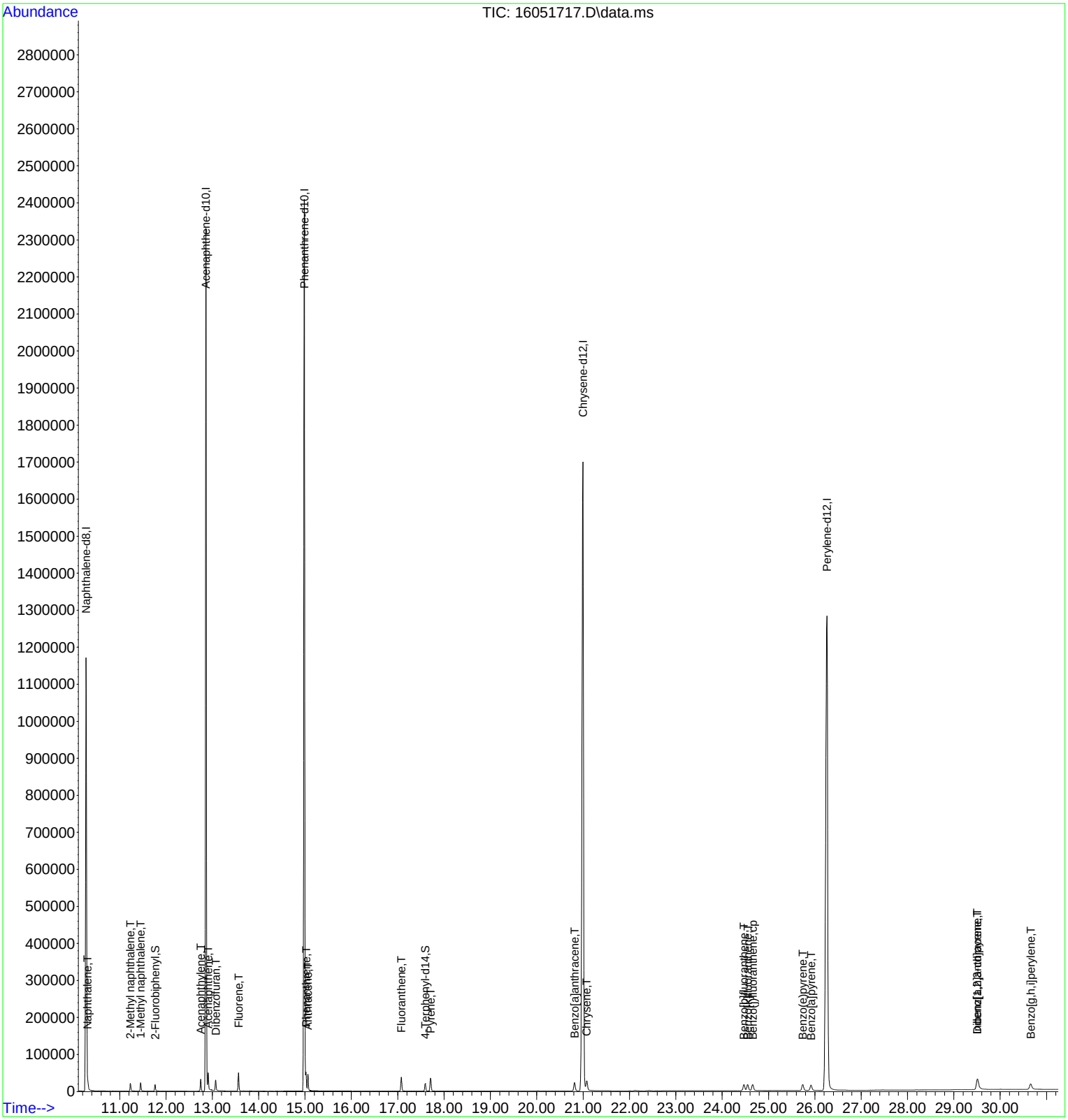
Target Compounds						Qvalue
2) Naphthalene	10.313	128	19225	50.72	ug/kg	100
3) 2-Methyl naphthalene	11.230	142	15281	51.86	ug/kg	98
4) 1-Methyl naphthalene	11.452	142	14530	52.11	ug/kg	98
7) Acenaphthylene	12.748	152	31599	50.89	ug/kg	98
8) Acenaphthene	12.910	153	20004	51.05	ug/kg	97
9) Dibenzofuran	13.072	168	30435	50.99	ug/kg	97
10) Fluorene	13.563	166	27428	50.64	ug/kg	100
12) Phenanthrene	15.020	178	42270	51.64	ug/kg	97
13) Anthracene	15.062	178	42517	51.34	ug/kg	98
14) Fluoranthene	17.077	202	44464	51.91	ug/kg	98
15) Pyrene	17.709	202	43861	52.40	ug/kg	97
18) Benzo[a]anthracene	20.812	228	36261	47.66	ug/kg	98
19) Chrysene	21.083	228	34959	48.99	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	33604	47.88	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	29005	46.47	ug/kg	98
23) Benzo(j)fluoranthene	24.658	252	31228	50.07	ug/kg	99
24) Benzo(e)pyrene	25.742	252	33142	49.21	ug/kg	99
25) Benzo[a]pyrene	25.918	252	31972	48.73	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.514	276	39995	48.61	ug/kg	99
27) Dibenz[a,h]anthracene	29.500	278	32742	46.13	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	34676	48.76	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051717.D
Acq On : 17 May 2016 6:12 pm
Operator :
Sample : P3-160517 50
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 14:21:53 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051718.D
Acq On : 17 May 2016 6:49 pm
Operator :
Sample : P4-160517 100
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 14:21:56 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.276	136	1693906	4000.00 ug/kg	104
6) Acenaphthene-d10	12.861	164	1440728	4000.00 ug/kg	115
11) Phenanthrene-d10	14.983	188	2966427	4000.00 ug/kg	101
16) Chrysene-d12	20.994	240	2706021	4000.00 ug/kg	100
20) Perylene-d12	26.254	264	2498423	4000.00 ug/kg	101

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	41597	110.29 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.76%#		
17) 4-Terphenyl-d14	17.592	244	57884	101.06 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.53%#		

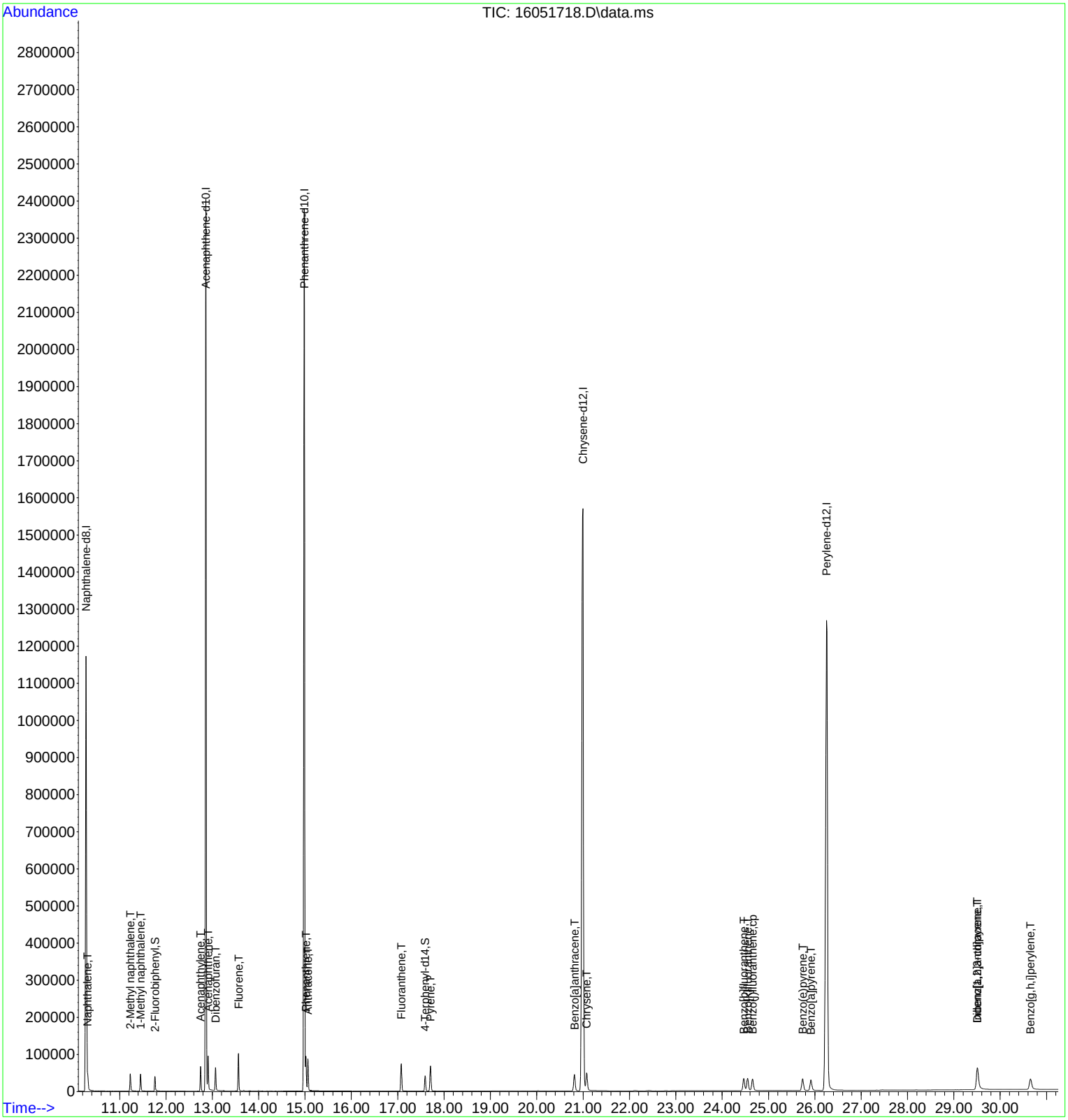
Target Compounds					Qvalue
2) Naphthalene	10.313	128	39101	103.04 ug/kg	100
3) 2-Methyl naphthalene	11.230	142	31845	107.95 ug/kg	99
4) 1-Methyl naphthalene	11.452	142	29622	106.11 ug/kg	99
7) Acenaphthylene	12.743	152	65260	103.63 ug/kg	99
8) Acenaphthene	12.910	153	41268	103.85 ug/kg	98
9) Dibenzofuran	13.067	168	63596	105.06 ug/kg	94
10) Fluorene	13.563	166	56542	102.94 ug/kg	100
12) Phenanthrene	15.019	178	81029	99.27 ug/kg	97
13) Anthracene	15.061	178	83432	101.02 ug/kg	98
14) Fluoranthene	17.076	202	83259	99.39 ug/kg	99
15) Pyrene	17.705	202	81588	99.81 ug/kg	98
18) Benzo[a]anthracene	20.811	228	69165	96.87 ug/kg	99
19) Chrysene	21.075	228	65585	98.75 ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	65590	96.99 ug/kg	99
22) Benzo[k]fluoranthene	24.547	252	56746	93.79 ug/kg	100
23) Benzo(j)fluoranthene	24.657	252	58663	98.81 ug/kg	99
24) Benzo(e)pyrene	25.734	252	63628	98.71 ug/kg	99
25) Benzo[a]pyrene	25.917	252	61356	97.35 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	77335	98.62 ug/kg	99
27) Dibenz[a,h]anthracene	29.499	278	64324	96.94 ug/kg	99
28) Benzo[g,h,i]perylene	30.656	276	67436	99.67 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051718.D
Acq On : 17 May 2016 6:49 pm
Operator :
Sample : P4-160517 100
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 14:21:56 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051719.D
Acq On : 17 May 2016 7:26 pm
Operator :
Sample : P5-160517 500
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 14:22:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.275	136	1716888	4000.00 ug/kg	105
6) Acenaphthene-d10	12.861	164	1420427	4000.00 ug/kg	113
11) Phenanthrene-d10	14.984	188	3065132	4000.00 ug/kg	105
16) Chrysene-d12	20.996	240	2806740	4000.00 ug/kg	104
20) Perylene-d12	26.255	264	2612071	4000.00 ug/kg	105

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	198425	519.07 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 12.98%#		
17) 4-Terphenyl-d14	17.593	244	301886	508.16 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 12.70%#		

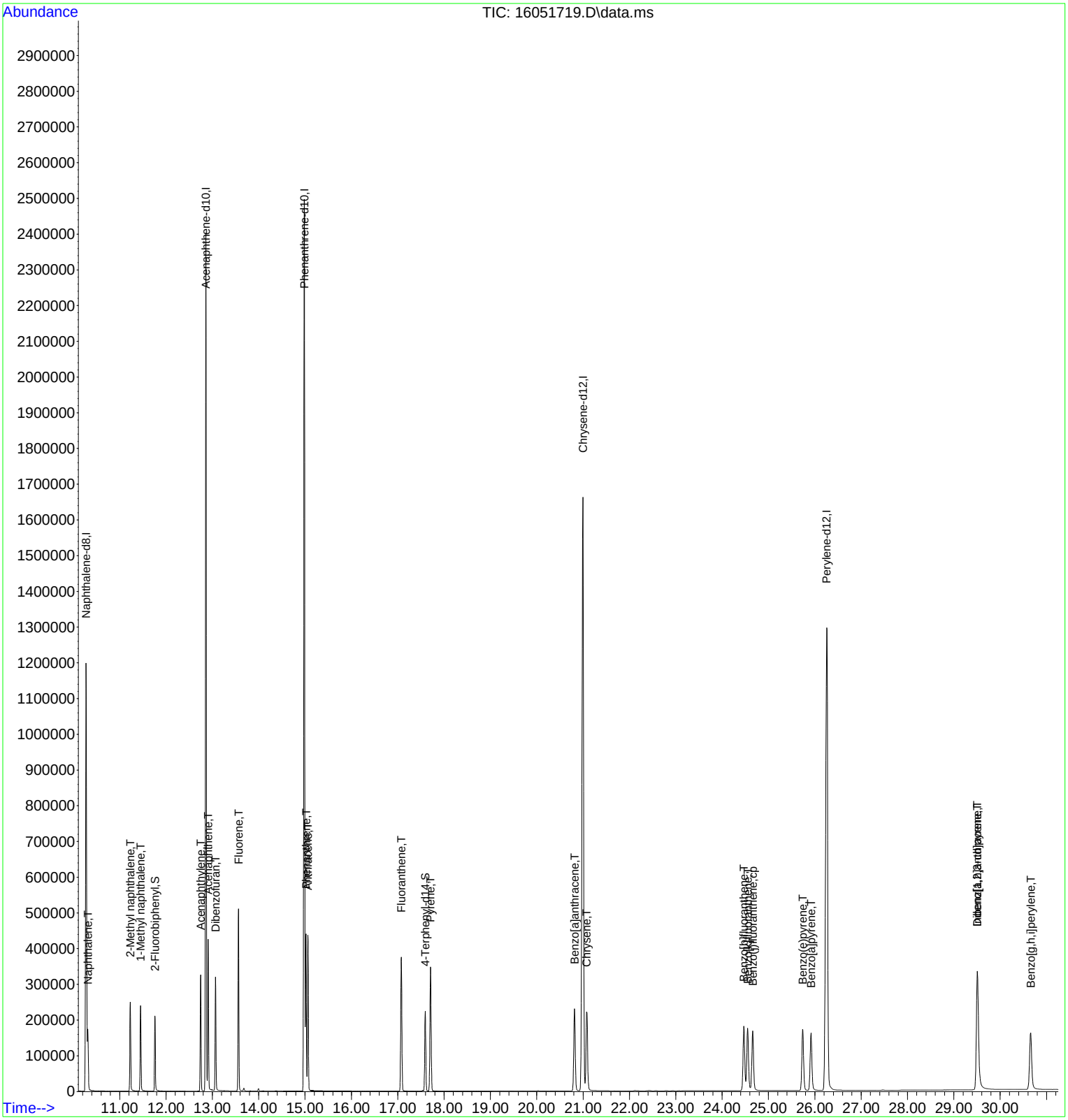
Target Compounds					Qvalue
2) Naphthalene	10.312	128	192186	499.67 ug/kg	100
3) 2-Methyl naphthalene	11.229	142	156202	522.41 ug/kg	99
4) 1-Methyl naphthalene	11.451	142	144981	512.40 ug/kg	99
7) Acenaphthylene	12.748	152	315668	508.42 ug/kg	99
8) Acenaphthene	12.910	153	197655	504.51 ug/kg	98
9) Dibenzofuran	13.067	168	302969	507.65 ug/kg	91
10) Fluorene	13.563	166	276455	510.53 ug/kg	99
12) Phenanthrene	15.020	178	411797	488.27 ug/kg	98
13) Anthracene	15.062	178	418563	490.47 ug/kg	98
14) Fluoranthene	17.077	202	424180	503.59 ug/kg	99
15) Pyrene	17.709	202	411312	500.25 ug/kg	97
18) Benzo[a]anthracene	20.812	228	360174	498.19 ug/kg	99
19) Chrysene	21.076	228	335004	501.45 ug/kg	99
21) Benzo[b]fluoranthene	24.468	252	344489	497.86 ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	306053	491.39 ug/kg	99
23) Benzo(j)fluoranthene	24.658	252	296427	493.61 ug/kg	99
24) Benzo(e)pyrene	25.735	252	324231	494.73 ug/kg	99
25) Benzo[a]pyrene	25.918	252	319375	496.08 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.515	276	396879	499.27 ug/kg	98
27) Dibenz[a,h]anthracene	29.500	278	328543	495.21 ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	343154	500.70 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051719.D
Acq On : 17 May 2016 7:26 pm
Operator :
Sample : P5-160517 500
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 14:22:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051720.D
Acq On : 17 May 2016 8:03 pm
Operator :
Sample : P6-160517 1000
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 14:22:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.276	136	1672746	4000.00 ug/kg	103
6) Acenaphthene-d10	12.862	164	1335900	4000.00 ug/kg	107
11) Phenanthrene-d10	14.983	188	3005081	4000.00 ug/kg	103
16) Chrysene-d12	20.996	240	2748497	4000.00 ug/kg	101
20) Perylene-d12	26.263	264	2515463	4000.00 ug/kg	101

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	366689	984.56 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 24.61%#		
17) 4-Terphenyl-d14	17.592	244	589485	1013.30 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 25.33%#		

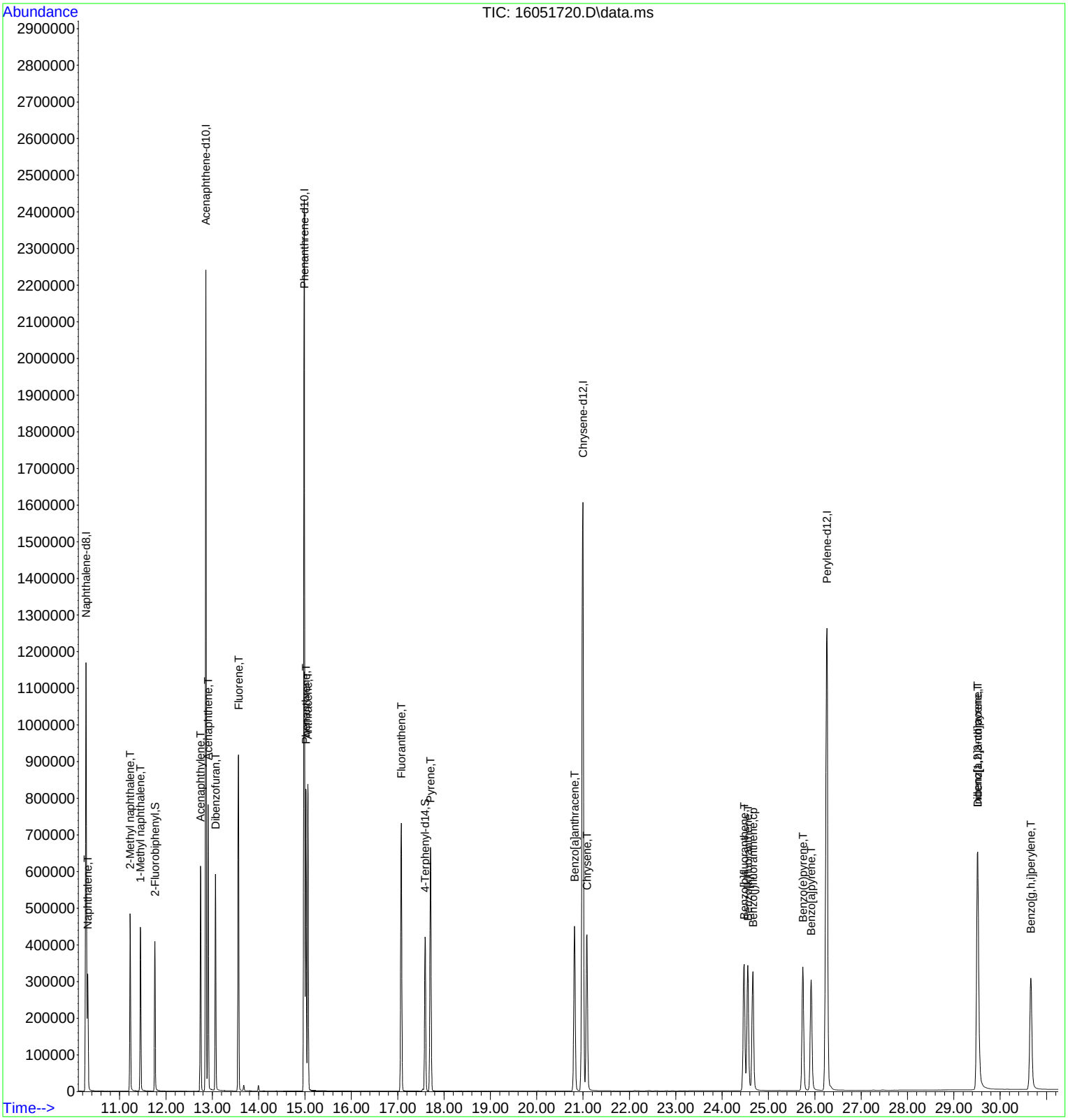
Target Compounds					Qvalue
2) Naphthalene	10.313	128	368948	984.54 ug/kg	100
3) 2-Methyl naphthalene	11.227	142	294264	1010.11 ug/kg	99
4) 1-Methyl naphthalene	11.449	142	270777	982.25 ug/kg	98
7) Acenaphthylene	12.744	152	584017	1000.15 ug/kg	99
8) Acenaphthene	12.911	153	367052	996.17 ug/kg	99
9) Dibenzofuran	13.068	168	564260	1005.29 ug/kg	95
10) Fluorene	13.564	166	514152	1009.56 ug/kg	99
12) Phenanthrene	15.019	178	788028	953.04 ug/kg	99
13) Anthracene	15.063	178	800602	956.88 ug/kg	99
14) Fluoranthene	17.076	202	817359	1005.41 ug/kg	99
15) Pyrene	17.709	202	799661	1005.73 ug/kg	98
18) Benzo[a]anthracene	20.813	228	709426	1016.07 ug/kg	100
19) Chrysene	21.084	228	653281	1012.70 ug/kg	99
21) Benzo[b]fluoranthene	24.475	252	665603	1010.40 ug/kg	100
22) Benzo[k]fluoranthene	24.556	252	599301	1008.21 ug/kg	99
23) Benzo(j)fluoranthene	24.666	252	580263	1017.28 ug/kg	99
24) Benzo(e)pyrene	25.743	252	630968	1013.00 ug/kg	100
25) Benzo[a]pyrene	25.918	252	618328	1007.08 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.522	276	759719	1005.42 ug/kg	99
27) Dibenz[a,h]anthracene	29.508	278	633064	1006.18 ug/kg	100
28) Benzo[g,h,i]perylene	30.665	276	654258	1003.99 ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051720.D
Acq On : 17 May 2016 8:03 pm
Operator :
Sample : P6-160517 1000
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 14:22:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051721.D
Acq On : 17 May 2016 8:40 pm
Operator :
Sample : P7-160517 2000
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 14:22:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1630045	4000.00	ug/kg	100
6) Acenaphthene-d10	12.862	164	1254060	4000.00	ug/kg	100
11) Phenanthrene-d10	14.981	188	2926310	4000.00	ug/kg	100
16) Chrysene-d12	20.989	240	2710742	4000.00	ug/kg	100
20) Perylene-d12	26.255	264	2483020	4000.00	ug/kg	100

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	658153	1813.43	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 45.34%			
17) 4-Terphenyl-d14	17.593	244	1112679	1939.28	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.48%#			

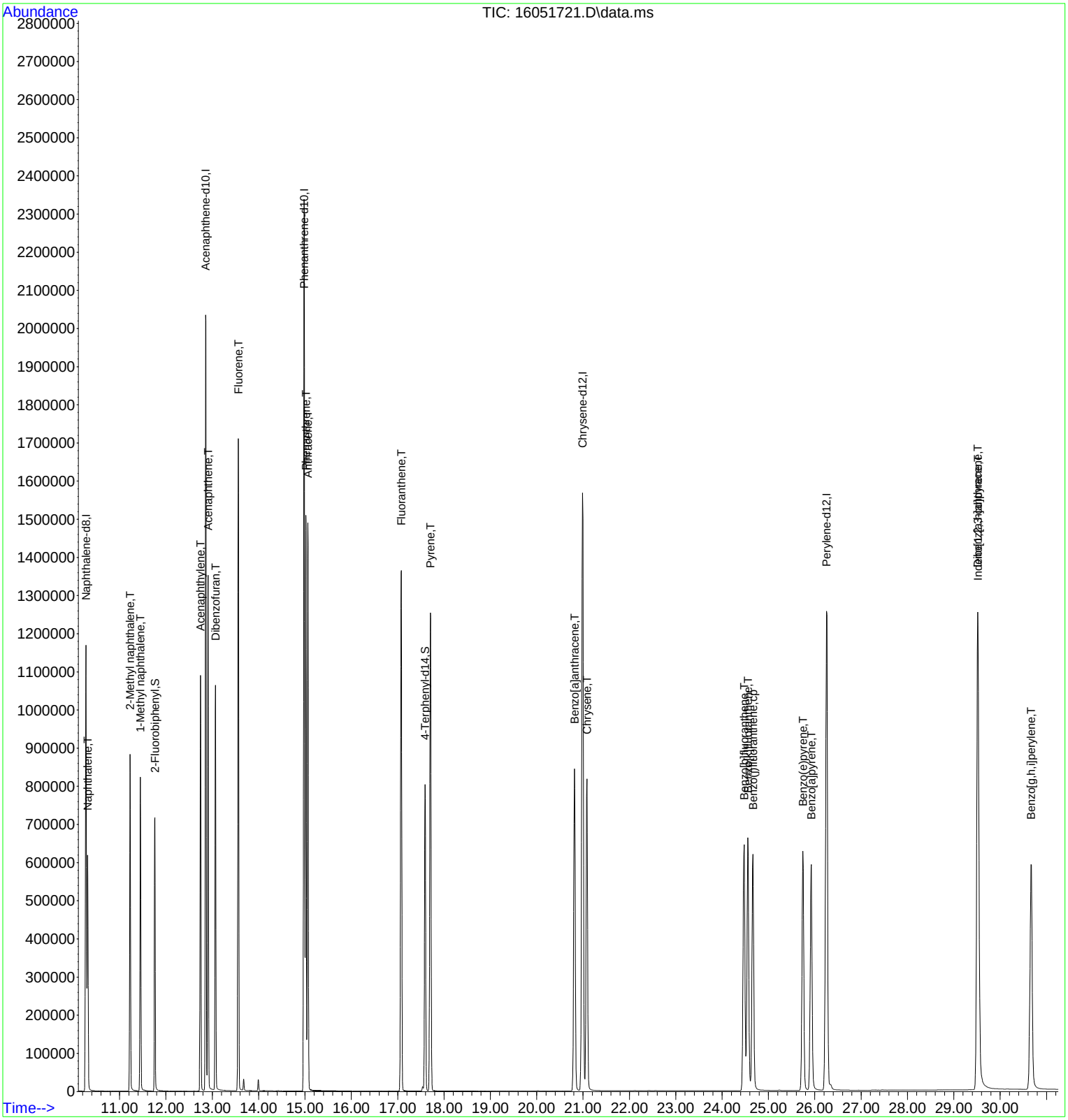
Target Compounds						Qvalue
2) Naphthalene	10.310	128	695769	1905.31	ug/kg	100
3) 2-Methyl naphthalene	11.227	142	538753	1897.81	ug/kg	100
4) 1-Methyl naphthalene	11.449	142	497158	1850.70	ug/kg	100
7) Acenaphthylene	12.744	152	1039945	1897.17	ug/kg	100
8) Acenaphthene	12.911	153	659005	1905.25	ug/kg	100
9) Dibenzofuran	13.068	168	1007003	1911.16	ug/kg	100
10) Fluorene	13.559	166	925041	1934.89	ug/kg	100
12) Phenanthrene	15.019	178	1444658	1794.20	ug/kg	100
13) Anthracene	15.061	178	1476119	1811.76	ug/kg	100
14) Fluoranthene	17.077	202	1527667	1984.95	ug/kg	100
15) Pyrene	17.706	202	1503502	1988.60	ug/kg	100
18) Benzo[a]anthracene	20.813	228	1337835	1989.79	ug/kg	100
19) Chrysene	21.084	228	1233351	1983.94	ug/kg	100
21) Benzo[b]fluoranthene	24.475	252	1273446	1997.62	ug/kg	100
22) Benzo[k]fluoranthene	24.556	252	1165290	2018.15	ug/kg	100
23) Benzo(j)fluoranthene	24.666	252	1096280	1988.83	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1199708	1993.89	ug/kg	100
25) Benzo[a]pyrene	25.926	252	1194718	2003.05	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.530	276	1458740	1998.39	ug/kg	100
27) Dibenz[a,h]anthracene	29.515	278	1219313	2010.42	ug/kg	100
28) Benzo[g,h,i]perylene	30.672	276	1257350	1996.01	ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051721.D
Acq On : 17 May 2016 8:40 pm
Operator :
Sample : P7-160517 2000
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 14:22:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051722.D
Acq On : 17 May 2016 9:17 pm
Operator :
Sample : P8-160517 5000
Misc : CAL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 14:22:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.276	136	1589455	4000.00 ug/kg	98
6) Acenaphthene-d10	12.862	164	1157466	4000.00 ug/kg	92
11) Phenanthrene-d10	14.984	188	2872086	4000.00 ug/kg	98
16) Chrysene-d12	20.995	240	2715512	4000.00 ug/kg	100
20) Perylene-d12	26.262	264	2467636	4000.00 ug/kg	99

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	1413417	3993.89 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 99.85%		
17) 4-Terphenyl-d14	17.598	244	2558145	4450.75 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 111.27%		

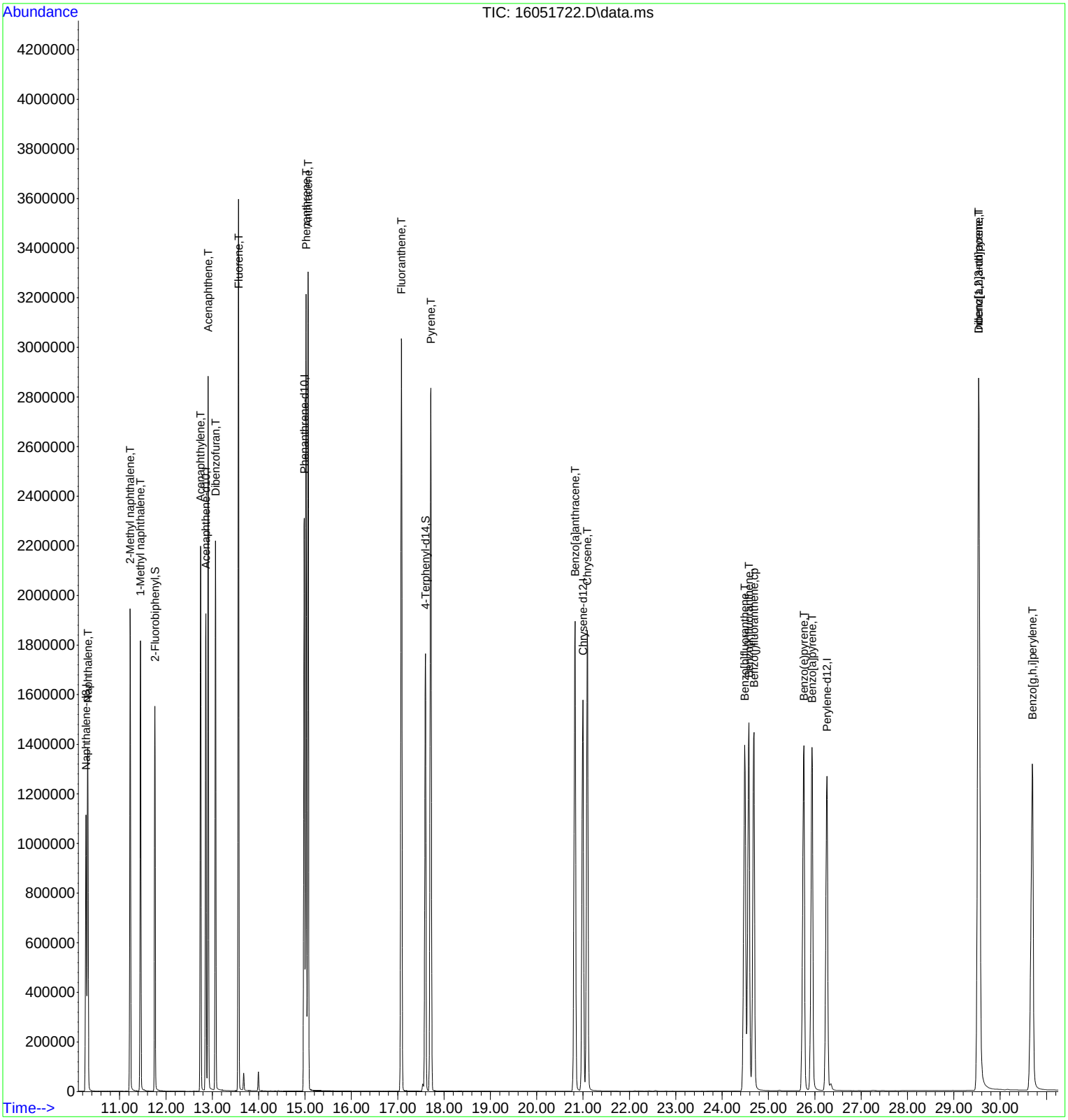
Target Compounds					Qvalue
2) Naphthalene	10.313	128	1596025	4482.20 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	1194581	4315.50 ug/kg	98
4) 1-Methyl naphthalene	11.453	142	1102506	4208.96 ug/kg	98
7) Acenaphthylene	12.749	152	2208060	4364.33 ug/kg	99
8) Acenaphthene	12.911	153	1406596	4405.99 ug/kg	99
9) Dibenzofuran	13.068	168	2123466	4366.39 ug/kg	87
10) Fluorene	13.564	166	1967421	4458.63 ug/kg	100
12) Phenanthrene	15.024	178	3215270	4068.60 ug/kg	97
13) Anthracene	15.068	178	3242032	4054.33 ug/kg	97
14) Fluoranthene	17.080	202	3457212	5005.46 ug/kg	96
15) Pyrene	17.715	202	3449381	5003.88 ug/kg	97
18) Benzo[a]anthracene	20.827	228	3123986	5001.18 ug/kg	98
19) Chrysene	21.090	228	2900176	5004.26 ug/kg	98
21) Benzo[b]fluoranthene	24.489	252	2980787	4998.98 ug/kg	98
22) Benzo[k]fluoranthene	24.577	252	2731461	4991.28 ug/kg	98
23) Benzo(j)fluoranthene	24.687	252	2544105	4948.79 ug/kg	98
24) Benzo(e)pyrene	25.764	252	2799050	5000.38 ug/kg	99
25) Benzo[a]pyrene	25.940	252	2826486	4997.57 ug/kg	97
26) Indeno[1,2,3-cd]pyrene	29.544	276	3400603	4999.58 ug/kg	88
27) Dibenz[a,h]anthracene	29.536	278	2812177	4994.40 ug/kg	97
28) Benzo[g,h,i]perylene	30.694	276	2941935	5000.81 ug/kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051722.D
Acq On : 17 May 2016 9:17 pm
Operator :
Sample : P8-160517 5000
Misc : CAL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 14:22:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051723.D
Acq On : 17 May 2016 9:54 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 18 14:22:14 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.273	136	1550711	4000.00 ug/kg	95
6) Acenaphthene-d10	12.856	164	1014776	4000.00 ug/kg	81
11) Phenanthrene-d10	14.978	188	2298444	4000.00 ug/kg	79
16) Chrysene-d12	20.987	240	2487435	4000.00 ug/kg	92
20) Perylene-d12	26.254	264	2286057	4000.00 ug/kg	92

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	122	0.35 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#	
17) 4-Terphenyl-d14	17.592	244	528	1.00 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	0.03%#	

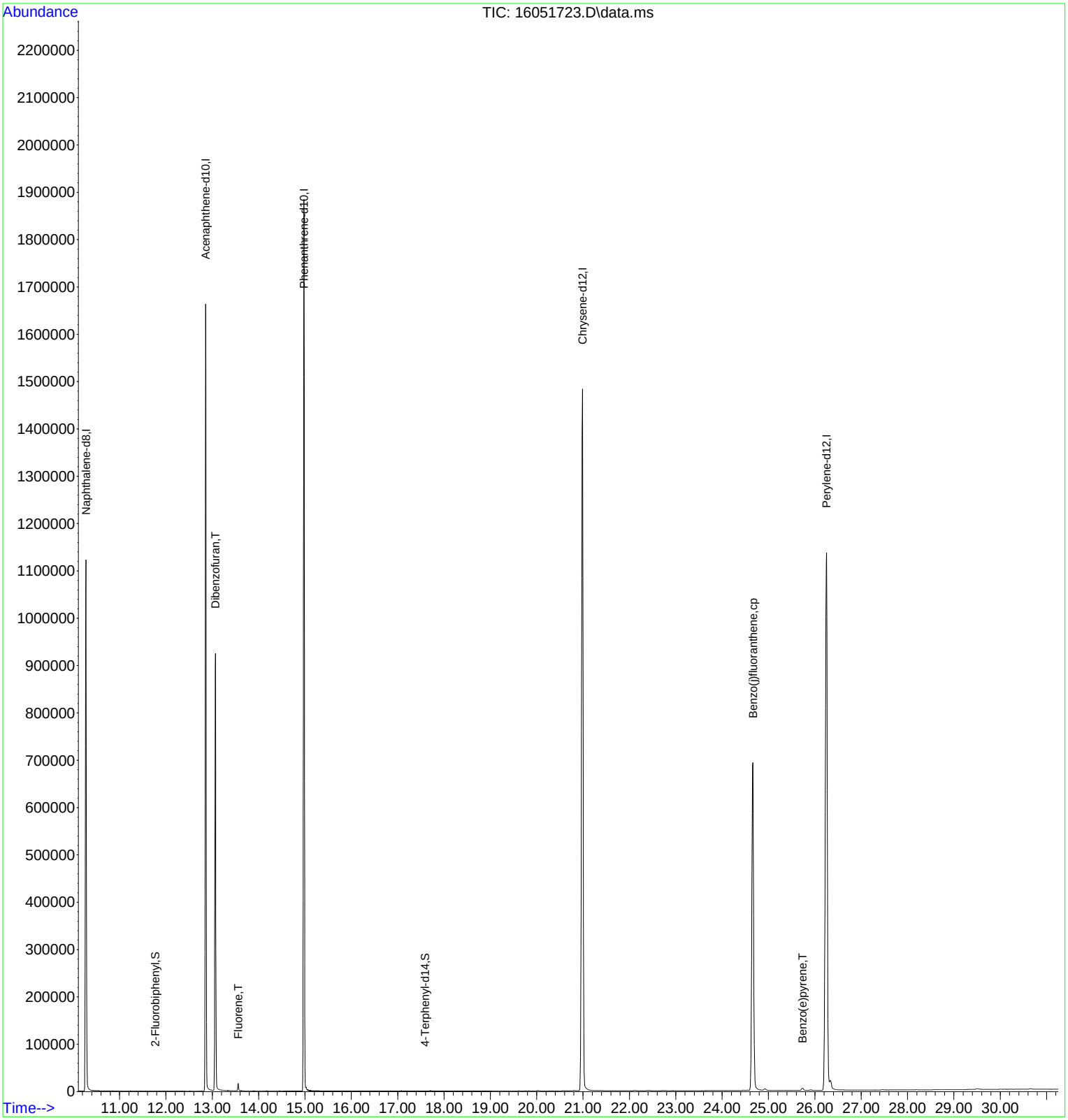
Target Compounds					Qvalue
9) Dibenzofuran	13.067	168	911536	2137.91 ug/kg	99
10) Fluorene	13.558	166	9200	23.78 ug/kg	98
23) Benzo(j)fluoranthene	24.664	252	1314135	2624.66 ug/kg	100
24) Benzo(e)pyrene	25.734	252	9708	14.36 ug/kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051723.D
Acq On : 17 May 2016 9:54 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 18 14:22:14 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051724.D
Acq On : 17 May 2016 10:30 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 18 14:22:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1465767	4000.00	ug/kg	90
6) Acenaphthene-d10	12.857	164	1139119	4000.00	ug/kg	91
11) Phenanthrene-d10	14.979	188	2615766	4000.00	ug/kg	89
16) Chrysene-d12	20.988	240	2355864	4000.00	ug/kg	87
20) Perylene-d12	26.254	264	2172980	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	752192	2304.82	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 57.62%			
17) 4-Terphenyl-d14	17.590	244	1171361	2349.09	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 58.73%			

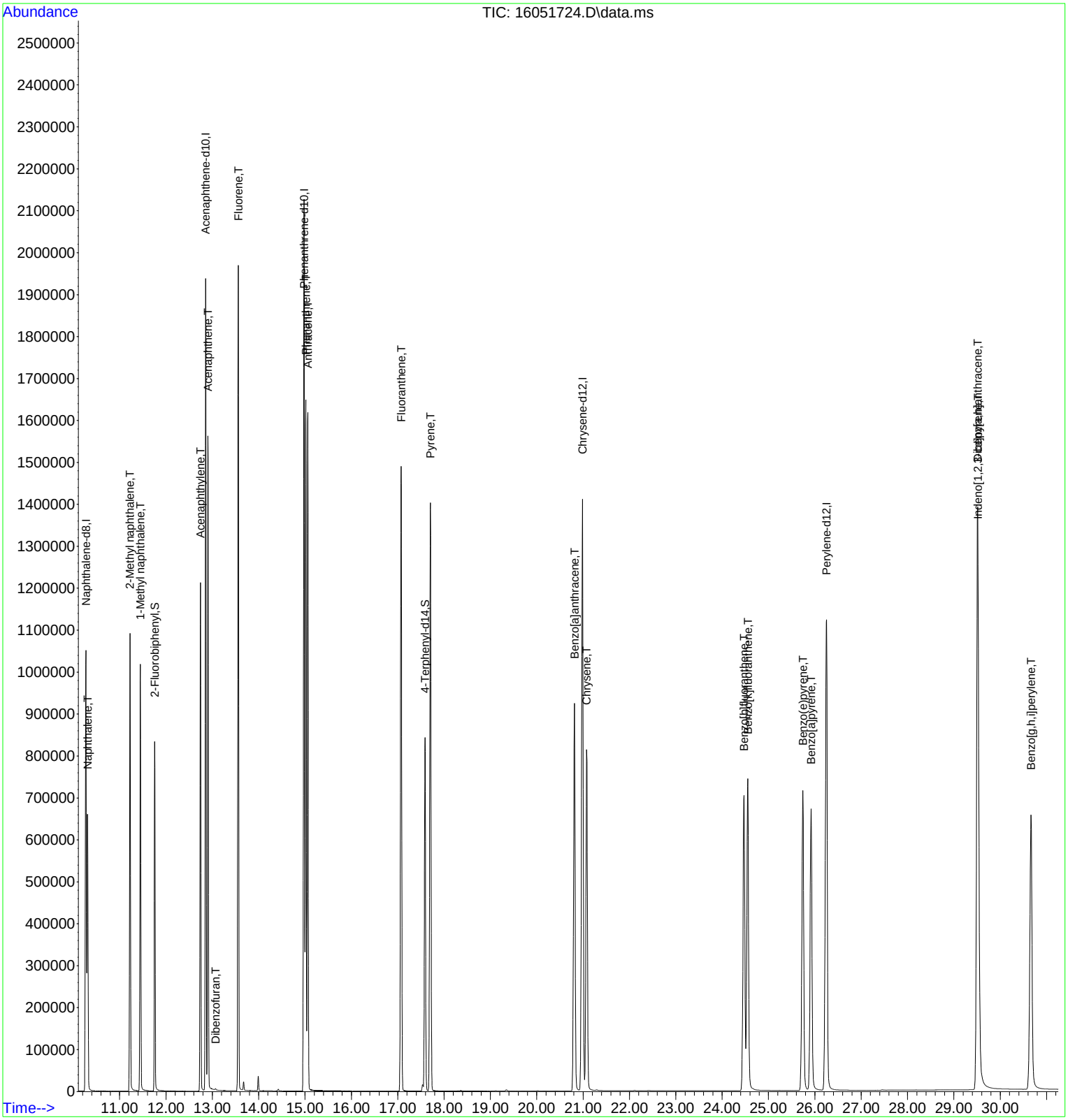
Target Compounds						Qvalue
2) Naphthalene	10.309	128	777437	2367.56	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	679588	2662.22	ug/kg	99
4) 1-Methyl naphthalene	11.449	142	612646	2536.22	ug/kg	99
7) Acenaphthylene	12.744	152	1159951	2329.62	ug/kg	100
8) Acenaphthene	12.906	153	767350	2442.34	ug/kg	98
9) Dibenzofuran	13.068	168	3474	7.26	ug/kg	96
10) Fluorene	13.559	166	1054874	2429.09	ug/kg	99
12) Phenanthrene	15.017	178	1585495	2202.88	ug/kg	100
13) Anthracene	15.061	178	1575915	2163.88	ug/kg	100
14) Fluoranthene	17.074	202	1676150	2470.73	ug/kg	99
15) Pyrene	17.706	202	1652248	2473.32	ug/kg	99
18) Benzo[a]anthracene	20.812	228	1439635	2494.31	ug/kg	100
19) Chrysene	21.075	228	1238892	2310.65	ug/kg	100
21) Benzo[b]fluoranthene	24.474	252	1404261	2544.63	ug/kg	100
22) Benzo[k]fluoranthene	24.555	252	1350774	2702.15	ug/kg	100
24) Benzo(e)pyrene	25.741	252	1385526	2670.03	ug/kg	100
25) Benzo[a]pyrene	25.917	252	1334073	2578.87	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.529	276	1609547	2549.19	ug/kg	98
27) Dibenz[a,h]anthracene	29.507	278	1345063	2566.28	ug/kg	98
28) Benzo[g,h,i]perylene	30.664	276	1389147	2548.55	ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051724.D
Acq On : 17 May 2016 10:30 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 18 14:22:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



ICP-MS3
For

DHL Work Order
1605135

ICP-MS3_160526A
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS3_160526A SOP: Metals-ICP-MS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			X
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			X
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			X
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%	X			
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)	X			

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			X
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality			X	X
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag data / Case narrative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data:

Analyst: Karyn Lane Date of Completion: 05/27/2016

Second-Level Review: [signature] Date Stamp: 05/31/2016

REVIEWED/APPROVED
By Sherri Herschmann at 10:44:03 AM, 5/31/2016

DHL Analytical, Inc.

Run ID: **ICP-MS3_160526A** **Run No.:** 86047

Analytical Run Date: 5/26/2016 **InstrumentID:** ICP-MS3

Analyst: Karyn Lane

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 11:35:00 AM		
L2-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 11:41:00 AM		
L-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 11:47:00 AM		
10X-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 11:53:00 AM		
5X-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 12:00:00 PM		
2X-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 12:06:00 PM		
H-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 12:11:00 PM		
H2-160526	1	ICPMS_TWDOD	CAL	R86047	5/26/2016 12:17:00 PM		
ICSA-160526	1	ICPMS_TWDOD	ICSA	R86047	5/26/2016 12:35:00 PM		
ICSAB-160526	1	ICPMS_TWDOD	ICSB	R86047	5/26/2016 12:41:00 PM		
ICV1-160526	1	ICPMS_TWDOD	ICV	R86047	5/26/2016 12:59:00 PM		
ICB1-160526	1	ICPMS_TWDOD	ICB	R86047	5/26/2016 1:05:00 PM		
ILCVL-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 1:11:00 PM		
MB-75258	5	ICPMS_TSDOD1	MBLK	75258	5/26/2016 1:17:00 PM		
LCS-75258	5	ICPMS_TSDOD1	LCS	75258	5/26/2016 1:23:00 PM		
LCSD-75258	5	ICPMS_TSDOD1	LCSD	75258	5/26/2016 1:29:00 PM		
1605121-43A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 1:42:00 PM		
1605121-43A SD	25	ICPMS_TSDOD1	SD	75258	5/26/2016 1:48:00 PM		
1605121-38A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 1:54:00 PM		
1605121-39A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:00:00 PM		
1605121-40A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:06:00 PM		
1605121-41A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:12:00 PM		
1605121-42A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:17:00 PM		
1605121-44A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:23:00 PM		
1605121-45A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:29:00 PM		
1605135-01A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:35:00 PM		
1605135-02A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 2:41:00 PM		
1605121-43A PDS	5	ICPMS_TSDOD1	PDS	75258	5/26/2016 2:47:00 PM		
1605121-43A MS	5	ICPMS_TSDOD1	MS	75258	5/26/2016 2:53:00 PM		
1605121-43A MSD	5	ICPMS_TSDOD1	MSD	75258	5/26/2016 2:59:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

DHL Analytical, Inc.

Run ID: **ICP-MS3_160526A** **Run No.:** 86047

CCV1-160526	1	ICPMS_TWDOD	CCV	R86047	5/26/2016 3:05:00 PM		
CCB1-160526	1	ICPMS_TWDOD	CCB	R86047	5/26/2016 3:11:00 PM		
LCVL1-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 3:17:00 PM		
1605135-03A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:23:00 PM		
1605135-04A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:29:00 PM		
1605135-05A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:35:00 PM		
1605135-06A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:41:00 PM		
1605135-07A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:47:00 PM		
1605135-08A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:53:00 PM		
1605135-09A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 3:59:00 PM		
1605135-10A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 4:05:00 PM		
1605135-11A	5	ICPMS_TSDOD1	SAMP	75258	5/26/2016 4:11:00 PM		
CCV2-160526	1	ICPMS_TWDOD	CCV	R86047	5/26/2016 4:17:00 PM		
CCB2-160526	1	ICPMS_TWDOD	CCB	R86047	5/26/2016 4:23:00 PM		
LCVL2-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 4:29:00 PM		
MB-75286	5	ICPMS_TSDOD1	MBLK	75286	5/26/2016 4:35:00 PM		
LCS-75286	5	ICPMS_TSDOD1	LCS	75286	5/26/2016 4:41:00 PM		
LCSD-75286	5	ICPMS_TSDOD1	LCSD	75286	5/26/2016 4:48:00 PM		
1605135-14A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:00:00 PM		
1605135-14A SD	25	ICPMS_TSDOD1	SD	75286	5/26/2016 5:06:00 PM		
1605135-12A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:12:00 PM		
1605135-13A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:18:00 PM		
1605135-15A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:24:00 PM		
1605135-16A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:29:00 PM		
1605135-17A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:35:00 PM		
1605135-18A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:41:00 PM		
1605135-19A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:47:00 PM		
1605135-20A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:53:00 PM		
1605135-21A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 5:59:00 PM		
1605135-14A PDS	5	ICPMS_TSDOD1	PDS	75286	5/26/2016 6:05:00 PM		
1605135-14A MS	5	ICPMS_TSDOD1	MS	75286	5/26/2016 6:11:00 PM		
1605135-14A MSD	5	ICPMS_TSDOD1	MSD	75286	5/26/2016 6:17:00 PM		
CCV3-160526	1	ICPMS_TWDOD	CCV	R86047	5/26/2016 6:29:00 PM		
LCVL3-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 6:41:00 PM		
CCB3-160526	1	ICPMS_TWDOD	CCB	R86047	5/26/2016 6:47:00 PM		

REVIEWED/APPROVED

By Sherri Herschmann at 10:50:08 AM, 5/31/2016

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: **ICP-MS3_160526A** **Run No.:** 86047

1605135-22A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 6:53:00 PM		
1605135-23A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 6:59:00 PM		
1605135-24A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:05:00 PM		
1605135-25A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:11:00 PM		
1605135-26A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:17:00 PM		
1605135-27A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:23:00 PM		
1605135-28A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:29:00 PM		
1605135-29A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:35:00 PM		
1605135-30A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:41:00 PM		
1605135-31A	5	ICPMS_TSDOD1	SAMP	75286	5/26/2016 7:47:00 PM		
CCV4-160526	1	ICPMS_TWDOD	CCV	R86047	5/26/2016 7:53:00 PM		
LCVL4-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 8:05:00 PM		
CCB4-160526	1	ICPMS_TWDOD	CCB	R86047	5/26/2016 8:12:00 PM		
MB-75292	5	ICPMS_TSDOD1	MBLK	75292	5/26/2016 8:18:00 PM		
LCS-75292	5	ICPMS_TSDOD1	LCS	75292	5/26/2016 8:24:00 PM		
LCSD-75292	5	ICPMS_TSDOD1	LCSD	75292	5/26/2016 8:30:00 PM		
1605144-13A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 8:42:00 PM		
1605144-13A SD	25	ICPMS_TSDOD1	SD	75292	5/26/2016 8:48:00 PM		
1605144-07A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 8:54:00 PM		
1605144-08A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:00:00 PM		
1605144-09A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:06:00 PM		
1605144-10A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:12:00 PM		
1605144-11A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:18:00 PM		
1605144-12A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:24:00 PM		
1605144-14A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:30:00 PM		
1605144-15A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:36:00 PM		
1605144-17A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 9:42:00 PM		
1605144-13A PDS	5	ICPMS_TSDOD1	PDS	75292	5/26/2016 9:48:00 PM		
1605144-13A MS	5	ICPMS_TSDOD1	MS	75292	5/26/2016 9:54:00 PM		
1605144-13A MSD	5	ICPMS_TSDOD1	MSD	75292	5/26/2016 10:00:00 PM		
CCV5-160526	1	ICPMS_TWDOD	CCV	R86047	5/26/2016 10:12:00 PM		
LCVL5-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 10:24:00 PM		
CCB5-160526	1	ICPMS_TWDOD	CCB	R86047	5/26/2016 10:30:00 PM		
1605144-18A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 10:36:00 PM		
1605144-19A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 10:42:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

DHL Analytical, Inc.

Run ID: **ICP-MS3_160526A** **Run No.:** 86047

1605144-20A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 10:48:00 PM		
1605144-21A	5	ICPMS_TSDOD1	SAMP	75292	5/26/2016 10:54:00 PM		
CCV6-160526	1	ICPMS_TWDOD	CCV	R86047	5/26/2016 11:00:00 PM		
LCVL6-160526	1	ICPMS_TWDOD	LCVL	R86047	5/26/2016 11:12:00 PM		
CCB6-160526	1	ICPMS_TWDOD	CCB	R86047	5/26/2016 11:18:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		CALBEG	Start of CALIB						
2	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		BLANK	CAL ICPMS_TW	1.000				
3	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		BLANK	CAL ICPMS_TW	1.000				
4	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		BLANK	CAL ICPMS_TW	1.000				
5	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		BLANK	CAL ICPMS_TW	1.000				
6	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		BLANK	CAL ICPMS_TW	1.000				
7	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalBlk	2101		BLANK STD 1	CAL ICPMS_TW	Level 1				
8	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2102		L2-160526	CAL ICPMS_TW	Level 2				
9	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2103		L-160526	CAL ICPMS_TW	Level 3				
10	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2104		10X-160526	CAL ICPMS_TW	Level 4				
11	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2105		5X-160526	CAL ICPMS_TW	Level 5				
12	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2106		2X-160526	CAL ICPMS_TW	Level 6				
13	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2107		H-160526	CAL ICPMS_TW	Level 7				
14	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2108		H2-160526	CAL ICPMS_TW	Level 8				
15	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		BLANK	CAL ICPMS_TW	1.000				
16	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		BLANK	CAL ICPMS_TW	1.000				
17		Keyword		CALEND	End of CALIB						
18		Keyword		ICSBEG	Start of ICS						
19	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICS-A	2109		ICSA-160526	ICSAICPMS_TW	1.000				
20	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICS-AB	2110		ICSAB-160526	ICSBICPMS_TW	1.000				
21	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CAL ICPMS_TW	1.000				
22	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		RINSE	CAL ICPMS_TW	1.000				
23		Keyword		ICSEND	End of ICS						
24		Keyword		SMPLBEG	Start of SMPL						
25	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICV	2111		ICV1-160526	ICV ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
26	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICB	1104		ICB1-160526	ICB ICPMS_TW	1.000				
27	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		ILCVL-160526	LCVLICPMS_TW	1.000				
28	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	2201		MB-75258	MBLKICPMS_TSDOD1	5.000				
29	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2202		LCS-75258	LCS ICPMS_TSDOD1	5.000				
30	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2203		LCSD-75258	LCSDICPMS_TSDOD1	5.000				
31	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
32	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	2204		1605121-43A	SAMPICPMS_TSDOD1	5.000				
33	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	2205		1605121-43A SD	SD ICPMS_TSDOD1	25.00				
34	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2206		1605121-38A	SAMPICPMS_TSDOD1	5.000				
35	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2207		1605121-39A	SAMPICPMS_TSDOD1	5.000				
36	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2208		1605121-40A	SAMPICPMS_TSDOD1	5.000				
37	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2209		1605121-41A	SAMPICPMS_TSDOD1	5.000				
38	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2210		1605121-42A	SAMPICPMS_TSDOD1	5.000				
39	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2211		1605121-44A	SAMPICPMS_TSDOD1	5.000				
40	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2212		1605121-45A	SAMPICPMS_TSDOD1	5.000				
41	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2301		1605135-01A	SAMPICPMS_TSDOD1	5.000				
42	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2302		1605135-02A	SAMPICPMS_TSDOD1	5.000				
43	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	2303		1605121-43A PDS	PDS ICPMS_TSDOD1	5.000				
44	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	2304		1605121-43A MS	MS ICPMS_TSDOD1	5.000				
45	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	2305		1605121-43A MSD	MSD ICPMS_TSDOD1	5.000				
46	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV1-160526	CCV ICPMS_TW	1.000				
47	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB1-160526	CCB ICPMS_TW	1.000				
48	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2512		LCVL1-160526	LCVLICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
49	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2401		1605135-03A	SAMPICPMS_TSDOD1	5.000				
50	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2402		1605135-04A	SAMPICPMS_TSDOD1	5.000				
51	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2403		1605135-05A	SAMPICPMS_TSDOD1	5.000				
52	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2404		1605135-06A	SAMPICPMS_TSDOD1	5.000				
53	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2405		1605135-07A	SAMPICPMS_TSDOD1	5.000				
54	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2406		1605135-08A	SAMPICPMS_TSDOD1	5.000				
55	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2407		1605135-09A	SAMPICPMS_TSDOD1	5.000				
56	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2408		1605135-10A	SAMPICPMS_TSDOD1	5.000				
57	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2409		1605135-11A	SAMPICPMS_TSDOD1	5.000				
58	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV2-160526	CCV ICPMS_TW	1.000				
59	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB2-160526	CCB ICPMS_TW	1.000				
60	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2511		LCVL2-160526	LCVLICPMS_TW	1.000				
61	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	3101		MB-75286	MBLKICPMS_TSDOD1	5.000				
62	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3102		LCS-75286	LCS ICPMS_TSDOD1	5.000				
63	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3103		LCSD-75286	LCSDICPMS_TSDOD1	5.000				
64	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
65	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	3104		1605135-14A	SAMPICPMS_TSDOD1	5.000				
66	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	3105		1605135-14A SD	SD ICPMS_TSDOD1	25.00				
67	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3106		1605135-12A	SAMPICPMS_TSDOD1	5.000				
68	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3107		1605135-13A	SAMPICPMS_TSDOD1	5.000				
69	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3108		1605135-15A	SAMPICPMS_TSDOD1	5.000				
70	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3109		1605135-16A	SAMPICPMS_TSDOD1	5.000				
71	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3110		1605135-17A	SAMPICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
72	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3111		1605135-18A	SAMPICPMS_TSDOD1	5.000				
73	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3112		1605135-19A	SAMPICPMS_TSDOD1	5.000				
74	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3201		1605135-20A	SAMPICPMS_TSDOD1	5.000				
75	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3202		1605135-21A	SAMPICPMS_TSDOD1	5.000				
76	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	3203		1605135-14A PDS	PDS ICPMS_TSDOD1	5.000				
77	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3204		1605135-14A MS	MS_ICPMS_TSDOD1	5.000				
78	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3205		1605135-14A MSD	MSD ICPMS_TSDOD1	5.000				
79	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
80	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV3-160526	CCV ICPMS_TW	1.000				
81	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB3-160526	CCB ICPMS_TW	1.000				
82	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2512		LCVL3-160526	LCVLICPMS_TW	1.000				
83	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB3-160526	CCB ICPMS_TW	1.000				
84	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3301		1605135-22A	SAMPICPMS_TSDOD1	5.000				
85	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3302		1605135-23A	SAMPICPMS_TSDOD1	5.000				
86	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3303		1605135-24A	SAMPICPMS_TSDOD1	5.000				
87	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3304		1605135-25A	SAMPICPMS_TSDOD1	5.000				
88	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3305		1605135-26A	SAMPICPMS_TSDOD1	5.000				
89	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3306		1605135-27A	SAMPICPMS_TSDOD1	5.000				
90	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3307		1605135-28A	SAMPICPMS_TSDOD1	5.000				
91	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3308		1605135-29A	SAMPICPMS_TSDOD1	5.000				
92	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3309		1605135-30A	SAMPICPMS_TSDOD1	5.000				
93	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3310		1605135-31A	SAMPICPMS_TSDOD1	5.000				
94	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV4-160526	CCV ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
95	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB4-160526	CCB ICPMS_TW	1.000				
96	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		LCVL4-160526	LCVLICPMS_TW	1.000				
97	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB4-160526	CCB ICPMS_TW	1.000				
98	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	3401		MB-75292	MBLKICPMS_TSDOD1	5.000				
99	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3402		LCS-75292	LCS ICPMS_TSDOD1	5.000				
100	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3403		LCSD-75292	LCSDICPMS_TSDOD1	5.000				
101	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
102	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	3404		1605144-13A	SAMPICPMS_TSDOD1	5.000				
103	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	3405		1605144-13A SD	SD ICPMS_TSDOD1	25.00				
104	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3406		1605144-07A	SAMPICPMS_TSDOD1	5.000				
105	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3407		1605144-08A	SAMPICPMS_TSDOD1	5.000				
106	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3408		1605144-09A	SAMPICPMS_TSDOD1	5.000				
107	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3409		1605144-10A	SAMPICPMS_TSDOD1	5.000				
108	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3410		1605144-11A	SAMPICPMS_TSDOD1	5.000				
109	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3411		1605144-12A	SAMPICPMS_TSDOD1	5.000				
110	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3412		1605144-14A	SAMPICPMS_TSDOD1	5.000				
111	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3501		1605144-15A	SAMPICPMS_TSDOD1	5.000				
112	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3502		1605144-17A	SAMPICPMS_TSDOD1	5.000				
113	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	3503		1605144-13A PDS	PDS ICPMS_TSDOD1	5.000				
114	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3504		1605144-13A MS	MS ICPMS_TSDOD1	5.000				
115	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3505		1605144-13A MSD	MSD ICPMS_TSDOD1	5.000				
116	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
117	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV5-160526	CCV ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
118	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB5-160526	CCB ICPMS_TW	1.000				
119	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2511		LCVL5-160526	LCVLICPMS_TW	1.000				
120	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB5-160526	CCB ICPMS_TW	1.000				
121	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3506		1605144-18A	SAMPICPMS_TSDOD1	5.000				
122	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3507		1605144-19A	SAMPICPMS_TSDOD1	5.000				
123	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3508		1605144-20A	SAMPICPMS_TSDOD1	5.000				
124	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3509		1605144-21A	SAMPICPMS_TSDOD1	5.000				
125	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV6-160526	CCV ICPMS_TW	1.000				
126	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB6-160526	CCB ICPMS_TW	1.000				
127	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		LCVL6-160526	LCVLICPMS_TW	1.000				
128	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB6-160526	CCB ICPMS_TW	1.000				
129	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		IDL1-160526	CCB ICPMS_TW	1.000				
130	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		IDL2-160526	CCB ICPMS_TW	1.000				
131	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		IDL3-160526	CCB ICPMS_TW	1.000				
132	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		IDL4-160526	CCB ICPMS_TW	1.000				
133	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		IDL5-160526	CCB ICPMS_TW	1.000				
134	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		IDL6-160526	CCB ICPMS_TW	1.000				
135	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		IDL7-160526	CCB ICPMS_TW	1.000				
136	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
137		Keyword		StandBy							
138		Keyword		SMPLEND	End of SMPL						
139		Keyword		End	End of Sequence						
140		Keyword		CCVBEG	Start of CCV						
141		Keyword		CCVEND	End of CCV						
142		Keyword		BLKBEG	Start of BLANK						
143		Keyword		BLKEND	End of BLANK						

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
144		Keyword		ERRBEG	Start of ERRTERM						
145		Keyword		ERREND	End of ERRTERM						

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	KL	**BALANCE #:**	26	
TEST DATE:	05/26/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	See Below	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

PIPETTE ID: P-31	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	4.00	3.9943	3.9863	99.66	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		3.9791	3.9711	99.28		
3		3.9750	3.9671	99.18		
AVERAGE (MEAN)		3.983	3.975	99.37		0.255
						PASS

PIPETTE ID: P-21	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.50	0.4971	0.4961	99.22	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.4962	0.4952	99.04		
3		0.4950	0.4940	98.80		
AVERAGE (MEAN)		0.496	0.495	99.02		0.212
						PASS

PIPETTE ID: P-39	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.200	0.2003	0.1999	99.95	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.1994	0.1990	99.50		
3		0.1993	0.1989	99.45		
AVERAGE (MEAN)		0.200	0.199	99.63		0.276
						PASS

Karyn Jane 5/26/16
Analyst / Date

Sherri Herschmann 05/31/2016
Review and Approved / Date

REVIEWED/APPROVED
By Sherri Herschmann at 10:44:06 AM, 5/31/2016

C:\Users\METALS\Desktop\Pipetter Accuracy Check- RO 3-29-2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/20/2016 9:40:12 AM**
Digestion: **Start: 5/20/2016 11:55:00 AM / Stop: 5/20/2016 5:10:00 PM**
Prep End Date: **5/20/2016 5:12:20 PM**

Prep Batch **75258** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-38A	Soil		1.09	50	45.872	1 of 1	
1605121-39A	Soil		1.13	50	44.248	1 of 1	
1605121-40A	Soil		1	50	50.000	1 of 1	
1605121-41A	Soil		1.03	50	48.544	1 of 1	
1605121-42A	Soil		1.1	50	45.455	1 of 1	
1605121-43A	Soil		1.03	50	48.544	1 of 1	
1605121-43A MS	Soil		1.02	50	49.020	of	
1605121-43A MSD	Soil		1.06	50	47.170	of	
1605121-43A PDS	Soil		1.03	50	48.544	of	
1605121-43A SD	Soil		1.03	50	48.544	of	
1605121-44A	Soil		1.17	50	42.735	1 of 1	
1605121-45A	Soil		1.17	50	42.735	1 of 1	
1605135-01A	Soil		1.1	50	45.455	1 of 1	
1605135-02A	Soil		1.03	50	48.544	1 of 1	
1605135-03A	Soil		1.12	50	44.643	1 of 1	
1605135-04A	Soil		1.15	50	43.478	1 of 1	
1605135-05A	Soil		1.15	50	43.478	1 of 1	
1605135-06A	Soil		1.12	50	44.643	1 of 1	
1605135-07A	Soil		1.05	50	47.619	1 of 1	
1605135-08A	Soil		1.18	50	42.373	1 of 1	
1605135-09A	Soil		1	50	50.000	1 of 1	
1605135-10A	Soil		1.16	50	43.103	1 of 1	
1605135-11A	Soil		1.11	50	45.045	1 of 1	
LCS-75258	Soil		1	50	50.000	of	
LCSD-75258	Soil		1	50	50.000	of	
MB-75258	Soil		1	50	50.000	of	

Precipitate form on top of samples overnight, after prep. Does not seem to have effect on Pb.

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	11/30/2017

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160519-3	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	08/17/2016
MET-SPIKE-160519-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/17/2016
MET-SPIKE-160520-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/18/2016

REVIEWED/APPROVED

By Sherri Herschmann at 10:54:25 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/20/2016 9:40:12 AM**
Digestion:
Prep End Date:

Prep Batch **75258** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke** Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-38A	Soil		1.09	50	50.000	1 of 1	
1605121-39A	Soil		1.13	50	50.000	1 of 1	
1605121-40A	Soil		1.00	50	50.000	1 of 1	
1605121-41A	Soil		1.03	50	50.000	1 of 1	
1605121-42A	Soil		1.10	50	50.000	1 of 1	
1605121-43A	Soil		1.03	50	50.000	1 of 1	
1605121-43A MS	Soil		1.02	50	50.000	of	
1605121-43A MSD	Soil		1.06	50	50.000	of	
1605121-44A	Soil		1.17	50	50.000	1 of 1	
1605121-45A	Soil		1.17	50	50.000	1 of 1	
1605135-01A	Soil		1.10	50	50.000	1 of 1	
1605135-02A	Soil		1.03	50	50.000	1 of 1	
1605135-03A	Soil		1.12	50	50.000	1 of 1	
1605135-04A	Soil		1.15	50	50.000	1 of 1	
1605135-05A	Soil		1.15	50	50.000	1 of 1	
1605135-06A	Soil		1.12	50	50.000	1 of 1	
1605135-07A	Soil		1.05	50	50.000	1 of 1	
1605135-08A	Soil		1.18	50	50.000	1 of 1	
1605135-09A	Soil		1.00	50	50.000	1 of 1	
1605135-10A	Soil		1.16	50	50.000	1 of 1	
1605135-11A	Soil		1.11	50	50.000	1 of 1	
[redacted]	Soil		1	50	50.000	1 of 1	
LCS-75258	Soil		1	50	50.000	of	
LCSD-75258	Soil		1	50	50.000	of	
MB-75258	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160519-3	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	08/17/2016
MET-SPIKE-160519-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/17/2016
MET-SPIKE-160520-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/18/2016

[redacted]
11:55-12:05
12:12-14:12
14:35-16:35
16:55-17:10

REVIEWED/APPROVED
By Sherri Herschmann at 10:51:33 AM, 5/31/2016

5/20/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 3:40:00 PM**
Digestion: **Start: 5/16/2016 4:45:00 PM / Stop: 5/18/2016 11:00:00 AM**
Prep End Date: **5/18/2016 3:00:00 PM**

Prep Batch **75188** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-41A	Soil		0	0	#Num!	1 of 1	
1605121-42A	Soil		0	0	#Num!	1 of 1	
1605121-43A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay MS/MSD							
1605121-44A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-45A	Soil		0	0	#Num!	1 of 1	
1605135-01A	Soil		0	0	#Num!	1 of 1	
1605135-02A	Soil		0	0	#Num!	1 of 1	
1605135-03A	Soil		0	0	#Num!	1 of 1	
1605135-04A	Soil		0	0	#Num!	1 of 1	
1605135-05A	Soil		0	0	#Num!	1 of 1	
1605135-06A	Soil		0	0	#Num!	1 of 1	
1605135-07A	Soil		0	0	#Num!	1 of 1	
1605135-08A	Soil		0	0	#Num!	1 of 1	
1605135-09A	Soil		0	0	#Num!	1 of 1	
1605135-10A	Soil		0	0	#Num!	1 of 1	
1605135-11A	Soil		0	0	#Num!	1 of 1	
1605135-12A	Soil		0	0	#Num!	1 of 1	
1605135-13A	Soil		0	0	#Num!	1 of 1	
1605135-14A	Soil		0	0	#Num!	of 3	
Extra sub sampled for MS/MSD							
1605135-15A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 3:00:00 PM**
Digestion: **Start: 5/13/2016 4:00:00 PM / Stop: 5/17/2016 1:30:00 PM**
Prep End Date: **5/18/2016 9:30:00 AM**

Prep Batch **75159** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-21A	Soil		0	0	#Num!	1 of 1	
1605121-22A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay MS/MSD							
1605121-23A	Soil		0	0	#Num!	1 of 1	
1605121-24A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-25A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-26A	Soil		0	0	#Num!	1 of 1	
1605121-27A	Soil		0	0	#Num!	1 of 1	
1605121-28A	Soil		0	0	#Num!	1 of 1	
1605121-29A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-30A	Soil		0	0	#Num!	1 of 1	
1605121-31A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-32A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-33A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-34A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-35A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605121-36A	Soil		0	0	#Num!	1 of 1	
1605121-37A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 3:00:00 PM**
Digestion: **Start: 5/13/2016 4:00:00 PM / Stop: 5/17/2016 1:30:00 PM**
Prep End Date: **5/18/2016 9:30:00 AM**

Prep Batch **75159** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-38A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						
1605121-39A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						
1605121-40A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling						

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/20/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

PIPETTE ID: P-01	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	5.00	4.9912	4.9812	99.62	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9993	4.9893	99.79		
3		4.9957	4.9857	99.71		
AVERAGE (MEAN)		4.995	4.985	99.71		0.081
						PASS

PIPETTE ID: P-09	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.20	0.2002	0.1998	99.90	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2012	0.2008	100.40		
3		0.2005	0.2001	100.05		
AVERAGE (MEAN)		0.201	0.200	100.12		0.256
						PASS

PIPETTE ID:	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/20/16

Analyst / Date

05/31/2016

Review and Approved / Date

X:\LOGS\Syringe and Pipetter Cal Logbook\MET-HG PREP\Pipetter Accuracy Check-CVD-05.20.16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 10:33:02 AM**
Digestion: **Start: 5/23/2016 11:34:00 AM / Stop: 5/23/2016 4:56:00 PM**
Prep End Date: **5/23/2016 5:35:00 PM**

Prep Batch **75286** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-12A	Soil		1.03	50	48.544	1 of 1	
1605135-13A	Soil		1.05	50	47.619	1 of 1	
1605135-14A	Soil		1.15	50	43.478	3 of 3	
1605135-14A MS	Soil		1.1	50	45.455	3 of	
1605135-14A MSD	Soil		1.1	50	45.455	3 of	
1605135-14A PDS	Soil		1.15	50	43.478	3 of	
1605135-14A SD	Soil		1.15	50	43.478	3 of	
1605135-15A	Soil		1.03	50	48.544	1 of 1	
1605135-16A	Soil		1.07	50	46.729	3 of 3	
1605135-17A	Soil		1.05	50	47.619	1 of 1	
1605135-18A	Soil		1.04	50	48.077	1 of 1	
1605135-19A	Soil		1.07	50	46.729	1 of 1	
1605135-20A	Soil		1.05	50	47.619	1 of 1	
1605135-21A	Soil		1.04	50	48.077	1 of 1	
1605135-22A	Soil		1.02	50	49.020	1 of 1	
1605135-23A	Soil		1.05	50	47.619	1 of 1	
1605135-24A	Soil		1.06	50	47.170	1 of 1	
1605135-25A	Soil		1.02	50	49.020	1 of 1	
1605135-26A	Soil		1.1	50	45.455	1 of 1	
1605135-27A	Soil		1.13	50	44.248	1 of 1	
1605135-28A	Soil		1.07	50	46.729	1 of 1	
1605135-29A	Soil		1.04	50	48.077	1 of 1	
1605135-30A	Soil		1.05	50	47.619	1 of 1	
1605135-31A	Soil		1.07	50	46.729	1 of 1	
LCS-75286	Soil		1	50	50.000	of	
LCSD-75286	Soil		1	50	50.000	of	
MB-75286	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	11/30/2017

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160519-3	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	08/17/2016
MET-SPIKE-160519-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/17/2016
MET-SPIKE-160520-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/18/2016

REVIEWED/APPROVED

By Sherri Herschmann at 10:56:27 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 10:33:02 AM**
Digestion:
Prep End Date:

Prep Batch **75286** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-12A	Soil		1.03	50	50.000	1 of 1	
1605135-13A	Soil		1.05	50	50.000	1 of 1	
1605135-14A	Soil		1.15	50	50.000	3 of 3	
1605135-14A MS	Soil		1.10	50	50.000	3 of 3	
1605135-14A MSD	Soil		1.10	50	50.000	3 of 3	
1605135-15A	Soil		1.03	50	50.000	1 of 1	
1605135-16A	Soil		1.07	50	50.000	3 of 3	
1605135-17A	Soil		1.05	50	50.000	1 of 1	
1605135-18A	Soil		1.04	50	50.000	1 of 1	
1605135-19A	Soil		1.07	50	50.000	1 of 1	
1605135-20A	Soil		1.05	50	50.000	1 of 1	
1605135-21A	Soil		1.04	50	50.000	1 of 1	
1605135-22A	Soil		1.02	50	50.000	1 of 1	
1605135-23A	Soil		1.05	50	50.000	1 of 1	
1605135-24A	Soil		1.06	50	50.000	1 of 1	
1605135-25A	Soil		1.02	50	50.000	1 of 1	
1605135-26A	Soil		1.10	50	50.000	1 of 1	
1605135-27A	Soil		1.13	50	50.000	1 of 1	
1605135-28A	Soil		1.07	50	50.000	1 of 1	
1605135-29A	Soil		1.04	50	50.000	1 of 1	
1605135-30A	Soil		1.05	50	50.000	1 of 1	
1605135-31A	Soil		1.07	50	50.000	1 of 1	
LCS-75286	Soil		1	50	50.000	of	
LCSD-75286	Soil		1	50	50.000	of	
MB-75286	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160519-3	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	08/17/2016
MET-SPIKE-160519-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/17/2016
MET-SPIKE-160520-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/18/2016

11:34 - 11:44
11:49 - 13:49
14:20 - 16:20
16:41 - 16:56

5/23/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 3:40:00 PM**
Digestion: **Start: 5/16/2016 4:45:00 PM / Stop: 5/18/2016 11:00:00 AM**
Prep End Date: **5/18/2016 3:00:00 PM**

Prep Batch **75188** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-41A	Soil		0	0	#Num!	1 of 1	
1605121-42A	Soil		0	0	#Num!	1 of 1	
1605121-43A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay MS/MSD						
1605121-44A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-45A	Soil		0	0	#Num!	1 of 1	
1605135-01A	Soil		0	0	#Num!	1 of 1	
1605135-02A	Soil		0	0	#Num!	1 of 1	
1605135-03A	Soil		0	0	#Num!	1 of 1	
1605135-04A	Soil		0	0	#Num!	1 of 1	
1605135-05A	Soil		0	0	#Num!	1 of 1	
1605135-06A	Soil		0	0	#Num!	1 of 1	
1605135-07A	Soil		0	0	#Num!	1 of 1	
1605135-08A	Soil		0	0	#Num!	1 of 1	
1605135-09A	Soil		0	0	#Num!	1 of 1	
1605135-10A	Soil		0	0	#Num!	1 of 1	
1605135-11A	Soil		0	0	#Num!	1 of 1	
1605135-12A	Soil		0	0	#Num!	1 of 1	
1605135-13A	Soil		0	0	#Num!	1 of 1	
1605135-14A	Soil		0	0	#Num!	of 3	
	Extra sub sampled for MS/MSD						
1605135-15A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 5:00:00 PM**
Digestion: **Start: 5/16/2016 5:30:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date: **5/19/2016 9:00:00 AM**

Prep Batch **75190** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605135-16A	Soil		0	0	#Num!		of	3	
Extra sub sampled for MS/MSD									
1605135-17A	Soil		0	0	#Num!	1	of	1	
1605135-18A	Soil		0	0	#Num!	1	of	1	
1605135-19A	Soil		0	0	#Num!	1	of	1	
1605135-20A	Soil		0	0	#Num!	1	of	1	
1605135-21A	Soil		0	0	#Num!	1	of	1	
1605135-22A	Soil		0	0	#Num!	1	of	1	
1605135-23A	Soil		0	0	#Num!	1	of	1	
1605135-24A	Soil		0	0	#Num!	1	of	1	
1605135-25A	Soil		0	0	#Num!	1	of	1	
1605135-26A	Soil		0	0	#Num!	1	of	1	
1605135-27A	Soil		0	0	#Num!	1	of	1	
1605135-28A	Soil		0	0	#Num!	1	of	1	
1605135-29A	Soil		0	0	#Num!	1	of	1	
1605135-30A	Soil		0	0	#Num!	1	of	1	
1605135-31A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling hard clay									
1605135-32A	Soil		0	0	#Num!	1	of	1	
1605135-33A	Soil		0	0	#Num!	1	of	1	
1605135-34A	Soil		0	0	#Num!	1	of	1	
1605135-35A	Soil		0	0	#Num!	1	of	1	

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/23/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	5.0095	4.9995	99.99	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0068	4.9968	99.94		
3		5.0003	4.9903	99.81		
AVERAGE (MEAN)		**5.006**	**4.996**	**99.91**		**0.094**
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2004	0.2000	100.00	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.1999	0.1995	99.75		
3		0.1996	0.1992	99.60		
AVERAGE (MEAN)		**0.200**	**0.200**	**99.78**		**0.202**
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/23/16

Analyst / Date

05/31/2016

Review and Approved / Date

X:\LOGS\Syringe and Pipetter Cal Logbook\MET-HG PREP\Pipetter Accuracy Check-CVD-05.23.16

Calibration Summary Report

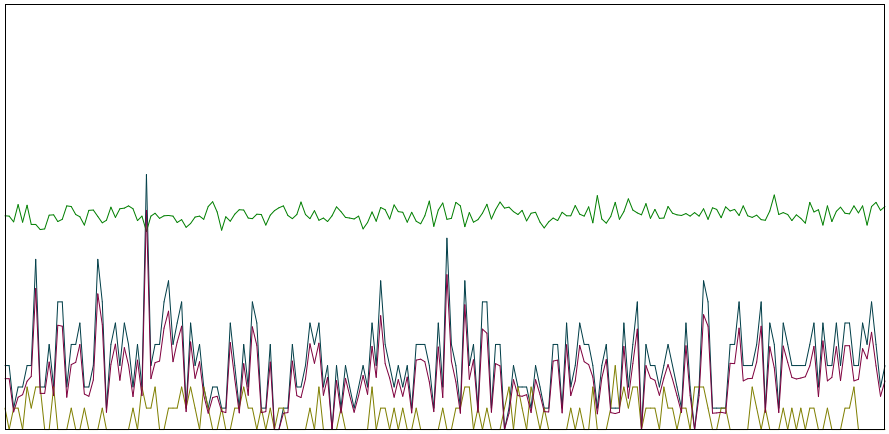
Instrument: ICPMS3
Current Method: C:\ICPCHEM\1\METHODS\DHL_3Fe.M
Calibration: C:\ICPCHEM\1\CALIB\DHL_3Fe.C
Last Update: May 26 2016 12:20 pm
Cal Type: Y=aX+[blank]

Standard	Date Acquired	File
BLANK STD 1	May 26 2016 11:35 am	c:\icpchem\1\data\16e26l01.b\006calb.d\
L2-160526	May 26 2016 11:41 am	c:\icpchem\1\data\16e26l01.b\007cals.d\
L-160526	May 26 2016 11:47 am	c:\icpchem\1\data\16e26l01.b\008cals.d\
10X-160526	May 26 2016 11:53 am	c:\icpchem\1\data\16e26l01.b\009cals.d\
5X-160526	May 26 2016 12:00 pm	c:\icpchem\1\data\16e26l01.b\010cals.d\
2X-160526	May 26 2016 12:06 pm	c:\icpchem\1\data\16e26l01.b\011cals.d\

Element Name	Corr Coef	Coef A	Coef B	Lvl 2	Lvl 6	Lvl 7	L7 %R	Lvl 8	L8 %R
Li	1.0000	0.3366	0.02913	1.01	254	499		2000	
Be	0.9998	0.08368	0.0005551	1.04	258	495	99%	--------	######
B	0.9999	0.06756	0.1378	1.13	255	523	105%	1,994	100%
Na	1.0000	0.2752	2.928	18.60	5,041	10,030	100%	24,980	100%
Mg	1.0000	0.1278	0.2399	20.28	4,922	10,020	100%	25,010	100%
Al	1.0000	0.03286	0.223	21.41	5,021	9,994	100%	--------	######
K	0.9999	0.07297	2.879	17.62	4,884	9,752	98%	25,130	101%
Ca	1.0000	0.008501	0.1555	18.59	4,930	10,140	101%	24,970	100%
Ti	1.0000	0.02844	0.00105	1.04	253	502	100%	1,999	100%
V	1.0000	1.192	0.1319	0.98	245	487	97%	2,004	100%
Cr	1.0000	1.555	0.05859	1.00	248	496	99%	2,001	100%
Mn	1.0000	0.6224	0.04795	1.02	255	504	101%	1,998	100%
Fe	1.0000	1.978	3.526	20.00	4,973	10,000	100%	--------	######
Co	0.9999	4.849	0.156	1.02	252	523	105%	1,994	100%
Ni	1.0000	1.456	0.1004	0.95	244	489	98%	2,004	100%
Cu	1.0000	3.942	0.2957	0.98	253	506	101%	1,998	100%
Zn	1.0000	0.3815	0.1666	1.02	261	511	102%	1,996	100%
As	1.0000	0.2183	0.01784	0.98	253	501	100%	1,999	100%
Se	1.0000	0.01243	0.005578	1.14	262	506	101%	1,997	100%
Sr	1.0000	0.303	0.03115	0.99	259	500	100%	1,999	100%
Mo	0.9999	0.05615	0.001224	0.95	240	481	96%	2,006	100%
Ag	0.9999	0.149	0.0009176	0.99	254	498	100%	--------	######
Cd	1.0000	0.03237	0.0006313	1.07	247	486	97%	2,004	100%
Sn	1.0000	0.08914	0.007554	0.96	246	516	103%	1,997	100%
Sb	0.9999	0.1041	0.003608	0.95	245	503	101%	--------	######
Ba	0.9999	0.04368	0.002479	0.94	238	476	95%	2,008	100%
Tl	1.0000	0.3286	0.00266	0.92	253	509	102%	1,998	100%
Pb	1.0000	0.4377	0.008346	0.97	249	510	102%	1,998	100%

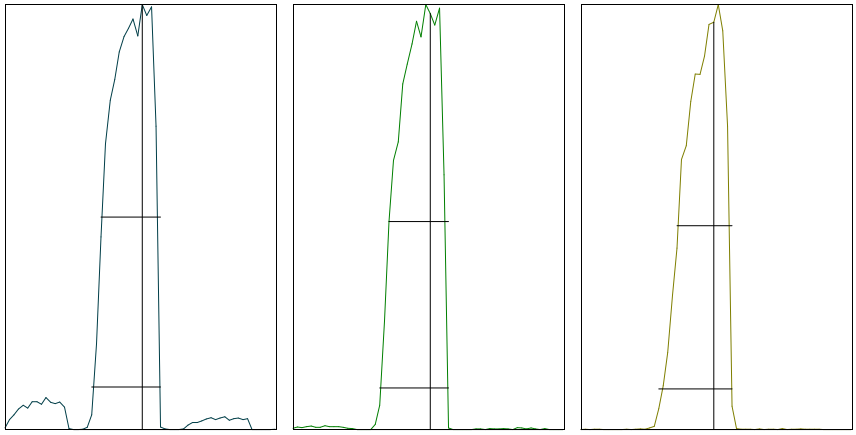
Tune Report

Tune File : He.U
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.3100 sec	
n:	200	
Oxide:	156/140	0.337%
Doubly Charged:	70/140	2.927%

m/z	Range	Count	Mean	RSD%	Background
51	20	3.0	3.2	58.08	0.10
59	5,000	2622.0	2529.1	3.21	0.30
75	20	0.0	0.6	119.43	0.30
51/59	1	0.114%	0.128%	59.20	



m/z:	59	89	205
Height:	2,619	1,156	2,499
Axis:	59.05	89.05	205.00
W-50%:	0.65	0.65	0.60
W-10%:	0.7500	0.7500	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.5600 sec

Y axis : Linear

Generated : May 26, 2016 10:44:33
Printed : May 26, 2016 10:44:36

Tune Report

Tune File : He.U
Comment :

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1600 W	Extract 1	:	0 V	AMU Gain	:	121
RF Matching	:	1.6 V	Extract 2	:	-110 V	AMU Offset	:	121
Smpl Depth	:	9 mm	Omega Bias-ce	:	-24 V	Axis Gain	:	0.9993
Torch-H	:	0 mm	Omega Lens-ce	:	-2 V	Axis Offset	:	-0.03
Torch-V	:	0.5 mm	Cell Entrance	:	-40 V	QP Bias	:	-15 V
Carrier Gas	:	1.2 L/min	QP Focus	:	-10 V			
Makeup Gas	:	0 L/min	Cell Exit	:	-40 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	1740 V
Sample Pump	:	--- rps	OctP RF	:	170 V	Pulse HV	:	1460 V
S/C Temp	:	2 degC	OctP Bias	:	-18 V			

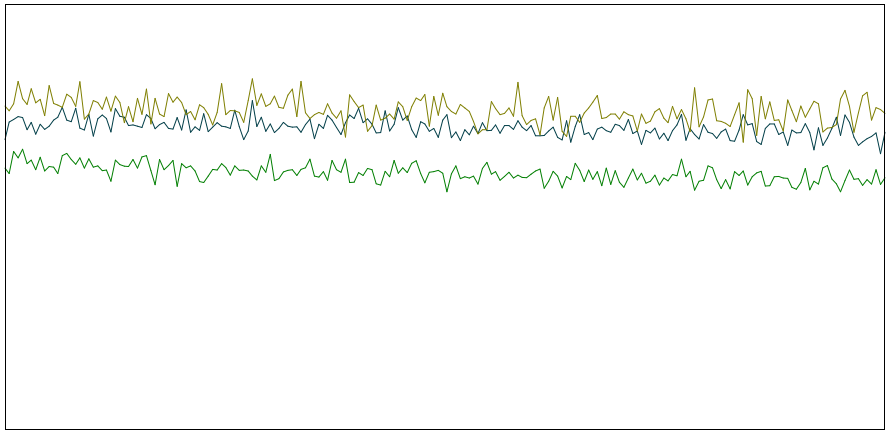
===Reaction Cell===

Reaction Mode	:	ON						
H2 Gas	:	0 mL/min	He Gas	:	4.8 mL/min	Optional Gas	:	--- %

Generated : May 26, 2016 10:44:33
Printed : May 26, 2016 10:44:38

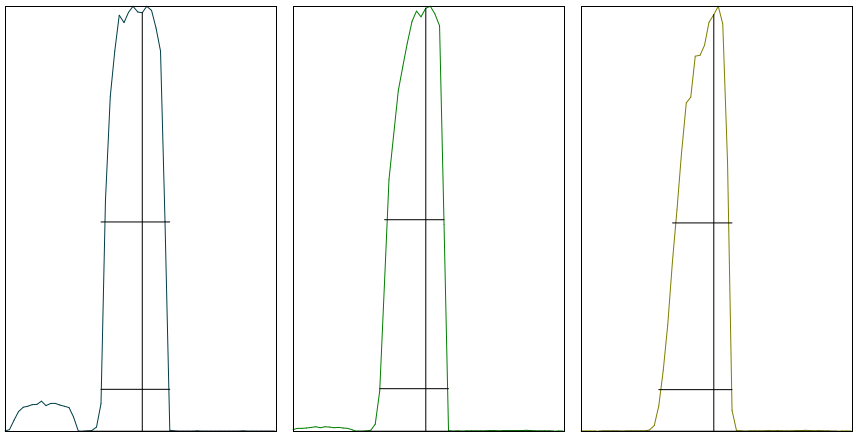
Tune Report

Tune File : nogas.u
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.8200 sec	
n:	200	
Oxide:	156/140	1.040%
Doubly Charged:	70/140	1.312%

m/z	Range	Count	Mean	RSD%	Background
7	10,000	6992.0	7099.4	2.91	2.00
89	20,000	11841.0	12054.4	3.39	4.00
205	10,000	7437.0	7508.7	3.86	11.60
156/140	2	0.851%	1.014%	11.65	
70/140	2	1.169%	1.169%	10.03	
63	500	222.0	280.8	7.45	2.40
23	20,000	10169.0	10894.1	3.85	2.40



m/z:	7	89	205
Height:	6,839	11,728	7,449
Axis:	7.05	89.00	205.00
W-50%:	0.75	0.65	0.65
W-10%:	0.7500	0.7500	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : May 26, 2016 10:40:54
Printed : May 26, 2016 10:40:56

Tune Report

Tune File : nogas.u
Comment :

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1600 W	Extract 1	:	0 V	AMU Gain	:	121
RF Matching	:	1.6 V	Extract 2	:	-110 V	AMU Offset	:	121
Smpl Depth	:	9 mm	Omega Bias-ce	:	-20 V	Axis Gain	:	0.9993
Torch-H	:	0 mm	Omega Lens-ce	:	-1 V	Axis Offset	:	-0.03
Torch-V	:	0.5 mm	Cell Entrance	:	-30 V	QP Bias	:	-1 V
Carrier Gas	:	1.2 L/min	QP Focus	:	4 V			
Makeup Gas	:	0 L/min	Cell Exit	:	-40 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	1740 V
Sample Pump	:	--- rps	OctP RF	:	170 V	Pulse HV	:	1460 V
S/C Temp	:	2 degC	OctP Bias	:	-6 V			

===Reaction Cell===								
Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

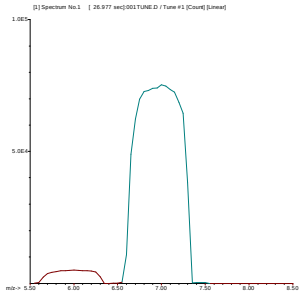
Generated : May 26, 2016 10:40:54
Printed : May 26, 2016 10:40:59

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\16E26k00.B\001TUNE.D
Date Acquired: May 26 2016 10:52 am
Acq. Method: TN6020.M
Operator: KL
Sample Name: TUNE CHECK
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020.M

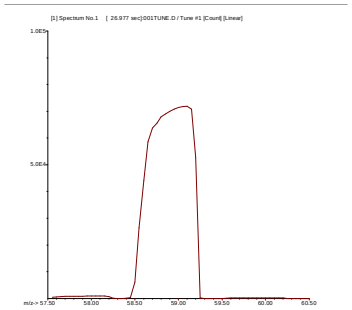
RSD (%)

Element	Actual	Required	Flag
7 Li	2.69	5.00	
59 Co	4.86	5.00	
115 In	2.79	5.00	
205 Tl	2.70	5.00	

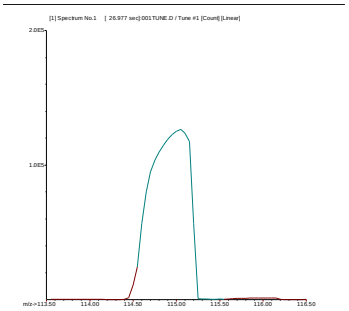


7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:

REVIEWED/APPROVED
By Sherri Herschmann at 11:22:22 AM, 5/31/2016



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In

Mass Calib.

Actual: 115.00

Required: 114.90 - 115.10

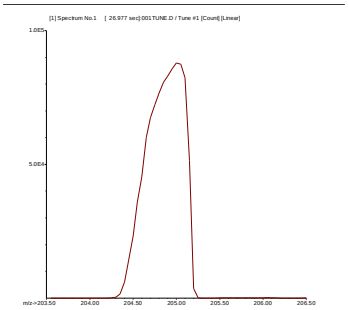
Flag:

Peak Width

Actual: 0.65

Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00

Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.60

Required: 0.90

Flag:

P/A Factor Tuning Report

Acquired:May 26 2016 10:49 am

Mass[amu]	Element	P/A Factor
6	Li	0.071167
23	Na	0.086629
24	Mg	0.091020
27	Al	0.094920
39	K	0.095510
44	Ca	Sensitivity too low
45	Sc	0.096377
47	Ti	Sensitivity too low
51	V	0.098935
52	Cr	0.101915
55	Mn	0.103383
59	Co	0.107147
60	Ni	0.109965
63	Cu	0.112207
66	Zn	0.111739
72	Ge	0.110602
75	As	0.109640
78	Se	Sensitivity too low
88	Sr	0.110320
95	Mo	0.109090
106	(Cd)	0.115897
107	Ag	Sensitivity too low
108	(Cd)	0.116123
111	Cd	0.117892
115	In	0.116952
118	Sn	0.116558
121	Sb	0.116308
137	Ba	Sensitivity too low
205	Tl	0.126999
206	(Pb)	0.126840
207	(Pb)	0.127005
208	Pb	0.126839
209	Bi	0.126647
238		0.125660

===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 1740 V
Pulse HV: 1460 V

Calibration Blank QC Report

Acq. Method: DHL_3Fe.M Sample Name: BLANK STD 1
Operator: KL Instrument: ICPMS3
Last Cal. Update: May 26 2016 11:39 am
Date Acquired: May 26 2016 11:35 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)
6	Li	2	---	22.89	P	11.75	51.33
7	Li	2	45	642.26	P	12.62	1.96
9	Be	2	45	12.22	P	6.94	56.77
11	B	2	45	3037.17	P	36.06	1.19
23	Na	1	45	2469.24	P	95.33	3.86
24	Mg	1	45	202.23	P	32.89	16.26
27	Al	1	45	188.00	P	3.53	1.88
39	K	1	45	2428.12	P	89.25	3.68
44	Ca	2	45	3431.72	P	159.90	4.66
45	Sc	1	---	168636.09	P	1517.00	0.90
45	Sc	2	---	4411245.00	A	91060.00	2.06
47	Ti	1	45	0.89	P	0.77	86.60
51	V	1	45	111.11	P	10.36	9.32
51	V	2	---		P		
52	Cr	1	45	49.33	P	11.62	23.55
55	Mn	1	45	40.45	P	6.01	14.87
56	Fe	1	72	1777.94	P	176.90	9.95
59	Co	1	72	78.67	P	4.62	5.87
60	Ni	1	72	50.67	P	6.11	12.06
60	Ni	2	---		P		
63	Cu	1	72	149.34	P	19.37	12.97
63	Cu	2	---		P		
66	Zn	1	72	84.00	P	7.42	8.84
66	Zn	2	---		P		
72	Ge	1	---	100925.70	P	970.30	0.96
72	Ge	2	---		P		
75	As	1	72	9.00	P	0.38	4.28
78	Se	1	72	2.81	P	0.17	6.03
88	Sr	2	###	1017.86	P	16.44	1.62
95	Mo	2	###	40.00	P	0.00	0.00
107	Ag	2	###	30.00	P	3.33	11.11
111	Cd	2	###	20.61	P	10.46	50.75
115	In	2	---	6534497.00	A	74010.00	1.13
118	Sn	2	###	246.68	P	16.67	6.76
121	Sb	2	###	117.78	P	12.62	10.72
137	Ba	2	###	81.11	P	22.20	27.37
205	Tl	2	###	64.45	P	3.85	5.97
208	Pb	2	###	202.23	P	48.57	24.02
209	Bi	2	---	4845836.00	A	5263.00	0.11

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: L2-160526
Operator: KL Instrument: ICPMS3
Date Acquired: May 26 2016 11:41 am
Last Cal. Update: May 26 2016 11:39 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-227.07	P	55.37	24.39	ISFail
7	Li	2	45	8054.00	P	134.90	1.67	
9	Be	2	45	1902.44	P	74.13	3.90	
11	B	2	45	4649.92	P	67.38	1.45	
23	Na	1	45	6889.97	P	45.29	0.66	
24	Mg	1	45	2425.90	P	75.00	3.09	
27	Al	1	45	793.37	P	9.33	1.18	
39	K	1	45	3566.22	P	30.98	0.87	
44	Ca	2	45	6817.75	P	166.80	2.45	
45	Sc	1	---	171268.80	P	1426.00	0.83	
45	Sc	2	---	4348096.00	A	24070.00	0.55	
47	Ti	1	45	26.22	P	8.15	31.07	
51	V	1	45	1112.07	P	34.64	3.11	
51	V	2	---		P			
52	Cr	1	45	1377.88	P	104.70	7.60	
55	Mn	1	45	584.91	P	26.14	4.47	
56	Fe	1	72	21962.82	P	531.10	2.42	
59	Co	1	72	2609.21	P	49.49	1.90	
60	Ni	1	72	758.70	P	17.33	2.28	
60	Ni	2	---		P			
63	Cu	1	72	2110.44	P	60.02	2.84	
63	Cu	2	---		P			
66	Zn	1	72	283.12	P	14.26	5.04	
66	Zn	2	---		P			
72	Ge	1	---	101930.60	P	160.20	0.16	
72	Ge	2	---		P			
75	As	1	72	117.78	P	1.93	1.64	
78	Se	1	72	10.04	P	0.74	7.37	
88	Sr	2	115	10552.80	P	188.60	1.79	
95	Mo	2	115	1743.53	P	58.13	3.33	
107	Ag	2	115	4742.24	P	236.60	4.99	
111	Cd	2	115	1129.57	P	79.02	7.00	
115	In	2	---	6399852.00	A	71650.00	1.12	
118	Sn	2	115	2970.51	P	140.00	4.71	
121	Sb	2	115	3295.05	P	126.20	3.83	
137	Ba	2	115	1392.37	P	63.02	4.53	
205	Tl	2	209	7480.56	P	22.20	0.30	
208	Pb	2	209	10592.39	P	243.70	2.30	
209	Bi	2	---	4892523.00	A	32760.00	0.67	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-227.07	24.39	22.89	-991.9	70 - 120	ISFail
45	Sc	1	171268.78	0.83	168636.11	101.6	70 - 120	
45	Sc	2	4348096.00	0.55	4411244.50	98.6	70 - 120	
72	Ge	1	101930.59	0.16	100925.69	101.0	70 - 120	
115	In	2	6399852.50	1.12	6534497.50	97.9	70 - 120	
209	Bi	2	4892523.00	0.67	4845836.50	101.0	70 - 120	

Calibration Standard QC Report

Acq. Method:	DHL_3Fe.M	Sample Name:	L-160526
Operator:	KL	Instrument:	ICPMS3
Date Acquired:	May 26 2016 11:47 am		
Last Cal. Update:	May 26 2016 11:45 am		

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-2853.03	P	197.30	6.92	ISFail
7	Li	2	45	74406.89	P	1183.00	1.59	Fail
9	Be	2	45	18379.55	P	334.00	1.82	Fail
11	B	2	45	17512.86	P	404.30	2.31	Fail
23	Na	1	45	48760.43	P	422.10	0.87	Fail
24	Mg	1	45	21735.13	P	291.70	1.34	Fail
27	Al	1	45	5678.71	P	62.30	1.10	Fail
39	K	1	45	14016.23	P	113.90	0.81	Fail
44	Ca	2	45	39486.07	P	974.50	2.47	Fail
45	Sc	1	---	168489.80	P	862.70	0.51	
45	Sc	2	---	4346676.00	A	83690.00	1.93	
47	Ti	1	45	250.23	P	9.08	3.63	Fail
51	V	1	45	9816.04	P	119.80	1.22	Fail
51	V	2	---		P			
52	Cr	1	45	13241.91	P	131.80	1.00	Fail
55	Mn	1	45	5455.06	P	96.32	1.77	Fail
56	Fe	1	72	200825.91	P	2321.00	1.16	Fail
59	Co	1	72	24544.59	P	237.90	0.97	Fail
60	Ni	1	72	7264.92	P	109.80	1.51	Fail
60	Ni	2	---		P			
63	Cu	1	72	20467.45	P	153.30	0.75	Fail
63	Cu	2	---		P			
66	Zn	1	72	2187.79	P	49.01	2.24	Fail
66	Zn	2	---		P			
72	Ge	1	---	100347.00	P	757.50	0.75	
72	Ge	2	---		P			
75	As	1	72	1122.46	P	15.77	1.40	Fail
78	Se	1	72	69.44	P	2.46	3.54	Fail
88	Sr	2	115	95572.36	P	1410.00	1.48	Fail
95	Mo	2	115	17210.60	P	598.40	3.48	Fail
107	Ag	2	115	47745.14	P	876.10	1.84	Fail
111	Cd	2	115	10552.84	P	216.20	2.05	Fail
115	In	2	---	6494819.00	A	84050.00	1.29	
118	Sn	2	115	28959.69	P	472.00	1.63	Fail
121	Sb	2	115	32449.74	P	643.00	1.98	Fail
137	Ba	2	115	13570.54	P	272.20	2.01	Fail
205	Tl	2	209	77095.92	P	1656.00	2.15	Fail
208	Pb	2	209	103645.20	P	826.60	0.80	Fail
209	Bi	2	---	4924977.00	A	59300.00	1.20	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-2853.03	6.92	22.89	-12462.4	70 - 120	ISFail
45	Sc	1	168489.81	0.51	168636.11	99.9	70 - 120	
45	Sc	2	4346675.50	1.93	4411244.50	98.5	70 - 120	
72	Ge	1	100346.99	0.75	100925.69	99.4	70 - 120	
115	In	2	6494818.50	1.29	6534497.50	99.4	70 - 120	
209	Bi	2	4924977.00	1.20	4845836.50	101.6	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 10X-160526
Operator: KL Instrument: ICPMS3
Date Acquired: May 26 2016 11:53 am
Last Cal. Update: May 26 2016 11:51 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-14495.79	P	241.50	1.67	ISFail
7	Li	2	45	368393.91	P	4734.00	1.29	Fail
9	Be	2	45	92563.86	P	1778.00	1.92	Fail
11	B	2	45	77851.37	P	1375.00	1.77	Fail
23	Na	1	45	229791.91	P	2959.00	1.29	Fail
24	Mg	1	45	105968.90	P	1539.00	1.45	Fail
27	Al	1	45	27241.77	P	477.30	1.75	Fail
39	K	1	45	60364.88	P	831.90	1.38	Fail
44	Ca	2	45	180640.00	P	4169.00	2.31	Fail
45	Sc	1	---	164793.30	P	1223.00	0.74	
45	Sc	2	---	4331415.00	A	63170.00	1.46	
47	Ti	1	45	1192.08	P	26.97	2.26	
51	V	1	45	48173.05	P	589.10	1.22	Fail
51	V	2	---		P			
52	Cr	1	45	64556.11	P	1446.00	2.24	
55	Mn	1	45	26149.18	P	521.40	1.99	Fail
56	Fe	1	72	980871.81	P	11120.00	1.13	
59	Co	1	72	121114.60	P	1407.00	1.16	
60	Ni	1	72	35624.92	P	346.90	0.97	
60	Ni	2	---		P			
63	Cu	1	72	99116.49	P	1273.00	1.28	
63	Cu	2	---		P			
66	Zn	1	72	10013.11	P	71.08	0.71	Fail
66	Zn	2	---		P			
72	Ge	1	---	97589.42	P	1162.00	1.19	
72	Ge	2	---		P			
75	As	1	72	5465.07	P	28.80	0.53	
78	Se	1	72	322.60	P	5.60	1.74	Fail
88	Sr	2	115	475911.41	P	12140.00	2.55	Fail
95	Mo	2	115	84947.17	P	986.10	1.16	Fail
107	Ag	2	115	236413.80	P	2317.00	0.98	Fail
111	Cd	2	115	51850.21	P	475.10	0.92	Fail
115	In	2	---	6447723.00	A	51790.00	0.80	
118	Sn	2	115	141358.50	P	2925.00	2.07	Fail
121	Sb	2	115	162336.09	P	3836.00	2.36	Fail
137	Ba	2	115	65999.50	P	2209.00	3.35	Fail
205	Tl	2	209	381669.81	P	6171.00	1.62	Fail
208	Pb	2	209	516578.59	P	8319.00	1.61	Fail
209	Bi	2	---	4918655.00	A	65340.00	1.33	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-14495.79	1.67	22.89	-63319.6	70 - 120	ISFail
45	Sc	1	164793.33	0.74	168636.11	97.7	70 - 120	
45	Sc	2	4331414.50	1.46	4411244.50	98.2	70 - 120	
72	Ge	1	97589.41	1.19	100925.69	96.7	70 - 120	
115	In	2	6447723.00	0.80	6534497.50	98.7	70 - 120	
209	Bi	2	4918655.00	1.33	4845836.50	101.5	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 5X-160526
Operator: KL Instrument: ICPMS3
Date Acquired: May 26 2016 12:00 pm
Last Cal. Update: May 26 2016 11:57 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-29158.50	P	1014.00	3.48	ISFail
7	Li	2	45	736902.38	A	19540.00	2.65	Fail
9	Be	2	45	185362.30	P	3536.00	1.91	Fail
11	B	2	45	149951.50	P	1692.00	1.13	Fail
23	Na	1	45	457975.81	P	3107.00	0.68	Fail
24	Mg	1	45	210458.50	P	2170.00	1.03	
27	Al	1	45	54325.29	P	728.60	1.34	Fail
39	K	1	45	118726.50	P	732.50	0.62	Fail
44	Ca	2	45	356693.19	P	8182.00	2.29	Fail
45	Sc	1	---	166716.70	P	655.10	0.39	
45	Sc	2	---	4306344.00	A	93420.00	2.17	
47	Ti	1	45	2353.15	P	46.59	1.98	
51	V	1	45	96531.47	P	2236.00	2.32	
51	V	2	---		P			
52	Cr	1	45	128789.00	P	1664.00	1.29	
55	Mn	1	45	52020.13	P	683.20	1.31	
56	Fe	1	72	1985262.00	A	20400.00	1.03	
59	Co	1	72	240217.80	P	3230.00	1.34	
60	Ni	1	72	70843.21	P	1119.00	1.58	
60	Ni	2	---		P			
63	Cu	1	72	198214.41	P	2267.00	1.14	
63	Cu	2	---		P			
66	Zn	1	72	19982.66	P	103.00	0.52	Fail
66	Zn	2	---		P			
72	Ge	1	---	97991.54	P	580.90	0.59	
72	Ge	2	---		P			
75	As	1	72	10856.13	P	111.90	1.03	
78	Se	1	72	642.72	P	8.49	1.32	Fail
88	Sr	2	115	963155.69	M	26940.00	2.80	Fail
95	Mo	2	115	171238.50	P	2895.00	1.69	Fail
107	Ag	2	115	473196.41	P	12300.00	2.60	Fail
111	Cd	2	115	102299.90	P	3009.00	2.94	Fail
115	In	2	---	6419535.00	A	40530.00	0.63	
118	Sn	2	115	280883.09	P	6245.00	2.22	Fail
121	Sb	2	115	324213.09	P	6272.00	1.93	Fail
137	Ba	2	115	130490.80	P	3322.00	2.55	Fail
205	Tl	2	209	749869.69	P	11560.00	1.54	Fail
208	Pb	2	209	1008207.00	P	16570.00	1.64	Fail
209	Bi	2	---	4780422.00	A	51650.00	1.08	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-29158.51	3.48	22.89	-127368.4	70 - 120	ISFail
45	Sc	1	166716.70	0.39	168636.11	98.9	70 - 120	
45	Sc	2	4306344.50	2.17	4411244.50	97.6	70 - 120	
72	Ge	1	97991.54	0.59	100925.69	97.1	70 - 120	
115	In	2	6419535.50	0.63	6534497.50	98.2	70 - 120	
209	Bi	2	4780421.50	1.08	4845836.50	98.7	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 2X-160526
Operator: KL Instrument: ICPMS3
Date Acquired: May 26 2016 12:06 pm
Last Cal. Update: May 26 2016 12:03 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-70471.73	P	1437.00	2.04	ISFail
7	Li	2	45	1807047.00	A	16860.00	0.93	Fail
9	Be	2	45	456731.50	P	6546.00	1.43	
11	B	2	45	367061.69	P	6478.00	1.76	Fail
23	Na	1	45	1164363.00	A	21250.00	1.83	Fail
24	Mg	1	45	527160.50	P	10800.00	2.05	
27	Al	1	45	138352.09	P	1812.00	1.31	Fail
39	K	1	45	300885.81	P	1087.00	0.36	Fail
44	Ca	2	45	888808.13	M	40400.00	4.55	Fail
45	Sc	1	---	167494.09	P	951.50	0.57	
45	Sc	2	---	4224350.00	A	83120.00	1.97	
47	Ti	1	45	6029.12	P	35.66	0.59	
51	V	1	45	244170.91	P	2403.00	0.98	
51	V	2	---		A			
52	Cr	1	45	323235.91	P	2725.00	0.84	
55	Mn	1	45	133135.50	P	860.00	0.65	
56	Fe	1	72	4845755.00	A	30750.00	0.63	
59	Co	1	72	601062.69	P	4270.00	0.71	
60	Ni	1	72	175083.09	P	441.40	0.25	
60	Ni	2	---		P			
63	Cu	1	72	490695.69	P	3225.00	0.66	
63	Cu	2	---		P			
66	Zn	1	72	49171.62	P	699.30	1.42	
66	Zn	2	---		P			
72	Ge	1	---	98470.84	P	640.90	0.65	
72	Ge	2	---		P			
75	As	1	72	27200.44	P	121.40	0.45	
78	Se	1	72	1608.44	P	24.48	1.52	
88	Sr	2	115	2452718.00	A	20500.00	0.84	Fail
95	Mo	2	115	422343.31	P	6915.00	1.64	Fail
107	Ag	2	115	1184420.00	A	16580.00	1.40	
111	Cd	2	115	249780.50	P	5961.00	2.39	Fail
115	In	2	---	6257524.00	A	85220.00	1.36	
118	Sn	2	115	686210.38	P	12360.00	1.80	Fail
121	Sb	2	115	797247.63	P	16380.00	2.05	Fail
137	Ba	2	115	324773.69	P	6188.00	1.91	Fail
205	Tl	2	209	1958548.00	A	27100.00	1.38	
208	Pb	2	209	2565249.00	A	26460.00	1.03	Fail
209	Bi	2	---	4715737.00	A	21610.00	0.46	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-70471.73	2.04	22.89	-307830.3	70 - 120	ISFail
45	Sc	1	167494.09	0.57	168636.11	99.3	70 - 120	
45	Sc	2	4224349.50	1.97	4411244.50	95.8	70 - 120	
72	Ge	1	98470.84	0.65	100925.69	97.6	70 - 120	
115	In	2	6257524.00	1.36	6534497.50	95.8	70 - 120	
209	Bi	2	4715737.00	0.46	4845836.50	97.3	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: H-160526
Operator: KL Instrument: ICPMS3
Date Acquired: May 26 2016 12:11 pm
Last Cal. Update: May 26 2016 12:09 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-132861.91	P	2177.00	1.64	ISFail
7	Li	2	45	3508284.00	A	38330.00	1.09	Fail
9	Be	2	45	864896.88	A	14120.00	1.63	
11	B	2	45	740353.19	A	29940.00	4.04	Fail
23	Na	1	45	2288264.00	A	6624.00	0.29	
24	Mg	1	45	1061258.00	A	7676.00	0.72	
27	Al	1	45	272175.41	P	4544.00	1.67	
39	K	1	45	591750.31	P	3637.00	0.61	Fail
44	Ca	2	45	1802629.00	A	28580.00	1.59	Fail
45	Sc	1	---	165642.50	P	288.60	0.17	
45	Sc	2	---	4175889.00	A	80940.00	1.94	
47	Ti	1	45	11821.35	P	81.54	0.69	
51	V	1	45	480969.41	P	5472.00	1.14	
51	V	2	---		A			
52	Cr	1	45	638365.69	P	6338.00	0.99	
55	Mn	1	45	259638.09	P	1946.00	0.75	
56	Fe	1	72	9520204.00	A	135800.00	1.43	
59	Co	1	72	1219065.00	A	11490.00	0.94	
60	Ni	1	72	342652.81	P	3298.00	0.96	
60	Ni	2	---		P			
63	Cu	1	72	958707.81	P	9060.00	0.95	
63	Cu	2	---		A			
66	Zn	1	72	93784.77	P	455.10	0.49	
66	Zn	2	---		P			
72	Ge	1	---	96193.00	P	109.10	0.11	
72	Ge	2	---		P			
75	As	1	72	52649.53	P	394.20	0.75	
78	Se	1	72	3029.27	P	32.02	1.06	
88	Sr	2	115	4711314.00	A	82860.00	1.76	Fail
95	Mo	2	115	839991.31	P	7998.00	0.95	Fail
107	Ag	2	115	2308572.00	A	22780.00	0.99	
111	Cd	2	115	488632.19	P	5254.00	1.08	Fail
115	In	2	---	6218405.00	A	37950.00	0.61	
118	Sn	2	115	1430087.00	A	11650.00	0.81	Fail
121	Sb	2	115	1628869.00	A	17120.00	1.05	Fail
137	Ba	2	115	645862.81	P	7157.00	1.11	Fail
205	Tl	2	209	3879082.00	A	39070.00	1.01	
208	Pb	2	209	5179257.00	A	49440.00	0.95	
209	Bi	2	---	4639222.00	A	40220.00	0.87	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-132861.92	1.64	22.89	-580359.3	70 - 120	ISFail
45	Sc	1	165642.52	0.17	168636.11	98.2	70 - 120	
45	Sc	2	4175889.00	1.94	4411244.50	94.7	70 - 120	
72	Ge	1	96193.00	0.11	100925.69	95.3	70 - 120	
115	In	2	6218405.50	0.61	6534497.50	95.2	70 - 120	
209	Bi	2	4639222.00	0.87	4845836.50	95.7	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: H2-160526
Operator: KL Instrument: ICPMS3
Date Acquired: May 26 2016 12:17 pm
Last Cal. Update: May 26 2016 12:15 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-509995.91	P	3854.00	0.76	ISFail
7	Li	2	45	13441910.00	A	26400.00	0.20	
9	Be	2	45	3154331.00	A	49580.00	1.57	
11	B	2	45	2692521.00	A	28860.00	1.07	Fail
23	Na	1	45	5413152.00	A	15890.00	0.29	
24	Mg	1	45	2516737.00	A	12710.00	0.51	
27	Al	1	45	1090.73	P	27.36	2.51	Fail
39	K	1	45	1445588.00	A	6917.00	0.48	Fail
44	Ca	2	45	4240984.00	A	37070.00	0.87	Fail
45	Sc	1	---	157418.30	P	226.70	0.14	
45	Sc	2	---	3993967.00	A	47680.00	1.19	
47	Ti	1	45	44753.04	P	785.50	1.76	
51	V	1	45	1879829.00	A	10140.00	0.54	
51	V	2	---		A			
52	Cr	1	45	2450212.00	A	23830.00	0.97	
55	Mn	1	45	978944.00	M	9552.00	0.98	
56	Fe	1	72	12968.46	P	1113.00	8.58	Fail
59	Co	1	72	4393587.00	A	55010.00	1.25	
60	Ni	1	72	1325923.00	A	13450.00	1.01	
60	Ni	2	---		A			
63	Cu	1	72	3579196.00	A	44960.00	1.26	
63	Cu	2	---		A			
66	Zn	1	72	346018.81	P	1461.00	0.42	
66	Zn	2	---		A			
72	Ge	1	---	90882.19	P	416.00	0.46	
72	Ge	2	---		P			
75	As	1	72	198315.59	P	1161.00	0.59	
78	Se	1	72	11280.52	P	62.48	0.55	
88	Sr	2	115	17988920.00	A	164700.00	0.92	Fail
95	Mo	2	115	3345117.00	A	36480.00	1.09	
107	Ag	2	115	2218.19	P	500.50	22.56	Fail
111	Cd	2	115	1926422.00	A	21080.00	1.09	
115	In	2	---	5939000.00	A	10480.00	0.18	
118	Sn	2	115	5285574.00	A	43870.00	0.83	Fail
121	Sb	2	115	2279.25	P	433.00	19.00	Fail
137	Ba	2	115	2605059.00	A	25600.00	0.98	
205	Tl	2	209	14883310.00	A	84140.00	0.57	
208	Pb	2	209	19828910.00	A	107100.00	0.54	
209	Bi	2	---	4534559.00	A	31890.00	0.70	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-509995.94	0.76	22.89	#########	70 - 120	ISFail
45	Sc	1	157418.30	0.14	168636.11	93.3	70 - 120	
45	Sc	2	3993967.00	1.19	4411244.50	90.5	70 - 120	
72	Ge	1	90882.19	0.46	100925.69	90.0	70 - 120	
115	In	2	5939000.00	0.18	6534497.50	90.9	70 - 120	
209	Bi	2	4534559.00	0.70	4845836.50	93.6	70 - 120	

ICSA QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\016ICSA.D\016ICSA.D#

Date Acquired:	May 26 2016 12:35 pm	Sample Name:	**ICSA-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICSAICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	RL S	RL Aq	Flag
7	Li	2	45	0.488	ppb	5.16	8.00	5.00	
9	Be	2	45	0.207	ppb	8.66	0.32	0.80	
11	B	2	45	8.103	ppb	4.68	30.00	30.00	
23	Na	1	45	94780.000	ppb	1.74	#######	#######	
24	Mg	1	45	91940.000	ppb	0.92	#######	#######	
27	Al	1	45	100900.000	ppb	0.60	#######	#######	
39	K	1	45	95210.000	ppb	0.61	#######	#######	
44	Ca	2	45	94710.000	ppb	3.54	#######	#######	
47	Ti	1	45	2017.000	ppb	1.73	10.00	10.00	
51	V	1	45	0.289	ppb	2.68	10.00	10.00	
52	Cr	1	45	0.693	ppb	3.53	8.00	5.00	
55	Mn	1	45	2.089	ppb	4.64	8.00	10.00	
56	Fe	1	72	96900.000	ppb	1.50	#######	#######	
59	Co	1	72	0.829	ppb	1.33	8.00	10.00	
60	Ni	1	72	0.727	ppb	2.73	8.00	10.00	
63	Cu	1	72	0.777	ppb	1.44	8.00	10.00	
66	Zn	1	72	1.797	ppb	6.04	10.00	5.00	
75	As	1	72	0.992	ppb	4.03	4.00	5.00	
78	Se	1	72	0.569	ppb	13.73	2.00	5.00	
88	Sr	2	115	1.647	ppb	3.48	10.00	10.00	
95	Mo	2	115	1965.000	ppb	2.02	8.00	5.00	
107	Ag	2	115	0.181	ppb	4.24	0.80	2.00	
111	Cd	2	115	0.448	ppb	25.55	1.20	1.00	
118	Sn	2	115	0.635	ppb	6.10	10.00	10.00	
121	Sb	2	115	0.434	ppb	1.84	4.00	2.50	
137	Ba	2	115	0.539	ppb	5.83	8.00	10.00	
205	Tl	2	209	0.366	ppb	8.02	4.00	1.50	
208	Pb	2	209	0.664	ppb	4.93	1.20	1.00	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-55.73	18.57	22.89	-243.4	70 - 120	ISFail
45	Sc	1	159654.55	0.29	168636.11	94.7	70 - 120	
45	Sc	2	3995579.80	2.64	4411244.50	90.6	70 - 120	
72	Ge	1	90761.45	0.08	100925.69	89.9	70 - 120	
115	In	2	5758946.00	1.54	6534497.50	88.1	70 - 120	
209	Bi	2	4107273.30	0.60	4845836.50	84.8	70 - 120	

ICS-AB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\017ICSB.D\017ICSB.D#

Date Acquired:	May 26 2016 12:41 pm	Sample Name:	**ICSAB-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICSBICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Flag
7	Li	2	45	0.36	ppb	4.26	---	80 - 120	
9	Be	2	45	0.13	ppb	12.74	---	80 - 120	
11	B	2	45	5.09	ppb	5.00	---	80 - 120	
23	Na	1	45	95160.00	ppb	0.97	100000.00	80 - 120	
24	Mg	1	45	90010.00	ppb	0.62	100000.00	80 - 120	
27	Al	1	45	99030.00	ppb	1.45	100000.00	80 - 120	
39	K	1	45	94510.00	ppb	0.77	100000.00	80 - 120	
44	Ca	2	45	94940.00	ppb	4.19	100000.00	80 - 120	
47	Ti	1	45	2001.00	ppb	0.31	---	80 - 120	
51	V	1	45	39.17	ppb	1.12	40.00	80 - 120	
52	Cr	1	45	20.64	ppb	1.72	20.00	80 - 120	
55	Mn	1	45	20.00	ppb	2.83	20.00	80 - 120	
56	Fe	1	72	95770.00	ppb	1.88	100000.00	80 - 120	
59	Co	1	72	40.41	ppb	1.44	40.00	80 - 120	
60	Ni	1	72	35.96	ppb	1.69	40.00	80 - 120	
63	Cu	1	72	19.75	ppb	0.58	20.00	80 - 120	
66	Zn	1	72	19.01	ppb	2.90	20.00	80 - 120	
75	As	1	72	19.93	ppb	0.69	20.00	80 - 120	
78	Se	1	72	20.40	ppb	1.87	20.00	80 - 120	
88	Sr	2	115	1.18	ppb	2.52	---	80 - 120	
95	Mo	2	115	1968.00	ppb	2.45	---	80 - 120	
107	Ag	2	115	18.18	ppb	3.39	20.00	80 - 120	
111	Cd	2	115	9.15	ppb	1.78	10.00	80 - 120	
118	Sn	2	115	0.56	ppb	3.69	---	80 - 120	
121	Sb	2	115	0.07	ppb	8.90	---	80 - 120	
137	Ba	2	115	0.55	ppb	11.05	---	80 - 120	
205	Tl	2	209	0.20	ppb	13.15	---	80 - 120	
208	Pb	2	209	0.46	ppb	4.54	---	80 - 120	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-39.15	34.94	22.89	-171.0	70 - 120	ISFail
45	Sc	1	159302.56	0.39	168636.11	94.5	70 - 120	
45	Sc	2	3837165.80	3.82	4411244.50	87.0	70 - 120	
72	Ge	1	90530.78	0.25	100925.69	89.7	70 - 120	
115	In	2	5628280.50	2.65	6534497.50	86.1	70 - 120	
209	Bi	2	4071041.30	0.76	4845836.50	84.0	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\020ICV.D\020ICV.D#

Date Acquired:	May 26 2016 12:59 pm	Sample Name:	**ICV1-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	116.70 ppb	2.28	100.00	90 - 110	116.7	Fail
9	Be	2	45	111.30 ppb	2.03	100.00	90 - 110	111.3	Fail
11	B	2	45	112.50 ppb	1.13	100.00	90 - 110	112.5	Fail
23	Na	1	45	2651.00 ppb	0.27	2500.00	90 - 110	106.0	
24	Mg	1	45	2587.00 ppb	1.33	2500.00	90 - 110	103.5	
27	Al	1	45	2540.00 ppb	1.23	2500.00	90 - 110	101.6	
39	K	1	45	2515.00 ppb	0.34	2500.00	90 - 110	100.6	
44	Ca	2	45	2446.00 ppb	1.10	2500.00	90 - 110	97.8	
47	Ti	1	45	101.20 ppb	1.02	100.00	90 - 110	101.2	
51	V	1	45	100.50 ppb	1.11	100.00	90 - 110	100.5	
52	Cr	1	45	104.60 ppb	1.59	100.00	90 - 110	104.6	
55	Mn	1	45	99.70 ppb	1.27	100.00	90 - 110	99.7	
56	Fe	1	72	2640.00 ppb	1.67	2500.00	90 - 110	105.6	
59	Co	1	72	104.20 ppb	0.99	100.00	90 - 110	104.2	
60	Ni	1	72	100.40 ppb	1.16	100.00	90 - 110	100.4	
63	Cu	1	72	102.70 ppb	0.48	100.00	90 - 110	102.7	
66	Zn	1	72	105.10 ppb	1.21	100.00	90 - 110	105.1	
75	As	1	72	101.10 ppb	0.52	100.00	90 - 110	101.1	
78	Se	1	72	99.09 ppb	1.32	100.00	90 - 110	99.1	
88	Sr	2	115	98.66 ppb	1.92	100.00	90 - 110	98.7	
95	Mo	2	115	93.46 ppb	2.24	100.00	90 - 110	93.5	
107	Ag	2	115	97.69 ppb	2.31	100.00	90 - 110	97.7	
111	Cd	2	115	97.19 ppb	0.90	100.00	90 - 110	97.2	
118	Sn	2	115	101.70 ppb	2.04	100.00	90 - 110	101.7	
121	Sb	2	115	99.96 ppb	2.08	100.00	90 - 110	100.0	
137	Ba	2	115	97.26 ppb	1.52	100.00	90 - 110	97.3	
205	Tl	2	209	96.44 ppb	1.44	100.00	90 - 110	96.4	
208	Pb	2	209	98.21 ppb	0.88	100.00	90 - 110	98.2	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-12468.67	9.71	22.89	-54464.9	70 - 120	ISFail
45	Sc	1		161320.23	0.40	168636.11	95.7	70 - 120	
45	Sc	2		3646372.80	2.00	4411244.50	82.7	70 - 120	
72	Ge	1		95107.23	0.29	100925.69	94.2	70 - 120	
115	In	2		5797043.50	1.89	6534497.50	88.7	70 - 120	
209	Bi	2		4730840.00	1.04	4845836.50	97.6	70 - 120	

ICB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\021_ICB.D\021_ICB.D#

Date Acquired:	May 26 2016 01:05 pm	Sample Name:	**ICB1-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm	Instrument:	ICPMS3

QC Elements

Element				Conc.		RSD(%)	High Limit	Flag
7	Li	2	45	0.20	ppb	6.02	2.00	
9	Be	2	45	0.09	ppb	23.17	0.40	
11	B	2	45	2.02	ppb	3.90	10.00	
23	Na	1	45	16.05	ppb	7.98	50.00	
24	Mg	1	45	10.42	ppb	19.58	50.00	
27	Al	1	45	9.38	ppb	7.12	50.00	
39	K	1	45	11.87	ppb	4.15	50.00	
44	Ca	2	45	6.67	ppb	2.93	50.00	
47	Ti	1	45	0.28	ppb	26.96	4.00	
51	V	1	45	0.10	ppb	13.87	4.00	
52	Cr	1	45	0.11	ppb	18.55	2.00	
55	Mn	1	45	0.23	ppb	6.86	2.00	
56	Fe	1	72	10.06	ppb	20.74	50.00	
59	Co	1	72	0.11	ppb	19.35	2.00	
60	Ni	1	72	0.15	ppb	13.66	2.00	
63	Cu	1	72	0.17	ppb	13.23	2.00	
66	Zn	1	72	0.24	ppb	9.26	4.00	
75	As	1	72	0.14	ppb	13.25	2.00	
78	Se	1	72	0.10	ppb	15.23	0.60	
88	Sr	2	115	0.06	ppb	6.44	4.00	
95	Mo	2	115	0.28	ppb	16.31	2.00	
107	Ag	2	115	0.06	ppb	6.96	0.40	
111	Cd	2	115	0.07	ppb	19.79	0.40	
118	Sn	2	115	0.14	ppb	4.65	20.00	
121	Sb	2	115	0.06	ppb	15.39	2.00	
137	Ba	2	115	0.05	ppb	21.69	2.00	
205	Tl	2	209	0.17	ppb	8.63	2.00	
208	Pb	2	209	0.11	ppb	10.70	0.40	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2 RHig	-0.29	######	22.89	-1.3	70 - 120	ISFail
45	Sc	1	166252.50	0.87	168636.11	98.6	70 - 120	
45	Sc	2	3717545.80	1.65	4411244.50	84.3	70 - 120	
72	Ge	1	98903.38	0.13	100925.69	98.0	70 - 120	
115	In	2	5904958.00	1.54	6534497.50	90.4	70 - 120	
209	Bi	2	4901903.50	1.06	4845836.50	101.2	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\022LCVL.D\022LCVL.D#

Date Acquired:	May 26 2016 01:11 pm	Sample Name:	**ILCVL-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	11.95	ppb	1.75	5.00	70 -	130	239.0	Fail
9	Be	2	45	1.12	ppb	2.80	1.00	70 -	130	112.1	
11	B	2	45	22.52	ppb	4.16	20.00	70 -	130	112.6	
23	Na	1	45	113.00	ppb	1.08	100.00	70 -	130	113.0	
24	Mg	1	45	107.20	ppb	2.11	100.00	70 -	130	107.2	
27	Al	1	45	107.40	ppb	3.20	100.00	70 -	130	107.4	
39	K	1	45	102.60	ppb	3.48	100.00	70 -	130	102.6	
44	Ca	2	45	104.90	ppb	5.35	100.00	70 -	130	104.9	
47	Ti	1	45	5.32	ppb	8.80	5.00	70 -	130	106.5	
51	V	1	45	1.05	ppb	3.85	1.00	70 -	130	104.9	
52	Cr	1	45	5.28	ppb	1.08	5.00	70 -	130	105.6	
55	Mn	1	45	5.12	ppb	2.37	5.00	70 -	130	102.5	
56	Fe	1	72	106.60	ppb	1.76	100.00	70 -	130	106.6	
59	Co	1	72	5.12	ppb	1.74	5.00	70 -	130	102.3	
60	Ni	1	72	5.08	ppb	4.92	5.00	70 -	130	101.6	
63	Cu	1	72	5.23	ppb	1.80	5.00	70 -	130	104.6	
66	Zn	1	72	5.29	ppb	4.78	5.00	70 -	130	105.8	
75	As	1	72	5.18	ppb	0.63	5.00	70 -	130	103.7	
78	Se	1	72	5.51	ppb	5.23	5.00	70 -	130	110.2	
88	Sr	2	115	4.87	ppb	2.71	5.00	70 -	130	97.4	
95	Mo	2	115	4.67	ppb	2.33	5.00	70 -	130	93.3	
107	Ag	2	115	2.01	ppb	1.55	2.00	70 -	130	100.5	
111	Cd	2	115	1.03	ppb	8.17	1.00	70 -	130	102.7	
118	Sn	2	115	5.07	ppb	5.15	5.00	70 -	130	101.3	
121	Sb	2	115	2.02	ppb	5.60	2.00	70 -	130	101.1	
137	Ba	2	115	4.93	ppb	1.99	5.00	70 -	130	98.5	
205	Tl	2	209	0.99	ppb	4.97	1.00	70 -	130	98.9	
208	Pb	2	209	1.01	ppb	2.23	1.00	70 -	130	100.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-1241.10	1.60	22.89	-5421.3	70 -	120	ISFail
45	Sc	1	162653.64	0.57	168636.11	96.5	70 -	120	
45	Sc	2	3682736.30	1.79	4411244.50	83.5	70 -	120	
72	Ge	1	96966.94	0.14	100925.69	96.1	70 -	120	
115	In	2	5879880.50	1.74	6534497.50	90.0	70 -	120	
209	Bi	2	4872015.50	1.57	4845836.50	100.5	70 -	120	

PB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\023__PB.D\023__PB.D#

Date Acquired:	May 26 2016 01:17 pm	Sample Name:	**MB-75258**
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.149	ppb	5.47	2.0	8.00	
9	Be	2	45	0.030	ppb	23.31	0.4	1.20	
11	B	2	45	0.943	ppb	2.73	10.0	30.00	
23	Na	1	45	15.720	ppb	0.74	50.0	#####	
24	Mg	1	45	30.790	ppb	3.89	50.0	#####	
27	Al	1	45	81.620	ppb	2.64	50.0	#####	J
39	K	1	45	6.372	ppb	4.12	50.0	#####	
44	Ca	2	45	103.800	ppb	2.97	50.0	#####	J
47	Ti	1	45	6.569	ppb	14.00	4.0	10.00	J
51	V	1	45	0.023	ppb	10.39	4.0	10.00	
52	Cr	1	45	0.306	ppb	4.15	2.0	8.00	
55	Mn	1	45	0.119	ppb	7.85	2.0	8.00	
56	Fe	1	72	6.915	ppb	5.71	50.0	#####	
59	Co	1	72	0.031	ppb	3.48	2.0	8.00	
60	Ni	1	72	0.299	ppb	4.47	2.0	8.00	
63	Cu	1	72	0.170	ppb	3.41	2.0	8.00	
66	Zn	1	72	10.930	ppb	1.93	4.0	10.00	Fail
75	As	1	72	0.031	ppb	10.30	2.0	4.00	
78	Se	1	72	-0.052	ppb	21.82	0.6	2.00	
88	Sr	2	115	0.106	ppb	1.30	4.0	10.00	
95	Mo	2	115	0.116	ppb	14.01	2.0	8.00	
107	Ag	2	115	0.015	ppb	21.73	0.4	0.80	
111	Cd	2	115	0.009	ppb	14.44	0.4	1.20	
118	Sn	2	115	4.075	ppb	2.41	20.0	40.00	
121	Sb	2	115	0.006	ppb	6.96	2.0	4.00	
137	Ba	2	115	0.054	ppb	11.62	2.0	8.00	
205	Tl	2	209	0.043	ppb	7.35	2.0	4.00	
208	Pb	2	209	0.074	ppb	2.47	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-1.37	######	22.89	-6.0	70 - 120	ISFail
45	Sc	1		163136.64	0.69	168636.11	96.7	70 - 120	
45	Sc	2		3735391.80	1.31	4411244.50	84.7	70 - 120	
72	Ge	1		94768.16	0.16	100925.69	93.9	70 - 120	
115	In	2		5955899.50	1.58	6534497.50	91.1	70 - 120	
209	Bi	2		4976295.50	0.60	4845836.50	102.7	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\024_LCS.D\024_LCS.D#

Date Acquired:	May 26 2016 01:23 pm	Sample Name:	LCS-75258
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	238.70	ppb	1.25	200.00	80 -	120	119.4	
9	Be	2	45	216.40	ppb	1.38	200.00	80 -	120	108.2	
11	B	2	45	210.80	ppb	2.17	200.00	80 -	120	105.4	
23	Na	1	45	5328.00	ppb	1.29	1000.00	80 -	120	532.8	Fail
24	Mg	1	45	5117.00	ppb	1.63	1000.00	80 -	120	511.7	Fail
27	Al	1	45	1010.00	ppb	2.08	1000.00	80 -	120	101.0	
39	K	1	45	4979.00	ppb	1.17	1000.00	80 -	120	497.9	Fail
44	Ca	2	45	4955.00	ppb	2.02	1000.00	80 -	120	495.5	Fail
47	Ti	1	45	202.70	ppb	0.31	200.00	80 -	120	101.4	
51	V	1	45	198.40	ppb	2.08	200.00	80 -	120	99.2	
52	Cr	1	45	203.60	ppb	1.47	200.00	80 -	120	101.8	
55	Mn	1	45	203.90	ppb	1.32	200.00	80 -	120	102.0	
56	Fe	1	72	1057.00	ppb	1.29	1000.00	80 -	120	105.7	
59	Co	1	72	209.60	ppb	1.38	200.00	80 -	120	104.8	
60	Ni	1	72	203.80	ppb	1.36	200.00	80 -	120	101.9	
63	Cu	1	72	209.20	ppb	1.20	200.00	80 -	120	104.6	
66	Zn	1	72	205.30	ppb	2.09	200.00	80 -	120	102.7	
75	As	1	72	197.20	ppb	0.52	200.00	80 -	120	98.6	
78	Se	1	72	192.90	ppb	2.84	200.00	80 -	120	96.5	
88	Sr	2	115	202.70	ppb	1.50	200.00	80 -	120	101.4	
95	Mo	2	115	185.70	ppb	1.46	200.00	80 -	120	92.9	
107	Ag	2	115	194.00	ppb	1.95	200.00	80 -	120	97.0	
111	Cd	2	115	191.60	ppb	2.10	200.00	80 -	120	95.8	
118	Sn	2	115	204.30	ppb	1.45	200.00	80 -	120	102.2	
121	Sb	2	115	192.60	ppb	1.90	200.00	80 -	120	96.3	
137	Ba	2	115	192.00	ppb	2.05	200.00	80 -	120	96.0	
205	Tl	2	209	207.30	ppb	2.03	200.00	80 -	120	103.7	
208	Pb	2	209	198.60	ppb	1.38	200.00	80 -	120	99.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-56825.68	3.01	22.89	-248222.5	70 -	120	ISFail
45	Sc	1	157769.45	0.57	168636.11	93.6	70 -	120	
45	Sc	2	3668085.80	2.14	4411244.50	83.2	70 -	120	
72	Ge	1	91421.31	0.77	100925.69	90.6	70 -	120	
115	In	2	5832783.00	2.07	6534497.50	89.3	70 -	120	
209	Bi	2	4696745.00	0.26	4845836.50	96.9	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\025_LCS.D\025_LCS.D#

Date Acquired:	May 26 2016 01:29 pm	Sample Name:	LCSD-75258
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	242.50	ppb	0.84	200.00	80 -	120	121.3	Fail
9	Be	2	45	221.70	ppb	2.04	200.00	80 -	120	110.9	
11	B	2	45	218.20	ppb	2.60	200.00	80 -	120	109.1	
23	Na	1	45	5515.00	ppb	1.39	1000.00	80 -	120	551.5	Fail
24	Mg	1	45	5252.00	ppb	1.43	1000.00	80 -	120	525.2	Fail
27	Al	1	45	1043.00	ppb	2.67	1000.00	80 -	120	104.3	
39	K	1	45	5091.00	ppb	0.14	1000.00	80 -	120	509.1	Fail
44	Ca	2	45	5014.00	ppb	1.96	1000.00	80 -	120	501.4	Fail
47	Ti	1	45	210.60	ppb	2.18	200.00	80 -	120	105.3	
51	V	1	45	206.80	ppb	1.72	200.00	80 -	120	103.4	
52	Cr	1	45	210.90	ppb	1.26	200.00	80 -	120	105.5	
55	Mn	1	45	212.00	ppb	1.66	200.00	80 -	120	106.0	
56	Fe	1	72	1081.00	ppb	1.52	1000.00	80 -	120	108.1	
59	Co	1	72	215.90	ppb	1.10	200.00	80 -	120	108.0	
60	Ni	1	72	209.70	ppb	1.40	200.00	80 -	120	104.9	
63	Cu	1	72	216.00	ppb	1.85	200.00	80 -	120	108.0	
66	Zn	1	72	213.60	ppb	0.97	200.00	80 -	120	106.8	
75	As	1	72	202.60	ppb	1.05	200.00	80 -	120	101.3	
78	Se	1	72	197.40	ppb	0.94	200.00	80 -	120	98.7	
88	Sr	2	115	204.90	ppb	1.76	200.00	80 -	120	102.5	
95	Mo	2	115	188.10	ppb	1.50	200.00	80 -	120	94.1	
107	Ag	2	115	195.80	ppb	1.44	200.00	80 -	120	97.9	
111	Cd	2	115	194.00	ppb	2.03	200.00	80 -	120	97.0	
118	Sn	2	115	206.40	ppb	1.32	200.00	80 -	120	103.2	
121	Sb	2	115	195.60	ppb	1.69	200.00	80 -	120	97.8	
137	Ba	2	115	195.60	ppb	2.06	200.00	80 -	120	97.8	
205	Tl	2	209	211.40	ppb	1.86	200.00	80 -	120	105.7	
208	Pb	2	209	202.30	ppb	1.86	200.00	80 -	120	101.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-57068.63	1.31	22.89	-249283.7	70 -	120	ISFail
45	Sc	1	154398.14	1.45	168636.11	91.6	70 -	120	
45	Sc	2	3630068.00	1.80	4411244.50	82.3	70 -	120	
72	Ge	1	90439.00	0.92	100925.69	89.6	70 -	120	
115	In	2	5841645.50	2.05	6534497.50	89.4	70 -	120	
209	Bi	2	4662055.00	0.53	4845836.50	96.2	70 -	120	

DT QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\028DT1.D\028DT1.D#

Date Acquired:	May 26 2016 01:48 pm	Sample Name:	**1605121-43A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	11.53	ppb	3.34	-689.42	90 - 110	-8.4	
9	Be	2	45	0.43	ppb	4.59	1.76	90 - 110	121.5	
11	B	2	45	21.10	ppb	1.70	91.48	90 - 110	115.3	
23	Na	1	45	3332.00	ppb	2.48	16280.00	90 - 110	102.3	GOOD
24	Mg	1	45	2078.00	ppb	3.01	10170.00	90 - 110	102.2	GOOD
27	Al	1	45	6325.00	ppb	4.10	31200.00	90 - 110	101.4	GOOD
39	K	1	45	1341.00	ppb	2.69	6647.00	90 - 110	100.9	GOOD
44	Ca	2	45	95650.00	ppb	2.41	478100.00	90 - 110	100.0	GOOD
47	Ti	1	45	15.30	ppb	3.72	72.07	90 - 110	106.1	GOOD
51	V	1	45	9.54	ppb	4.32	45.92	90 - 110	103.9	GOOD
52	Cr	1	45	5.81	ppb	3.90	27.05	90 - 110	107.4	GOOD
55	Mn	1	45	31.33	ppb	3.58	151.90	90 - 110	103.1	GOOD
56	Fe	1	72	9798.00	ppb	2.98	48760.00	90 - 110	100.5	GOOD
59	Co	1	72	2.58	ppb	1.43	12.51	90 - 110	103.2	GOOD
60	Ni	1	72	4.13	ppb	2.95	19.43	90 - 110	106.4	GOOD
63	Cu	1	72	2.49	ppb	1.84	11.37	90 - 110	109.7	GOOD
66	Zn	1	72	18.70	ppb	4.71	80.08	90 - 110	116.8	
75	As	1	72	3.58	ppb	1.85	17.54	90 - 110	102.0	GOOD
78	Se	1	72	2.38	ppb	2.90	11.55	90 - 110	103.2	GOOD
88	Sr	2	115	1392.00	ppb	2.53	7065.00	90 - 110	98.5	GOOD
95	Mo	2	115	0.26	ppb	10.76	1.18	90 - 110	109.9	GOOD
107	Ag	2	115	0.06	ppb	9.76	0.15	90 - 110	213.8	
111	Cd	2	115	0.13	ppb	12.13	0.61	90 - 110	106.1	GOOD
118	Sn	2	115	0.99	ppb	7.36	4.84	90 - 110	101.9	GOOD
121	Sb	2	115	0.04	ppb	22.38	0.14	90 - 110	140.2	
137	Ba	2	115	45.28	ppb	2.50	230.90	90 - 110	98.1	GOOD
205	Tl	2	209	0.14	ppb	15.79	0.40	90 - 110	174.8	
208	Pb	2	209	6.46	ppb	2.12	32.81	90 - 110	98.5	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-689.42	6.74	22.89	-3011.5	70 - 120	ISFail
45	Sc	1		147307.52	3.09	168636.11	87.4	70 - 120	
45	Sc	2		3211082.80	3.31	4411244.50	72.8	70 - 120	
72	Ge	1		87077.05	2.01	100925.69	86.3	70 - 120	
115	In	2		5208473.50	4.03	6534497.50	79.7	70 - 120	
209	Bi	2		4226713.50	2.20	4845836.50	87.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\036SMPL.D\036SMPL.D#

Date Acquired:	May 26 2016 02:35 pm	Sample Name:	**1605135-01A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	78.160	ppb	#REF!	0.47	2000.00	>RL
9	Be	2	45	3.364	ppb	#REF!	3.42	2000.00	>RL
11	B	2	45	63.910	ppb	#REF!	1.30	2000.00	>RL
23	Na	1	45	3019.000	ppb	#REF!	0.68	25000.00	>RL
24	Mg	1	45	15300.000	ppb	#REF!	0.87	25000.00	>RL
27	Al	1	45	73510.000	ppb	#REF!	2.12	10000.00	OUTCAL
39	K	1	45	16690.000	ppb	#REF!	0.54	25000.00	>RL
44	Ca	2	45	82640.000	ppb	#REF!	2.04	25000.00	OUTCAL
47	Ti	1	45	123.200	ppb	#REF!	3.15	2000.00	>RL
51	V	1	45	108.200	ppb	#REF!	1.54	2000.00	>RL
52	Cr	1	45	65.410	ppb	#REF!	1.13	2000.00	>RL
55	Mn	1	45	685.100	ppb	#REF!	1.23	2000.00	>RL
56	Fe	1	72	75680.000	ppb	#REF!	1.51	10000.00	OUTCAL
59	Co	1	72	27.480	ppb	#REF!	1.70	2000.00	>RL
60	Ni	1	72	44.430	ppb	#REF!	1.33	2000.00	>RL
63	Cu	1	72	25.170	ppb	#REF!	1.44	2000.00	>RL
66	Zn	1	72	247.800	ppb	#REF!	0.62	2000.00	>RL
75	As	1	72	31.130	ppb	#REF!	1.73	2000.00	>RL
78	Se	1	72	20.250	ppb	#REF!	6.38	2000.00	>RL
88	Sr	2	115	378.500	ppb	#REF!	1.25	2000.00	>RL
95	Mo	2	115	1.438	ppb	#REF!	5.14	2000.00	ND
107	Ag	2	115	0.201	ppb	#REF!	5.43	500.00	ND
111	Cd	2	115	1.007	ppb	#REF!	2.50	2000.00	J
118	Sn	2	115	5.283	ppb	#REF!	2.35	2000.00	ND
121	Sb	2	115	1.506	ppb	#REF!	3.13	500.00	ND
137	Ba	2	115	568.100	ppb	#REF!	1.94	2000.00	>RL
205	Tl	2	209	0.631	ppb	#REF!	2.67	2000.00	ND
208	Pb	2	209	175.000	ppb	#REF!	2.14	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4208.35	6.19	RHigh	22.89	-18382.6	70 - 120	ISFail
45	Sc	1	130224.41	0.85		168636.11	77.2	70 - 120	
45	Sc	2	2809815.80	2.15		4411244.50	63.7	70 - 120	ISFail
72	Ge	1	76999.38	0.65		100925.69	76.3	70 - 120	
115	In	2	4526748.50	1.11		6534497.50	69.3	70 - 120	ISFail
209	Bi	2	3559089.00	1.43		4845836.50	73.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\037SMPL.D\037SMPL.D#

Date Acquired:	May 26 2016 02:41 pm	Sample Name:	**1605135-02A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	91.990	ppb	#REF!	1.01	2000.00	>RL
9	Be	2	45	2.470	ppb	#REF!	4.30	2000.00	>RL
11	B	2	45	84.290	ppb	#REF!	1.25	2000.00	>RL
23	Na	1	45	9699.000	ppb	#REF!	4.53	25000.00	>RL
24	Mg	1	45	17010.000	ppb	#REF!	5.80	25000.00	>RL
27	Al	1	45	49920.000	ppb	#REF!	6.03	10000.00	OUTCAL
39	K	1	45	9886.000	ppb	#REF!	5.19	25000.00	>RL
44	Ca	2	45	411800.000	ppb	#REF!	1.11	25000.00	OUTCAL
47	Ti	1	45	94.380	ppb	#REF!	4.10	2000.00	>RL
51	V	1	45	85.050	ppb	#REF!	5.66	2000.00	>RL
52	Cr	1	45	42.210	ppb	#REF!	6.43	2000.00	>RL
55	Mn	1	45	1143.000	ppb	#REF!	5.31	2000.00	>RL
56	Fe	1	72	63120.000	ppb	#REF!	5.86	10000.00	OUTCAL
59	Co	1	72	34.310	ppb	#REF!	6.29	2000.00	>RL
60	Ni	1	72	57.230	ppb	#REF!	4.51	2000.00	>RL
63	Cu	1	72	12.590	ppb	#REF!	5.46	2000.00	>RL
66	Zn	1	72	201.400	ppb	#REF!	4.30	2000.00	>RL
75	As	1	72	22.920	ppb	#REF!	6.74	2000.00	>RL
78	Se	1	72	24.570	ppb	#REF!	5.36	2000.00	>RL
88	Sr	2	115	936.000	ppb	#REF!	1.72	2000.00	>RL
95	Mo	2	115	1.737	ppb	#REF!	4.06	2000.00	ND
107	Ag	2	115	0.099	ppb	#REF!	4.15	500.00	ND
111	Cd	2	115	1.469	ppb	#REF!	2.81	2000.00	>RL
118	Sn	2	115	5.053	ppb	#REF!	1.36	2000.00	ND
121	Sb	2	115	0.097	ppb	#REF!	20.67	500.00	ND
137	Ba	2	115	1011.000	ppb	#REF!	0.54	2000.00	>RL
205	Tl	2	209	0.691	ppb	#REF!	2.48	2000.00	ND
208	Pb	2	209	30.600	ppb	#REF!	1.26	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4900.66	11.61	RHigh	22.89	-21406.8	70 - 120	ISFail
45	Sc	1	128634.38	3.71		168636.11	76.3	70 - 120	
45	Sc	2	2791960.30	1.43		4411244.50	63.3	70 - 120	ISFail
72	Ge	1	74137.27	3.93		100925.69	73.5	70 - 120	
115	In	2	4447150.50	0.92		6534497.50	68.1	70 - 120	ISFail
209	Bi	2	3376426.30	0.33		4845836.50	69.7	~~70 - 120~~	~~ISFail~~

ISTD limits for DOD are 30-120%.

PDS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\038_PDS.D\038_PDS.D#

Date Acquired:	May 26 2016 02:47 pm	Sample Name:	**1605121-43A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	258.80	ppb	3.33	-22581.34	200	75-125	######	Fail
9	Be	2	45	185.60	ppb	2.96	1.76	200	75-125	91.9	
11	B	2	45	245.30	ppb	4.00	91.48	200	75-125	76.9	
23	Na	1	45	20660.00	ppb	1.99	16280.00	5000	75-125	87.6	
24	Mg	1	45	14960.00	ppb	3.73	10170.00	5000	75-125	95.8	
27	Al	1	45	34620.00	ppb	3.68	31200.00	5000	75-125	68.4	Fail
39	K	1	45	11430.00	ppb	2.84	6647.00	5000	75-125	95.7	
44	Ca	2	45	473000.00	ppb	3.30	478100.00	5000	75-125	-102.0	Fail
47	Ti	1	45	264.80	ppb	5.96	72.07	200	75-125	96.4	
51	V	1	45	240.40	ppb	3.14	45.92	200	75-125	97.2	
52	Cr	1	45	221.10	ppb	2.95	27.05	200	75-125	97.0	
55	Mn	1	45	337.50	ppb	3.45	151.90	200	75-125	92.8	
56	Fe	1	72	53210.00	ppb	3.52	48760.00	5000	75-125	89.0	
59	Co	1	72	210.30	ppb	3.41	12.51	200	75-125	98.9	
60	Ni	1	72	202.10	ppb	3.68	19.43	200	75-125	91.3	
63	Cu	1	72	195.40	ppb	3.10	11.37	200	75-125	92.0	
66	Zn	1	72	254.30	ppb	3.49	80.08	200	75-125	87.1	
75	As	1	72	222.00	ppb	2.81	17.54	200	75-125	102.2	
78	Se	1	72	208.00	ppb	2.98	11.55	200	75-125	98.2	
88	Sr	2	115	7176.00	ppb	3.61	7065.00	200	75-125	55.5	Fail
95	Mo	2	115	187.00	ppb	3.48	1.18	200	75-125	92.9	
107	Ag	2	115	176.70	ppb	3.38	0.15	200	75-125	88.3	
111	Cd	2	115	175.40	ppb	3.48	0.61	200	75-125	87.4	
118	Sn	2	115	202.80	ppb	3.37	4.84	200	75-125	99.0	
121	Sb	2	115	199.80	ppb	3.02	0.14	200	75-125	99.8	
137	Ba	2	115	418.60	ppb	3.22	230.90	200	75-125	93.9	
205	Tl	2	209	198.40	ppb	6.41	0.40	200	75-125	99.0	
208	Pb	2	209	226.90	ppb	3.64	32.81	200	75-125	97.0	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-22581.34	8.85	22.89	-98638.4	70 - 120	ISFail
45	Sc	1		140036.17	3.24	168636.11	83.0	70 - 120	
45	Sc	2		2970911.00	2.49	4411244.50	67.3	70 - 120	ISFail
72	Ge	1		78988.16	2.91	100925.69	78.3	70 - 120	
115	In	2		4803728.50	3.35	6534497.50	73.5	70 - 120	
209	Bi	2		3518785.80	3.85	4845836.50	72.6	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\039_MS.D\039_MS.D#

Date Acquired:	May 26 2016 02:53 pm	Sample Name:	**1605121-43A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	265.10	ppb	3.09	########	200	80-120	######	Fail
9	Be	2	45	191.30	ppb	3.52	1.76	200	80-120	94.8	
11	B	2	45	232.10	ppb	4.96	91.48	200	80-120	70.3	Fail
23	Na	1	45	21490.00	ppb	2.24	16280.00	1000	80-120	521.0	Fail
24	Mg	1	45	17300.00	ppb	2.92	10170.00	1000	80-120	713.0	Fail
27	Al	1	45	50370.00	ppb	2.92	31200.00	1000	80-120	1917.0	Fail
39	K	1	45	12780.00	ppb	1.90	6647.00	1000	80-120	613.3	Fail
44	Ca	2	45	464300.00	ppb	3.98	########	1000	80-120	######	Fail
47	Ti	1	45	141.20	ppb	5.18	72.07	200	80-120	34.6	Fail
51	V	1	45	253.50	ppb	3.39	45.92	200	80-120	103.8	
52	Cr	1	45	257.30	ppb	3.47	27.05	200	80-120	115.1	
55	Mn	1	45	347.10	ppb	3.11	151.90	200	80-120	97.6	
56	Fe	1	72	50510.00	ppb	3.95	48760.00	1000	80-120	175.0	Fail
59	Co	1	72	216.50	ppb	3.35	12.51	200	80-120	102.0	
60	Ni	1	72	222.50	ppb	2.90	19.43	200	80-120	101.5	
63	Cu	1	72	204.30	ppb	2.70	11.37	200	80-120	96.5	
66	Zn	1	72	267.60	ppb	2.88	80.08	200	80-120	93.8	
75	As	1	72	225.20	ppb	2.57	17.54	200	80-120	103.8	
78	Se	1	72	211.40	ppb	3.59	11.55	200	80-120	99.9	
88	Sr	2	115	9815.00	ppb	3.26	7065.00	200	80-120	1375.0	Fail
95	Mo	2	115	161.70	ppb	3.42	1.18	200	80-120	80.3	
107	Ag	2	115	179.10	ppb	3.71	0.15	200	80-120	89.5	
111	Cd	2	115	185.40	ppb	4.07	0.61	200	80-120	92.4	
118	Sn	2	115	199.20	ppb	3.30	4.84	200	80-120	97.2	
121	Sb	2	115	30.88	ppb	4.35	0.14	200	80-120	15.4	Fail
137	Ba	2	115	450.80	ppb	3.46	230.90	200	80-120	110.0	
205	Tl	2	209	215.30	ppb	2.26	0.40	200	80-120	107.4	
208	Pb	2	209	240.70	ppb	2.26	32.81	200	80-120	103.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-47611.13	3.70	22.89	########	70 - 120	ISFail
45	Sc	1	137634.02	2.28	168636.11	81.6	70 - 120	
45	Sc	2	3274525.30	4.23	4411244.50	74.2	70 - 120	
72	Ge	1	78282.98	1.96	100925.69	77.6	70 - 120	
115	In	2	5286697.50	2.98	6534497.50	80.9	70 - 120	
209	Bi	2	3857024.00	2.20	4845836.50	79.6	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\040_MS.D\040_MS.D#

Date Acquired:	May 26 2016 02:59 pm	Sample Name:	**1605121-43A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	263.60	ppb	0.58	########	200	80-120	######	Fail
9	Be	2	45	189.80	ppb	0.89	1.76	200	80-120	94.0	
11	B	2	45	228.50	ppb	2.31	91.48	200	80-120	68.5	Fail
23	Na	1	45	21020.00	ppb	1.31	16280.00	1000	80-120	474.0	Fail
24	Mg	1	45	16920.00	ppb	1.32	10170.00	1000	80-120	675.0	Fail
27	Al	1	45	48950.00	ppb	0.34	31200.00	1000	80-120	1775.0	Fail
39	K	1	45	12350.00	ppb	1.95	6647.00	1000	80-120	570.3	Fail
44	Ca	2	45	381000.00	ppb	1.42	########	1000	80-120	######	Fail
47	Ti	1	45	116.30	ppb	2.59	72.07	200	80-120	22.1	Fail
51	V	1	45	249.40	ppb	0.64	45.92	200	80-120	101.7	
52	Cr	1	45	236.10	ppb	0.62	27.05	200	80-120	104.5	
55	Mn	1	45	349.00	ppb	1.23	151.90	200	80-120	98.6	
56	Fe	1	72	60890.00	ppb	0.79	48760.00	1000	80-120	1213.0	Fail
59	Co	1	72	214.50	ppb	1.53	12.51	200	80-120	101.0	
60	Ni	1	72	211.50	ppb	1.46	19.43	200	80-120	96.0	
63	Cu	1	72	203.70	ppb	1.29	11.37	200	80-120	96.2	
66	Zn	1	72	264.30	ppb	1.13	80.08	200	80-120	92.1	
75	As	1	72	224.00	ppb	1.12	17.54	200	80-120	103.2	
78	Se	1	72	202.40	ppb	2.29	11.55	200	80-120	95.4	
88	Sr	2	115	4666.00	ppb	0.51	7065.00	200	80-120	######	Fail
95	Mo	2	115	162.60	ppb	0.35	1.18	200	80-120	80.7	
107	Ag	2	115	178.40	ppb	0.82	0.15	200	80-120	89.1	
111	Cd	2	115	183.30	ppb	0.37	0.61	200	80-120	91.3	
118	Sn	2	115	198.80	ppb	0.55	4.84	200	80-120	97.0	
121	Sb	2	115	34.09	ppb	0.76	0.14	200	80-120	17.0	Fail
137	Ba	2	115	408.20	ppb	1.09	230.90	200	80-120	88.7	
205	Tl	2	209	216.10	ppb	1.73	0.40	200	80-120	107.8	
208	Pb	2	209	233.00	ppb	0.36	32.81	200	80-120	100.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-48211.56	2.30	22.89	########	70 - 120	ISFail
45	Sc	1	139044.64	2.24	168636.11	82.5	70 - 120	
45	Sc	2	3322082.00	1.12	4411244.50	75.3	70 - 120	
72	Ge	1	78614.88	1.53	100925.69	77.9	70 - 120	
115	In	2	5341430.50	1.43	6534497.50	81.7	70 - 120	
209	Bi	2	3904216.30	0.69	4845836.50	80.6	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\041CCV1.D\041CCV1.D#

Date Acquired:	May 26 2016 03:05 pm	Sample Name:	**CCV1-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	223.10	ppb	1.48	200.00	90 -	110	111.6	Fail
9	Be	2	45	210.40	ppb	2.09	200.00	90 -	110	105.2	
11	B	2	45	191.80	ppb	0.90	200.00	90 -	110	95.9	
23	Na	1	45	5059.00	ppb	0.73	5000.00	90 -	110	101.2	
24	Mg	1	45	4844.00	ppb	2.07	5000.00	90 -	110	96.9	
27	Al	1	45	4907.00	ppb	2.26	5000.00	90 -	110	98.1	
39	K	1	45	4777.00	ppb	1.34	5000.00	90 -	110	95.5	
44	Ca	2	45	5028.00	ppb	0.76	5000.00	90 -	110	100.6	
47	Ti	1	45	196.80	ppb	2.47	200.00	90 -	110	98.4	
51	V	1	45	196.80	ppb	1.22	200.00	90 -	110	98.4	
52	Cr	1	45	202.00	ppb	2.10	200.00	90 -	110	101.0	
55	Mn	1	45	200.90	ppb	2.31	200.00	90 -	110	100.5	
56	Fe	1	72	5014.00	ppb	2.46	5000.00	90 -	110	100.3	
59	Co	1	72	200.70	ppb	2.46	200.00	90 -	110	100.4	
60	Ni	1	72	195.00	ppb	1.90	200.00	90 -	110	97.5	
63	Cu	1	72	203.00	ppb	1.95	200.00	90 -	110	101.5	
66	Zn	1	72	204.90	ppb	2.04	200.00	90 -	110	102.5	
75	As	1	72	202.50	ppb	0.87	200.00	90 -	110	101.3	
78	Se	1	72	197.60	ppb	1.20	200.00	90 -	110	98.8	
88	Sr	2	115	207.80	ppb	2.01	200.00	90 -	110	103.9	
95	Mo	2	115	186.20	ppb	1.37	200.00	90 -	110	93.1	
107	Ag	2	115	193.40	ppb	1.60	200.00	90 -	110	96.7	
111	Cd	2	115	193.30	ppb	2.09	200.00	90 -	110	96.7	
118	Sn	2	115	197.00	ppb	1.88	200.00	90 -	110	98.5	
121	Sb	2	115	197.90	ppb	1.38	200.00	90 -	110	99.0	
137	Ba	2	115	194.20	ppb	2.14	200.00	90 -	110	97.1	
205	Tl	2	209	201.50	ppb	1.06	200.00	90 -	110	100.8	
208	Pb	2	209	192.40	ppb	1.80	200.00	90 -	110	96.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-48343.84	0.24	22.89	-211172.6	70 -	120	ISFail
45	Sc	1	143219.92	0.92	168636.11	84.9	70 -	120	
45	Sc	2	3396432.80	1.42	4411244.50	77.0	70 -	120	
72	Ge	1	85723.23	1.13	100925.69	84.9	70 -	120	
115	In	2	5544841.50	0.79	6534497.50	84.9	70 -	120	
209	Bi	2	4443310.50	0.19	4845836.50	91.7	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\042_CCB.D\042_CCB.D#

Date Acquired:	May 26 2016 03:11 pm	Sample Name:	**CCB1-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.395	ppb	5.38	2.00	2.00	
9	Be	2	45	0.228	ppb	3.91	0.40	0.30	
11	B	2	45	2.788	ppb	5.52	10.00	10.00	
23	Na	1	45	23.210	ppb	6.05	50.00	#####	
24	Mg	1	45	12.800	ppb	6.10	50.00	#####	
27	Al	1	45	31.450	ppb	3.71	50.00	10.00	FailAq
39	K	1	45	15.660	ppb	4.73	50.00	#####	
44	Ca	2	45	193.600	ppb	4.59	50.00	#####	Failsoil
47	Ti	1	45	0.220	ppb	24.99	4.00	3.00	
51	V	1	45	0.255	ppb	6.57	4.00	3.00	
52	Cr	1	45	0.265	ppb	3.89	2.00	2.00	
55	Mn	1	45	0.428	ppb	9.78	2.00	3.00	
56	Fe	1	72	42.100	ppb	2.97	50.00	30.00	FailAq
59	Co	1	72	0.243	ppb	1.46	2.00	3.00	
60	Ni	1	72	0.269	ppb	8.87	2.00	3.00	
63	Cu	1	72	0.307	ppb	4.13	2.00	2.00	
66	Zn	1	72	0.295	ppb	8.12	4.00	2.00	
75	As	1	72	0.330	ppb	7.50	2.00	2.00	
78	Se	1	72	0.331	ppb	35.91	0.60	2.00	
88	Sr	2	115	2.584	ppb	8.49	4.00	3.00	
95	Mo	2	115	0.248	ppb	8.14	2.00	2.00	
107	Ag	2	115	0.205	ppb	19.42	0.40	1.00	
111	Cd	2	115	0.197	ppb	15.61	0.40	0.30	
118	Sn	2	115	0.211	ppb	15.93	20.00	3.00	
121	Sb	2	115	0.188	ppb	4.55	2.00	0.80	
137	Ba	2	115	0.364	ppb	4.09	2.00	3.00	
205	Tl	2	209	0.325	ppb	5.84	2.00	0.50	
208	Pb	2	209	0.249	ppb	8.97	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-49.01	43.95	22.89	-214.1	70 - 120	ISFail
45	Sc	1		146175.67	0.36	168636.11	86.7	70 - 120	
45	Sc	2		3508618.30	1.36	4411244.50	79.5	70 - 120	
72	Ge	1		89127.49	1.28	100925.69	88.3	70 - 120	
115	In	2		5710293.50	1.15	6534497.50	87.4	70 - 120	
209	Bi	2		4531261.00	0.42	4845836.50	93.5	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\043LCVL.D\043LCVL.D#

Date Acquired:	May 26 2016 03:17 pm	Sample Name:	**LCVL1-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	10.73	ppb	0.66	5.00	70 -	130	214.6	Fail
9	Be	2	45	1.14	ppb	2.92	1.00	70 -	130	113.6	
11	B	2	45	20.11	ppb	2.91	20.00	70 -	130	100.6	
23	Na	1	45	114.50	ppb	1.42	100.00	70 -	130	114.5	
24	Mg	1	45	105.90	ppb	3.05	100.00	70 -	130	105.9	
27	Al	1	45	119.90	ppb	3.23	100.00	70 -	130	119.9	
39	K	1	45	104.50	ppb	1.85	100.00	70 -	130	104.5	
44	Ca	2	45	209.00	ppb	3.53	100.00	70 -	130	209.0	Fail
47	Ti	1	45	4.90	ppb	15.55	5.00	70 -	130	98.1	
51	V	1	45	1.06	ppb	5.15	1.00	70 -	130	106.4	
52	Cr	1	45	5.11	ppb	1.05	5.00	70 -	130	102.2	
55	Mn	1	45	5.36	ppb	2.00	5.00	70 -	130	107.1	
56	Fe	1	72	123.70	ppb	2.05	100.00	70 -	130	123.7	
59	Co	1	72	4.95	ppb	0.98	5.00	70 -	130	98.9	
60	Ni	1	72	4.96	ppb	3.74	5.00	70 -	130	99.2	
63	Cu	1	72	5.07	ppb	3.31	5.00	70 -	130	101.4	
66	Zn	1	72	5.17	ppb	2.79	5.00	70 -	130	103.4	
75	As	1	72	5.27	ppb	2.55	5.00	70 -	130	105.3	
78	Se	1	72	5.36	ppb	5.01	5.00	70 -	130	107.2	
88	Sr	2	115	6.24	ppb	2.21	5.00	70 -	130	124.8	
95	Mo	2	115	4.59	ppb	2.75	5.00	70 -	130	91.8	
107	Ag	2	115	1.99	ppb	2.35	2.00	70 -	130	99.7	
111	Cd	2	115	1.00	ppb	6.20	1.00	70 -	130	100.0	
118	Sn	2	115	4.93	ppb	0.98	5.00	70 -	130	98.6	
121	Sb	2	115	2.02	ppb	2.38	2.00	70 -	130	100.8	
137	Ba	2	115	4.97	ppb	3.22	5.00	70 -	130	99.5	
205	Tl	2	209	1.02	ppb	3.25	1.00	70 -	130	102.3	
208	Pb	2	209	1.03	ppb	3.75	1.00	70 -	130	102.8	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigh	-1057.26	16.20	22.89	-4618.3	70 -	120	ISFail
45	Sc	1		147874.44	0.95	168636.11	87.7	70 -	120	
45	Sc	2		3571001.80	2.05	4411244.50	81.0	70 -	120	
72	Ge	1		89241.45	0.85	100925.69	88.4	70 -	120	
115	In	2		5723110.50	0.96	6534497.50	87.6	70 -	120	
209	Bi	2		4545912.50	1.28	4845836.50	93.8	70 -	120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\044SMPL.D\044SMPL.D#

Date Acquired:	May 26 2016 03:23 pm	Sample Name:	**1605135-03A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	56.240	ppb	#REF!	2.04	2000.00	>RL
9	Be	2	45	2.207	ppb	#REF!	7.37	2000.00	>RL
11	B	2	45	85.520	ppb	#REF!	2.60	2000.00	>RL
23	Na	1	45	7253.000	ppb	#REF!	1.31	25000.00	>RL
24	Mg	1	45	8988.000	ppb	#REF!	1.66	25000.00	>RL
27	Al	1	45	34890.000	ppb	#REF!	0.66	10000.00	OUTCAL
39	K	1	45	12560.000	ppb	#REF!	0.75	25000.00	>RL
44	Ca	2	45	159800.000	ppb	#REF!	2.03	25000.00	OUTCAL
47	Ti	1	45	87.290	ppb	#REF!	1.50	2000.00	>RL
51	V	1	45	49.720	ppb	#REF!	0.29	2000.00	>RL
52	Cr	1	45	34.430	ppb	#REF!	0.87	2000.00	>RL
55	Mn	1	45	188.900	ppb	#REF!	1.34	2000.00	>RL
56	Fe	1	72	56320.000	ppb	#REF!	1.17	10000.00	OUTCAL
59	Co	1	72	18.880	ppb	#REF!	0.91	2000.00	>RL
60	Ni	1	72	23.240	ppb	#REF!	1.08	2000.00	>RL
63	Cu	1	72	4.901	ppb	#REF!	0.72	2000.00	J
66	Zn	1	72	120.000	ppb	#REF!	1.06	2000.00	>RL
75	As	1	72	16.600	ppb	#REF!	0.73	2000.00	>RL
78	Se	1	72	17.160	ppb	#REF!	1.75	2000.00	>RL
88	Sr	2	115	673.400	ppb	#REF!	2.09	2000.00	>RL
95	Mo	2	115	1.151	ppb	#REF!	1.87	2000.00	ND
107	Ag	2	115	0.106	ppb	#REF!	16.15	500.00	ND
111	Cd	2	115	0.522	ppb	#REF!	23.84	2000.00	J
118	Sn	2	115	4.477	ppb	#REF!	3.74	2000.00	ND
121	Sb	2	115	0.065	ppb	#REF!	3.37	500.00	ND
137	Ba	2	115	114.100	ppb	#REF!	1.82	2000.00	>RL
205	Tl	2	209	0.370	ppb	#REF!	6.30	2000.00	ND
208	Pb	2	209	23.850	ppb	#REF!	3.03	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3944.74	11.05	RHigh	22.89	-17231.2	70 - 120	ISFail
45	Sc	1	147386.48	1.50		168636.11	87.4	70 - 120	
45	Sc	2	3573132.30	2.38		4411244.50	81.0	70 - 120	
72	Ge	1	84952.13	0.85		100925.69	84.2	70 - 120	
115	In	2	5734354.50	3.49		6534497.50	87.8	70 - 120	
209	Bi	2	4206498.50	3.15		4845836.50	86.8	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\045SMPL.D\045SMPL.D#

Date Acquired:	May 26 2016 03:29 pm	Sample Name:	**1605135-04A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	50.660	ppb	#REF!	2.06	2000.00	>RL
9	Be	2	45	2.022	ppb	#REF!	1.11	2000.00	>RL
11	B	2	45	85.340	ppb	#REF!	4.52	2000.00	>RL
23	Na	1	45	5870.000	ppb	#REF!	1.76	25000.00	>RL
24	Mg	1	45	8458.000	ppb	#REF!	3.19	25000.00	>RL
27	Al	1	45	32660.000	ppb	#REF!	1.77	10000.00	OUTCAL
39	K	1	45	11740.000	ppb	#REF!	1.70	25000.00	>RL
44	Ca	2	45	190000.000	ppb	#REF!	4.00	25000.00	OUTCAL
47	Ti	1	45	81.340	ppb	#REF!	6.88	2000.00	>RL
51	V	1	45	49.750	ppb	#REF!	1.69	2000.00	>RL
52	Cr	1	45	34.510	ppb	#REF!	1.33	2000.00	>RL
55	Mn	1	45	66.710	ppb	#REF!	1.41	2000.00	>RL
56	Fe	1	72	65870.000	ppb	#REF!	2.12	10000.00	OUTCAL
59	Co	1	72	7.685	ppb	#REF!	1.92	2000.00	J
60	Ni	1	72	13.710	ppb	#REF!	1.60	2000.00	>RL
63	Cu	1	72	4.926	ppb	#REF!	1.16	2000.00	J
66	Zn	1	72	102.800	ppb	#REF!	1.60	2000.00	>RL
75	As	1	72	17.660	ppb	#REF!	0.28	2000.00	>RL
78	Se	1	72	13.940	ppb	#REF!	2.87	2000.00	>RL
88	Sr	2	115	952.600	ppb	#REF!	2.59	2000.00	>RL
95	Mo	2	115	1.141	ppb	#REF!	6.64	2000.00	ND
107	Ag	2	115	0.093	ppb	#REF!	9.49	500.00	ND
111	Cd	2	115	0.483	ppb	#REF!	10.98	2000.00	J
118	Sn	2	115	4.630	ppb	#REF!	4.38	2000.00	ND
121	Sb	2	115	0.038	ppb	#REF!	14.05	500.00	ND
137	Ba	2	115	47.850	ppb	#REF!	3.89	2000.00	>RL
205	Tl	2	209	0.317	ppb	#REF!	1.88	2000.00	ND
208	Pb	2	209	18.720	ppb	#REF!	2.75	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3793.36	3.38	22.89	-16569.9	70 - 120	ISFail
45	Sc	1	159441.67	2.35	168636.11	94.5	70 - 120	
45	Sc	2	3684242.30	3.32	4411244.50	83.5	70 - 120	
72	Ge	1	90939.13	1.04	100925.69	90.1	70 - 120	
115	In	2	5996766.50	1.80	6534497.50	91.8	70 - 120	
209	Bi	2	4439495.00	1.79	4845836.50	91.6	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\046SMPL.D\046SMPL.D#

Date Acquired:	May 26 2016 03:35 pm	Sample Name:	**1605135-05A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	72.020	ppb	#REF!	2.21	2000.00	>RL
9	Be	2	45	2.405	ppb	#REF!	4.87	2000.00	>RL
11	B	2	45	100.900	ppb	#REF!	5.41	2000.00	>RL
23	Na	1	45	6454.000	ppb	#REF!	1.76	25000.00	>RL
24	Mg	1	45	10370.000	ppb	#REF!	2.33	25000.00	>RL
27	Al	1	45	38550.000	ppb	#REF!	4.04	10000.00	OUTCAL
39	K	1	45	13230.000	ppb	#REF!	2.27	25000.00	>RL
44	Ca	2	45	141500.000	ppb	#REF!	4.13	25000.00	OUTCAL
47	Ti	1	45	94.790	ppb	#REF!	2.18	2000.00	>RL
51	V	1	45	55.760	ppb	#REF!	2.14	2000.00	>RL
52	Cr	1	45	39.690	ppb	#REF!	1.50	2000.00	>RL
55	Mn	1	45	100.500	ppb	#REF!	2.48	2000.00	>RL
56	Fe	1	72	81400.000	ppb	#REF!	1.46	10000.00	OUTCAL
59	Co	1	72	8.385	ppb	#REF!	1.62	2000.00	>RL
60	Ni	1	72	17.040	ppb	#REF!	1.42	2000.00	>RL
63	Cu	1	72	5.678	ppb	#REF!	1.48	2000.00	J
66	Zn	1	72	136.700	ppb	#REF!	1.70	2000.00	>RL
75	As	1	72	19.750	ppb	#REF!	1.49	2000.00	>RL
78	Se	1	72	16.100	ppb	#REF!	1.86	2000.00	>RL
88	Sr	2	115	4359.000	ppb	#REF!	4.04	2000.00	OUTCAL
95	Mo	2	115	1.003	ppb	#REF!	3.28	2000.00	ND
107	Ag	2	115	0.093	ppb	#REF!	12.92	500.00	ND
111	Cd	2	115	0.532	ppb	#REF!	13.60	2000.00	J
118	Sn	2	115	4.988	ppb	#REF!	5.06	2000.00	ND
121	Sb	2	115	0.040	ppb	#REF!	10.86	500.00	ND
137	Ba	2	115	73.500	ppb	#REF!	4.52	2000.00	>RL
205	Tl	2	209	0.284	ppb	#REF!	1.11	2000.00	ND
208	Pb	2	209	16.060	ppb	#REF!	2.36	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5384.00	3.45	22.89	-23518.1	70 - 120	ISFail
45	Sc	1	157308.17	2.59	168636.11	93.3	70 - 120	
45	Sc	2	3514025.00	4.42	4411244.50	79.7	70 - 120	
72	Ge	1	90353.38	2.34	100925.69	89.5	70 - 120	
115	In	2	5632956.00	3.73	6534497.50	86.2	70 - 120	
209	Bi	2	4284918.50	2.99	4845836.50	88.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\047SMPL.D\047SMPL.D#

Date Acquired:	May 26 2016 03:41 pm	Sample Name:	**1605135-06A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	70.700	ppb	#REF!	1.43	2000.00	>RL
9	Be	2	45	2.974	ppb	#REF!	6.39	2000.00	>RL
11	B	2	45	57.500	ppb	#REF!	2.04	2000.00	>RL
23	Na	1	45	2598.000	ppb	#REF!	0.50	25000.00	>RL
24	Mg	1	45	14840.000	ppb	#REF!	1.10	25000.00	>RL
27	Al	1	45	68930.000	ppb	#REF!	1.29	10000.00	OUTCAL
39	K	1	45	15550.000	ppb	#REF!	0.71	25000.00	>RL
44	Ca	2	45	90720.000	ppb	#REF!	2.23	25000.00	OUTCAL
47	Ti	1	45	90.670	ppb	#REF!	2.75	2000.00	>RL
51	V	1	45	95.730	ppb	#REF!	1.26	2000.00	>RL
52	Cr	1	45	62.400	ppb	#REF!	0.76	2000.00	>RL
55	Mn	1	45	691.000	ppb	#REF!	0.56	2000.00	>RL
56	Fe	1	72	70540.000	ppb	#REF!	1.16	10000.00	OUTCAL
59	Co	1	72	28.040	ppb	#REF!	0.78	2000.00	>RL
60	Ni	1	72	46.340	ppb	#REF!	0.62	2000.00	>RL
63	Cu	1	72	27.180	ppb	#REF!	0.55	2000.00	>RL
66	Zn	1	72	228.700	ppb	#REF!	1.02	2000.00	>RL
75	As	1	72	27.430	ppb	#REF!	1.11	2000.00	>RL
78	Se	1	72	19.950	ppb	#REF!	4.98	2000.00	>RL
88	Sr	2	115	374.500	ppb	#REF!	1.22	2000.00	>RL
95	Mo	2	115	1.348	ppb	#REF!	3.35	2000.00	ND
107	Ag	2	115	0.272	ppb	#REF!	9.59	500.00	ND
111	Cd	2	115	1.089	ppb	#REF!	3.07	2000.00	J
118	Sn	2	115	4.833	ppb	#REF!	2.63	2000.00	ND
121	Sb	2	115	1.336	ppb	#REF!	6.89	500.00	ND
137	Ba	2	115	470.200	ppb	#REF!	2.21	2000.00	>RL
205	Tl	2	209	0.600	ppb	#REF!	3.07	2000.00	ND
208	Pb	2	209	142.600	ppb	#REF!	1.88	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4402.69	2.69	22.89	-19231.6	70 - 120	ISFail
45	Sc	1	139374.94	0.91	168636.11	82.6	70 - 120	
45	Sc	2	3214783.30	2.78	4411244.50	72.9	70 - 120	
72	Ge	1	81271.48	0.70	100925.69	80.5	70 - 120	
115	In	2	5243488.50	2.04	6534497.50	80.2	70 - 120	
209	Bi	2	3974554.50	1.66	4845836.50	82.0	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\048SMPL.D\048SMPL.D#

Date Acquired:	May 26 2016 03:47 pm	Sample Name:	**1605135-07A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	78.110 ppb	#REF!	5.31	2000.00	>RL
9	Be	2	45	2.346 ppb	#REF!	10.40	2000.00	>RL
11	B	2	45	71.300 ppb	#REF!	7.95	2000.00	>RL
23	Na	1	45	8330.000 ppb	#REF!	2.68	25000.00	>RL
24	Mg	1	45	12190.000 ppb	#REF!	3.50	25000.00	>RL
27	Al	1	45	44570.000 ppb	#REF!	4.78	10000.00	OUTCAL
39	K	1	45	9528.000 ppb	#REF!	4.00	25000.00	>RL
44	Ca	2	45	399000.000 ppb	#REF!	7.27	25000.00	OUTCAL
47	Ti	1	45	99.860 ppb	#REF!	6.43	2000.00	>RL
51	V	1	45	80.970 ppb	#REF!	3.28	2000.00	>RL
52	Cr	1	45	38.390 ppb	#REF!	4.56	2000.00	>RL
55	Mn	1	45	735.100 ppb	#REF!	3.84	2000.00	>RL
56	Fe	1	72	59970.000 ppb	#REF!	3.37	10000.00	OUTCAL
59	Co	1	72	28.580 ppb	#REF!	3.28	2000.00	>RL
60	Ni	1	72	44.480 ppb	#REF!	3.96	2000.00	>RL
63	Cu	1	72	11.810 ppb	#REF!	3.15	2000.00	>RL
66	Zn	1	72	167.600 ppb	#REF!	2.71	2000.00	>RL
75	As	1	72	23.880 ppb	#REF!	4.10	2000.00	>RL
78	Se	1	72	21.900 ppb	#REF!	4.68	2000.00	>RL
88	Sr	2	115	987.900 ppb	#REF!	6.81	2000.00	>RL
95	Mo	2	115	1.810 ppb	#REF!	10.95	2000.00	ND
107	Ag	2	115	0.099 ppb	#REF!	19.48	500.00	ND
111	Cd	2	115	1.096 ppb	#REF!	8.53	2000.00	J
118	Sn	2	115	4.362 ppb	#REF!	5.36	2000.00	ND
121	Sb	2	115	0.084 ppb	#REF!	10.48	500.00	ND
137	Ba	2	115	678.900 ppb	#REF!	7.53	2000.00	>RL
205	Tl	2	209	0.557 ppb	#REF!	6.03	2000.00	ND
208	Pb	2	209	25.900 ppb	#REF!	6.35	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5201.55	15.56	RHigh	22.89	-22721.1	70 - 120	ISFail
45	Sc	1	152378.83	3.16		168636.11	90.4	70 - 120	
45	Sc	2	3127645.80	9.40	RHigh	4411244.50	70.9	70 - 120	
72	Ge	1	86399.27	3.35		100925.69	85.6	70 - 120	
115	In	2	5097144.50	9.35	RHigh	6534497.50	78.0	70 - 120	
209	Bi	2	3625810.80	8.19	RHigh	4845836.50	74.8	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\049SMPL.D\049SMPL.D#

Date Acquired:	May 26 2016 03:53 pm	Sample Name:	**1605135-08A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	101.000	ppb	#REF!	1.77	2000.00	>RL
9	Be	2	45	2.700	ppb	#REF!	3.75	2000.00	>RL
11	B	2	45	85.670	ppb	#REF!	2.01	2000.00	>RL
23	Na	1	45	8067.000	ppb	#REF!	1.29	25000.00	>RL
24	Mg	1	45	11780.000	ppb	#REF!	1.08	25000.00	>RL
27	Al	1	45	44120.000	ppb	#REF!	1.60	10000.00	OUTCAL
39	K	1	45	12410.000	ppb	#REF!	2.40	25000.00	>RL
44	Ca	2	45	291700.000	ppb	#REF!	2.08	25000.00	OUTCAL
47	Ti	1	45	95.160	ppb	#REF!	3.29	2000.00	>RL
51	V	1	45	66.070	ppb	#REF!	0.85	2000.00	>RL
52	Cr	1	45	40.380	ppb	#REF!	0.20	2000.00	>RL
55	Mn	1	45	465.800	ppb	#REF!	1.79	2000.00	>RL
56	Fe	1	72	76840.000	ppb	#REF!	1.40	10000.00	OUTCAL
59	Co	1	72	43.630	ppb	#REF!	1.13	2000.00	>RL
60	Ni	1	72	45.030	ppb	#REF!	1.34	2000.00	>RL
63	Cu	1	72	7.993	ppb	#REF!	1.90	2000.00	J
66	Zn	1	72	195.500	ppb	#REF!	1.34	2000.00	>RL
75	As	1	72	24.010	ppb	#REF!	0.92	2000.00	>RL
78	Se	1	72	20.880	ppb	#REF!	1.64	2000.00	>RL
88	Sr	2	115	1012.000	ppb	#REF!	2.85	2000.00	>RL
95	Mo	2	115	2.023	ppb	#REF!	2.08	2000.00	J
107	Ag	2	115	0.091	ppb	#REF!	3.99	500.00	ND
111	Cd	2	115	0.776	ppb	#REF!	5.55	2000.00	J
118	Sn	2	115	4.862	ppb	#REF!	3.79	2000.00	ND
121	Sb	2	115	0.041	ppb	#REF!	16.13	500.00	ND
137	Ba	2	115	260.400	ppb	#REF!	2.36	2000.00	>RL
205	Tl	2	209	0.431	ppb	#REF!	4.04	2000.00	ND
208	Pb	2	209	34.100	ppb	#REF!	0.93	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-6410.51	2.61	22.89	-28002.0	70 - 120	ISFail
45	Sc	1	145946.64	1.73	168636.11	86.5	70 - 120	
45	Sc	2	3289849.30	1.93	4411244.50	74.6	70 - 120	
72	Ge	1	83179.48	1.12	100925.69	82.4	70 - 120	
115	In	2	5346866.00	1.23	6534497.50	81.8	70 - 120	
209	Bi	2	3962490.30	1.27	4845836.50	81.8	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\050SMPL.D\050SMPL.D#

Date Acquired:	May 26 2016 03:59 pm	Sample Name:	**1605135-09A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	40.770	ppb	#REF!	2.18	2000.00	>RL
9	Be	2	45	1.803	ppb	#REF!	6.94	2000.00	>RL
11	B	2	45	75.330	ppb	#REF!	3.47	2000.00	>RL
23	Na	1	45	5660.000	ppb	#REF!	3.35	25000.00	>RL
24	Mg	1	45	7311.000	ppb	#REF!	1.10	25000.00	>RL
27	Al	1	45	28810.000	ppb	#REF!	0.80	10000.00	OUTCAL
39	K	1	45	11370.000	ppb	#REF!	1.25	25000.00	>RL
44	Ca	2	45	171800.000	ppb	#REF!	3.82	25000.00	OUTCAL
47	Ti	1	45	83.120	ppb	#REF!	5.80	2000.00	>RL
51	V	1	45	43.640	ppb	#REF!	0.60	2000.00	>RL
52	Cr	1	45	29.910	ppb	#REF!	0.80	2000.00	>RL
55	Mn	1	45	54.950	ppb	#REF!	0.64	2000.00	>RL
56	Fe	1	72	54470.000	ppb	#REF!	0.79	10000.00	OUTCAL
59	Co	1	72	5.934	ppb	#REF!	1.15	2000.00	J
60	Ni	1	72	9.882	ppb	#REF!	1.97	2000.00	>RL
63	Cu	1	72	4.111	ppb	#REF!	2.31	2000.00	J
66	Zn	1	72	84.090	ppb	#REF!	1.51	2000.00	>RL
75	As	1	72	15.310	ppb	#REF!	1.48	2000.00	>RL
78	Se	1	72	11.940	ppb	#REF!	4.49	2000.00	>RL
88	Sr	2	115	1184.000	ppb	#REF!	3.50	2000.00	>RL
95	Mo	2	115	1.070	ppb	#REF!	5.80	2000.00	ND
107	Ag	2	115	0.074	ppb	#REF!	13.83	500.00	ND
111	Cd	2	115	0.341	ppb	#REF!	16.56	2000.00	ND
118	Sn	2	115	4.316	ppb	#REF!	4.00	2000.00	ND
121	Sb	2	115	0.013	ppb	#REF!	11.16	500.00	ND
137	Ba	2	115	50.620	ppb	#REF!	2.13	2000.00	>RL
205	Tl	2	209	0.249	ppb	#REF!	8.47	2000.00	ND
208	Pb	2	209	19.040	ppb	#REF!	2.12	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-2531.75	6.36	RHigh	22.89	-11059.0	70 - 120	ISFail
45	Sc	1	136639.58	1.90		168636.11	81.0	70 - 120	
45	Sc	2	3453184.80	3.08		4411244.50	78.3	70 - 120	
72	Ge	1	79166.23	1.78		100925.69	78.4	70 - 120	
115	In	2	5673185.50	3.50		6534497.50	86.8	70 - 120	
209	Bi	2	4275211.50	2.57		4845836.50	88.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\051SMPL.D\051SMPL.D#

Date Acquired:	May 26 2016 04:05 pm	Sample Name:	**1605135-10A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	57.120	ppb	#REF!	2.45	2000.00	>RL
9	Be	2	45	2.127	ppb	#REF!	4.02	2000.00	>RL
11	B	2	45	86.890	ppb	#REF!	4.07	2000.00	>RL
23	Na	1	45	6505.000	ppb	#REF!	0.49	25000.00	>RL
24	Mg	1	45	9277.000	ppb	#REF!	0.71	25000.00	>RL
27	Al	1	45	35570.000	ppb	#REF!	0.46	10000.00	OUTCAL
39	K	1	45	11650.000	ppb	#REF!	1.02	25000.00	>RL
44	Ca	2	45	254800.000	ppb	#REF!	2.55	25000.00	OUTCAL
47	Ti	1	45	81.150	ppb	#REF!	3.66	2000.00	>RL
51	V	1	45	54.380	ppb	#REF!	0.69	2000.00	>RL
52	Cr	1	45	39.240	ppb	#REF!	0.72	2000.00	>RL
55	Mn	1	45	102.100	ppb	#REF!	1.00	2000.00	>RL
56	Fe	1	72	88980.000	ppb	#REF!	0.89	10000.00	OUTCAL
59	Co	1	72	12.680	ppb	#REF!	0.73	2000.00	>RL
60	Ni	1	72	16.480	ppb	#REF!	0.40	2000.00	>RL
63	Cu	1	72	7.033	ppb	#REF!	1.32	2000.00	J
66	Zn	1	72	136.200	ppb	#REF!	0.46	2000.00	>RL
75	As	1	72	24.660	ppb	#REF!	1.44	2000.00	>RL
78	Se	1	72	14.970	ppb	#REF!	5.81	2000.00	>RL
88	Sr	2	115	1059.000	ppb	#REF!	1.25	2000.00	>RL
95	Mo	2	115	1.968	ppb	#REF!	2.88	2000.00	ND
107	Ag	2	115	0.067	ppb	#REF!	12.00	500.00	ND
111	Cd	2	115	0.482	ppb	#REF!	16.64	2000.00	J
118	Sn	2	115	4.832	ppb	#REF!	3.60	2000.00	ND
121	Sb	2	115	0.053	ppb	#REF!	11.06	500.00	ND
137	Ba	2	115	28.740	ppb	#REF!	1.74	2000.00	>RL
205	Tl	2	209	0.263	ppb	#REF!	0.99	2000.00	ND
208	Pb	2	209	20.930	ppb	#REF!	0.94	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3713.07	16.41	RHigh	22.89	-16219.2	70 - 120	ISFail
45	Sc	1	143563.94	0.74		168636.11	85.1	70 - 120	
45	Sc	2	3332986.80	2.97		4411244.50	75.6	70 - 120	
72	Ge	1	82591.74	1.02		100925.69	81.8	70 - 120	
115	In	2	5407443.50	2.69		6534497.50	82.8	70 - 120	
209	Bi	2	4002197.80	1.89		4845836.50	82.6	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\052SMPL.D\052SMPL.D#

Date Acquired:	May 26 2016 04:11 pm	Sample Name:	**1605135-11A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	71.750	ppb	#REF!	0.70	2000.00	>RL
9	Be	2	45	3.012	ppb	#REF!	2.35	2000.00	>RL
11	B	2	45	54.020	ppb	#REF!	1.51	2000.00	>RL
23	Na	1	45	3235.000	ppb	#REF!	0.28	25000.00	>RL
24	Mg	1	45	15250.000	ppb	#REF!	0.80	25000.00	>RL
27	Al	1	45	69790.000	ppb	#REF!	1.67	10000.00	OUTCAL
39	K	1	45	15610.000	ppb	#REF!	0.43	25000.00	>RL
44	Ca	2	45	103400.000	ppb	#REF!	1.81	25000.00	OUTCAL
47	Ti	1	45	88.650	ppb	#REF!	1.38	2000.00	>RL
51	V	1	45	96.300	ppb	#REF!	0.94	2000.00	>RL
52	Cr	1	45	59.900	ppb	#REF!	1.28	2000.00	>RL
55	Mn	1	45	692.900	ppb	#REF!	0.73	2000.00	>RL
56	Fe	1	72	70980.000	ppb	#REF!	1.63	10000.00	OUTCAL
59	Co	1	72	28.270	ppb	#REF!	1.23	2000.00	>RL
60	Ni	1	72	46.320	ppb	#REF!	0.85	2000.00	>RL
63	Cu	1	72	25.360	ppb	#REF!	0.38	2000.00	>RL
66	Zn	1	72	230.500	ppb	#REF!	1.35	2000.00	>RL
75	As	1	72	27.070	ppb	#REF!	0.22	2000.00	>RL
78	Se	1	72	19.580	ppb	#REF!	1.46	2000.00	>RL
88	Sr	2	115	395.800	ppb	#REF!	1.82	2000.00	>RL
95	Mo	2	115	1.123	ppb	#REF!	2.08	2000.00	ND
107	Ag	2	115	0.219	ppb	#REF!	1.92	500.00	ND
111	Cd	2	115	1.036	ppb	#REF!	6.78	2000.00	J
118	Sn	2	115	4.910	ppb	#REF!	2.70	2000.00	ND
121	Sb	2	115	1.114	ppb	#REF!	4.35	500.00	ND
137	Ba	2	115	581.700	ppb	#REF!	1.21	2000.00	>RL
205	Tl	2	209	0.626	ppb	#REF!	4.37	2000.00	ND
208	Pb	2	209	119.800	ppb	#REF!	1.00	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4813.66	8.22	RHigh	22.89	-21026.7	70 - 120	ISFail
45	Sc	1	141997.80	0.30		168636.11	84.2	70 - 120	
45	Sc	2	3313950.80	1.82		4411244.50	75.1	70 - 120	
72	Ge	1	82923.02	0.48		100925.69	82.2	70 - 120	
115	In	2	5475348.50	1.72		6534497.50	83.8	70 - 120	
209	Bi	2	4097887.80	0.87		4845836.50	84.6	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\053CCV1.D\053CCV1.D#

Date Acquired:	May 26 2016 04:17 pm	Sample Name:	**CCV2-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	200.40	ppb	3.17	200.00	90 -	110	100.2	
9	Be	2	45	191.60	ppb	5.42	200.00	90 -	110	95.8	
11	B	2	45	177.00	ppb	3.64	200.00	90 -	110	88.5	Fail
23	Na	1	45	4982.00	ppb	1.13	5000.00	90 -	110	99.6	
24	Mg	1	45	4719.00	ppb	1.30	5000.00	90 -	110	94.4	
27	Al	1	45	4818.00	ppb	1.19	5000.00	90 -	110	96.4	
39	K	1	45	4695.00	ppb	0.60	5000.00	90 -	110	93.9	
44	Ca	2	45	4632.00	ppb	5.30	5000.00	90 -	110	92.6	
47	Ti	1	45	196.10	ppb	4.02	200.00	90 -	110	98.1	
51	V	1	45	193.70	ppb	1.63	200.00	90 -	110	96.9	
52	Cr	1	45	196.60	ppb	2.08	200.00	90 -	110	98.3	
55	Mn	1	45	199.20	ppb	1.46	200.00	90 -	110	99.6	
56	Fe	1	72	4963.00	ppb	1.52	5000.00	90 -	110	99.3	
59	Co	1	72	196.10	ppb	1.44	200.00	90 -	110	98.1	
60	Ni	1	72	190.70	ppb	1.28	200.00	90 -	110	95.4	
63	Cu	1	72	198.60	ppb	1.17	200.00	90 -	110	99.3	
66	Zn	1	72	199.60	ppb	0.77	200.00	90 -	110	99.8	
75	As	1	72	200.40	ppb	1.30	200.00	90 -	110	100.2	
78	Se	1	72	194.70	ppb	1.41	200.00	90 -	110	97.4	
88	Sr	2	115	196.70	ppb	4.89	200.00	90 -	110	98.4	
95	Mo	2	115	177.50	ppb	4.51	200.00	90 -	110	88.8	Fail
107	Ag	2	115	184.50	ppb	3.32	200.00	90 -	110	92.3	
111	Cd	2	115	185.50	ppb	4.54	200.00	90 -	110	92.8	
118	Sn	2	115	185.90	ppb	6.06	200.00	90 -	110	93.0	
121	Sb	2	115	189.10	ppb	4.98	200.00	90 -	110	94.6	
137	Ba	2	115	188.00	ppb	4.81	200.00	90 -	110	94.0	
205	Tl	2	209	197.40	ppb	3.48	200.00	90 -	110	98.7	
208	Pb	2	209	187.50	ppb	3.90	200.00	90 -	110	93.8	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-45248.27	3.83	22.89	-197650.7	70 -	120	ISFail
45	Sc	1	138964.20	0.44	168636.11	82.4	70 -	120	
45	Sc	2	3487940.30	1.62	4411244.50	79.1	70 -	120	
72	Ge	1	83254.24	0.49	100925.69	82.5	70 -	120	
115	In	2	5804800.50	1.63	6534497.50	88.8	70 -	120	
209	Bi	2	4483626.00	1.64	4845836.50	92.5	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\054_CCB.D\054_CCB.D#

Date Acquired:	May 26 2016 04:23 pm	Sample Name:	**CCB2-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.271	ppb	3.22	2.00	2.00	
9	Be	2	45	0.178	ppb	11.69	0.40	0.30	
11	B	2	45	1.801	ppb	5.58	10.00	10.00	
23	Na	1	45	63.740	ppb	2.99	50.00	#####	Failsoil
24	Mg	1	45	10.330	ppb	4.07	50.00	#####	
27	Al	1	45	27.320	ppb	9.52	50.00	10.00	FailAq
39	K	1	45	11.730	ppb	1.90	50.00	#####	
44	Ca	2	45	63.610	ppb	2.90	50.00	#####	Failsoil
47	Ti	1	45	0.239	ppb	13.33	4.00	3.00	
51	V	1	45	0.201	ppb	4.89	4.00	3.00	
52	Cr	1	45	0.213	ppb	9.27	2.00	2.00	
55	Mn	1	45	0.399	ppb	9.97	2.00	3.00	
56	Fe	1	72	35.180	ppb	12.56	50.00	30.00	FailAq
59	Co	1	72	0.184	ppb	7.27	2.00	3.00	
60	Ni	1	72	0.220	ppb	13.13	2.00	3.00	
63	Cu	1	72	0.242	ppb	8.21	2.00	2.00	
66	Zn	1	72	0.298	ppb	13.07	4.00	2.00	
75	As	1	72	0.249	ppb	19.01	2.00	2.00	
78	Se	1	72	0.198	ppb	6.44	0.60	2.00	
88	Sr	2	115	0.530	ppb	1.91	4.00	3.00	
95	Mo	2	115	0.222	ppb	7.09	2.00	2.00	
107	Ag	2	115	0.145	ppb	3.76	0.40	1.00	
111	Cd	2	115	0.104	ppb	25.62	0.40	0.30	
118	Sn	2	115	0.191	ppb	5.62	20.00	3.00	
121	Sb	2	115	0.159	ppb	4.29	2.00	0.80	
137	Ba	2	115	0.272	ppb	12.80	2.00	3.00	
205	Tl	2	209	0.256	ppb	1.33	2.00	0.50	
208	Pb	2	209	0.214	ppb	2.59	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-32.60	62.79	22.89	-142.4	70 - 120	ISFail
45	Sc	1		147162.81	0.09	168636.11	87.3	70 - 120	
45	Sc	2		3699381.00	1.91	4411244.50	83.9	70 - 120	
72	Ge	1		89407.74	0.88	100925.69	88.6	70 - 120	
115	In	2		6021329.00	1.35	6534497.50	92.1	70 - 120	
209	Bi	2		4584997.50	1.82	4845836.50	94.6	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\055LCVL.D\055LCVL.D#

Date Acquired:	May 26 2016 04:29 pm	Sample Name:	**LCVL2-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	9.92	ppb	1.05	5.00	70 -	130	198.3	Fail
9	Be	2	45	1.03	ppb	5.02	1.00	70 -	130	103.2	
11	B	2	45	18.70	ppb	1.56	20.00	70 -	130	93.5	
23	Na	1	45	178.60	ppb	6.01	100.00	70 -	130	178.6	Fail
24	Mg	1	45	101.80	ppb	2.58	100.00	70 -	130	101.8	
27	Al	1	45	114.60	ppb	1.97	100.00	70 -	130	114.6	
39	K	1	45	107.90	ppb	0.25	100.00	70 -	130	107.9	
44	Ca	2	45	159.40	ppb	2.31	100.00	70 -	130	159.4	Fail
47	Ti	1	45	5.43	ppb	2.41	5.00	70 -	130	108.6	
51	V	1	45	1.01	ppb	6.58	1.00	70 -	130	100.6	
52	Cr	1	45	4.89	ppb	2.31	5.00	70 -	130	97.8	
55	Mn	1	45	5.07	ppb	2.73	5.00	70 -	130	101.4	
56	Fe	1	72	120.60	ppb	2.47	100.00	70 -	130	120.6	
59	Co	1	72	4.84	ppb	0.82	5.00	70 -	130	96.8	
60	Ni	1	72	4.84	ppb	2.12	5.00	70 -	130	96.8	
63	Cu	1	72	4.96	ppb	1.44	5.00	70 -	130	99.1	
66	Zn	1	72	5.19	ppb	4.19	5.00	70 -	130	103.7	
75	As	1	72	5.11	ppb	0.84	5.00	70 -	130	102.1	
78	Se	1	72	5.62	ppb	6.31	5.00	70 -	130	112.3	
88	Sr	2	115	5.14	ppb	1.07	5.00	70 -	130	102.7	
95	Mo	2	115	4.55	ppb	3.24	5.00	70 -	130	91.0	
107	Ag	2	115	1.92	ppb	1.97	2.00	70 -	130	95.9	
111	Cd	2	115	1.03	ppb	2.99	1.00	70 -	130	103.4	
118	Sn	2	115	4.80	ppb	3.43	5.00	70 -	130	96.1	
121	Sb	2	115	1.99	ppb	3.30	2.00	70 -	130	99.4	
137	Ba	2	115	4.86	ppb	2.67	5.00	70 -	130	97.2	
205	Tl	2	209	1.00	ppb	1.72	1.00	70 -	130	99.7	
208	Pb	2	209	1.05	ppb	1.18	1.00	70 -	130	105.0	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigl	-1092.24	10.67	22.89	-4771.0	70 -	120	ISFail
45	Sc	1		148124.48	1.10	168636.11	87.8	70 -	120	
45	Sc	2		3670998.00	2.52	4411244.50	83.2	70 -	120	
72	Ge	1		89089.56	0.69	100925.69	88.3	70 -	120	
115	In	2		6052001.00	1.03	6534497.50	92.6	70 -	120	
209	Bi	2		4773090.50	1.89	4845836.50	98.5	70 -	120	

PB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\056__PB.D\056__PB.D#

Date Acquired:	May 26 2016 04:35 pm	Sample Name:	**MB-75286**
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.	RSD(%)	MDL	RL	Flag
7	Li	2	45	0.168 ppb	4.93	2.0	8.00	
9	Be	2	45	0.053 ppb	9.80	0.4	1.20	
11	B	2	45	0.445 ppb	6.90	10.0	30.00	
23	Na	1	45	84.300 ppb	3.15	50.0	#####	J
24	Mg	1	45	7.601 ppb	2.57	50.0	#####	
27	Al	1	45	14.050 ppb	8.46	50.0	#####	
39	K	1	45	13.190 ppb	1.48	50.0	#####	
44	Ca	2	45	61.380 ppb	0.30	50.0	#####	J
47	Ti	1	45	0.182 ppb	45.83	4.0	10.00	
51	V	1	45	0.082 ppb	8.25	4.0	10.00	
52	Cr	1	45	0.248 ppb	12.64	2.0	8.00	
55	Mn	1	45	0.380 ppb	4.49	2.0	8.00	
56	Fe	1	72	24.270 ppb	1.30	50.0	#####	
59	Co	1	72	0.042 ppb	8.93	2.0	8.00	
60	Ni	1	72	0.215 ppb	11.01	2.0	8.00	
63	Cu	1	72	0.172 ppb	3.08	2.0	8.00	
66	Zn	1	72	1.985 ppb	1.71	4.0	10.00	
75	As	1	72	0.096 ppb	7.31	2.0	4.00	
78	Se	1	72	0.065 ppb	13.21	0.6	2.00	
88	Sr	2	115	0.372 ppb	3.71	4.0	10.00	
95	Mo	2	115	0.071 ppb	15.16	2.0	8.00	
107	Ag	2	115	0.043 ppb	1.54	0.4	0.80	
111	Cd	2	115	0.048 ppb	18.43	0.4	1.20	
118	Sn	2	115	3.922 ppb	1.85	20.0	40.00	
121	Sb	2	115	0.024 ppb	7.44	2.0	4.00	
137	Ba	2	115	0.146 ppb	5.14	2.0	8.00	
205	Tl	2	209	0.063 ppb	8.86	2.0	4.00	
208	Pb	2	209	0.102 ppb	1.62	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-9.33	366.78	22.89	-40.8	70 - 120	ISFail
45	Sc	1		142337.83	0.78	168636.11	84.4	70 - 120	
45	Sc	2		3612112.30	0.80	4411244.50	81.9	70 - 120	
72	Ge	1		84564.77	0.59	100925.69	83.8	70 - 120	
115	In	2		5927814.50	1.34	6534497.50	90.7	70 - 120	
209	Bi	2		4687405.50	1.86	4845836.50	96.7	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\057_LCS.D\057_LCS.D#

Date Acquired:	May 26 2016 04:41 pm	Sample Name:	LCS-75286
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	201.80	ppb	1.00	200.00	80 -	120	100.9	
9	Be	2	45	189.00	ppb	0.76	200.00	80 -	120	94.5	
11	B	2	45	177.20	ppb	2.34	200.00	80 -	120	88.6	
23	Na	1	45	5142.00	ppb	0.89	1000.00	80 -	120	514.2	Fail
24	Mg	1	45	4837.00	ppb	0.39	1000.00	80 -	120	483.7	Fail
27	Al	1	45	986.80	ppb	0.77	1000.00	80 -	120	98.7	
39	K	1	45	4893.00	ppb	0.53	1000.00	80 -	120	489.3	Fail
44	Ca	2	45	4760.00	ppb	1.90	1000.00	80 -	120	476.0	Fail
47	Ti	1	45	197.30	ppb	0.70	200.00	80 -	120	98.7	
51	V	1	45	192.90	ppb	1.03	200.00	80 -	120	96.5	
52	Cr	1	45	196.40	ppb	1.36	200.00	80 -	120	98.2	
55	Mn	1	45	199.80	ppb	1.21	200.00	80 -	120	99.9	
56	Fe	1	72	1001.00	ppb	1.19	1000.00	80 -	120	100.1	
59	Co	1	72	195.80	ppb	0.42	200.00	80 -	120	97.9	
60	Ni	1	72	190.20	ppb	0.26	200.00	80 -	120	95.1	
63	Cu	1	72	196.40	ppb	0.63	200.00	80 -	120	98.2	
66	Zn	1	72	192.70	ppb	0.72	200.00	80 -	120	96.4	
75	As	1	72	192.30	ppb	0.68	200.00	80 -	120	96.2	
78	Se	1	72	184.60	ppb	0.28	200.00	80 -	120	92.3	
88	Sr	2	115	200.70	ppb	0.38	200.00	80 -	120	100.4	
95	Mo	2	115	182.20	ppb	1.56	200.00	80 -	120	91.1	
107	Ag	2	115	188.80	ppb	1.72	200.00	80 -	120	94.4	
111	Cd	2	115	184.90	ppb	1.83	200.00	80 -	120	92.5	
118	Sn	2	115	195.90	ppb	1.65	200.00	80 -	120	98.0	
121	Sb	2	115	192.60	ppb	1.02	200.00	80 -	120	96.3	
137	Ba	2	115	192.00	ppb	0.86	200.00	80 -	120	96.0	
205	Tl	2	209	201.30	ppb	1.38	200.00	80 -	120	100.7	
208	Pb	2	209	192.90	ppb	1.71	200.00	80 -	120	96.5	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-46150.16	1.58	22.89	-201590.3	70 -	120	ISFail
45	Sc	1	137475.39	1.06	168636.11	81.5	70 -	120	
45	Sc	2	3452792.80	1.22	4411244.50	78.3	70 -	120	
72	Ge	1	81579.74	0.13	100925.69	80.8	70 -	120	
115	In	2	5548910.50	0.50	6534497.50	84.9	70 -	120	
209	Bi	2	4259716.00	1.71	4845836.50	87.9	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\058_LCS.D\058_LCS.D#

Date Acquired:	May 26 2016 04:48 pm	Sample Name:	**LCSD-75286**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	202.70	ppb	0.66	200.00	80 -	120	101.4	
9	Be	2	45	190.70	ppb	1.81	200.00	80 -	120	95.4	
11	B	2	45	177.10	ppb	2.18	200.00	80 -	120	88.6	
23	Na	1	45	5189.00	ppb	1.07	1000.00	80 -	120	518.9	Fail
24	Mg	1	45	4891.00	ppb	1.25	1000.00	80 -	120	489.1	Fail
27	Al	1	45	1004.00	ppb	1.36	1000.00	80 -	120	100.4	
39	K	1	45	4965.00	ppb	0.89	1000.00	80 -	120	496.5	Fail
44	Ca	2	45	4829.00	ppb	2.26	1000.00	80 -	120	482.9	Fail
47	Ti	1	45	205.30	ppb	3.29	200.00	80 -	120	102.7	
51	V	1	45	195.60	ppb	1.06	200.00	80 -	120	97.8	
52	Cr	1	45	200.30	ppb	1.30	200.00	80 -	120	100.2	
55	Mn	1	45	203.80	ppb	1.41	200.00	80 -	120	101.9	
56	Fe	1	72	1010.00	ppb	1.27	1000.00	80 -	120	101.0	
59	Co	1	72	198.90	ppb	0.97	200.00	80 -	120	99.5	
60	Ni	1	72	192.20	ppb	0.77	200.00	80 -	120	96.1	
63	Cu	1	72	198.00	ppb	0.82	200.00	80 -	120	99.0	
66	Zn	1	72	196.20	ppb	0.57	200.00	80 -	120	98.1	
75	As	1	72	196.10	ppb	0.71	200.00	80 -	120	98.1	
78	Se	1	72	183.30	ppb	0.47	200.00	80 -	120	91.7	
88	Sr	2	115	204.60	ppb	1.56	200.00	80 -	120	102.3	
95	Mo	2	115	185.90	ppb	1.82	200.00	80 -	120	93.0	
107	Ag	2	115	189.70	ppb	2.20	200.00	80 -	120	94.9	
111	Cd	2	115	186.70	ppb	2.25	200.00	80 -	120	93.4	
118	Sn	2	115	198.00	ppb	1.66	200.00	80 -	120	99.0	
121	Sb	2	115	194.80	ppb	1.83	200.00	80 -	120	97.4	
137	Ba	2	115	195.80	ppb	2.32	200.00	80 -	120	97.9	
205	Tl	2	209	207.90	ppb	0.74	200.00	80 -	120	104.0	
208	Pb	2	209	194.20	ppb	1.03	200.00	80 -	120	97.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-45748.89	2.56	22.89	-199837.5	70 -	120	ISFail
45	Sc	1	134196.89	1.13	168636.11	79.6	70 -	120	
45	Sc	2	3424443.00	1.27	4411244.50	77.6	70 -	120	
72	Ge	1	80008.41	0.37	100925.69	79.3	70 -	120	
115	In	2	5511413.50	1.23	6534497.50	84.3	70 -	120	
209	Bi	2	4117153.30	0.34	4845836.50	85.0	70 -	120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\060AREF.D\060AREF.D#

Date Acquired:	May 26 2016 05:00 pm	Sample Name:	**1605135-14A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	54.390	ppb	#REF!	0.87	2000.00	>RL
9	Be	2	45	2.214	ppb	#REF!	7.28	2000.00	>RL
11	B	2	45	109.500	ppb	#REF!	2.49	2000.00	>RL
23	Na	1	45	5575.000	ppb	#REF!	0.16	25000.00	>RL
24	Mg	1	45	9873.000	ppb	#REF!	1.98	25000.00	>RL
27	Al	1	45	47470.000	ppb	#REF!	1.65	10000.00	OUTCAL
39	K	1	45	13920.000	ppb	#REF!	0.85	25000.00	>RL
44	Ca	2	45	193600.000	ppb	#REF!	2.48	25000.00	OUTCAL
47	Ti	1	45	152.400	ppb	#REF!	2.76	2000.00	>RL
51	V	1	45	63.380	ppb	#REF!	1.27	2000.00	>RL
52	Cr	1	45	76.360	ppb	#REF!	1.38	2000.00	>RL
55	Mn	1	45	70.030	ppb	#REF!	0.85	2000.00	>RL
56	Fe	1	72	62910.000	ppb	#REF!	1.09	10000.00	OUTCAL
59	Co	1	72	8.042	ppb	#REF!	0.24	2000.00	>RL
60	Ni	1	72	32.460	ppb	#REF!	0.35	2000.00	>RL
63	Cu	1	72	4.535	ppb	#REF!	0.54	2000.00	J
66	Zn	1	72	191.000	ppb	#REF!	1.28	2000.00	>RL
75	As	1	72	15.230	ppb	#REF!	0.63	2000.00	>RL
78	Se	1	72	14.310	ppb	#REF!	4.64	2000.00	>RL
88	Sr	2	115	1101.000	ppb	#REF!	2.55	2000.00	>RL
95	Mo	2	115	4.673	ppb	#REF!	5.37	2000.00	J
107	Ag	2	115	0.157	ppb	#REF!	14.66	500.00	ND
111	Cd	2	115	0.535	ppb	#REF!	5.08	2000.00	J
118	Sn	2	115	5.334	ppb	#REF!	2.77	2000.00	J
121	Sb	2	115	0.137	ppb	#REF!	18.58	500.00	ND
137	Ba	2	115	34.820	ppb	#REF!	1.84	2000.00	>RL
205	Tl	2	209	0.370	ppb	#REF!	11.06	2000.00	ND
208	Pb	2	209	15.540	ppb	#REF!	0.87	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4107.05	1.47	22.89	-17940.1	70 - 120	ISFail
45	Sc	1	136370.30	0.41	168636.11	80.9	70 - 120	
45	Sc	2	3434317.00	2.34	4411244.50	77.9	70 - 120	
72	Ge	1	78474.10	0.15	100925.69	77.8	70 - 120	
115	In	2	5500665.50	2.39	6534497.50	84.2	70 - 120	
209	Bi	2	4053749.00	1.28	4845836.50	83.7	70 - 120	

DT QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\061DT1.D\061DT1.D#

Date Acquired:	May 26 2016 05:06 pm	Sample Name:	**1605135-14A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	11.12	ppb	3.72	-851.57	90 - 110	-6.5	
9	Be	2	45	0.53	ppb	3.87	2.21	90 - 110	119.0	
11	B	2	45	23.29	ppb	2.52	109.50	90 - 110	106.3	GOOD
23	Na	1	45	1147.00	ppb	0.44	5575.00	90 - 110	102.9	GOOD
24	Mg	1	45	1984.00	ppb	0.45	9873.00	90 - 110	100.5	GOOD
27	Al	1	45	9001.00	ppb	1.04	47470.00	90 - 110	94.8	GOOD
39	K	1	45	2780.00	ppb	0.26	13920.00	90 - 110	99.9	GOOD
44	Ca	2	45	38740.00	ppb	4.01	193600.00	90 - 110	100.1	GOOD
47	Ti	1	45	29.55	ppb	1.29	152.40	90 - 110	96.9	GOOD
51	V	1	45	12.67	ppb	0.69	63.38	90 - 110	100.0	GOOD
52	Cr	1	45	15.62	ppb	1.04	76.36	90 - 110	102.3	GOOD
55	Mn	1	45	14.15	ppb	1.83	70.03	90 - 110	101.0	GOOD
56	Fe	1	72	12340.00	ppb	1.31	62910.00	90 - 110	98.1	GOOD
59	Co	1	72	1.65	ppb	1.42	8.04	90 - 110	102.3	GOOD
60	Ni	1	72	6.68	ppb	0.45	32.46	90 - 110	102.9	GOOD
63	Cu	1	72	1.00	ppb	2.45	4.53	90 - 110	110.7	
66	Zn	1	72	42.19	ppb	1.24	191.00	90 - 110	110.4	
75	As	1	72	3.10	ppb	3.20	15.23	90 - 110	101.8	GOOD
78	Se	1	72	2.56	ppb	8.92	14.31	90 - 110	89.4	
88	Sr	2	115	218.80	ppb	3.96	1101.00	90 - 110	99.4	GOOD
95	Mo	2	115	1.00	ppb	7.09	4.67	90 - 110	106.6	GOOD
107	Ag	2	115	0.08	ppb	1.59	0.16	90 - 110	261.9	
111	Cd	2	115	0.15	ppb	18.65	0.54	90 - 110	140.0	
118	Sn	2	115	1.12	ppb	6.14	5.33	90 - 110	105.3	GOOD
121	Sb	2	115	0.07	ppb	4.19	0.14	90 - 110	238.2	
137	Ba	2	115	6.81	ppb	3.79	34.82	90 - 110	97.8	GOOD
205	Tl	2	209	0.16	ppb	9.11	0.37	90 - 110	211.1	
208	Pb	2	209	3.01	ppb	2.34	15.54	90 - 110	96.7	GOOD

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-851.57	4.37	22.89	-3719.8	70 - 120	ISFail
45	Sc	1	136263.31	0.79	168636.11	80.8	70 - 120	
45	Sc	2	3369500.30	1.65	4411244.50	76.4	70 - 120	
72	Ge	1	82261.15	0.93	100925.69	81.5	70 - 120	
115	In	2	5509855.50	1.17	6534497.50	84.3	70 - 120	
209	Bi	2	4166163.30	0.89	4845836.50	86.0	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\062SMPL.D\062SMPL.D#

Date Acquired:	May 26 2016 05:12 pm	Sample Name:	**1605135-12A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	78.850	ppb	#REF!	1.75	2000.00	>RL
9	Be	2	45	2.340	ppb	#REF!	2.86	2000.00	>RL
11	B	2	45	83.560	ppb	#REF!	4.25	2000.00	>RL
23	Na	1	45	6585.000	ppb	#REF!	3.43	25000.00	>RL
24	Mg	1	45	13470.000	ppb	#REF!	2.20	25000.00	>RL
27	Al	1	45	59460.000	ppb	#REF!	2.35	10000.00	OUTCAL
39	K	1	45	11500.000	ppb	#REF!	1.51	25000.00	>RL
44	Ca	2	45	365600.000	ppb	#REF!	3.89	25000.00	OUTCAL
47	Ti	1	45	207.600	ppb	#REF!	3.00	2000.00	>RL
51	V	1	45	97.070	ppb	#REF!	2.40	2000.00	>RL
52	Cr	1	45	48.120	ppb	#REF!	2.73	2000.00	>RL
55	Mn	1	45	994.500	ppb	#REF!	2.12	2000.00	>RL
56	Fe	1	72	66360.000	ppb	#REF!	3.11	10000.00	OUTCAL
59	Co	1	72	30.980	ppb	#REF!	2.46	2000.00	>RL
60	Ni	1	72	45.060	ppb	#REF!	1.79	2000.00	>RL
63	Cu	1	72	10.280	ppb	#REF!	2.36	2000.00	>RL
66	Zn	1	72	152.600	ppb	#REF!	1.70	2000.00	>RL
75	As	1	72	21.580	ppb	#REF!	3.06	2000.00	>RL
78	Se	1	72	15.240	ppb	#REF!	3.47	2000.00	>RL
88	Sr	2	115	809.600	ppb	#REF!	2.38	2000.00	>RL
95	Mo	2	115	2.206	ppb	#REF!	4.30	2000.00	J
107	Ag	2	115	0.143	ppb	#REF!	7.44	500.00	ND
111	Cd	2	115	1.164	ppb	#REF!	2.94	2000.00	J
118	Sn	2	115	5.148	ppb	#REF!	2.64	2000.00	ND
121	Sb	2	115	0.206	ppb	#REF!	3.44	500.00	ND
137	Ba	2	115	497.000	ppb	#REF!	2.22	2000.00	>RL
205	Tl	2	209	0.701	ppb	#REF!	1.20	2000.00	ND
208	Pb	2	209	25.230	ppb	#REF!	1.73	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5319.93	7.96	RHigh	22.89	-23238.2	70 - 120	ISFail
45	Sc	1	136719.70	2.03		168636.11	81.1	70 - 120	
45	Sc	2	3208347.30	2.62		4411244.50	72.7	70 - 120	
72	Ge	1	77716.05	1.50		100925.69	77.0	70 - 120	
115	In	2	5148700.50	1.99		6534497.50	78.8	70 - 120	
209	Bi	2	3701400.80	1.37		4845836.50	76.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\063SMPL.D\063SMPL.D#

Date Acquired:	May 26 2016 05:18 pm	Sample Name:	**1605135-13A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	80.150 ppb	#REF!	4.11	2000.00	>RL
9	Be	2	45	2.547 ppb	#REF!	5.17	2000.00	>RL
11	B	2	45	112.600 ppb	#REF!	5.95	2000.00	>RL
23	Na	1	45	6660.000 ppb	#REF!	0.83	25000.00	>RL
24	Mg	1	45	11850.000 ppb	#REF!	1.50	25000.00	>RL
27	Al	1	45	55570.000 ppb	#REF!	0.62	10000.00	OUTCAL
39	K	1	45	13860.000 ppb	#REF!	0.74	25000.00	>RL
44	Ca	2	45	199500.000 ppb	#REF!	5.10	25000.00	OUTCAL
47	Ti	1	45	150.300 ppb	#REF!	2.33	2000.00	>RL
51	V	1	45	82.600 ppb	#REF!	1.62	2000.00	>RL
52	Cr	1	45	50.190 ppb	#REF!	0.99	2000.00	>RL
55	Mn	1	45	127.700 ppb	#REF!	1.10	2000.00	>RL
56	Fe	1	72	90370.000 ppb	#REF!	1.18	10000.00	OUTCAL
59	Co	1	72	18.770 ppb	#REF!	0.79	2000.00	>RL
60	Ni	1	72	29.660 ppb	#REF!	0.80	2000.00	>RL
63	Cu	1	72	8.139 ppb	#REF!	1.85	2000.00	>RL
66	Zn	1	72	191.300 ppb	#REF!	1.78	2000.00	>RL
75	As	1	72	24.090 ppb	#REF!	0.77	2000.00	>RL
78	Se	1	72	16.430 ppb	#REF!	4.74	2000.00	>RL
88	Sr	2	115	735.100 ppb	#REF!	4.45	2000.00	>RL
95	Mo	2	115	2.478 ppb	#REF!	7.12	2000.00	J
107	Ag	2	115	0.103 ppb	#REF!	6.83	500.00	ND
111	Cd	2	115	0.586 ppb	#REF!	7.37	2000.00	J
118	Sn	2	115	5.139 ppb	#REF!	5.62	2000.00	ND
121	Sb	2	115	0.133 ppb	#REF!	4.75	500.00	ND
137	Ba	2	115	104.300 ppb	#REF!	4.60	2000.00	>RL
205	Tl	2	209	0.423 ppb	#REF!	3.91	2000.00	ND
208	Pb	2	209	22.210 ppb	#REF!	4.05	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5050.90	16.35	RHigh	22.89	-22063.0	70 - 120	ISFail
45	Sc	1	135797.73	1.18		168636.11	80.5	70 - 120	
45	Sc	2	2988580.00	5.67	RHigh	4411244.50	67.7	70 - 120	ISFail
72	Ge	1	78203.73	1.01		100925.69	77.5	70 - 120	
115	In	2	4882642.00	5.20	RHigh	6534497.50	74.7	70 - 120	
209	Bi	2	3623226.30	3.71		4845836.50	74.8	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\064SMPL.D\064SMPL.D#

Date Acquired:	May 26 2016 05:24 pm	Sample Name:	**1605135-15A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	50.940	ppb	#REF!	0.84	2000.00	>RL
9	Be	2	45	2.139	ppb	#REF!	3.45	2000.00	>RL
11	B	2	45	118.200	ppb	#REF!	3.66	2000.00	>RL
23	Na	1	45	5928.000	ppb	#REF!	1.24	25000.00	>RL
24	Mg	1	45	10110.000	ppb	#REF!	1.19	25000.00	>RL
27	Al	1	45	48380.000	ppb	#REF!	1.57	10000.00	OUTCAL
39	K	1	45	13310.000	ppb	#REF!	1.30	25000.00	>RL
44	Ca	2	45	163100.000	ppb	#REF!	3.80	25000.00	OUTCAL
47	Ti	1	45	156.700	ppb	#REF!	2.66	2000.00	>RL
51	V	1	45	73.540	ppb	#REF!	0.91	2000.00	>RL
52	Cr	1	45	48.570	ppb	#REF!	1.16	2000.00	>RL
55	Mn	1	45	152.700	ppb	#REF!	1.44	2000.00	>RL
56	Fe	1	72	80870.000	ppb	#REF!	0.79	10000.00	OUTCAL
59	Co	1	72	10.770	ppb	#REF!	2.46	2000.00	>RL
60	Ni	1	72	16.900	ppb	#REF!	1.18	2000.00	>RL
63	Cu	1	72	6.249	ppb	#REF!	2.16	2000.00	J
66	Zn	1	72	125.100	ppb	#REF!	2.02	2000.00	>RL
75	As	1	72	20.490	ppb	#REF!	1.00	2000.00	>RL
78	Se	1	72	15.020	ppb	#REF!	2.13	2000.00	>RL
88	Sr	2	115	2013.000	ppb	#REF!	3.31	2000.00	OUTCAL
95	Mo	2	115	1.848	ppb	#REF!	2.28	2000.00	ND
107	Ag	2	115	0.101	ppb	#REF!	8.08	500.00	ND
111	Cd	2	115	0.551	ppb	#REF!	9.80	2000.00	J
118	Sn	2	115	5.049	ppb	#REF!	3.88	2000.00	ND
121	Sb	2	115	0.088	ppb	#REF!	5.44	500.00	ND
137	Ba	2	115	53.470	ppb	#REF!	4.21	2000.00	>RL
205	Tl	2	209	0.388	ppb	#REF!	2.22	2000.00	ND
208	Pb	2	209	21.580	ppb	#REF!	2.67	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3208.47	9.52	RHigh	22.89	-14015.1	70 - 120	ISFail
45	Sc	1	131537.75	2.01		168636.11	78.0	70 - 120	
45	Sc	2	3021618.00	2.90		4411244.50	68.5	70 - 120	ISFail
72	Ge	1	76375.91	1.50		100925.69	75.7	70 - 120	
115	In	2	4921470.50	1.34		6534497.50	75.3	70 - 120	
209	Bi	2	3687064.00	1.98		4845836.50	76.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\065SMPL.D\065SMPL.D#

Date Acquired:	May 26 2016 05:29 pm	Sample Name:	**1605135-16A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	70.650	ppb	#REF!	1.21	2000.00	>RL
9	Be	2	45	2.763	ppb	#REF!	1.98	2000.00	>RL
11	B	2	45	67.900	ppb	#REF!	2.90	2000.00	>RL
23	Na	1	45	1799.000	ppb	#REF!	0.51	25000.00	>RL
24	Mg	1	45	14840.000	ppb	#REF!	1.14	25000.00	>RL
27	Al	1	45	77130.000	ppb	#REF!	2.13	10000.00	OUTCAL
39	K	1	45	15870.000	ppb	#REF!	0.48	25000.00	>RL
44	Ca	2	45	107400.000	ppb	#REF!	3.18	25000.00	OUTCAL
47	Ti	1	45	186.700	ppb	#REF!	2.27	2000.00	>RL
51	V	1	45	111.400	ppb	#REF!	1.49	2000.00	>RL
52	Cr	1	45	65.650	ppb	#REF!	1.26	2000.00	>RL
55	Mn	1	45	616.000	ppb	#REF!	1.29	2000.00	>RL
56	Fe	1	72	74480.000	ppb	#REF!	1.65	10000.00	OUTCAL
59	Co	1	72	25.980	ppb	#REF!	0.87	2000.00	>RL
60	Ni	1	72	40.250	ppb	#REF!	1.34	2000.00	>RL
63	Cu	1	72	19.430	ppb	#REF!	1.21	2000.00	>RL
66	Zn	1	72	204.000	ppb	#REF!	1.14	2000.00	>RL
75	As	1	72	25.860	ppb	#REF!	0.40	2000.00	>RL
78	Se	1	72	16.920	ppb	#REF!	0.69	2000.00	>RL
88	Sr	2	115	338.700	ppb	#REF!	2.44	2000.00	>RL
95	Mo	2	115	2.197	ppb	#REF!	1.20	2000.00	J
107	Ag	2	115	0.172	ppb	#REF!	6.45	500.00	ND
111	Cd	2	115	0.915	ppb	#REF!	8.65	2000.00	J
118	Sn	2	115	5.209	ppb	#REF!	1.91	2000.00	ND
121	Sb	2	115	2.280	ppb	#REF!	5.22	500.00	J
137	Ba	2	115	363.600	ppb	#REF!	2.09	2000.00	>RL
205	Tl	2	209	0.611	ppb	#REF!	4.96	2000.00	ND
208	Pb	2	209	177.800	ppb	#REF!	0.82	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4519.18	11.78	RHigh	22.89	-19740.4	70 - 120	ISFail
45	Sc	1	128570.28	0.21		168636.11	76.2	70 - 120	
45	Sc	2	3049059.00	2.30		4411244.50	69.1	70 - 120	ISFail
72	Ge	1	74985.18	0.56		100925.69	74.3	70 - 120	
115	In	2	4936825.00	1.56		6534497.50	75.6	70 - 120	
209	Bi	2	3697992.80	1.66		4845836.50	76.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\066SMPL.D\066SMPL.D#

Date Acquired:	May 26 2016 05:35 pm	Sample Name:	**1605135-17A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	83.530	ppb	#REF!	1.89	2000.00	>RL
9	Be	2	45	2.631	ppb	#REF!	1.52	2000.00	>RL
11	B	2	45	96.310	ppb	#REF!	3.23	2000.00	>RL
23	Na	1	45	7362.000	ppb	#REF!	1.57	25000.00	>RL
24	Mg	1	45	14730.000	ppb	#REF!	1.89	25000.00	>RL
27	Al	1	45	66090.000	ppb	#REF!	1.21	10000.00	OUTCAL
39	K	1	45	11760.000	ppb	#REF!	0.62	25000.00	>RL
44	Ca	2	45	251900.000	ppb	#REF!	1.94	25000.00	OUTCAL
47	Ti	1	45	142.700	ppb	#REF!	3.34	2000.00	>RL
51	V	1	45	122.000	ppb	#REF!	1.05	2000.00	>RL
52	Cr	1	45	61.510	ppb	#REF!	1.30	2000.00	>RL
55	Mn	1	45	962.800	ppb	#REF!	0.70	2000.00	>RL
56	Fe	1	72	82060.000	ppb	#REF!	1.64	10000.00	OUTCAL
59	Co	1	72	33.650	ppb	#REF!	1.40	2000.00	>RL
60	Ni	1	72	44.400	ppb	#REF!	1.45	2000.00	>RL
63	Cu	1	72	11.730	ppb	#REF!	2.39	2000.00	>RL
66	Zn	1	72	183.700	ppb	#REF!	1.33	2000.00	>RL
75	As	1	72	26.120	ppb	#REF!	1.20	2000.00	>RL
78	Se	1	72	19.620	ppb	#REF!	5.22	2000.00	>RL
88	Sr	2	115	481.300	ppb	#REF!	2.23	2000.00	>RL
95	Mo	2	115	1.673	ppb	#REF!	3.35	2000.00	ND
107	Ag	2	115	0.117	ppb	#REF!	6.56	500.00	ND
111	Cd	2	115	1.051	ppb	#REF!	4.44	2000.00	J
118	Sn	2	115	4.935	ppb	#REF!	0.80	2000.00	ND
121	Sb	2	115	0.232	ppb	#REF!	3.84	500.00	ND
137	Ba	2	115	1530.000	ppb	#REF!	0.97	2000.00	>RL
205	Tl	2	209	0.532	ppb	#REF!	1.68	2000.00	ND
208	Pb	2	209	32.810	ppb	#REF!	1.10	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5285.06	5.98	RHigh	22.89	-23085.9	70 - 120	ISFail
45	Sc	1	129247.51	0.14		168636.11	76.6	70 - 120	
45	Sc	2	3050584.80	3.01		4411244.50	69.2	70 - 120	ISFail
72	Ge	1	74425.78	0.17		100925.69	73.7	70 - 120	
115	In	2	5020200.50	1.34		6534497.50	76.8	70 - 120	
209	Bi	2	3692774.50	0.31		4845836.50	76.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\067SMPL.D\067SMPL.D#

Date Acquired:	May 26 2016 05:41 pm	Sample Name:	**1605135-18A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	76.920	ppb	#REF!	1.32	2000.00	>RL
9	Be	2	45	2.040	ppb	#REF!	2.86	2000.00	>RL
11	B	2	45	82.890	ppb	#REF!	3.63	2000.00	>RL
23	Na	1	45	4260.000	ppb	#REF!	0.62	25000.00	>RL
24	Mg	1	45	10310.000	ppb	#REF!	1.24	25000.00	>RL
27	Al	1	45	54090.000	ppb	#REF!	0.21	10000.00	OUTCAL
39	K	1	45	9764.000	ppb	#REF!	0.74	25000.00	>RL
44	Ca	2	45	265800.000	ppb	#REF!	3.47	25000.00	OUTCAL
47	Ti	1	45	162.100	ppb	#REF!	1.85	2000.00	>RL
51	V	1	45	96.950	ppb	#REF!	0.27	2000.00	>RL
52	Cr	1	45	60.170	ppb	#REF!	0.83	2000.00	>RL
55	Mn	1	45	516.000	ppb	#REF!	0.43	2000.00	>RL
56	Fe	1	72	73290.000	ppb	#REF!	1.23	10000.00	OUTCAL
59	Co	1	72	28.150	ppb	#REF!	0.66	2000.00	>RL
60	Ni	1	72	42.380	ppb	#REF!	1.30	2000.00	>RL
63	Cu	1	72	11.010	ppb	#REF!	0.70	2000.00	>RL
66	Zn	1	72	204.000	ppb	#REF!	0.21	2000.00	>RL
75	As	1	72	26.460	ppb	#REF!	0.83	2000.00	>RL
78	Se	1	72	14.110	ppb	#REF!	1.95	2000.00	>RL
88	Sr	2	115	904.000	ppb	#REF!	2.53	2000.00	>RL
95	Mo	2	115	3.299	ppb	#REF!	4.36	2000.00	J
107	Ag	2	115	0.109	ppb	#REF!	2.77	500.00	ND
111	Cd	2	115	0.674	ppb	#REF!	9.67	2000.00	J
118	Sn	2	115	5.047	ppb	#REF!	0.93	2000.00	ND
121	Sb	2	115	0.342	ppb	#REF!	6.64	500.00	ND
137	Ba	2	115	196.800	ppb	#REF!	2.73	2000.00	>RL
205	Tl	2	209	0.369	ppb	#REF!	5.32	2000.00	ND
208	Pb	2	209	29.750	ppb	#REF!	2.31	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5023.65	1.32	22.89	-21944.0	70 - 120	ISFail
45	Sc	1	133769.77	0.78	168636.11	79.3	70 - 120	
45	Sc	2	3248624.30	3.52	4411244.50	73.6	70 - 120	
72	Ge	1	76609.74	0.63	100925.69	75.9	70 - 120	
115	In	2	5332780.00	2.76	6534497.50	81.6	70 - 120	
209	Bi	2	3898083.80	1.06	4845836.50	80.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\068SMPL.D\068SMPL.D#

Date Acquired:	May 26 2016 05:47 pm	Sample Name:	**1605135-19A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	55.930	ppb	#REF!	3.79	2000.00	>RL
9	Be	2	45	1.687	ppb	#REF!	2.70	2000.00	>RL
11	B	2	45	83.210	ppb	#REF!	4.01	2000.00	>RL
23	Na	1	45	3382.000	ppb	#REF!	3.60	25000.00	>RL
24	Mg	1	45	10900.000	ppb	#REF!	4.94	25000.00	>RL
27	Al	1	45	34300.000	ppb	#REF!	4.27	10000.00	OUTCAL
39	K	1	45	9311.000	ppb	#REF!	3.47	25000.00	>RL
44	Ca	2	45	272000.000	ppb	#REF!	5.20	25000.00	OUTCAL
47	Ti	1	45	142.300	ppb	#REF!	4.91	2000.00	>RL
51	V	1	45	61.270	ppb	#REF!	4.30	2000.00	>RL
52	Cr	1	45	45.840	ppb	#REF!	3.89	2000.00	>RL
55	Mn	1	45	1563.000	ppb	#REF!	3.78	2000.00	>RL
56	Fe	1	72	53750.000	ppb	#REF!	4.89	10000.00	OUTCAL
59	Co	1	72	17.130	ppb	#REF!	3.43	2000.00	>RL
60	Ni	1	72	25.070	ppb	#REF!	3.74	2000.00	>RL
63	Cu	1	72	4.969	ppb	#REF!	3.39	2000.00	J
66	Zn	1	72	112.800	ppb	#REF!	2.48	2000.00	>RL
75	As	1	72	16.260	ppb	#REF!	2.39	2000.00	>RL
78	Se	1	72	12.220	ppb	#REF!	5.39	2000.00	>RL
88	Sr	2	115	1227.000	ppb	#REF!	4.28	2000.00	>RL
95	Mo	2	115	2.805	ppb	#REF!	3.42	2000.00	J
107	Ag	2	115	0.089	ppb	#REF!	9.60	500.00	ND
111	Cd	2	115	0.421	ppb	#REF!	15.27	2000.00	J
118	Sn	2	115	4.598	ppb	#REF!	5.75	2000.00	ND
121	Sb	2	115	0.096	ppb	#REF!	16.81	500.00	ND
137	Ba	2	115	88.950	ppb	#REF!	4.91	2000.00	>RL
205	Tl	2	209	0.273	ppb	#REF!	1.75	2000.00	ND
208	Pb	2	209	18.390	ppb	#REF!	3.44	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3330.69	9.45	RHigh	22.89	-14548.9	70 - 120	ISFail
45	Sc	1	132465.33	3.29		168636.11	78.6	70 - 120	
45	Sc	2	3033896.80	4.76		4411244.50	68.8	70 - 120	ISFail
72	Ge	1	75811.19	2.86		100925.69	75.1	70 - 120	
115	In	2	4938565.00	3.48		6534497.50	75.6	70 - 120	
209	Bi	2	3596737.00	2.44		4845836.50	74.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\069SMPL.D\069SMPL.D#

Date Acquired:	May 26 2016 05:53 pm	Sample Name:	**1605135-20A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	69.310	ppb	#REF!	1.77	2000.00	>RL
9	Be	2	45	2.687	ppb	#REF!	0.25	2000.00	>RL
11	B	2	45	66.500	ppb	#REF!	2.07	2000.00	>RL
23	Na	1	45	1633.000	ppb	#REF!	0.17	25000.00	>RL
24	Mg	1	45	14570.000	ppb	#REF!	1.14	25000.00	>RL
27	Al	1	45	76140.000	ppb	#REF!	1.02	10000.00	OUTCAL
39	K	1	45	15590.000	ppb	#REF!	0.96	25000.00	>RL
44	Ca	2	45	95210.000	ppb	#REF!	1.90	25000.00	OUTCAL
47	Ti	1	45	194.900	ppb	#REF!	2.18	2000.00	>RL
51	V	1	45	107.600	ppb	#REF!	0.65	2000.00	>RL
52	Cr	1	45	65.410	ppb	#REF!	0.97	2000.00	>RL
55	Mn	1	45	619.700	ppb	#REF!	0.95	2000.00	>RL
56	Fe	1	72	70570.000	ppb	#REF!	1.30	10000.00	OUTCAL
59	Co	1	72	25.370	ppb	#REF!	0.89	2000.00	>RL
60	Ni	1	72	38.690	ppb	#REF!	1.86	2000.00	>RL
63	Cu	1	72	18.610	ppb	#REF!	0.69	2000.00	>RL
66	Zn	1	72	200.500	ppb	#REF!	1.12	2000.00	>RL
75	As	1	72	24.200	ppb	#REF!	0.16	2000.00	>RL
78	Se	1	72	16.770	ppb	#REF!	5.14	2000.00	>RL
88	Sr	2	115	335.100	ppb	#REF!	2.27	2000.00	>RL
95	Mo	2	115	2.197	ppb	#REF!	2.45	2000.00	J
107	Ag	2	115	0.166	ppb	#REF!	5.36	500.00	ND
111	Cd	2	115	0.806	ppb	#REF!	2.83	2000.00	J
118	Sn	2	115	5.206	ppb	#REF!	4.24	2000.00	ND
121	Sb	2	115	3.726	ppb	#REF!	2.71	500.00	J
137	Ba	2	115	369.900	ppb	#REF!	1.22	2000.00	>RL
205	Tl	2	209	0.561	ppb	#REF!	3.09	2000.00	ND
208	Pb	2	209	319.500	ppb	#REF!	1.17	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4282.91	18.41	RHigh	22.89	-18708.3	70 - 120	ISFail
45	Sc	1	131769.61	0.45		168636.11	78.1	70 - 120	
45	Sc	2	3085836.80	1.61		4411244.50	70.0	70 - 120	ISFail
72	Ge	1	77136.79	0.32		100925.69	76.4	70 - 120	
115	In	2	5045576.00	1.32		6534497.50	77.2	70 - 120	
209	Bi	2	3806209.50	0.81		4845836.50	78.5	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\070SMPL.D\070SMPL.D#

Date Acquired:	May 26 2016 05:59 pm	Sample Name:	**1605135-21A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	84.440	ppb	#REF!	1.59	2000.00	>RL
9	Be	2	45	2.729	ppb	#REF!	3.82	2000.00	>RL
11	B	2	45	83.930	ppb	#REF!	3.33	2000.00	>RL
23	Na	1	45	6114.000	ppb	#REF!	0.42	25000.00	>RL
24	Mg	1	45	15360.000	ppb	#REF!	0.17	25000.00	>RL
27	Al	1	45	72490.000	ppb	#REF!	0.29	10000.00	OUTCAL
39	K	1	45	12950.000	ppb	#REF!	0.58	25000.00	>RL
44	Ca	2	45	218900.000	ppb	#REF!	3.14	25000.00	OUTCAL
47	Ti	1	45	157.100	ppb	#REF!	4.69	2000.00	>RL
51	V	1	45	131.200	ppb	#REF!	0.45	2000.00	>RL
52	Cr	1	45	64.570	ppb	#REF!	0.66	2000.00	>RL
55	Mn	1	45	572.500	ppb	#REF!	0.37	2000.00	>RL
56	Fe	1	72	90150.000	ppb	#REF!	0.62	10000.00	OUTCAL
59	Co	1	72	40.270	ppb	#REF!	0.22	2000.00	>RL
60	Ni	1	72	50.290	ppb	#REF!	0.19	2000.00	>RL
63	Cu	1	72	14.660	ppb	#REF!	0.68	2000.00	>RL
66	Zn	1	72	214.300	ppb	#REF!	0.68	2000.00	>RL
75	As	1	72	28.770	ppb	#REF!	0.91	2000.00	>RL
78	Se	1	72	20.720	ppb	#REF!	1.21	2000.00	>RL
88	Sr	2	115	427.900	ppb	#REF!	0.77	2000.00	>RL
95	Mo	2	115	1.802	ppb	#REF!	3.58	2000.00	ND
107	Ag	2	115	0.114	ppb	#REF!	19.25	500.00	ND
111	Cd	2	115	0.777	ppb	#REF!	12.67	2000.00	J
118	Sn	2	115	5.194	ppb	#REF!	1.10	2000.00	ND
121	Sb	2	115	0.613	ppb	#REF!	6.98	500.00	ND
137	Ba	2	115	996.600	ppb	#REF!	4.23	2000.00	>RL
205	Tl	2	209	0.545	ppb	#REF!	1.90	2000.00	ND
208	Pb	2	209	60.400	ppb	#REF!	1.33	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5027.89	3.40	22.89	-21962.5	70 - 120	ISFail
45	Sc	1	123903.48	0.97	168636.11	73.5	70 - 120	
45	Sc	2	2915731.00	2.40	4411244.50	66.1	70 - 120	ISFail
72	Ge	1	71413.64	1.11	100925.69	70.8	70 - 120	
115	In	2	4782378.50	2.08	6534497.50	73.2	70 - 120	
209	Bi	2	3527507.80	0.62	4845836.50	72.8	70 - 120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\071_PDS.D\071_PDS.D#

Date Acquired:	May 26 2016 06:05 pm	Sample Name:	**1605135-14A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	232.50	ppb	0.86	-21760.04	200	75-125	######	Fail
9	Be	2	45	169.80	ppb	0.56	2.21	200	75-125	83.8	
11	B	2	45	250.20	ppb	0.34	109.50	200	75-125	70.4	Fail
23	Na	1	45	10250.00	ppb	1.47	5575.00	5000	75-125	93.5	
24	Mg	1	45	14600.00	ppb	1.05	9873.00	5000	75-125	94.5	
27	Al	1	45	49860.00	ppb	1.40	47470.00	5000	75-125	47.8	Fail
39	K	1	45	18450.00	ppb	1.67	13920.00	5000	75-125	90.6	
44	Ca	2	45	194700.00	ppb	0.66	193600.00	5000	75-125	22.0	Fail
47	Ti	1	45	342.30	ppb	3.08	152.40	200	75-125	95.0	
51	V	1	45	253.90	ppb	1.88	63.38	200	75-125	95.3	
52	Cr	1	45	235.90	ppb	2.17	76.36	200	75-125	79.8	
55	Mn	1	45	254.10	ppb	1.80	70.03	200	75-125	92.0	
56	Fe	1	72	65890.00	ppb	1.67	62910.00	5000	75-125	59.6	Fail
59	Co	1	72	198.70	ppb	1.62	8.04	200	75-125	95.3	
60	Ni	1	72	193.00	ppb	1.63	32.46	200	75-125	80.3	
63	Cu	1	72	182.60	ppb	1.33	4.53	200	75-125	89.0	
66	Zn	1	72	278.90	ppb	1.62	191.00	200	75-125	44.0	Fail
75	As	1	72	212.20	ppb	1.35	15.23	200	75-125	98.5	
78	Se	1	72	195.80	ppb	3.43	14.31	200	75-125	90.7	
88	Sr	2	115	1285.00	ppb	0.97	1101.00	200	75-125	92.0	
95	Mo	2	115	185.70	ppb	0.59	4.67	200	75-125	90.5	
107	Ag	2	115	177.10	ppb	1.73	0.16	200	75-125	88.5	
111	Cd	2	115	176.40	ppb	1.57	0.54	200	75-125	87.9	
118	Sn	2	115	203.50	ppb	1.39	5.33	200	75-125	99.1	
121	Sb	2	115	197.90	ppb	0.63	0.14	200	75-125	98.9	
137	Ba	2	115	226.70	ppb	1.51	34.82	200	75-125	95.9	
205	Tl	2	209	205.00	ppb	2.47	0.37	200	75-125	102.3	
208	Pb	2	209	208.00	ppb	2.06	15.54	200	75-125	96.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-21760.04	2.58	22.89	-95050.9	70 - 120	ISFail
45	Sc	1	122897.01	1.39	168636.11	72.9	70 - 120	
45	Sc	2	3348554.30	0.36	4411244.50	75.9	70 - 120	
72	Ge	1	71121.98	0.72	100925.69	70.5	70 - 120	
115	In	2	5463240.50	0.90	6534497.50	83.6	70 - 120	
209	Bi	2	3983668.80	2.55	4845836.50	82.2	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\072_MS.D\072_MS.D#

Date Acquired:	May 26 2016 06:11 pm	Sample Name:	**1605135-14A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	243.80	ppb	1.20	########	200	80-120	######	Fail
9	Be	2	45	175.00	ppb	2.06	2.21	200	80-120	86.4	
11	B	2	45	250.20	ppb	2.02	109.50	200	80-120	70.4	Fail
23	Na	1	45	10260.00	ppb	1.43	5575.00	1000	80-120	468.5	Fail
24	Mg	1	45	14910.00	ppb	2.40	9873.00	1000	80-120	503.7	Fail
27	Al	1	45	51740.00	ppb	3.09	47470.00	1000	80-120	427.0	Fail
39	K	1	45	18580.00	ppb	2.51	13920.00	1000	80-120	466.0	Fail
44	Ca	2	45	211800.00	ppb	2.50	########	1000	80-120	1820.0	Fail
47	Ti	1	45	276.40	ppb	3.39	152.40	200	80-120	62.0	Fail
51	V	1	45	258.30	ppb	1.85	63.38	200	80-120	97.5	
52	Cr	1	45	235.50	ppb	2.76	76.36	200	80-120	79.6	Fail
55	Mn	1	45	257.50	ppb	2.04	70.03	200	80-120	93.7	
56	Fe	1	72	62690.00	ppb	2.10	62910.00	1000	80-120	-22.0	Fail
59	Co	1	72	198.20	ppb	2.14	8.04	200	80-120	95.1	
60	Ni	1	72	194.10	ppb	1.71	32.46	200	80-120	80.8	
63	Cu	1	72	185.00	ppb	2.11	4.53	200	80-120	90.2	
66	Zn	1	72	273.00	ppb	1.33	191.00	200	80-120	41.0	Fail
75	As	1	72	213.40	ppb	1.36	15.23	200	80-120	99.1	
78	Se	1	72	197.50	ppb	1.20	14.31	200	80-120	91.6	
88	Sr	2	115	1054.00	ppb	1.71	1101.00	200	80-120	-23.5	Fail
95	Mo	2	115	180.30	ppb	1.65	4.67	200	80-120	87.8	
107	Ag	2	115	176.60	ppb	1.98	0.16	200	80-120	88.2	
111	Cd	2	115	179.70	ppb	2.61	0.54	200	80-120	89.6	
118	Sn	2	115	196.50	ppb	1.70	5.33	200	80-120	95.6	
121	Sb	2	115	63.71	ppb	1.58	0.14	200	80-120	31.8	Fail
137	Ba	2	115	229.70	ppb	0.72	34.82	200	80-120	97.4	
205	Tl	2	209	211.50	ppb	0.94	0.37	200	80-120	105.6	
208	Pb	2	209	213.70	ppb	0.77	15.54	200	80-120	99.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-42032.65	2.71	22.89	########	70 - 120	ISFail
45	Sc	1	132637.80	1.63	168636.11	78.7	70 - 120	
45	Sc	2	3124208.30	2.39	4411244.50	70.8	70 - 120	
72	Ge	1	76708.27	1.96	100925.69	76.0	70 - 120	
115	In	2	5140287.00	1.62	6534497.50	78.7	70 - 120	
209	Bi	2	3700261.30	1.33	4845836.50	76.4	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\073_MS.D\073_MS.D#

Date Acquired:	May 26 2016 06:17 pm	Sample Name:	**1605135-14A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	244.50	ppb	3.27	########	200	80-120	######	Fail
9	Be	2	45	172.70	ppb	1.97	2.21	200	80-120	85.2	
11	B	2	45	260.10	ppb	3.19	109.50	200	80-120	75.3	Fail
23	Na	1	45	10290.00	ppb	3.32	5575.00	1000	80-120	471.5	Fail
24	Mg	1	45	14960.00	ppb	2.56	9873.00	1000	80-120	508.7	Fail
27	Al	1	45	53350.00	ppb	3.07	47470.00	1000	80-120	588.0	Fail
39	K	1	45	19160.00	ppb	2.06	13920.00	1000	80-120	524.0	Fail
44	Ca	2	45	204200.00	ppb	2.53	########	1000	80-120	1060.0	Fail
47	Ti	1	45	295.60	ppb	2.11	152.40	200	80-120	71.6	Fail
51	V	1	45	254.90	ppb	2.41	63.38	200	80-120	95.8	
52	Cr	1	45	232.30	ppb	2.21	76.36	200	80-120	78.0	Fail
55	Mn	1	45	262.00	ppb	1.99	70.03	200	80-120	96.0	
56	Fe	1	72	65600.00	ppb	3.00	62910.00	1000	80-120	269.0	Fail
59	Co	1	72	197.70	ppb	2.40	8.04	200	80-120	94.8	
60	Ni	1	72	193.20	ppb	2.21	32.46	200	80-120	80.4	
63	Cu	1	72	183.90	ppb	1.64	4.53	200	80-120	89.7	
66	Zn	1	72	272.10	ppb	1.34	191.00	200	80-120	40.6	Fail
75	As	1	72	210.80	ppb	1.55	15.23	200	80-120	97.8	
78	Se	1	72	198.30	ppb	2.57	14.31	200	80-120	92.0	
88	Sr	2	115	1137.00	ppb	2.30	1101.00	200	80-120	18.0	Fail
95	Mo	2	115	178.40	ppb	2.35	4.67	200	80-120	86.9	
107	Ag	2	115	176.00	ppb	2.11	0.16	200	80-120	87.9	
111	Cd	2	115	178.80	ppb	2.64	0.54	200	80-120	89.1	
118	Sn	2	115	196.40	ppb	2.95	5.33	200	80-120	95.5	
121	Sb	2	115	62.24	ppb	3.01	0.14	200	80-120	31.1	Fail
137	Ba	2	115	240.10	ppb	3.39	34.82	200	80-120	102.6	
205	Tl	2	209	206.60	ppb	3.68	0.37	200	80-120	103.1	
208	Pb	2	209	212.80	ppb	5.15	15.54	200	80-120	98.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-46101.79	4.54	22.89	########	70 - 120	ISFail
45	Sc	1	145290.77	1.75	168636.11	86.2	70 - 120	
45	Sc	2	3452643.00	1.64	4411244.50	78.3	70 - 120	
72	Ge	1	82579.11	1.67	100925.69	81.8	70 - 120	
115	In	2	5734377.00	2.99	6534497.50	87.8	70 - 120	
209	Bi	2	4304954.00	2.65	4845836.50	88.8	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\075CCV1.D\075CCV1.D#

Date Acquired:	May 26 2016 06:29 pm	Sample Name:	**CCV3-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	196.40	ppb	0.49	200.00	90 -	110	98.2	
9	Be	2	45	189.60	ppb	1.15	200.00	90 -	110	94.8	
11	B	2	45	175.40	ppb	1.81	200.00	90 -	110	87.7	Fail
23	Na	1	45	4940.00	ppb	1.44	5000.00	90 -	110	98.8	
24	Mg	1	45	4702.00	ppb	1.94	5000.00	90 -	110	94.0	
27	Al	1	45	4919.00	ppb	1.85	5000.00	90 -	110	98.4	
39	K	1	45	4829.00	ppb	0.63	5000.00	90 -	110	96.6	
44	Ca	2	45	4740.00	ppb	1.94	5000.00	90 -	110	94.8	
47	Ti	1	45	203.80	ppb	1.57	200.00	90 -	110	101.9	
51	V	1	45	192.00	ppb	1.78	200.00	90 -	110	96.0	
52	Cr	1	45	193.80	ppb	1.32	200.00	90 -	110	96.9	
55	Mn	1	45	200.90	ppb	1.29	200.00	90 -	110	100.5	
56	Fe	1	72	4965.00	ppb	1.99	5000.00	90 -	110	99.3	
59	Co	1	72	193.90	ppb	0.90	200.00	90 -	110	97.0	
60	Ni	1	72	188.10	ppb	1.61	200.00	90 -	110	94.1	
63	Cu	1	72	193.60	ppb	0.65	200.00	90 -	110	96.8	
66	Zn	1	72	200.80	ppb	1.15	200.00	90 -	110	100.4	
75	As	1	72	201.90	ppb	1.09	200.00	90 -	110	101.0	
78	Se	1	72	202.80	ppb	1.31	200.00	90 -	110	101.4	
88	Sr	2	115	201.00	ppb	0.39	200.00	90 -	110	100.5	
95	Mo	2	115	181.30	ppb	1.34	200.00	90 -	110	90.7	
107	Ag	2	115	186.90	ppb	1.84	200.00	90 -	110	93.5	
111	Cd	2	115	189.50	ppb	1.27	200.00	90 -	110	94.8	
118	Sn	2	115	193.60	ppb	1.17	200.00	90 -	110	96.8	
121	Sb	2	115	194.70	ppb	1.83	200.00	90 -	110	97.4	
137	Ba	2	115	191.70	ppb	2.08	200.00	90 -	110	95.9	
205	Tl	2	209	201.50	ppb	1.28	200.00	90 -	110	100.8	
208	Pb	2	209	190.80	ppb	0.56	200.00	90 -	110	95.4	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-44257.22	1.72	22.89	-193321.6	70 -	120	ISFail
45	Sc	1	139841.31	0.68	168636.11	82.9	70 -	120	
45	Sc	2	3491485.30	1.60	4411244.50	79.1	70 -	120	
72	Ge	1	83111.70	0.35	100925.69	82.3	70 -	120	
115	In	2	5869933.00	1.03	6534497.50	89.8	70 -	120	
209	Bi	2	4507379.00	0.88	4845836.50	93.0	70 -	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\077LCVL.D\077LCVL.D#

Date Acquired:	May 26 2016 06:41 pm	Sample Name:	**LCVL3-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	9.66	ppb	1.70	5.00	70 -	130	193.2	Fail
9	Be	2	45	0.99	ppb	2.95	1.00	70 -	130	99.1	
11	B	2	45	18.73	ppb	1.28	20.00	70 -	130	93.7	
23	Na	1	45	131.20	ppb	0.90	100.00	70 -	130	131.2	Fail
24	Mg	1	45	102.90	ppb	3.45	100.00	70 -	130	102.9	
27	Al	1	45	118.80	ppb	0.99	100.00	70 -	130	118.8	
39	K	1	45	103.10	ppb	1.25	100.00	70 -	130	103.1	
44	Ca	2	45	153.10	ppb	1.24	100.00	70 -	130	153.1	Fail
47	Ti	1	45	4.41	ppb	8.19	5.00	70 -	130	88.2	
51	V	1	45	1.03	ppb	4.09	1.00	70 -	130	102.8	
52	Cr	1	45	4.96	ppb	0.40	5.00	70 -	130	99.2	
55	Mn	1	45	5.16	ppb	4.08	5.00	70 -	130	103.3	
56	Fe	1	72	119.70	ppb	0.85	100.00	70 -	130	119.7	
59	Co	1	72	4.84	ppb	1.62	5.00	70 -	130	96.8	
60	Ni	1	72	4.79	ppb	1.60	5.00	70 -	130	95.8	
63	Cu	1	72	4.84	ppb	1.79	5.00	70 -	130	96.9	
66	Zn	1	72	5.11	ppb	2.04	5.00	70 -	130	102.2	
75	As	1	72	5.21	ppb	0.98	5.00	70 -	130	104.1	
78	Se	1	72	5.89	ppb	9.06	5.00	70 -	130	117.8	
88	Sr	2	115	4.97	ppb	1.05	5.00	70 -	130	99.4	
95	Mo	2	115	4.40	ppb	6.05	5.00	70 -	130	88.0	
107	Ag	2	115	1.93	ppb	3.27	2.00	70 -	130	96.3	
111	Cd	2	115	1.04	ppb	16.03	1.00	70 -	130	103.7	
118	Sn	2	115	4.89	ppb	3.14	5.00	70 -	130	97.8	
121	Sb	2	115	2.02	ppb	1.12	2.00	70 -	130	101.2	
137	Ba	2	115	4.87	ppb	2.66	5.00	70 -	130	97.4	
205	Tl	2	209	1.04	ppb	2.23	1.00	70 -	130	103.6	
208	Pb	2	209	1.03	ppb	2.53	1.00	70 -	130	102.7	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigh	-1025.60	15.06	22.89	-4480.0	70 -	120	ISFail
45	Sc	1		143261.48	0.49	168636.11	85.0	70 -	120	
45	Sc	2		3676986.00	2.25	4411244.50	83.4	70 -	120	
72	Ge	1		85387.91	0.95	100925.69	84.6	70 -	120	
115	In	2		6184134.50	1.14	6534497.50	94.6	70 -	120	
209	Bi	2		4899108.50	1.50	4845836.50	101.1	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\078_CCB.D\078_CCB.D#

Date Acquired:	May 26 2016 06:47 pm	Sample Name:	**CCB3-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.154 ppb	6.42	2.00	2.00	
9	Be	2	45	0.055 ppb	42.11	0.40	0.30	
11	B	2	45	0.940 ppb	1.76	10.00	10.00	
23	Na	1	45	30.700 ppb	2.04	50.00	#####	
24	Mg	1	45	3.530 ppb	14.31	50.00	#####	
27	Al	1	45	12.320 ppb	4.93	50.00	10.00	FailAq
39	K	1	45	9.875 ppb	4.36	50.00	#####	
44	Ca	2	45	43.000 ppb	3.57	50.00	#####	
47	Ti	1	45	0.054 ppb	86.62	4.00	3.00	
51	V	1	45	0.053 ppb	12.99	4.00	3.00	
52	Cr	1	45	0.050 ppb	6.98	2.00	2.00	
55	Mn	1	45	0.114 ppb	8.00	2.00	3.00	
56	Fe	1	72	15.600 ppb	2.37	50.00	30.00	
59	Co	1	72	0.041 ppb	3.60	2.00	3.00	
60	Ni	1	72	0.036 ppb	21.74	2.00	3.00	
63	Cu	1	72	0.072 ppb	8.77	2.00	2.00	
66	Zn	1	72	0.051 ppb	6.89	4.00	2.00	
75	As	1	72	0.104 ppb	10.38	2.00	2.00	
78	Se	1	72	0.153 ppb	23.50	0.60	2.00	
88	Sr	2	115	0.259 ppb	1.35	4.00	3.00	
95	Mo	2	115	0.068 ppb	23.01	2.00	2.00	
107	Ag	2	115	0.054 ppb	6.69	0.40	1.00	
111	Cd	2	115	0.043 ppb	29.63	0.40	0.30	
118	Sn	2	115	0.054 ppb	8.44	20.00	3.00	
121	Sb	2	115	0.045 ppb	4.60	2.00	0.80	
137	Ba	2	115	0.086 ppb	12.65	2.00	3.00	
205	Tl	2	209	0.095 ppb	1.85	2.00	0.50	
208	Pb	2	209	0.082 ppb	12.03	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-6.18	369.68	22.89	-27.0	70 - 120	ISFail
45	Sc	1		138429.02	1.62	168636.11	82.1	70 - 120	
45	Sc	2		3668180.30	1.98	4411244.50	83.2	70 - 120	
72	Ge	1		84107.66	0.69	100925.69	83.3	70 - 120	
115	In	2		6110557.00	1.30	6534497.50	93.5	70 - 120	
209	Bi	2		4817383.50	1.62	4845836.50	99.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\079SMPL.D\079SMPL.D#

Date Acquired:	May 26 2016 06:53 pm	Sample Name:	**1605135-22A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	66.380	ppb	#REF!	1.25	2000.00	>RL
9	Be	2	45	1.742	ppb	#REF!	0.57	2000.00	>RL
11	B	2	45	80.660	ppb	#REF!	3.25	2000.00	>RL
23	Na	1	45	3547.000	ppb	#REF!	1.84	25000.00	>RL
24	Mg	1	45	9256.000	ppb	#REF!	3.44	25000.00	>RL
27	Al	1	45	48470.000	ppb	#REF!	1.51	10000.00	OUTCAL
39	K	1	45	9279.000	ppb	#REF!	1.57	25000.00	>RL
44	Ca	2	45	301500.000	ppb	#REF!	3.44	25000.00	OUTCAL
47	Ti	1	45	160.900	ppb	#REF!	2.17	2000.00	>RL
51	V	1	45	78.830	ppb	#REF!	1.91	2000.00	>RL
52	Cr	1	45	52.470	ppb	#REF!	1.71	2000.00	>RL
55	Mn	1	45	1166.000	ppb	#REF!	1.84	2000.00	>RL
56	Fe	1	72	58380.000	ppb	#REF!	2.03	10000.00	OUTCAL
59	Co	1	72	26.590	ppb	#REF!	1.49	2000.00	>RL
60	Ni	1	72	35.580	ppb	#REF!	1.32	2000.00	>RL
63	Cu	1	72	7.433	ppb	#REF!	2.51	2000.00	J
66	Zn	1	72	157.900	ppb	#REF!	1.62	2000.00	>RL
75	As	1	72	18.730	ppb	#REF!	1.27	2000.00	>RL
78	Se	1	72	13.030	ppb	#REF!	8.70	2000.00	>RL
88	Sr	2	115	2045.000	ppb	#REF!	2.82	2000.00	OUTCAL
95	Mo	2	115	2.982	ppb	#REF!	3.30	2000.00	J
107	Ag	2	115	0.108	ppb	#REF!	6.67	500.00	ND
111	Cd	2	115	0.590	ppb	#REF!	12.47	2000.00	J
118	Sn	2	115	5.087	ppb	#REF!	4.05	2000.00	ND
121	Sb	2	115	0.174	ppb	#REF!	2.66	500.00	ND
137	Ba	2	115	358.500	ppb	#REF!	3.88	2000.00	>RL
205	Tl	2	209	0.377	ppb	#REF!	5.39	2000.00	ND
208	Pb	2	209	22.490	ppb	#REF!	2.33	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4755.35	4.65	22.89	-20772.0	70 - 120	ISFail
45	Sc	1	141022.50	2.04	168636.11	83.6	70 - 120	
45	Sc	2	3312534.30	3.04	4411244.50	75.1	70 - 120	
72	Ge	1	79963.65	2.01	100925.69	79.2	70 - 120	
115	In	2	5451301.00	2.40	6534497.50	83.4	70 - 120	
209	Bi	2	3936861.50	1.45	4845836.50	81.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\080SMPL.D\080SMPL.D#

Date Acquired:	May 26 2016 06:59 pm	Sample Name:	**1605135-23A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	62.950	ppb	#REF!	1.05	2000.00	>RL
9	Be	2	45	1.972	ppb	#REF!	6.41	2000.00	>RL
11	B	2	45	94.890	ppb	#REF!	3.47	2000.00	>RL
23	Na	1	45	4619.000	ppb	#REF!	4.29	25000.00	>RL
24	Mg	1	45	12640.000	ppb	#REF!	3.40	25000.00	>RL
27	Al	1	45	40070.000	ppb	#REF!	5.74	10000.00	OUTCAL
39	K	1	45	10660.000	ppb	#REF!	2.37	25000.00	>RL
44	Ca	2	45	273400.000	ppb	#REF!	1.78	25000.00	OUTCAL
47	Ti	1	45	141.900	ppb	#REF!	3.36	2000.00	>RL
51	V	1	45	63.630	ppb	#REF!	2.44	2000.00	>RL
52	Cr	1	45	47.700	ppb	#REF!	2.50	2000.00	>RL
55	Mn	1	45	1450.000	ppb	#REF!	2.45	2000.00	>RL
56	Fe	1	72	56080.000	ppb	#REF!	3.04	10000.00	OUTCAL
59	Co	1	72	19.570	ppb	#REF!	3.25	2000.00	>RL
60	Ni	1	72	24.470	ppb	#REF!	3.43	2000.00	>RL
63	Cu	1	72	4.686	ppb	#REF!	2.66	2000.00	J
66	Zn	1	72	115.000	ppb	#REF!	1.80	2000.00	>RL
75	As	1	72	16.780	ppb	#REF!	2.85	2000.00	>RL
78	Se	1	72	13.620	ppb	#REF!	0.96	2000.00	>RL
88	Sr	2	115	2883.000	ppb	#REF!	1.85	2000.00	OUTCAL
95	Mo	2	115	2.234	ppb	#REF!	3.32	2000.00	J
107	Ag	2	115	0.095	ppb	#REF!	12.08	500.00	ND
111	Cd	2	115	0.486	ppb	#REF!	26.29	2000.00	J
118	Sn	2	115	4.941	ppb	#REF!	3.30	2000.00	ND
121	Sb	2	115	0.094	ppb	#REF!	10.15	500.00	ND
137	Ba	2	115	108.100	ppb	#REF!	1.72	2000.00	>RL
205	Tl	2	209	0.273	ppb	#REF!	3.05	2000.00	ND
208	Pb	2	209	19.950	ppb	#REF!	1.37	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3987.55	6.15	RHigh	22.89	-17418.2	70 - 120	ISFail
45	Sc	1	139508.36	2.51		168636.11	82.7	70 - 120	
45	Sc	2	2983300.80	2.10		4411244.50	67.6	70 - 120	ISFail
72	Ge	1	79070.50	1.92		100925.69	78.3	70 - 120	
115	In	2	4964297.50	1.07		6534497.50	76.0	70 - 120	
209	Bi	2	3694954.50	1.52		4845836.50	76.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\081SMPL.D\081SMPL.D#

Date Acquired:	May 26 2016 07:05 pm	Sample Name:	**1605135-24A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	72.980	ppb	#REF!	1.58	2000.00	>RL
9	Be	2	45	3.006	ppb	#REF!	4.96	2000.00	>RL
11	B	2	45	72.170	ppb	#REF!	3.55	2000.00	>RL
23	Na	1	45	1839.000	ppb	#REF!	0.87	25000.00	>RL
24	Mg	1	45	16260.000	ppb	#REF!	0.34	25000.00	>RL
27	Al	1	45	84130.000	ppb	#REF!	1.85	10000.00	OUTCAL
39	K	1	45	17210.000	ppb	#REF!	0.87	25000.00	>RL
44	Ca	2	45	116300.000	ppb	#REF!	3.06	25000.00	OUTCAL
47	Ti	1	45	193.000	ppb	#REF!	0.67	2000.00	>RL
51	V	1	45	139.800	ppb	#REF!	1.75	2000.00	>RL
52	Cr	1	45	71.310	ppb	#REF!	1.58	2000.00	>RL
55	Mn	1	45	706.100	ppb	#REF!	1.31	2000.00	>RL
56	Fe	1	72	98180.000	ppb	#REF!	2.16	10000.00	OUTCAL
59	Co	1	72	29.930	ppb	#REF!	1.33	2000.00	>RL
60	Ni	1	72	47.700	ppb	#REF!	2.29	2000.00	>RL
63	Cu	1	72	20.800	ppb	#REF!	2.33	2000.00	>RL
66	Zn	1	72	231.100	ppb	#REF!	1.10	2000.00	>RL
75	As	1	72	37.770	ppb	#REF!	0.85	2000.00	>RL
78	Se	1	72	21.450	ppb	#REF!	2.97	2000.00	>RL
88	Sr	2	115	385.700	ppb	#REF!	2.50	2000.00	>RL
95	Mo	2	115	2.631	ppb	#REF!	2.56	2000.00	J
107	Ag	2	115	0.193	ppb	#REF!	5.88	500.00	ND
111	Cd	2	115	0.949	ppb	#REF!	10.87	2000.00	J
118	Sn	2	115	5.054	ppb	#REF!	3.07	2000.00	ND
121	Sb	2	115	1.930	ppb	#REF!	6.36	500.00	ND
137	Ba	2	115	403.000	ppb	#REF!	2.15	2000.00	>RL
205	Tl	2	209	0.682	ppb	#REF!	3.02	2000.00	ND
208	Pb	2	209	132.300	ppb	#REF!	1.21	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5313.94	7.87	RHigh	22.89	-23212.0	70 - 120	ISFail
45	Sc	1	134342.44	0.72		168636.11	79.7	70 - 120	
45	Sc	2	3260421.00	2.22		4411244.50	73.9	70 - 120	
72	Ge	1	77917.95	0.48		100925.69	77.2	70 - 120	
115	In	2	5387577.00	2.04		6534497.50	82.4	70 - 120	
209	Bi	2	3988793.80	1.03		4845836.50	82.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\082SMPL.D\082SMPL.D#

Date Acquired:	May 26 2016 07:11 pm	Sample Name:	**1605135-25A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	77.470	ppb	#REF!	2.12	2000.00	>RL
9	Be	2	45	2.618	ppb	#REF!	1.73	2000.00	>RL
11	B	2	45	88.140	ppb	#REF!	2.83	2000.00	>RL
23	Na	1	45	6142.000	ppb	#REF!	0.59	25000.00	>RL
24	Mg	1	45	15130.000	ppb	#REF!	1.34	25000.00	>RL
27	Al	1	45	73020.000	ppb	#REF!	0.92	10000.00	OUTCAL
39	K	1	45	13130.000	ppb	#REF!	0.13	25000.00	>RL
44	Ca	2	45	201700.000	ppb	#REF!	2.41	25000.00	OUTCAL
47	Ti	1	45	166.900	ppb	#REF!	1.07	2000.00	>RL
51	V	1	45	120.400	ppb	#REF!	1.44	2000.00	>RL
52	Cr	1	45	64.430	ppb	#REF!	1.13	2000.00	>RL
55	Mn	1	45	484.100	ppb	#REF!	0.95	2000.00	>RL
56	Fe	1	72	75860.000	ppb	#REF!	0.91	10000.00	OUTCAL
59	Co	1	72	30.190	ppb	#REF!	0.29	2000.00	>RL
60	Ni	1	72	44.230	ppb	#REF!	1.07	2000.00	>RL
63	Cu	1	72	14.230	ppb	#REF!	0.73	2000.00	>RL
66	Zn	1	72	200.200	ppb	#REF!	0.54	2000.00	>RL
75	As	1	72	23.650	ppb	#REF!	0.83	2000.00	>RL
78	Se	1	72	19.860	ppb	#REF!	3.08	2000.00	>RL
88	Sr	2	115	426.700	ppb	#REF!	2.17	2000.00	>RL
95	Mo	2	115	1.425	ppb	#REF!	2.83	2000.00	ND
107	Ag	2	115	0.116	ppb	#REF!	8.52	500.00	ND
111	Cd	2	115	0.995	ppb	#REF!	11.83	2000.00	J
118	Sn	2	115	5.190	ppb	#REF!	4.31	2000.00	ND
121	Sb	2	115	0.409	ppb	#REF!	0.67	500.00	ND
137	Ba	2	115	1153.000	ppb	#REF!	2.31	2000.00	>RL
205	Tl	2	209	0.527	ppb	#REF!	3.70	2000.00	ND
208	Pb	2	209	51.310	ppb	#REF!	2.47	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5362.03	7.15	RHigh	22.89	-23422.1	70 - 120	ISFail
45	Sc	1	134077.75	0.42		168636.11	79.5	70 - 120	
45	Sc	2	3245926.00	2.50		4411244.50	73.6	70 - 120	
72	Ge	1	77201.82	0.36		100925.69	76.5	70 - 120	
115	In	2	5398770.00	2.12		6534497.50	82.6	70 - 120	
209	Bi	2	3940074.00	1.70		4845836.50	81.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\083SMPL.D\083SMPL.D#

Date Acquired:	May 26 2016 07:17 pm	Sample Name:	**1605135-26A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	84.500 ppb	#REF!	1.34	2000.00	>RL
9	Be	2	45	2.107 ppb	#REF!	3.18	2000.00	>RL
11	B	2	45	97.210 ppb	#REF!	4.22	2000.00	>RL
23	Na	1	45	4521.000 ppb	#REF!	5.38	25000.00	>RL
24	Mg	1	45	11390.000 ppb	#REF!	3.90	25000.00	>RL
27	Al	1	45	59890.000 ppb	#REF!	3.53	10000.00	OUTCAL
39	K	1	45	11070.000 ppb	#REF!	3.41	25000.00	>RL
44	Ca	2	45	289600.000 ppb	#REF!	3.53	25000.00	OUTCAL
47	Ti	1	45	163.900 ppb	#REF!	5.77	2000.00	>RL
51	V	1	45	97.650 ppb	#REF!	3.92	2000.00	>RL
52	Cr	1	45	59.250 ppb	#REF!	4.12	2000.00	>RL
55	Mn	1	45	709.500 ppb	#REF!	3.84	2000.00	>RL
56	Fe	1	72	70420.000 ppb	#REF!	3.77	10000.00	OUTCAL
59	Co	1	72	32.730 ppb	#REF!	3.37	2000.00	>RL
60	Ni	1	72	39.910 ppb	#REF!	4.83	2000.00	>RL
63	Cu	1	72	8.623 ppb	#REF!	4.80	2000.00	>RL
66	Zn	1	72	189.400 ppb	#REF!	2.75	2000.00	>RL
75	As	1	72	24.790 ppb	#REF!	3.51	2000.00	>RL
78	Se	1	72	14.920 ppb	#REF!	8.15	2000.00	>RL
88	Sr	2	115	1163.000 ppb	#REF!	3.21	2000.00	>RL
95	Mo	2	115	2.477 ppb	#REF!	5.42	2000.00	J
107	Ag	2	115	0.097 ppb	#REF!	7.83	500.00	ND
111	Cd	2	115	0.666 ppb	#REF!	8.68	2000.00	J
118	Sn	2	115	5.026 ppb	#REF!	4.59	2000.00	ND
121	Sb	2	115	0.173 ppb	#REF!	4.88	500.00	ND
137	Ba	2	115	239.500 ppb	#REF!	2.74	2000.00	>RL
205	Tl	2	209	0.373 ppb	#REF!	3.78	2000.00	ND
208	Pb	2	209	30.360 ppb	#REF!	1.47	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5422.78	4.94	22.89	-23687.5	70 - 120	ISFail
45	Sc	1	135898.47	3.37	168636.11	80.6	70 - 120	
45	Sc	2	3072853.00	2.02	4411244.50	69.7	70 - 120	ISFail
72	Ge	1	76937.58	2.71	100925.69	76.2	70 - 120	
115	In	2	5081756.00	1.51	6534497.50	77.8	70 - 120	
209	Bi	2	3737898.80	0.74	4845836.50	77.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\084SMPL.D\084SMPL.D#

Date Acquired:	May 26 2016 07:23 pm	Sample Name:	**1605135-27A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	57.220	ppb	#REF!	1.78	2000.00	>RL
9	Be	2	45	1.865	ppb	#REF!	2.04	2000.00	>RL
11	B	2	45	91.360	ppb	#REF!	3.81	2000.00	>RL
23	Na	1	45	4351.000	ppb	#REF!	0.29	25000.00	>RL
24	Mg	1	45	12500.000	ppb	#REF!	0.89	25000.00	>RL
27	Al	1	45	37920.000	ppb	#REF!	0.82	10000.00	OUTCAL
39	K	1	45	10860.000	ppb	#REF!	0.82	25000.00	>RL
44	Ca	2	45	248100.000	ppb	#REF!	4.07	25000.00	OUTCAL
47	Ti	1	45	139.600	ppb	#REF!	4.08	2000.00	>RL
51	V	1	45	63.180	ppb	#REF!	0.67	2000.00	>RL
52	Cr	1	45	46.990	ppb	#REF!	1.02	2000.00	>RL
55	Mn	1	45	1347.000	ppb	#REF!	0.26	2000.00	>RL
56	Fe	1	72	55920.000	ppb	#REF!	0.65	10000.00	OUTCAL
59	Co	1	72	20.210	ppb	#REF!	0.51	2000.00	>RL
60	Ni	1	72	25.900	ppb	#REF!	0.72	2000.00	>RL
63	Cu	1	72	4.645	ppb	#REF!	1.73	2000.00	J
66	Zn	1	72	113.300	ppb	#REF!	1.63	2000.00	>RL
75	As	1	72	17.910	ppb	#REF!	0.87	2000.00	>RL
78	Se	1	72	15.280	ppb	#REF!	4.09	2000.00	>RL
88	Sr	2	115	2229.000	ppb	#REF!	3.85	2000.00	OUTCAL
95	Mo	2	115	2.722	ppb	#REF!	2.73	2000.00	J
107	Ag	2	115	0.086	ppb	#REF!	7.71	500.00	ND
111	Cd	2	115	0.533	ppb	#REF!	18.02	2000.00	J
118	Sn	2	115	4.580	ppb	#REF!	3.46	2000.00	ND
121	Sb	2	115	0.095	ppb	#REF!	6.80	500.00	ND
137	Ba	2	115	208.000	ppb	#REF!	3.37	2000.00	>RL
205	Tl	2	209	0.236	ppb	#REF!	3.33	2000.00	ND
208	Pb	2	209	20.490	ppb	#REF!	3.10	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3651.34	7.44	RHigh	22.89	-15949.5	70 - 120	ISFail
45	Sc	1	134446.52	0.59		168636.11	79.7	70 - 120	
45	Sc	2	3235760.30	3.09		4411244.50	73.4	70 - 120	
72	Ge	1	77091.63	0.62		100925.69	76.4	70 - 120	
115	In	2	5482131.00	3.11		6534497.50	83.9	70 - 120	
209	Bi	2	3996426.30	2.19		4845836.50	82.5	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\085SMPL.D\085SMPL.D#

Date Acquired:	May 26 2016 07:29 pm	Sample Name:	**1605135-28A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	84.670	ppb	#REF!	2.37	2000.00	>RL
9	Be	2	45	3.237	ppb	#REF!	0.84	2000.00	>RL
11	B	2	45	82.490	ppb	#REF!	2.54	2000.00	>RL
23	Na	1	45	1174.000	ppb	#REF!	1.48	25000.00	>RL
24	Mg	1	45	15360.000	ppb	#REF!	2.14	25000.00	>RL
27	Al	1	45	89940.000	ppb	#REF!	1.76	10000.00	OUTCAL
39	K	1	45	18360.000	ppb	#REF!	1.75	25000.00	>RL
44	Ca	2	45	92840.000	ppb	#REF!	3.17	25000.00	OUTCAL
47	Ti	1	45	247.300	ppb	#REF!	3.31	2000.00	>RL
51	V	1	45	115.700	ppb	#REF!	1.44	2000.00	>RL
52	Cr	1	45	71.680	ppb	#REF!	2.21	2000.00	>RL
55	Mn	1	45	791.300	ppb	#REF!	1.71	2000.00	>RL
56	Fe	1	72	88250.000	ppb	#REF!	2.19	10000.00	OUTCAL
59	Co	1	72	37.450	ppb	#REF!	1.56	2000.00	>RL
60	Ni	1	72	50.020	ppb	#REF!	2.52	2000.00	>RL
63	Cu	1	72	25.520	ppb	#REF!	1.35	2000.00	>RL
66	Zn	1	72	280.700	ppb	#REF!	1.73	2000.00	>RL
75	As	1	72	26.300	ppb	#REF!	1.50	2000.00	>RL
78	Se	1	72	20.810	ppb	#REF!	1.32	2000.00	>RL
88	Sr	2	115	491.500	ppb	#REF!	1.74	2000.00	>RL
95	Mo	2	115	2.131	ppb	#REF!	4.07	2000.00	J
107	Ag	2	115	0.239	ppb	#REF!	3.07	500.00	ND
111	Cd	2	115	1.067	ppb	#REF!	15.71	2000.00	J
118	Sn	2	115	5.944	ppb	#REF!	2.04	2000.00	ND
121	Sb	2	115	2.740	ppb	#REF!	1.26	500.00	J
137	Ba	2	115	454.600	ppb	#REF!	2.11	2000.00	>RL
205	Tl	2	209	0.681	ppb	#REF!	0.75	2000.00	ND
208	Pb	2	209	153.200	ppb	#REF!	1.04	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5578.12	4.37	22.89	-24366.0	70 - 120	ISFail
45	Sc	1	125011.87	1.22	168636.11	74.1	70 - 120	
45	Sc	2	3114658.30	2.28	4411244.50	70.6	70 - 120	
72	Ge	1	73699.93	1.31	100925.69	73.0	70 - 120	
115	In	2	5184989.00	1.41	6534497.50	79.3	70 - 120	
209	Bi	2	3910650.30	1.07	4845836.50	80.7	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\086SMPL.D\086SMPL.D#

Date Acquired:	May 26 2016 07:35 pm	Sample Name:	**1605135-29A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	76.570	ppb	#REF!	1.87	2000.00	>RL
9	Be	2	45	2.534	ppb	#REF!	4.43	2000.00	>RL
11	B	2	45	93.550	ppb	#REF!	1.66	2000.00	>RL
23	Na	1	45	5788.000	ppb	#REF!	1.15	25000.00	>RL
24	Mg	1	45	14530.000	ppb	#REF!	0.69	25000.00	>RL
27	Al	1	45	67220.000	ppb	#REF!	1.08	10000.00	OUTCAL
39	K	1	45	13820.000	ppb	#REF!	0.58	25000.00	>RL
44	Ca	2	45	97120.000	ppb	#REF!	1.91	25000.00	OUTCAL
47	Ti	1	45	159.500	ppb	#REF!	0.81	2000.00	>RL
51	V	1	45	102.800	ppb	#REF!	1.08	2000.00	>RL
52	Cr	1	45	60.560	ppb	#REF!	1.53	2000.00	>RL
55	Mn	1	45	369.000	ppb	#REF!	1.62	2000.00	>RL
56	Fe	1	72	75790.000	ppb	#REF!	1.65	10000.00	OUTCAL
59	Co	1	72	26.110	ppb	#REF!	1.18	2000.00	>RL
60	Ni	1	72	38.250	ppb	#REF!	0.80	2000.00	>RL
63	Cu	1	72	11.700	ppb	#REF!	1.09	2000.00	>RL
66	Zn	1	72	173.200	ppb	#REF!	1.40	2000.00	>RL
75	As	1	72	21.100	ppb	#REF!	0.83	2000.00	>RL
78	Se	1	72	18.990	ppb	#REF!	3.28	2000.00	>RL
88	Sr	2	115	405.500	ppb	#REF!	1.16	2000.00	>RL
95	Mo	2	115	1.127	ppb	#REF!	3.75	2000.00	ND
107	Ag	2	115	0.108	ppb	#REF!	2.32	500.00	ND
111	Cd	2	115	0.761	ppb	#REF!	4.96	2000.00	J
118	Sn	2	115	5.068	ppb	#REF!	1.24	2000.00	ND
121	Sb	2	115	0.232	ppb	#REF!	4.24	500.00	ND
137	Ba	2	115	747.800	ppb	#REF!	1.90	2000.00	>RL
205	Tl	2	209	0.440	ppb	#REF!	2.95	2000.00	ND
208	Pb	2	209	33.330	ppb	#REF!	1.29	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5352.31	7.27	RHigh	22.89	-23379.6	70 - 120	ISFail
45	Sc	1	131387.20	0.66		168636.11	77.9	70 - 120	
45	Sc	2	3228110.00	1.09		4411244.50	73.2	70 - 120	
72	Ge	1	77098.70	0.49		100925.69	76.4	70 - 120	
115	In	2	5413470.00	1.94		6534497.50	82.8	70 - 120	
209	Bi	2	4051489.50	1.12		4845836.50	83.6	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\087SMPL.D\087SMPL.D#

Date Acquired:	May 26 2016 07:41 pm	Sample Name:	**1605135-30A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	69.790	ppb	#REF!	3.89	2000.00	>RL
9	Be	2	45	1.949	ppb	#REF!	6.30	2000.00	>RL
11	B	2	45	94.560	ppb	#REF!	6.63	2000.00	>RL
23	Na	1	45	6257.000	ppb	#REF!	1.42	25000.00	>RL
24	Mg	1	45	10780.000	ppb	#REF!	2.44	25000.00	>RL
27	Al	1	45	53170.000	ppb	#REF!	0.15	10000.00	OUTCAL
39	K	1	45	11220.000	ppb	#REF!	0.24	25000.00	>RL
44	Ca	2	45	225000.000	ppb	#REF!	6.23	25000.00	OUTCAL
47	Ti	1	45	165.000	ppb	#REF!	2.45	2000.00	>RL
51	V	1	45	81.500	ppb	#REF!	0.50	2000.00	>RL
52	Cr	1	45	51.460	ppb	#REF!	1.32	2000.00	>RL
55	Mn	1	45	213.800	ppb	#REF!	0.21	2000.00	>RL
56	Fe	1	72	62120.000	ppb	#REF!	0.64	10000.00	OUTCAL
59	Co	1	72	19.210	ppb	#REF!	1.43	2000.00	>RL
60	Ni	1	72	32.410	ppb	#REF!	1.95	2000.00	>RL
63	Cu	1	72	10.710	ppb	#REF!	0.33	2000.00	>RL
66	Zn	1	72	161.800	ppb	#REF!	1.58	2000.00	>RL
75	As	1	72	17.800	ppb	#REF!	2.09	2000.00	>RL
78	Se	1	72	15.080	ppb	#REF!	5.49	2000.00	>RL
88	Sr	2	115	652.900	ppb	#REF!	4.45	2000.00	>RL
95	Mo	2	115	1.397	ppb	#REF!	9.05	2000.00	ND
107	Ag	2	115	0.088	ppb	#REF!	12.93	500.00	ND
111	Cd	2	115	0.626	ppb	#REF!	7.34	2000.00	J
118	Sn	2	115	4.875	ppb	#REF!	4.74	2000.00	ND
121	Sb	2	115	0.189	ppb	#REF!	9.60	500.00	ND
137	Ba	2	115	150.200	ppb	#REF!	4.67	2000.00	>RL
205	Tl	2	209	0.343	ppb	#REF!	0.70	2000.00	ND
208	Pb	2	209	24.720	ppb	#REF!	4.85	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4733.26	7.58	RHigh	22.89	-20675.5	70 - 120	ISFail
45	Sc	1	125181.12	0.33		168636.11	74.2	70 - 120	
45	Sc	2	3264823.30	4.81		4411244.50	74.0	70 - 120	
72	Ge	1	72122.76	0.28		100925.69	71.5	70 - 120	
115	In	2	5518748.00	4.02		6534497.50	84.5	70 - 120	
209	Bi	2	4151117.00	4.75		4845836.50	85.7	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\088SMPL.D\088SMPL.D#

Date Acquired:	May 26 2016 07:47 pm	Sample Name:	**1605135-31A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	131.700	ppb	#REF!	1.46	2000.00	>RL
9	Be	2	45	2.730	ppb	#REF!	1.41	2000.00	>RL
11	B	2	45	150.600	ppb	#REF!	2.40	2000.00	>RL
23	Na	1	45	12130.000	ppb	#REF!	1.16	25000.00	>RL
24	Mg	1	45	15420.000	ppb	#REF!	1.87	25000.00	>RL
27	Al	1	45	79110.000	ppb	#REF!	2.44	10000.00	OUTCAL
39	K	1	45	14380.000	ppb	#REF!	1.71	25000.00	>RL
44	Ca	2	45	134300.000	ppb	#REF!	2.81	25000.00	OUTCAL
47	Ti	1	45	155.500	ppb	#REF!	3.02	2000.00	>RL
51	V	1	45	122.400	ppb	#REF!	2.31	2000.00	>RL
52	Cr	1	45	83.630	ppb	#REF!	1.92	2000.00	>RL
55	Mn	1	45	193.400	ppb	#REF!	1.91	2000.00	>RL
56	Fe	1	72	106300.000	ppb	#REF!	2.22	10000.00	OUTCAL
59	Co	1	72	31.140	ppb	#REF!	1.56	2000.00	>RL
60	Ni	1	72	51.970	ppb	#REF!	1.23	2000.00	>RL
63	Cu	1	72	12.700	ppb	#REF!	1.45	2000.00	>RL
66	Zn	1	72	299.000	ppb	#REF!	2.13	2000.00	>RL
75	As	1	72	25.900	ppb	#REF!	1.99	2000.00	>RL
78	Se	1	72	17.770	ppb	#REF!	2.77	2000.00	>RL
88	Sr	2	115	873.800	ppb	#REF!	1.58	2000.00	>RL
95	Mo	2	115	2.368	ppb	#REF!	5.95	2000.00	J
107	Ag	2	115	0.102	ppb	#REF!	8.25	500.00	ND
111	Cd	2	115	0.640	ppb	#REF!	7.99	2000.00	J
118	Sn	2	115	5.952	ppb	#REF!	1.49	2000.00	ND
121	Sb	2	115	0.070	ppb	#REF!	8.65	500.00	ND
137	Ba	2	115	110.700	ppb	#REF!	1.99	2000.00	>RL
205	Tl	2	209	0.426	ppb	#REF!	4.00	2000.00	ND
208	Pb	2	209	30.130	ppb	#REF!	0.91	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-7792.75	7.93	RHigh	22.89	-34039.8	70 - 120	ISFail
45	Sc	1	121287.35	0.74		168636.11	71.9	70 - 120	
45	Sc	2	2994070.30	2.10		4411244.50	67.9	70 - 120	ISFail
72	Ge	1	71254.98	0.89		100925.69	70.6	70 - 120	
115	In	2	5101193.00	1.71		6534497.50	78.1	70 - 120	
209	Bi	2	3816838.30	0.96		4845836.50	78.8	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\089CCV1.D\089CCV1.D#

Date Acquired:	May 26 2016 07:53 pm	Sample Name:	**CCV4-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	194.90	ppb	1.15	200.00	90 -	110	97.5	
9	Be	2	45	183.60	ppb	1.51	200.00	90 -	110	91.8	
11	B	2	45	166.10	ppb	0.73	200.00	90 -	110	83.1	Fail
23	Na	1	45	4835.00	ppb	1.24	5000.00	90 -	110	96.7	
24	Mg	1	45	4709.00	ppb	1.67	5000.00	90 -	110	94.2	
27	Al	1	45	5035.00	ppb	1.23	5000.00	90 -	110	100.7	
39	K	1	45	4920.00	ppb	1.47	5000.00	90 -	110	98.4	
44	Ca	2	45	4849.00	ppb	0.64	5000.00	90 -	110	97.0	
47	Ti	1	45	204.00	ppb	0.92	200.00	90 -	110	102.0	
51	V	1	45	192.30	ppb	1.34	200.00	90 -	110	96.2	
52	Cr	1	45	195.30	ppb	2.02	200.00	90 -	110	97.7	
55	Mn	1	45	203.40	ppb	2.05	200.00	90 -	110	101.7	
56	Fe	1	72	5053.00	ppb	2.37	5000.00	90 -	110	101.1	
59	Co	1	72	190.90	ppb	1.55	200.00	90 -	110	95.5	
60	Ni	1	72	184.60	ppb	1.22	200.00	90 -	110	92.3	
63	Cu	1	72	192.40	ppb	0.89	200.00	90 -	110	96.2	
66	Zn	1	72	200.00	ppb	0.98	200.00	90 -	110	100.0	
75	As	1	72	203.10	ppb	1.05	200.00	90 -	110	101.6	
78	Se	1	72	202.30	ppb	0.85	200.00	90 -	110	101.2	
88	Sr	2	115	201.90	ppb	0.91	200.00	90 -	110	101.0	
95	Mo	2	115	180.60	ppb	0.97	200.00	90 -	110	90.3	
107	Ag	2	115	185.30	ppb	1.35	200.00	90 -	110	92.7	
111	Cd	2	115	189.40	ppb	1.03	200.00	90 -	110	94.7	
118	Sn	2	115	192.50	ppb	1.87	200.00	90 -	110	96.3	
121	Sb	2	115	196.70	ppb	1.14	200.00	90 -	110	98.4	
137	Ba	2	115	195.10	ppb	0.73	200.00	90 -	110	97.6	
205	Tl	2	209	201.90	ppb	2.00	200.00	90 -	110	101.0	
208	Pb	2	209	191.20	ppb	0.47	200.00	90 -	110	95.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-38250.51	1.03	22.89	-167083.5	70 -	120	ISFail
45	Sc	1	118311.65	0.88	168636.11	70.2	70 -	120	
45	Sc	2	2978509.80	1.08	4411244.50	67.5	70 -	120	ISFail
72	Ge	1	71241.90	0.55	100925.69	70.6	70 -	120	
115	In	2	5126225.50	1.05	6534497.50	78.4	70 -	120	
209	Bi	2	4008607.50	0.13	4845836.50	82.7	70 -	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\091LCVL.D\091LCVL.D#

Date Acquired:	May 26 2016 08:05 pm	Sample Name:	**LCVL4-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	9.47	ppb	1.74	5.00	70 -	130	189.4	Fail
9	Be	2	45	1.03	ppb	8.28	1.00	70 -	130	102.7	
11	B	2	45	17.36	ppb	1.55	20.00	70 -	130	86.8	
23	Na	1	45	107.60	ppb	0.87	100.00	70 -	130	107.6	
24	Mg	1	45	103.40	ppb	2.61	100.00	70 -	130	103.4	
27	Al	1	45	117.20	ppb	3.33	100.00	70 -	130	117.2	
39	K	1	45	113.40	ppb	5.02	100.00	70 -	130	113.4	
44	Ca	2	45	140.30	ppb	3.24	100.00	70 -	130	140.3	Fail
47	Ti	1	45	4.93	ppb	20.87	5.00	70 -	130	98.7	
51	V	1	45	1.00	ppb	2.99	1.00	70 -	130	99.7	
52	Cr	1	45	4.94	ppb	1.43	5.00	70 -	130	98.8	
55	Mn	1	45	5.10	ppb	2.38	5.00	70 -	130	102.0	
56	Fe	1	72	120.60	ppb	2.14	100.00	70 -	130	120.6	
59	Co	1	72	4.69	ppb	2.18	5.00	70 -	130	93.8	
60	Ni	1	72	4.51	ppb	4.02	5.00	70 -	130	90.3	
63	Cu	1	72	4.70	ppb	2.12	5.00	70 -	130	94.1	
66	Zn	1	72	5.07	ppb	3.91	5.00	70 -	130	101.4	
75	As	1	72	5.10	ppb	2.75	5.00	70 -	130	102.0	
78	Se	1	72	5.28	ppb	3.34	5.00	70 -	130	105.7	
88	Sr	2	115	5.00	ppb	1.76	5.00	70 -	130	100.0	
95	Mo	2	115	4.49	ppb	1.92	5.00	70 -	130	89.8	
107	Ag	2	115	1.90	ppb	2.65	2.00	70 -	130	95.1	
111	Cd	2	115	0.99	ppb	6.15	1.00	70 -	130	99.2	
118	Sn	2	115	4.89	ppb	3.56	5.00	70 -	130	97.9	
121	Sb	2	115	2.03	ppb	2.11	2.00	70 -	130	101.3	
137	Ba	2	115	4.99	ppb	3.16	5.00	70 -	130	99.8	
205	Tl	2	209	0.98	ppb	2.84	1.00	70 -	130	98.3	
208	Pb	2	209	1.03	ppb	0.83	1.00	70 -	130	103.1	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigh	-808.14	10.51	22.89	-3530.0	70 -	120	ISFail
45	Sc	1		114453.98	0.21	168636.11	67.9	70 -	120	ISFail
45	Sc	2		2929802.00	1.18	4411244.50	66.4	70 -	120	ISFail
72	Ge	1		70050.45	1.13	100925.69	69.4	70 -	120	ISFail
115	In	2		4953002.00	1.29	6534497.50	75.8	70 -	120	
209	Bi	2		4003718.80	1.92	4845836.50	82.6	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\092_CCB.D\092_CCB.D#

Date Acquired:	May 26 2016 08:12 pm	Sample Name:	**CCB4-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.130 ppb	5.27	2.00	2.00	
9	Be	2	45	0.023 ppb	48.60	0.40	0.30	
11	B	2	45	0.638 ppb	3.77	10.00	10.00	
23	Na	1	45	10.350 ppb	2.78	50.00	#####	
24	Mg	1	45	2.180 ppb	19.06	50.00	#####	
27	Al	1	45	10.710 ppb	9.01	50.00	10.00	FailAq
39	K	1	45	10.560 ppb	1.43	50.00	#####	
44	Ca	2	45	23.000 ppb	8.86	50.00	#####	
47	Ti	1	45	-0.010 ppb	173.20	4.00	3.00	
51	V	1	45	0.025 ppb	8.08	4.00	3.00	
52	Cr	1	45	0.034 ppb	31.13	2.00	2.00	
55	Mn	1	45	0.111 ppb	22.26	2.00	3.00	
56	Fe	1	72	13.990 ppb	11.07	50.00	30.00	
59	Co	1	72	0.015 ppb	11.48	2.00	3.00	
60	Ni	1	72	0.031 ppb	16.01	2.00	3.00	
63	Cu	1	72	0.043 ppb	15.14	2.00	2.00	
66	Zn	1	72	-0.031 ppb	10.91	4.00	2.00	
75	As	1	72	0.087 ppb	5.53	2.00	2.00	
78	Se	1	72	0.094 ppb	34.64	0.60	2.00	
88	Sr	2	115	0.143 ppb	2.47	4.00	3.00	
95	Mo	2	115	0.040 ppb	20.62	2.00	2.00	
107	Ag	2	115	0.026 ppb	22.11	0.40	1.00	
111	Cd	2	115	0.023 ppb	45.08	0.40	0.30	
118	Sn	2	115	0.020 ppb	11.13	20.00	3.00	
121	Sb	2	115	0.029 ppb	10.18	2.00	0.80	
137	Ba	2	115	0.035 ppb	24.17	2.00	3.00	
205	Tl	2	209	0.051 ppb	4.58	2.00	0.50	
208	Pb	2	209	0.048 ppb	3.87	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-8.51	189.64	22.89	-37.2	70 - 120	ISFail
45	Sc	1		116262.53	1.20	168636.11	68.9	70 - 120	ISFail
45	Sc	2		3078728.80	2.20	4411244.50	69.8	70 - 120	ISFail
72	Ge	1		71209.09	1.02	100925.69	70.6	70 - 120	
115	In	2		5207976.00	0.98	6534497.50	79.7	70 - 120	
209	Bi	2		4106173.30	1.95	4845836.50	84.7	70 - 120	

PB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\093__PB.D\093__PB.D#

Date Acquired:	May 26 2016 08:18 pm	Sample Name:	**MB-75292**
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.128	ppb	12.98	2.0	8.00	
9	Be	2	45	0.014	ppb	21.65	0.4	1.20	
11	B	2	45	0.426	ppb	2.77	10.0	30.00	
23	Na	1	45	12.180	ppb	2.58	50.0	#####	
24	Mg	1	45	3.507	ppb	16.49	50.0	#####	
27	Al	1	45	5.259	ppb	19.08	50.0	#####	
39	K	1	45	13.790	ppb	2.73	50.0	#####	
44	Ca	2	45	25.270	ppb	6.10	50.0	#####	
47	Ti	1	45	0.222	ppb	69.30	4.0	10.00	
51	V	1	45	0.020	ppb	15.45	4.0	10.00	
52	Cr	1	45	0.229	ppb	5.16	2.0	8.00	
55	Mn	1	45	0.306	ppb	8.32	2.0	8.00	
56	Fe	1	72	24.950	ppb	3.27	50.0	#####	
59	Co	1	72	-0.009	ppb	30.77	2.0	8.00	
60	Ni	1	72	0.620	ppb	2.96	2.0	8.00	
63	Cu	1	72	0.152	ppb	4.96	2.0	8.00	
66	Zn	1	72	2.066	ppb	1.33	4.0	10.00	
75	As	1	72	0.052	ppb	8.89	2.0	4.00	
78	Se	1	72	-0.047	ppb	12.75	0.6	2.00	
88	Sr	2	115	0.091	ppb	5.77	4.0	10.00	
95	Mo	2	115	0.036	ppb	27.74	2.0	8.00	
107	Ag	2	115	0.021	ppb	22.38	0.4	0.80	
111	Cd	2	115	-0.016	ppb	115.54	0.4	1.20	
118	Sn	2	115	4.074	ppb	2.93	20.0	40.00	
121	Sb	2	115	0.008	ppb	18.24	2.0	4.00	
137	Ba	2	115	0.038	ppb	6.06	2.0	8.00	
205	Tl	2	209	0.035	ppb	16.31	2.0	4.00	
208	Pb	2	209	0.061	ppb	2.96	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-20.99	72.04	22.89	-91.7	70 - 120	ISFail
45	Sc	1		120373.62	1.31	168636.11	71.4	70 - 120	
45	Sc	2		3139304.30	2.65	4411244.50	71.2	70 - 120	
72	Ge	1		72606.69	0.39	100925.69	71.9	70 - 120	
115	In	2		5345453.50	2.10	6534497.50	81.8	70 - 120	
209	Bi	2		4250538.00	0.58	4845836.50	87.7	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\094_LCS.D\094_LCS.D#

Date Acquired:	May 26 2016 08:24 pm	Sample Name:	LCS-75292
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	191.20	ppb	0.86	200.00	80 -	120	95.6	
9	Be	2	45	177.50	ppb	1.75	200.00	80 -	120	88.8	
11	B	2	45	166.70	ppb	2.13	200.00	80 -	120	83.4	
23	Na	1	45	4978.00	ppb	1.94	1000.00	80 -	120	497.8	Fail
24	Mg	1	45	4855.00	ppb	1.00	1000.00	80 -	120	485.5	Fail
27	Al	1	45	1024.00	ppb	1.06	1000.00	80 -	120	102.4	
39	K	1	45	5113.00	ppb	0.72	1000.00	80 -	120	511.3	Fail
44	Ca	2	45	4838.00	ppb	2.26	1000.00	80 -	120	483.8	Fail
47	Ti	1	45	205.90	ppb	0.63	200.00	80 -	120	103.0	
51	V	1	45	189.70	ppb	1.09	200.00	80 -	120	94.9	
52	Cr	1	45	191.30	ppb	1.35	200.00	80 -	120	95.7	
55	Mn	1	45	203.30	ppb	1.17	200.00	80 -	120	101.7	
56	Fe	1	72	975.40	ppb	1.02	1000.00	80 -	120	97.5	
59	Co	1	72	188.40	ppb	0.74	200.00	80 -	120	94.2	
60	Ni	1	72	181.40	ppb	0.69	200.00	80 -	120	90.7	
63	Cu	1	72	186.70	ppb	0.92	200.00	80 -	120	93.4	
66	Zn	1	72	191.70	ppb	0.32	200.00	80 -	120	95.9	
75	As	1	72	194.30	ppb	0.42	200.00	80 -	120	97.2	
78	Se	1	72	194.50	ppb	0.76	200.00	80 -	120	97.3	
88	Sr	2	115	198.30	ppb	1.58	200.00	80 -	120	99.2	
95	Mo	2	115	180.20	ppb	1.52	200.00	80 -	120	90.1	
107	Ag	2	115	183.50	ppb	1.56	200.00	80 -	120	91.8	
111	Cd	2	115	183.20	ppb	1.62	200.00	80 -	120	91.6	
118	Sn	2	115	198.40	ppb	1.70	200.00	80 -	120	99.2	
121	Sb	2	115	192.80	ppb	1.58	200.00	80 -	120	96.4	
137	Ba	2	115	197.60	ppb	0.70	200.00	80 -	120	98.8	
205	Tl	2	209	205.30	ppb	1.37	200.00	80 -	120	102.7	
208	Pb	2	209	192.40	ppb	1.52	200.00	80 -	120	96.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-39768.09	1.27	22.89	-173712.5	70 -	120	ISFail
45	Sc	1	121522.96	0.59	168636.11	72.1	70 -	120	
45	Sc	2	3117824.80	1.80	4411244.50	70.7	70 -	120	
72	Ge	1	72444.83	0.84	100925.69	71.8	70 -	120	
115	In	2	5286002.50	1.22	6534497.50	80.9	70 -	120	
209	Bi	2	4142432.50	1.24	4845836.50	85.5	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\095_LCS.D\095_LCS.D#

Date Acquired:	May 26 2016 08:30 pm	Sample Name:	LCSD-75292
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	188.40	ppb	0.66	200.00	80 -	120	94.2	
9	Be	2	45	177.40	ppb	1.17	200.00	80 -	120	88.7	
11	B	2	45	168.40	ppb	1.90	200.00	80 -	120	84.2	
23	Na	1	45	4883.00	ppb	0.93	1000.00	80 -	120	488.3	Fail
24	Mg	1	45	4864.00	ppb	0.89	1000.00	80 -	120	486.4	Fail
27	Al	1	45	1018.00	ppb	1.90	1000.00	80 -	120	101.8	
39	K	1	45	5059.00	ppb	1.37	1000.00	80 -	120	505.9	Fail
44	Ca	2	45	4833.00	ppb	1.45	1000.00	80 -	120	483.3	Fail
47	Ti	1	45	201.60	ppb	4.54	200.00	80 -	120	100.8	
51	V	1	45	190.10	ppb	1.34	200.00	80 -	120	95.1	
52	Cr	1	45	192.70	ppb	1.65	200.00	80 -	120	96.4	
55	Mn	1	45	205.20	ppb	0.82	200.00	80 -	120	102.6	
56	Fe	1	72	980.50	ppb	1.31	1000.00	80 -	120	98.1	
59	Co	1	72	190.00	ppb	1.29	200.00	80 -	120	95.0	
60	Ni	1	72	183.60	ppb	1.04	200.00	80 -	120	91.8	
63	Cu	1	72	189.20	ppb	1.38	200.00	80 -	120	94.6	
66	Zn	1	72	194.20	ppb	0.77	200.00	80 -	120	97.1	
75	As	1	72	194.50	ppb	0.85	200.00	80 -	120	97.3	
78	Se	1	72	196.40	ppb	1.68	200.00	80 -	120	98.2	
88	Sr	2	115	201.60	ppb	2.15	200.00	80 -	120	100.8	
95	Mo	2	115	180.60	ppb	1.28	200.00	80 -	120	90.3	
107	Ag	2	115	186.00	ppb	1.61	200.00	80 -	120	93.0	
111	Cd	2	115	185.00	ppb	2.06	200.00	80 -	120	92.5	
118	Sn	2	115	198.60	ppb	1.71	200.00	80 -	120	99.3	
121	Sb	2	115	193.80	ppb	1.60	200.00	80 -	120	96.9	
137	Ba	2	115	200.20	ppb	1.43	200.00	80 -	120	100.1	
205	Tl	2	209	205.30	ppb	1.59	200.00	80 -	120	102.7	
208	Pb	2	209	192.30	ppb	1.24	200.00	80 -	120	96.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-39499.27	1.18	22.89	-172538.3	70 -	120	ISFail
45	Sc	1	117378.68	0.75	168636.11	69.6	70 -	120	ISFail
45	Sc	2	3150003.00	1.91	4411244.50	71.4	70 -	120	
72	Ge	1	70096.84	0.85	100925.69	69.5	70 -	120	ISFail
115	In	2	5303895.50	0.91	6534497.50	81.2	70 -	120	
209	Bi	2	4188152.00	1.19	4845836.50	86.4	70 -	120	

DT QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\098DT1.D\098DT1.D#

Date Acquired:	May 26 2016 08:48 pm	Sample Name:	**1605144-13A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	8.98	ppb	1.04	-593.58	90 - 110	-7.6	
9	Be	2	45	0.46	ppb	2.27	2.12	90 - 110	109.5	GOOD
11	B	2	45	14.05	ppb	1.90	66.95	90 - 110	104.9	GOOD
23	Na	1	45	226.70	ppb	0.68	1123.00	90 - 110	100.9	GOOD
24	Mg	1	45	2529.00	ppb	0.38	13080.00	90 - 110	96.7	GOOD
27	Al	1	45	12610.00	ppb	1.43	65830.00	90 - 110	95.8	GOOD
39	K	1	45	2767.00	ppb	1.10	13950.00	90 - 110	99.2	GOOD
44	Ca	2	45	10120.00	ppb	2.56	49160.00	90 - 110	102.9	GOOD
47	Ti	1	45	61.15	ppb	2.28	320.30	90 - 110	95.5	GOOD
51	V	1	45	16.80	ppb	1.21	86.37	90 - 110	97.3	GOOD
52	Cr	1	45	11.21	ppb	0.90	56.34	90 - 110	99.5	GOOD
55	Mn	1	45	151.20	ppb	1.47	761.50	90 - 110	99.3	GOOD
56	Fe	1	72	10800.00	ppb	1.02	55130.00	90 - 110	98.0	GOOD
59	Co	1	72	3.69	ppb	1.37	18.96	90 - 110	97.3	GOOD
60	Ni	1	72	6.56	ppb	4.97	32.78	90 - 110	100.0	GOOD
63	Cu	1	72	10.47	ppb	0.29	52.35	90 - 110	100.0	GOOD
66	Zn	1	72	135.80	ppb	1.42	634.20	90 - 110	107.1	GOOD
75	As	1	72	17.74	ppb	1.49	86.88	90 - 110	102.1	GOOD
78	Se	1	72	3.25	ppb	6.44	15.50	90 - 110	104.9	GOOD
88	Sr	2	115	70.04	ppb	1.86	382.20	90 - 110	91.6	GOOD
95	Mo	2	115	0.32	ppb	7.95	1.89	90 - 110	84.7	
107	Ag	2	115	0.15	ppb	3.49	0.66	90 - 110	111.1	
111	Cd	2	115	0.41	ppb	4.23	1.86	90 - 110	108.9	GOOD
118	Sn	2	115	1.58	ppb	2.95	8.19	90 - 110	96.4	GOOD
121	Sb	2	115	0.70	ppb	4.37	3.69	90 - 110	95.2	GOOD
137	Ba	2	115	119.20	ppb	1.87	613.30	90 - 110	97.2	GOOD
205	Tl	2	209	0.17	ppb	6.19	0.71	90 - 110	118.0	
208	Pb	2	209	27.51	ppb	1.56	144.60	90 - 110	95.1	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-593.58	5.65	22.89	-2592.8	70 - 120	ISFail
45	Sc	1		116763.95	0.55	168636.11	69.2	70 - 120	ISFail
45	Sc	2		3108935.80	2.49	4411244.50	70.5	70 - 120	
72	Ge	1		70839.27	0.31	100925.69	70.2	70 - 120	
115	In	2		5248727.50	1.41	6534497.50	80.3	70 - 120	
209	Bi	2		4199692.50	0.98	4845836.50	86.7	70 - 120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\108_PDS.D\108_PDS.D#

Date Acquired:	May 26 2016 09:48 pm	Sample Name:	**1605144-13A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	207.50	ppb	1.36	-21126.95	200	75-125	######	Fail
9	Be	2	45	160.50	ppb	1.82	2.12	200	75-125	79.2	
11	B	2	45	213.40	ppb	2.52	66.95	200	75-125	73.2	Fail
23	Na	1	45	5939.00	ppb	1.82	1123.00	5000	75-125	96.3	
24	Mg	1	45	17520.00	ppb	1.67	13080.00	5000	75-125	88.8	
27	Al	1	45	67470.00	ppb	1.79	65830.00	5000	75-125	32.8	Fail
39	K	1	45	18290.00	ppb	1.67	13950.00	5000	75-125	86.8	
44	Ca	2	45	52880.00	ppb	2.37	49160.00	5000	75-125	74.4	Fail
47	Ti	1	45	504.80	ppb	3.39	320.30	200	75-125	92.3	
51	V	1	45	271.80	ppb	1.87	86.37	200	75-125	92.7	
52	Cr	1	45	243.50	ppb	1.32	56.34	200	75-125	93.6	
55	Mn	1	45	940.40	ppb	1.92	761.50	200	75-125	89.5	
56	Fe	1	72	58770.00	ppb	2.23	55130.00	5000	75-125	72.8	Fail
59	Co	1	72	202.10	ppb	1.41	18.96	200	75-125	91.6	
60	Ni	1	72	204.30	ppb	2.24	32.78	200	75-125	85.8	
63	Cu	1	72	224.10	ppb	0.91	52.35	200	75-125	85.9	
66	Zn	1	72	789.20	ppb	1.86	634.20	200	75-125	77.5	
75	As	1	72	275.70	ppb	1.68	86.88	200	75-125	94.4	
78	Se	1	72	206.70	ppb	2.00	15.50	200	75-125	95.6	
88	Sr	2	115	560.30	ppb	2.10	382.20	200	75-125	89.0	
95	Mo	2	115	178.30	ppb	1.79	1.89	200	75-125	88.2	
107	Ag	2	115	176.90	ppb	1.92	0.66	200	75-125	88.1	
111	Cd	2	115	176.70	ppb	1.85	1.86	200	75-125	87.4	
118	Sn	2	115	205.00	ppb	1.67	8.19	200	75-125	98.4	
121	Sb	2	115	203.20	ppb	1.89	3.69	200	75-125	99.8	
137	Ba	2	115	807.00	ppb	1.45	613.30	200	75-125	96.9	
205	Tl	2	209	206.70	ppb	0.82	0.71	200	75-125	103.0	
208	Pb	2	209	346.90	ppb	0.84	144.60	200	75-125	101.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-21126.95	4.72	22.89	-92285.4	70 - 120	ISFail
45	Sc	1	112236.50	0.85	168636.11	66.6	70 - 120	ISFail
45	Sc	2	3202520.30	2.04	4411244.50	72.6	70 - 120	
72	Ge	1	66796.18	0.81	100925.69	66.2	70 - 120	ISFail
115	In	2	5455923.50	1.19	6534497.50	83.5	70 - 120	
209	Bi	2	4169810.80	1.29	4845836.50	86.0	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\109_MS.D\109_MS.D#

Date Acquired:	May 26 2016 09:54 pm	Sample Name:	**1605144-13A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	205.10	ppb	1.62	########	200	80-120	######	Fail
9	Be	2	45	156.50	ppb	2.40	2.12	200	80-120	77.2	Fail
11	B	2	45	205.50	ppb	3.00	66.95	200	80-120	69.3	Fail
23	Na	1	45	5661.00	ppb	1.19	1123.00	1000	80-120	453.8	Fail
24	Mg	1	45	16920.00	ppb	0.95	13080.00	1000	80-120	384.0	Fail
27	Al	1	45	65760.00	ppb	2.57	65830.00	1000	80-120	-7.0	Fail
39	K	1	45	18160.00	ppb	0.99	13950.00	1000	80-120	421.0	Fail
44	Ca	2	45	51160.00	ppb	3.01	49160.00	1000	80-120	200.0	Fail
47	Ti	1	45	498.10	ppb	1.59	320.30	200	80-120	88.9	
51	V	1	45	262.20	ppb	0.54	86.37	200	80-120	87.9	
52	Cr	1	45	234.10	ppb	1.44	56.34	200	80-120	88.9	
55	Mn	1	45	937.50	ppb	1.10	761.50	200	80-120	88.0	
56	Fe	1	72	53580.00	ppb	1.95	55130.00	1000	80-120	-155.0	Fail
59	Co	1	72	193.30	ppb	0.77	18.96	200	80-120	87.2	
60	Ni	1	72	198.60	ppb	1.25	32.78	200	80-120	82.9	
63	Cu	1	72	222.90	ppb	0.82	52.35	200	80-120	85.3	
66	Zn	1	72	763.70	ppb	0.77	634.20	200	80-120	64.7	Fail
75	As	1	72	266.90	ppb	1.01	86.88	200	80-120	90.0	
78	Se	1	72	202.10	ppb	2.35	15.50	200	80-120	93.3	
88	Sr	2	115	552.30	ppb	2.74	382.20	200	80-120	85.0	
95	Mo	2	115	166.80	ppb	2.63	1.89	200	80-120	82.5	
107	Ag	2	115	171.00	ppb	3.15	0.66	200	80-120	85.2	
111	Cd	2	115	177.30	ppb	2.51	1.86	200	80-120	87.7	
118	Sn	2	115	191.10	ppb	2.91	8.19	200	80-120	91.5	
121	Sb	2	115	76.77	ppb	3.00	3.69	200	80-120	36.5	Fail
137	Ba	2	115	789.30	ppb	2.58	613.30	200	80-120	88.0	
205	Tl	2	209	201.50	ppb	2.92	0.71	200	80-120	100.4	
208	Pb	2	209	333.10	ppb	2.70	144.60	200	80-120	94.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-37867.16	1.39	22.89	########	70 - 120	ISFail
45	Sc	1	117034.37	0.50	168636.11	69.4	70 - 120	ISFail
45	Sc	2	3150471.00	3.35	4411244.50	71.4	70 - 120	
72	Ge	1	69389.35	0.77	100925.69	68.8	70 - 120	ISFail
115	In	2	5354111.00	3.09	6534497.50	81.9	70 - 120	
209	Bi	2	4177820.30	2.82	4845836.50	86.2	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\110_MS.D\110_MS.D#

Date Acquired:	May 26 2016 10:00 pm	Sample Name:	**1605144-13A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 26 2016 12:20 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	197.10	ppb	1.14	########	200	80-120	######	Fail
9	Be	2	45	151.80	ppb	1.52	2.12	200	80-120	74.8	Fail
11	B	2	45	202.90	ppb	2.02	66.95	200	80-120	68.0	Fail
23	Na	1	45	5365.00	ppb	2.41	1123.00	1000	80-120	424.2	Fail
24	Mg	1	45	15900.00	ppb	0.42	13080.00	1000	80-120	282.0	Fail
27	Al	1	45	60640.00	ppb	0.77	65830.00	1000	80-120	-519.0	Fail
39	K	1	45	16850.00	ppb	1.21	13950.00	1000	80-120	290.0	Fail
44	Ca	2	45	46780.00	ppb	2.40	49160.00	1000	80-120	-238.0	Fail
47	Ti	1	45	474.90	ppb	0.75	320.30	200	80-120	77.3	Fail
51	V	1	45	250.00	ppb	0.49	86.37	200	80-120	81.8	
52	Cr	1	45	224.00	ppb	0.51	56.34	200	80-120	83.8	
55	Mn	1	45	839.00	ppb	0.08	761.50	200	80-120	38.8	Fail
56	Fe	1	72	48770.00	ppb	0.58	55130.00	1000	80-120	-636.0	Fail
59	Co	1	72	185.90	ppb	0.53	18.96	200	80-120	83.5	
60	Ni	1	72	190.10	ppb	0.41	32.78	200	80-120	78.7	Fail
63	Cu	1	72	210.00	ppb	0.26	52.35	200	80-120	78.8	Fail
66	Zn	1	72	696.90	ppb	0.38	634.20	200	80-120	31.3	Fail
75	As	1	72	254.20	ppb	0.91	86.88	200	80-120	83.7	
78	Se	1	72	194.50	ppb	1.90	15.50	200	80-120	89.5	
88	Sr	2	115	499.90	ppb	1.22	382.20	200	80-120	58.8	Fail
95	Mo	2	115	159.40	ppb	1.90	1.89	200	80-120	78.8	Fail
107	Ag	2	115	164.10	ppb	1.42	0.66	200	80-120	81.7	
111	Cd	2	115	169.10	ppb	1.70	1.86	200	80-120	83.6	
118	Sn	2	115	184.40	ppb	1.66	8.19	200	80-120	88.1	
121	Sb	2	115	72.04	ppb	1.79	3.69	200	80-120	34.2	Fail
137	Ba	2	115	725.20	ppb	2.03	613.30	200	80-120	56.0	Fail
205	Tl	2	209	196.40	ppb	2.10	0.71	200	80-120	97.8	
208	Pb	2	209	317.00	ppb	1.96	144.60	200	80-120	86.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-35166.70	3.43	22.89	########	70 - 120	ISFail
45	Sc	1	110448.47	1.03	168636.11	65.5	70 - 120	ISFail
45	Sc	2	3051043.30	1.75	4411244.50	69.2	70 - 120	ISFail
72	Ge	1	65720.63	1.56	100925.69	65.1	70 - 120	ISFail
115	In	2	5264997.00	1.16	6534497.50	80.6	70 - 120	
209	Bi	2	4189733.30	1.81	4845836.50	86.5	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\112CCV1.D\112CCV1.D#

Date Acquired:	May 26 2016 10:12 pm	Sample Name:	**CCV5-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	172.70 ppb	1.53	200.00	90 - 110	86.4	Fail
9	Be	2	45	167.70 ppb	3.65	200.00	90 - 110	83.9	Fail
11	B	2	45	158.20 ppb	3.07	200.00	90 - 110	79.1	Fail
23	Na	1	45	4593.00 ppb	0.76	5000.00	90 - 110	91.9	
24	Mg	1	45	4577.00 ppb	1.39	5000.00	90 - 110	91.5	
27	Al	1	45	4890.00 ppb	1.57	5000.00	90 - 110	97.8	
39	K	1	45	4828.00 ppb	1.12	5000.00	90 - 110	96.6	
44	Ca	2	45	4590.00 ppb	3.32	5000.00	90 - 110	91.8	
47	Ti	1	45	196.60 ppb	1.07	200.00	90 - 110	98.3	
51	V	1	45	187.90 ppb	1.12	200.00	90 - 110	94.0	
52	Cr	1	45	189.00 ppb	1.77	200.00	90 - 110	94.5	
55	Mn	1	45	202.80 ppb	1.14	200.00	90 - 110	101.4	
56	Fe	1	72	4828.00 ppb	1.30	5000.00	90 - 110	96.6	
59	Co	1	72	184.90 ppb	1.19	200.00	90 - 110	92.5	
60	Ni	1	72	178.30 ppb	1.25	200.00	90 - 110	89.2	Fail
63	Cu	1	72	185.30 ppb	1.23	200.00	90 - 110	92.7	
66	Zn	1	72	198.80 ppb	1.94	200.00	90 - 110	99.4	
75	As	1	72	200.80 ppb	1.09	200.00	90 - 110	100.4	
78	Se	1	72	206.30 ppb	0.77	200.00	90 - 110	103.2	
88	Sr	2	115	195.90 ppb	2.20	200.00	90 - 110	98.0	
95	Mo	2	115	175.30 ppb	2.45	200.00	90 - 110	87.7	Fail
107	Ag	2	115	179.70 ppb	2.42	200.00	90 - 110	89.9	Fail
111	Cd	2	115	182.30 ppb	2.56	200.00	90 - 110	91.2	
118	Sn	2	115	189.40 ppb	2.79	200.00	90 - 110	94.7	
121	Sb	2	115	193.40 ppb	2.93	200.00	90 - 110	96.7	
137	Ba	2	115	197.60 ppb	2.13	200.00	90 - 110	98.8	
205	Tl	2	209	200.60 ppb	2.14	200.00	90 - 110	100.3	
208	Pb	2	209	187.40 ppb	2.95	200.00	90 - 110	93.7	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-33386.47	2.04	22.89	-145836.7	70 - 120	ISFail
45	Sc	1	104854.91	0.50	168636.11	62.2	70 - 120	ISFail
45	Sc	2	2922918.80	1.58	4411244.50	66.3	70 - 120	ISFail
72	Ge	1	63637.11	0.95	100925.69	63.1	70 - 120	ISFail
115	In	2	5068153.50	0.98	6534497.50	77.6	70 - 120	
209	Bi	2	4049706.50	1.87	4845836.50	83.6	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\114LCVL.D\114LCVL.D#

Date Acquired:	May 26 2016 10:24 pm	Sample Name:	**LCVL5-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	8.68	ppb	0.89	5.00	70 -	130	173.5	Fail
9	Be	2	45	0.92	ppb	6.75	1.00	70 -	130	92.1	
11	B	2	45	17.00	ppb	1.64	20.00	70 -	130	85.0	
23	Na	1	45	103.60	ppb	0.18	100.00	70 -	130	103.6	
24	Mg	1	45	99.40	ppb	1.12	100.00	70 -	130	99.4	
27	Al	1	45	115.60	ppb	3.30	100.00	70 -	130	115.6	
39	K	1	45	110.10	ppb	0.80	100.00	70 -	130	110.1	
44	Ca	2	45	106.60	ppb	2.01	100.00	70 -	130	106.6	
47	Ti	1	45	5.10	ppb	11.60	5.00	70 -	130	102.0	
51	V	1	45	1.11	ppb	3.67	1.00	70 -	130	111.4	
52	Cr	1	45	5.00	ppb	0.86	5.00	70 -	130	100.0	
55	Mn	1	45	5.15	ppb	2.53	5.00	70 -	130	102.9	
56	Fe	1	72	107.90	ppb	0.70	100.00	70 -	130	107.9	
59	Co	1	72	4.68	ppb	1.23	5.00	70 -	130	93.6	
60	Ni	1	72	4.51	ppb	3.73	5.00	70 -	130	90.1	
63	Cu	1	72	4.75	ppb	0.74	5.00	70 -	130	95.0	
66	Zn	1	72	5.11	ppb	3.55	5.00	70 -	130	102.2	
75	As	1	72	5.25	ppb	2.49	5.00	70 -	130	104.9	
78	Se	1	72	5.75	ppb	1.98	5.00	70 -	130	115.0	
88	Sr	2	115	4.75	ppb	1.04	5.00	70 -	130	95.1	
95	Mo	2	115	4.35	ppb	2.32	5.00	70 -	130	87.1	
107	Ag	2	115	1.89	ppb	2.68	2.00	70 -	130	94.3	
111	Cd	2	115	0.94	ppb	10.29	1.00	70 -	130	94.1	
118	Sn	2	115	4.90	ppb	3.63	5.00	70 -	130	98.0	
121	Sb	2	115	2.03	ppb	0.50	2.00	70 -	130	101.5	
137	Ba	2	115	5.28	ppb	0.88	5.00	70 -	130	105.5	
205	Tl	2	209	1.08	ppb	4.96	1.00	70 -	130	108.3	
208	Pb	2	209	1.04	ppb	1.75	1.00	70 -	130	103.8	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigl	-712.84	6.55	22.89	-3113.8	70 -	120	ISFail
45	Sc	1		107145.51	0.23	168636.11	63.5	70 -	120	ISFail
45	Sc	2		2990691.00	1.29	4411244.50	67.8	70 -	120	ISFail
72	Ge	1		66632.87	0.34	100925.69	66.0	70 -	120	ISFail
115	In	2		5258168.00	1.01	6534497.50	80.5	70 -	120	
209	Bi	2		4347028.00	1.33	4845836.50	89.7	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\115_CCB.D\115_CCB.D#

Date Acquired:	May 26 2016 10:30 pm	Sample Name:	**CCB5-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.136 ppb	5.92	2.00	2.00	
9	Be	2	45	0.036 ppb	6.25	0.40	0.30	
11	B	2	45	0.668 ppb	7.18	10.00	10.00	
23	Na	1	45	6.527 ppb	4.37	50.00	#####	
24	Mg	1	45	1.478 ppb	7.78	50.00	#####	
27	Al	1	45	8.465 ppb	10.61	50.00	10.00	
39	K	1	45	10.320 ppb	4.38	50.00	#####	
44	Ca	2	45	6.934 ppb	1.96	50.00	#####	
47	Ti	1	45	-0.007 ppb	173.20	4.00	3.00	
51	V	1	45	0.063 ppb	7.62	4.00	3.00	
52	Cr	1	45	0.051 ppb	21.36	2.00	2.00	
55	Mn	1	45	0.132 ppb	14.78	2.00	3.00	
56	Fe	1	72	7.213 ppb	5.77	50.00	30.00	
59	Co	1	72	0.039 ppb	7.06	2.00	3.00	
60	Ni	1	72	0.037 ppb	20.88	2.00	3.00	
63	Cu	1	72	0.058 ppb	2.37	2.00	2.00	
66	Zn	1	72	0.099 ppb	11.64	4.00	2.00	
75	As	1	72	0.096 ppb	11.77	2.00	2.00	
78	Se	1	72	0.168 ppb	13.48	0.60	2.00	
88	Sr	2	115	0.065 ppb	5.83	4.00	3.00	
95	Mo	2	115	0.043 ppb	16.68	2.00	2.00	
107	Ag	2	115	0.043 ppb	17.11	0.40	1.00	
111	Cd	2	115	0.031 ppb	26.58	0.40	0.30	
118	Sn	2	115	0.046 ppb	8.26	20.00	3.00	
121	Sb	2	115	0.041 ppb	14.98	2.00	0.80	
137	Ba	2	115	0.080 ppb	9.27	2.00	3.00	
205	Tl	2	209	0.077 ppb	8.84	2.00	0.50	
208	Pb	2	209	0.069 ppb	2.30	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-36.00	68.42	22.89	-157.2	70 - 120	ISFail
45	Sc	1		105745.16	0.46	168636.11	62.7	70 - 120	ISFail
45	Sc	2		3022424.80	1.42	4411244.50	68.5	70 - 120	ISFail
72	Ge	1		65665.65	0.63	100925.69	65.1	70 - 120	ISFail
115	In	2		5227148.00	1.12	6534497.50	80.0	70 - 120	
209	Bi	2		4190346.50	0.96	4845836.50	86.5	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\120CCV1.D\120CCV1.D#

Date Acquired:	May 26 2016 11:00 pm	Sample Name:	**CCV6-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	170.90	ppb	0.10	200.00	90 -	110	85.5	Fail
9	Be	2	45	167.60	ppb	1.11	200.00	90 -	110	83.8	Fail
11	B	2	45	155.20	ppb	2.05	200.00	90 -	110	77.6	Fail
23	Na	1	45	4580.00	ppb	1.22	5000.00	90 -	110	91.6	
24	Mg	1	45	4586.00	ppb	1.56	5000.00	90 -	110	91.7	
27	Al	1	45	5047.00	ppb	2.06	5000.00	90 -	110	100.9	
39	K	1	45	4940.00	ppb	1.24	5000.00	90 -	110	98.8	
44	Ca	2	45	4760.00	ppb	1.57	5000.00	90 -	110	95.2	
47	Ti	1	45	200.00	ppb	2.11	200.00	90 -	110	100.0	
51	V	1	45	188.50	ppb	1.49	200.00	90 -	110	94.3	
52	Cr	1	45	190.00	ppb	2.18	200.00	90 -	110	95.0	
55	Mn	1	45	205.50	ppb	1.67	200.00	90 -	110	102.8	
56	Fe	1	72	4926.00	ppb	1.61	5000.00	90 -	110	98.5	
59	Co	1	72	184.50	ppb	1.47	200.00	90 -	110	92.3	
60	Ni	1	72	179.10	ppb	2.23	200.00	90 -	110	89.6	Fail
63	Cu	1	72	185.60	ppb	1.43	200.00	90 -	110	92.8	
66	Zn	1	72	198.50	ppb	0.63	200.00	90 -	110	99.3	
75	As	1	72	200.90	ppb	1.39	200.00	90 -	110	100.5	
78	Se	1	72	208.50	ppb	1.91	200.00	90 -	110	104.3	
88	Sr	2	115	199.90	ppb	1.52	200.00	90 -	110	100.0	
95	Mo	2	115	177.10	ppb	1.59	200.00	90 -	110	88.6	Fail
107	Ag	2	115	181.70	ppb	1.54	200.00	90 -	110	90.9	
111	Cd	2	115	183.80	ppb	1.09	200.00	90 -	110	91.9	
118	Sn	2	115	192.40	ppb	1.50	200.00	90 -	110	96.2	
121	Sb	2	115	195.30	ppb	1.61	200.00	90 -	110	97.7	
137	Ba	2	115	200.90	ppb	1.54	200.00	90 -	110	100.5	
205	Tl	2	209	204.70	ppb	1.71	200.00	90 -	110	102.4	
208	Pb	2	209	190.20	ppb	1.40	200.00	90 -	110	95.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-34121.10	0.94	22.89	-149045.7	70 -	120	ISFail
45	Sc	1	108631.63	0.86	168636.11	64.4	70 -	120	ISFail
45	Sc	2	2975952.80	0.71	4411244.50	67.5	70 -	120	ISFail
72	Ge	1	65908.27	0.18	100925.69	65.3	70 -	120	ISFail
115	In	2	5216120.00	0.82	6534497.50	79.8	70 -	120	
209	Bi	2	4160339.00	1.63	4845836.50	85.9	70 -	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\122LCVL.D\122LCVL.D#

Date Acquired:	May 26 2016 11:12 pm	Sample Name:	**LCVL6-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	8.46	ppb	1.94	5.00	70 -	130	169.2	Fail
9	Be	2	45	0.89	ppb	7.43	1.00	70 -	130	88.6	
11	B	2	45	15.96	ppb	3.07	20.00	70 -	130	79.8	
23	Na	1	45	99.03	ppb	1.10	100.00	70 -	130	99.0	
24	Mg	1	45	99.23	ppb	1.25	100.00	70 -	130	99.2	
27	Al	1	45	124.10	ppb	2.02	100.00	70 -	130	124.1	
39	K	1	45	108.30	ppb	2.60	100.00	70 -	130	108.3	
44	Ca	2	45	117.60	ppb	2.33	100.00	70 -	130	117.6	
47	Ti	1	45	4.75	ppb	3.57	5.00	70 -	130	95.0	
51	V	1	45	1.09	ppb	3.49	1.00	70 -	130	109.3	
52	Cr	1	45	4.85	ppb	3.03	5.00	70 -	130	97.0	
55	Mn	1	45	5.41	ppb	3.42	5.00	70 -	130	108.2	
56	Fe	1	72	114.40	ppb	0.93	100.00	70 -	130	114.4	
59	Co	1	72	4.65	ppb	3.10	5.00	70 -	130	93.1	
60	Ni	1	72	4.56	ppb	2.44	5.00	70 -	130	91.3	
63	Cu	1	72	4.73	ppb	2.76	5.00	70 -	130	94.5	
66	Zn	1	72	5.41	ppb	3.96	5.00	70 -	130	108.1	
75	As	1	72	5.22	ppb	2.61	5.00	70 -	130	104.4	
78	Se	1	72	6.28	ppb	6.34	5.00	70 -	130	125.6	
88	Sr	2	115	4.85	ppb	3.32	5.00	70 -	130	97.1	
95	Mo	2	115	4.33	ppb	1.70	5.00	70 -	130	86.6	
107	Ag	2	115	1.87	ppb	1.24	2.00	70 -	130	93.7	
111	Cd	2	115	0.94	ppb	4.74	1.00	70 -	130	94.2	
118	Sn	2	115	4.85	ppb	3.76	5.00	70 -	130	97.0	
121	Sb	2	115	2.05	ppb	2.86	2.00	70 -	130	102.6	
137	Ba	2	115	5.13	ppb	3.03	5.00	70 -	130	102.5	
205	Tl	2	209	1.05	ppb	1.53	1.00	70 -	130	104.5	
208	Pb	2	209	1.06	ppb	2.08	1.00	70 -	130	106.0	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigl	-934.94	8.12	22.89	-4084.0	70 -	120	ISFail
45	Sc	1		109661.82	0.60	168636.11	65.0	70 -	120	ISFail
45	Sc	2		3127420.00	2.30	4411244.50	70.9	70 -	120	
72	Ge	1		68097.43	0.59	100925.69	67.5	70 -	120	ISFail
115	In	2		5557938.50	1.78	6534497.50	85.1	70 -	120	
209	Bi	2		4571607.00	2.67	4845836.50	94.3	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E26l01.B\123_CCB.D\123_CCB.D#

Date Acquired:	May 26 2016 11:18 pm	Sample Name:	**CCB6-160526**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 26 2016 12:20 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.	RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.101 ppb	14.60	2.00	2.00	
9	Be	2	45	0.033 ppb	9.96	0.40	0.30	
11	B	2	45	0.340 ppb	4.17	10.00	10.00	
23	Na	1	45	4.777 ppb	5.41	50.00	#####	
24	Mg	1	45	1.600 ppb	14.10	50.00	#####	
27	Al	1	45	11.340 ppb	4.62	50.00	10.00	FailAq
39	K	1	45	7.394 ppb	3.61	50.00	#####	
44	Ca	2	45	10.130 ppb	6.74	50.00	#####	
47	Ti	1	45	-0.008 ppb	173.20	4.00	3.00	
51	V	1	45	0.060 ppb	9.44	4.00	3.00	
52	Cr	1	45	0.035 ppb	2.17	2.00	2.00	
55	Mn	1	45	0.142 ppb	1.04	2.00	3.00	
56	Fe	1	72	9.749 ppb	8.98	50.00	30.00	
59	Co	1	72	0.021 ppb	5.85	2.00	3.00	
60	Ni	1	72	0.028 ppb	9.85	2.00	3.00	
63	Cu	1	72	0.034 ppb	4.63	2.00	2.00	
66	Zn	1	72	0.028 ppb	21.74	4.00	2.00	
75	As	1	72	0.081 ppb	3.87	2.00	2.00	
78	Se	1	72	0.048 ppb	18.81	0.60	2.00	
88	Sr	2	115	0.080 ppb	1.21	4.00	3.00	
95	Mo	2	115	0.040 ppb	10.78	2.00	2.00	
107	Ag	2	115	0.030 ppb	15.35	0.40	1.00	
111	Cd	2	115	0.016 ppb	31.66	0.40	0.30	
118	Sn	2	115	0.039 ppb	6.67	20.00	3.00	
121	Sb	2	115	0.033 ppb	8.19	2.00	0.80	
137	Ba	2	115	0.060 ppb	18.59	2.00	3.00	
205	Tl	2	209	0.071 ppb	0.58	2.00	0.50	
208	Pb	2	209	0.071 ppb	3.76	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-18.89	172.28	22.89	-82.5	70 - 120	ISFail
45	Sc	1		108033.78	0.46	168636.11	64.1	70 - 120	ISFail
45	Sc	2		3093215.80	0.93	4411244.50	70.1	70 - 120	
72	Ge	1		67155.41	0.19	100925.69	66.5	70 - 120	ISFail
115	In	2		5468202.50	0.78	6534497.50	83.7	70 - 120	
209	Bi	2		4450011.00	1.12	4845836.50	91.8	70 - 120	

ICP-MS4
For

DHL Work Order
1605135

ICP-MS4_160520C
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS4_160520C SOP: MET-ICPMS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			x
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			x
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%	X			
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%			X	
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%		X		
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)	X			

Lab Data Review Check List

EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality	X			x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?		X			

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag Data/ Case Narative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data: See Run Log

Analyst: [signature] Date of Completion: 05/23/2016

Second-Level Review: Janice Whitt Date Stamp: 5/23/2016

REVIEWED BY
By Janice Whitt at 2:57:44 PM, 5/23/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160520C** **Run No.:** 85935

Analytical Run Date: 5/20/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:52:00 AM		
L2-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:54:00 AM		
L-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:56:00 AM		
10X-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:58:00 AM		
5X-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:00:00 AM		
2X-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:02:00 AM		
H-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:04:00 AM		
H2-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:06:00 AM		
ICSA-160520	1	ICPMS_TWDOD	ICSA	R85935	5/20/2016 11:14:00 AM		
ICSAB-160520	1	ICPMS_TWDOD	ICSB	R85935	5/20/2016 11:16:00 AM		
ICV-160520	1	ICPMS_TWDOD	ICV	R85935	5/20/2016 11:28:00 AM		
LCVL-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 11:40:00 AM		
ICB-160520	1	ICPMS_TWDOD	ICB	R85935	5/20/2016 11:45:00 AM		
CCV2-160520	1	ICPMS_TWDOD	CCV	R85935	5/20/2016 1:06:00 PM		
LCVL2-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 1:11:00 PM		
CCB2-160520	1	ICPMS_TWDOD	CCB	R85935	5/20/2016 1:20:00 PM		
MB-75180	1	ICPMS_TWDOD	MBLK	75180	5/20/2016 1:22:00 PM		
LCS-75180	1	ICPMS_TWDOD	LCS	75180	5/20/2016 1:24:00 PM		
LCSD-75180	1	ICPMS_TWDOD	LCSD	75180	5/20/2016 1:26:00 PM		
1605097-27A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:30:00 PM		
1605097-27A SD	5	ICPMS_TWDOD	SD	75180	5/20/2016 1:32:00 PM		
1605047-31A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:34:00 PM		
1605047-32A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:36:00 PM		
1605047-38A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:38:00 PM		
1605071-28A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:40:00 PM		
1605071-29A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:42:00 PM		
1605074-33A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:44:00 PM		
1605074-34A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:46:00 PM		
1605074-35A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:48:00 PM		
1605096-36A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:50:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160520C** **Run No.:** 85935

1605097-27A PDS	1	ICPMS_TWDOD	PDS	75180	5/20/2016 1:52:00 PM		
1605097-27A MS	1	ICPMS_TWDOD	MS	75180	5/20/2016 1:54:00 PM		S-flag Pb- Low
1605097-27A MSD	1	ICPMS_TWDOD	MSD	75180	5/20/2016 1:56:00 PM		
CCV3-160520	1	ICPMS_TWDOD	CCV	R85935	5/20/2016 1:58:00 PM		
LCVL3-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 2:04:00 PM		
CCB3-160520	1	ICPMS_TWDOD	CCB	R85935	5/20/2016 2:06:00 PM		
1605096-37A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:08:00 PM		
1605096-44A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:10:00 PM		
1605097-30A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:12:00 PM		
1605098-42A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:14:00 PM		
1605121-46A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:16:00 PM		
1605121-47A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:18:00 PM		
1605135-46A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:20:00 PM		
1605144-16A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:22:00 PM		
CCV4-160520	1	ICPMS_TWDOD	CCV	R85935	5/20/2016 2:24:00 PM		
LCVL4-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 2:41:00 PM		
CCB4-160520	1	ICPMS_TWDOD	CCB	R85935	5/20/2016 2:48:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160520.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160520	CAL ICPMS_TW	2102	
14	CalStd	L-160520	CAL ICPMS_TW	2103	
15	CalStd	10X-160520	CAL ICPMS_TW	2104	
16	CalStd	5X-160520	CAL ICPMS_TW	2105	
17	CalStd	2X-160520	CAL ICPMS_TW	2106	
18	CalStd	H-160520	CAL ICPMS_TW	2107	
19	CalStd	H2-160520	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	1		
13	2		
14	3		
15	4		
16	5		
17	6		
18	7		
19	8		

Sample List

20

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	ICB	BLANK	CCB ICPMS_TW	1102	
22	ICB	BLANK	CCB ICPMS_TW	1103	
23	ICSA	ICSA-160520	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160520	ICSBICPMS_TW	2110	
25	ICB	BLANK	CCB ICPMS_TW	1101	
26	ICB	BLANK	CCB ICPMS_TW	1102	
27	ICB	BLANK	CCB ICPMS_TW	1103	
28	ICV	ICV-160520	ICV ICPMS_TW	2111	
29	ICB	ICB-160520	ICB ICPMS_TW	1101	
30	ICB	ICB-160520	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160520	LCVLICPMS_TW	2112	
32	ICB	ICB-160520	ICB ICPMS_TW	1102	
33	ICB	ICB-160520	ICB ICPMS_TW	1103	
34	PB_W	MB-75206	MBLK200.8_EPA	2201	
35	LCS_W	LCS-75206	LCS 200.8_EPA	2202	
36	LCS_W	LCSD-75206	LCSD200.8_EPA	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605161-13A	SAMP200.8_EPA	2204	
39	SD	1605161-13A SD	SD 200.8_EPA	2205	
40	SAMP_W	1605161-01A	SAMP200.8_EPA	2206	

#	Level	Dilution	Skip
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34		1	
35		1	
36		1	
37			
38		1	
39		5	
40		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	SAMP_W	1605161-02A	SAMP200.8_EPA	2207	
42	SAMP_W	1605161-03A	SAMP200.8_EPA	2208	
43	SAMP_W	1605161-04A	SAMP200.8_EPA	2209	
44	SAMP_W	1605161-05A	SAMP200.8_EPA	2210	
45	SAMP_W	1605161-06A	SAMP200.8_EPA	2211	

Sample List

46	SAMP_W	1605161-07A	SAMP200.8_EPA	2212
47	SAMP_W	1605161-08A	SAMP200.8_EPA	2301
48	SAMP_W	1605161-09A	SAMP200.8_EPA	2302
49	PDS	1605161-13A PDS	PDS 200.8_EPA	2303
50	MS_W	1605161-13A MS	MS 200.8_EPA	2304
51	MS_W	1605161-13A MSD	MSD 200.8_EPA	2305
52	CCV	CCV1-160520	CCV ICPMS_TW	1207
53	CCB	CCB1-160520	CCB ICPMS_TW	1102
54	LLCCV	LCVL1-160520	LCVLICPMS_TW	2112
55	CCB	CCB1-160520	CCB ICPMS_TW	1103
56	SAMP_W	1605161-10A	SAMP200.8_EPA	2306
57	SAMP_W	1605161-11A	SAMP200.8_EPA	2307
58	SAMP_W	1605161-12A	SAMP200.8_EPA	2308
59	SAMP_W	1605161-13A	SAMP200.8_EPA	2309
60	SAMP_W	1605161-14A	SAMP200.8_EPA	2310

#	Level	Dilution	Skip
41		1	
42		1	
43		1	
44		1	
45		1	
46		1	
47		1	
48		1	
49		1	
50		1	
51		1	
52			
53			
54			
55			
56		1	
57		1	
58		1	
59		1	
60		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	SAMP_W	1605161-15A	SAMP200.8_EPA	2311	
62	SAMP_W	1605161-16A	SAMP200.8_EPA	2312	
63	SAMP_W	1605161-17A	SAMP200.8_EPA	2401	
64	SAMP_W	1605161-18A	SAMP200.8_EPA	2402	
65	SAMP_W	1605161-19A	SAMP200.8_EPA	2403	
66	CCV	CCV2-160520	CCV ICPMS_TW	1207	
67	CCB	CCB2-160520	CCB ICPMS_TW	1102	
68	LLCCV	LCVL2-160520	LCVLICPMS_TW	2112	
69	CCB	CCB2-160520	CCB ICPMS_TW	1103	
70	PB_W	MB-75180	MBLKICPMS_TWDOD	3101	
71	LCS_W	LCS-75180	LCS ICPMS_TWDOD	3102	
72	LCS_W	LCSD-75180	LCSDICPMS_TWDOD	3103	
73	CCB	RINSE	CCB ICPMS_TW	1101	

Sample List

74	AllRef	1605097-27A	SAMPICPMS_TWDOD	3104
75	SD	1605097-27A SD	SD ICPMS_TWDOD	3105
76	SAMP_W	1605047-31A	SAMPICPMS_TWDOD	3106
77	SAMP_W	1605047-32A	SAMPICPMS_TWDOD	3107
78	SAMP_W	1605047-38A	SAMPICPMS_TWDOD	3108
79	SAMP_W	1605071-28A	SAMPICPMS_TWDOD	3109
80	SAMP_W	1605071-29A	SAMPICPMS_TWDOD	3110

#	Level	Dilution	Skip
61		1	
62		1	
63		1	
64		1	
65		1	
66			
67			
68			
69			
70		1	
71		1	
72		1	
73			
74		1	
75		5	
76		1	
77		1	
78		1	
79		1	
80		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605074-33A	SAMPICPMS_TWDOD	3111	
82	SAMP_W	1605074-34A	SAMPICPMS_TWDOD	3112	
83	SAMP_W	1605074-35A	SAMPICPMS_TWDOD	3201	
84	SAMP_W	1605096-36A	SAMPICPMS_TWDOD	3202	
85	PDS	1605097-27A PDS	PDS ICPMS_TWDOD	3203	
86	MS_W	1605097-27A MS	MS ICPMS_TWDOD	3204	
87	MS_W	1605097-27A MSD	MSD ICPMS_TWDOD	3205	
88	CCV	CCV3-160520	CCV ICPMS_TW	1207	
89	CCB	CCB3-160520	CCB ICPMS_TW	1102	
90	LLCCV	LCVL3-160520	LCVLICPMS_TW	2512	
91	CCB	CCB3-160520	CCB ICPMS_TW	1103	
92	SAMP_W	1605096-37A	SAMPICPMS_TWDOD	3206	
93	SAMP_W	1605096-44A	SAMPICPMS_TWDOD	3207	
94	SAMP_W	1605097-30A	SAMPICPMS_TWDOD	3208	
95	SAMP_W	1605098-42A	SAMPICPMS_TWDOD	3209	
96	SAMP_W	1605121-46A	SAMPICPMS_TWDOD	3210	
97	SAMP_W	1605121-47A	SAMPICPMS_TWDOD	3211	
98	SAMP_W	1605135-46A	SAMPICPMS_TWDOD	3212	
99	SAMP_W	1605144-16A	SAMPICPMS_TWDOD	2501	
100	CCV	CCV4-160520	CCV ICPMS_TW	1207	

Sample List

#	Level	Dilution	Skip
81		1	
82		1	
83		1	
84		1	
85		1	
86		1	
87		1	
88			
89			
90			
91			
92		1	
93		1	
94		1	
95		1	
96		1	
97		1	
98		1	
99		1	
100			

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	CCB	CCB4-160520	CCB ICPMS_TW	1102	
102	LLCCV	LCVL4-160520	LCVLICPMS_TW	2512	
103	CCB	CCB4-160520	CCB ICPMS_TW	1103	
104	PB_W	MB-75233	MBLKICPMS_TW	3301	
105	LCS_W	LCS-75233	LCS ICPMS_TW	3302	
106	LCS_W	LCSD-75233	LCSDICPMS_TW	3303	
107	CCB	RINSE	CCB ICPMS_TW	1101	
108	AllRef	1605172-04C	SAMPICPMS_TW	3304	
109	SD	1605172-04C SD	SD ICPMS_TW	3305	
110	SAMP_W	1605169-01C	SAMPICPMS_TW	3306	
111	SAMP_W	1605183-01C	SAMP6020A_W	3307	
112	SAMP_W	1605173-01E	SAMPICPMS_TW	3308	
113	SAMP_W	1605173-02E	SAMPICPMS_TW	3309	
114	SAMP_W	1605173-03E	SAMPICPMS_TW	3310	
115	SAMP_W	1605173-04E	SAMPICPMS_TW	3311	
116	SAMP_W	1604114-25B	SAMPICPMS_TW	3312	
117	SAMP_W	1604114-26B	SAMPICPMS_TW	3401	
118	SAMP_W	1604114-27B	SAMPICPMS_TW	3402	
119	PDS	1605172-04C PDS	PDS ICPMS_TW	3403	
120	MS_W	1605172-04C MS	MS ICPMS_TW	3404	

#	Level	Dilution	Skip
101			
102			
103			
104		1	
105		1	
106		1	
107			

Sample List

108	1
109	5
110	1
111	1
112	1
113	1
114	1
115	1
116	1
117	1
118	1
119	1
120	1

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	MS_W	1605172-04C MSD	MSD ICPMS_TW	3405	
122	CCV	CCV5-160520	CCV ICPMS_TW	1207	
123	CCB	CCB5-160520	CCB ICPMS_TW	1102	
124	CCB	CCB5-160520	CCB ICPMS_TW	1102	
125	CCB	CCB5-160520	CCB ICPMS_TW	1102	
126	CCB	CCB5-160520	CCB ICPMS_TW	1103	
127	CCB	CCB5-160520	CCB ICPMS_TW	1103	
128	CCB	CCB5-160520	CCB ICPMS_TW	1103	
129	LLCCV	LCVL5-160520	LCVLICPMS_TW	2511	
130	CCB	CCB5-160520	CCB ICPMS_TW	1103	
131	SAMP_W	1605172-01C	SAMPICPMS_TW	3406	
132	SAMP_W	1605172-02C	SAMPICPMS_TW	3407	
133	SAMP_W	1605172-03C	SAMPICPMS_TW	3408	
134	SAMP_W	1605181-01A	SAMPICPMS_TW	3409	
135	CCV	CCV6-160520	CCV ICPMS_TW	1207	
136	CCB	CCB6-160520	CCB ICPMS_TW	1102	
137	CCB	CCB6-160520	CCB ICPMS_TW	1102	
138	CCB	CCB6-160520	CCB ICPMS_TW	1103	
139	CCB	CCB6-160520	CCB ICPMS_TW	1103	
140	LLCCV	LCVL6-160520	LCVLICPMS_TW	2511	

#	Level	Dilution	Skip
121		1	
122			
123			
124			
125			
126			
127			
128			
129			
130			
131		1	
132		1	
133		1	
134		1	
135			

Sample List

136
137
138
139
140

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	CCB	CCB6-160520	CCB ICPMS_TW	1102	
142	CCB	CCB6-160520	CCB ICPMS_TW	1102	
143	CCB	CCB6-160520	CCB ICPMS_TW	1102	
144	CCB	CCB6-160520	CCB ICPMS_TW	1103	
145	CCB	CCB6-160520	CCB ICPMS_TW	1103	
146	CCB	CCB6-160520	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
141			
142			
143			
144			
145			
146			

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 8:30:00 AM**
Digestion:
Prep End Date:

Prep Batch **75180** Prep Code: **3005ADOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/mL**

Equipment List
Hot Block #4
Thermometer #71
Pipette #P-09-Spikes
Pipette #P-01 Samples

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-31A	Equip Blank		50	50	1.000	1 of 1	
1605047-32A	Equip Blank		50	50	1.000	1 of 1	
1605047-38A	Equip Blank		50	50	1.000	1 of 1	
1605071-28A	Equip Blank		50	50	1.000	1 of 1	
1605071-29A	Equip Blank		50	50	1.000	1 of 1	
1605074-33A	Equip Blank		50	50	1.000	1 of 1	
1605074-34A	Equip Blank		50	50	1.000	1 of 1	
1605074-35A	Equip Blank		50	50	1.000	1 of 1	
1605096-36A	Equip Blank		50	50	1.000	1 of 1	
1605096-37A	Equip Blank		50	50	1.000	1 of 1	
1605096-44A	Equip Blank		50	50	1.000	1 of 1	
1605097-27A	Equip Blank		50	50	1.000	1 of 1	MS + MSD
1605097-30A	Equip Blank		50	50	1.000	1 of 1	
1605098-42A	Equip Blank		50	50	1.000	1 of 1	
1605121-46A	Equip Blank		50	50	1.000	1 of 1	
1605121-47A	Equip Blank		50	50	1.000	1 of 1	
1605135-46A	Equip Blank		50	50	1.000	1 of 1	
1605144-16A	Equip Blank		50	50	1.000	1 of 1	
LCS-75180	Aqueous		50	50	1.000	of	
LCSD-75180	Aqueous		50	50	1.000	of	
MB-75180	Aqueous		50	50	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9641	Hydrochloric Acid (trace metal grade)	1	ml	09/22/2025
10056	Digestion Vessels	1	ml	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	1	ml	01/10/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.1	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	0.2	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	0.2	08/09/2016

9:54 - 15:33

REVIEWED BY
By Janice Whitt at 2:45:04 PM, 5/23/2016

5/19/16

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/19/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**BIAS**	**PRECISION % RSD Calculated**
1	5.00	4.9999	4.9899	99.80	PASS		RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9998	4.9898	99.80			
3		4.9952	4.9852	99.70			
AVERAGE (MEAN)		4.998	4.988	99.77			0.054
							PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2007	0.2003	100.15	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2025	0.2021	101.05		
3		0.2027	0.2023	101.15		
AVERAGE (MEAN)		0.202	0.202	100.78		0.545
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/19/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 2:45:08 PM, 5/23/2016

Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 8:30:00 AM**
Digestion: **Start: 5/19/2016 9:54:00 AM / Stop: 5/19/2016 3:33:00 PM**
Prep End Date: **5/19/2016 3:41:51 PM**

Prep Batch **75180** Prep Code: **3005ADOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/mL**

Equipment List

Hot Block #4
Thermometer #71
Pipette #P-09-Spikes
Pipette #P-01 Samples

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-31A	Equip Blank		50	50	1.000	1 of 1	
1605047-32A	Equip Blank		50	50	1.000	1 of 1	
1605047-38A	Equip Blank		50	50	1.000	1 of 1	
1605071-28A	Equip Blank		50	50	1.000	1 of 1	
1605071-29A	Equip Blank		50	50	1.000	1 of 1	
1605074-33A	Equip Blank		50	50	1.000	1 of 1	
1605074-34A	Equip Blank		50	50	1.000	1 of 1	
1605074-35A	Equip Blank		50	50	1.000	1 of 1	
1605096-36A	Equip Blank		50	50	1.000	1 of 1	
1605096-37A	Equip Blank		50	50	1.000	1 of 1	
1605096-44A	Equip Blank		50	50	1.000	1 of 1	
1605097-27A	Equip Blank		50	50	1.000	1 of 1	
1605097-27A MS	Equip Blank		50	50	1.000	of	
1605097-27A MSD	Equip Blank		50	50	1.000	of	
1605097-27A PDS	Equip Blank		50	50	1.000	of	
1605097-27A SD	Equip Blank		50	50	1.000	of	
1605097-30A	Equip Blank		50	50	1.000	1 of 1	
1605098-42A	Equip Blank		50	50	1.000	1 of 1	
1605121-46A	Equip Blank		50	50	1.000	1 of 1	
1605121-47A	Equip Blank		50	50	1.000	1 of 1	
1605135-46A	Equip Blank		50	50	1.000	1 of 1	
1605144-16A	Equip Blank		50	50	1.000	1 of 1	
LCS-75180	Aqueous		50	50	1.000	of	
LCSD-75180	Aqueous		50	50	1.000	of	
MB-75180	Aqueous		50	50	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9641	Hydrochloric Acid (trace metal grade)	1	ml	09/22/2025
10056	Digestion Vessels	1	ml	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	1	ml	01/10/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.1	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	0.2	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	0.2	08/09/2016

REVIEWED BY
By Janice Whitt at 2:45:11 PM, 5/23/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	RO	BALANCE #:	30	
TEST DATE:	05/20/2016	Water is at Room Temperatue (70-73°F) / (21-23°C)		
PIPETTER LAB ID:	See Below	WATER TEMP (°C):	21-23°C	
TEST VOLUME:	See Below	WATER DENSITY:	0.998	(0.9980-0.9976)

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

PIPETTE ID: P-31	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	4.00	3.9957	3.9877	99.69	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		3.9968	3.9888	99.72		
3		3.9926	3.9846	99.62		
AVERAGE (MEAN)		3.995	3.987	99.68		0.055
						PASS

PIPETTE ID: P-21	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	1.00	0.9998	0.9978	99.78	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.9976	0.9956	99.56		
3		0.9977	0.9957	99.57		
AVERAGE (MEAN)		0.998	0.996	99.64		0.124
						PASS

PIPETTE ID: P-39	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.500	0.4996	0.4986	99.72	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.4999	0.4989	99.78		
3		0.4989	0.4979	99.58		
AVERAGE (MEAN)		0.499	0.498	99.69		0.103
						PASS

5/20/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 2:45:14 PM, 5/23/2016

Review and Approved / Date

Calibration Summary Report

Date Acquired 5/20/2016 10:52
Data Batch 160520.b

Level	Calibration File Name
1	012CALB.d
2	013CALS.d
3	014CALS.d
4	015CALS.d
5	016CALS.d
6	017CALS.d
7	018CALS.d
8	019CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0014 * x + 1.9173E-004
Be	1.0000	y = 6.7611E-005 * x + 4.0753E-006
B	1.0000	y = 2.3935E-005 * x + 6.6671E-005
Na	0.9999	y = 8.2020E-004 * x + 0.0425
Mg	0.9999	y = 4.1094E-004 * x + 0.0010
Al	1.0000	y = 1.4756E-004 * x + 3.6385E-004
K	0.9999	y = 3.9899E-004 * x + 0.0507
Ca	1.0000	y = 2.2762E-005 * x + 2.4734E-004
Ti	1.0000	y = 1.5550E-004 * x + 2.4548E-006
V	1.0000	y = 0.0053 * x + 0.0030
Cr	1.0000	y = 0.0064 * x + 0.0010
Mn	1.0000	y = 0.0034 * x + 1.2334E-004
Fe	1.0000	y = 0.0054 * x + 0.0075
Co	1.0000	y = 0.0134 * x + 1.6697E-004
Ni	1.0000	y = 0.0037 * x + 5.9595E-004
Cu	1.0000	y = 0.0102 * x + 0.0033
Zn	1.0000	y = 0.0017 * x + 3.7275E-004
Se	1.0000	y = 7.9937E-005 * x + 9.8739E-005
Sr	1.0000	y = 6.4021E-004 * x + 3.3178E-005
Mo	1.0000	y = 6.0622E-004 * x + 4.8584E-006
Ag	0.9999	y = 0.0019 * x + 7.8947E-006
Cd	1.0000	y = 2.8420E-004 * x + 1.5075E-006
Sn	1.0000	y = 5.9872E-004 * x + 6.4692E-005
Sb	1.0000	y = 9.1882E-004 * x + 2.1127E-005
Tl	1.0000	y = 0.0017 * x + 2.3075E-006
Ba	1.0000	y = 2.9131E-004 * x + 3.1689E-006
Pb	1.0000	y = 0.0023 * x + 2.2673E-005
Li	1.0000	y = 5.2630E-005 * x + 1.4809E-005

REVIEWED BY
By Janice Whitt at 2:45:18 PM, 5/23/2016

Calibration Summary Report

Level 7 Cal

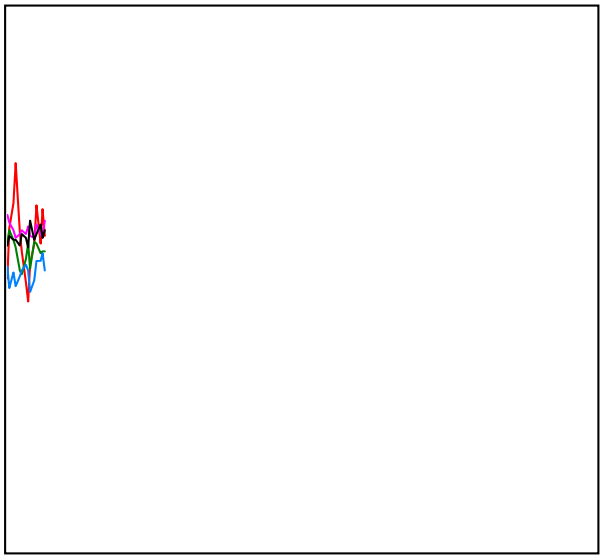
Ele	Conc	Calc	%Rec
As	500	494.27	99
Be	500	507.25	101
B	500	512.43	102
Na	10000	10274.86	103
Mg	10000	10243.18	102
Al	10000	9999.22	100
K	10000	10218.11	102
Ca	10000	9805.32	98
Ti	500	501.17	100
V	500	507.40	101
Cr	500	509.33	102
Mn	500	509.95	102
Fe	10000	9967.53	100
Co	500	512.00	102
Ni	500	505.16	101
Cu	500	508.82	102
Zn	500	506.99	101
Se	500	497.89	100
Sr	500	505.73	101
Mo	500	498.28	100
Ag	500	497.63	100
Cd	500	496.13	99
Sn	500	494.23	99
Sb	500	501.03	100
Tl	500	509.21	102
Ba	500	495.71	99
Pb	500	503.45	101

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	2001.88	100
Be	2000	1997.64	100
B	2000	1996.74	100
Na	25000	24858.90	101
Mg	25000	24867.65	101
K	25000	24896.46	100
Ca	25000	25100.13	100
Ti	2000	1999.82	100
V	2000	1997.81	100
Cr	2000	1997.17	100
Mn	2000	1996.76	100
Co	2000	1995.80	100
Ni	2000	1997.77	100
Cu	2000	1996.80	100
Zn	2000	1997.23	100
Se	2000	2000.32	100
Sr	2000	1998.31	100
Mo	2000	2000.69	100
Cd	2000	2001.01	100
Sn	2000	2001.88	100
Tl	2000	1997.65	100
Ba	2000	2001.53	100
Pb	2000	1999.22	100
Li	2000	1995.26	100

REVIEWED BY
By Janice Whitt at 2:45:21 PM, 5/23/2016

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
51	200	116	114.9	11.79
59	2000	1105	1102.9	4.38
89	2000	1032	1025.3	4.05
140	5000	3033	2949.5	2.29
205	5000	2959	2890.5	2.51
156/140	1	0.462 %	0.345 %	35.57
75	20	3	4.9	44.86
78	20	3	7.9	39.26
56	5000	2420	2326.3	2.61
31	100	56	49.2	9.44

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.55
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	6.6
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-80	Cell Exit	-60
Deflect	2.4		

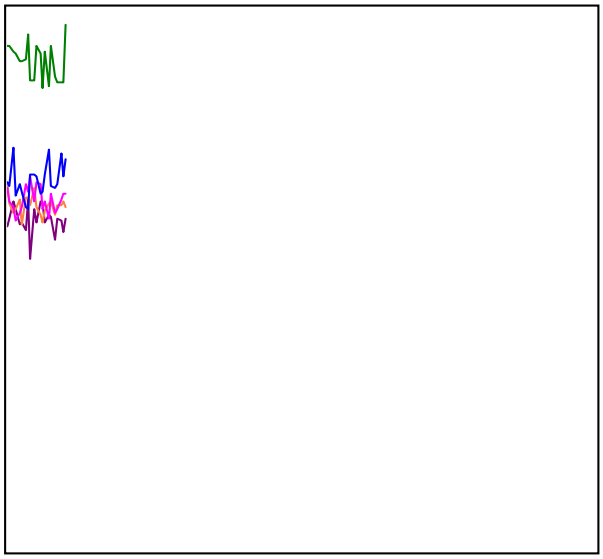
Cell Parameters

Use Gas	true	3rd Gas Flow	0
He Flow	4.7	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.26E+2	Pa	Carrier Gas(BP)	2.53E+2	kPa
Analyzer Press	2.03E-4	Pa	Reflected Power	1	W
Forward Power	1550	W			

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1222	1219.4	4.17
59	2000	1933	1800.7	3.77
89	5000	3170	3179.9	2.86
140	5000	3279	3231.5	3.58
205	5000	2137	2197.3	4.10
156/140	2	1.373 %	1.107 %	20.36
78	5000	2219	2298.0	2.84
63	500	361	341.0	4.61
75	10000	5042	4978.2	1.76

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.55
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	6.6
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-80	Cell Exit	-60
Deflect	7.0		

Cell Parameters

Use Gas	false	3rd Gas Flow	0
He Flow	4.2	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.25E+2	Pa	Carrier Gas(BP)	2.51E+2	kPa
Analyzer Press	1.15E-4	Pa	Reflected Power	1	W
Forward Power	1549	W			

US EPA Tune Check Sample Report

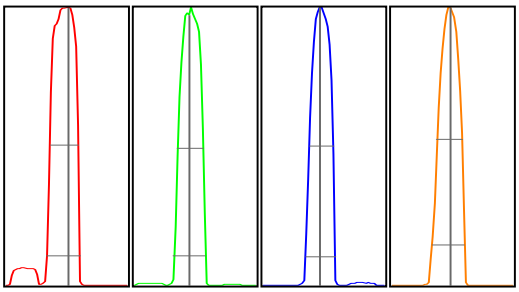
Batch Folder C:\Agilent\ICPMH\1\DATA\DHL TEMPLATE Li.b
Report Comment
Instrument Name ICPMS4 JP12361998

[No gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	766071	0.59	5.00	
59	1002535	0.88	5.00	
115	1534120	0.47	5.00	
205	1337735	0.65	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	761000	762770	766402	767567	772618
59	994287	996607	1000508	1004518	1016753
115	1531586	1527087	1528422	1540459	1543047
205	1347346	1339137	1338492	1340161	1323539

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	114427	7.05	6.9 - 7.1		0.792	0.850	
59	169781	58.90	58.9 - 59.1		0.757	0.850	
115	281192	114.95	114.9 - 115.1		0.715	0.850	
205	235049	205.00	204.9 - 205.1		0.792	0.850	

X% = 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Nebulizer Pump	0.10	rps
RF Matching	1.90	V	S/C Temp	2	℃
Smpl Depth	8.0	mm	Gas Switch	Dilution Gas	
Carrier Gas	0.55	L/min	Makeup/Dilution Gas	0.50	L/min
Option Gas	0.0	%			

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Cell Entrance	-40	V
Extract 2	-200.0	V	Cell Exit	-60	V
Omega Bias	-80	V	Deflect	7.0	V
Omega Lens	6.6	V	Plate Bias	-60	V

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		OctP Bias	-18.0	V
He Flow	0.0	mL/min	OctP RF	200	V
H2 Flow	0.0	mL/min	Energy Discrimination	3.0	V
3rd Gas Flow	0	%			

REVIEWED BY
By Janice Whitt at 2:45:29 PM, 5/23/2016

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: BLANK STD 1
Data File: 012CALB.d
Acquired: 05/20/2016 10:52:47

========= Detector Parameters and P/A Factors =========
Discriminator: 4.5 mV
AnalogHV: 1756 V
PulseHV: 1224 V

Acquired: 05/20/2016 10:17:33

Mass[u]	Element	P/A Factor
6	Li	0.098134
9	Be	0.112424
23	Na	0.120362
24	Mg	0.125799
27	Al	0.129086
39	K	0.130962
45	Sc	0.132626
48		0.132901
51	V	0.134336
52	Cr	0.138170
55	Mn	0.140003
59	Co	0.143275
60	Ni	0.144291
63	Cu	0.146894
66	Zn	0.146603
72		0.145810
74	Ge	0.145819
75	As	0.144825
88	Sr	0.145917
89		0.145627
95		0.145741
97	Mo	0.145945
98	Mo	0.146160
99	[Mo]	0.149063
101		0.148703
105		0.151466
111	Cd	0.152171
114	Cd	0.152307
115	In	0.152070
118	Sn	0.152341
121		0.151907
123	Sb	0.151213
135	Ba	0.153085
138		0.153114
175		0.157166
193		0.158115
205	Tl	0.159390
206	[Pb]	0.158901
207	[Pb]	0.160233
208	Pb	0.160034
209	Bi	0.160265
232		0.160153
238	U	0.160001
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

REVIEWED BY
By Janice Whitt at 2:45:32 PM, 5/23/2016

Calibration Blank Report

Date Acquired	5/20/2016 10:52	Sample Name	BLANK STD 1
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	012CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	13	11.46
9	Be	45	4	31.49
11	B	45	60	38.88
23	Na	45	38295	1.98
24	Mg	45	929	4.13
27	Al	45	328	9.67
39	K	45	45687	1.92
44	Ca	45	223	14.74
47	Ti	45	2	173.21
51	V	45	2712	3.25
52	Cr	45	932	8.94
55	Mn	45	111	4.58
56	Fe	45	6780	0.46
59	Co	72	116	10.13
60	Ni	72	412	4.45
63	Cu	72	2314	7.14
66	Zn	72	258	12.02
75	As	72	133	9.18
78	Se	72	68	18.46
88	Sr	115	220	6.60
95	Mo	115	32	39.17
107	Ag	115	52	47.91
111	Cd	115	10	0.00
118	Sn	115	429	7.22
121	Sb	115	140	14.48
137	Ba	115	21	59.77
205	Tl	209	38	10.19
208	Pb	209	371	5.49

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	900744	0.58
72	Ge	691836	0.52
115	In	6634288	1.31
209	Bi	16365010	0.86

Calibration Standard Report

Date Acquired	5/20/2016 10:54	Sample Name	L2-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	013CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	51	19.61
9	Be	45	59	16.17
11	B	45	81	47.63
23	Na	45	54693	1.98
24	Mg	45	8631	1.06
27	Al	45	3024	4.27
39	K	45	52837	1.33
44	Ca	45	673	9.59
47	Ti	45	142	21.27
51	V	45	7566	1.37
52	Cr	45	6659	1.56
55	Mn	45	3339	3.35
56	Fe	45	103212	0.39
59	Co	72	9894	1.63
60	Ni	72	3053	2.78
63	Cu	72	9651	1.49
66	Zn	72	1510	9.51
75	As	72	1134	3.65
78	Se	72	138	13.66
88	Sr	115	4758	9.98
95	Mo	115	4017	1.96
107	Ag	115	13061	1.16
111	Cd	115	1892	1.58
118	Sn	115	4368	1.85
121	Sb	115	6040	1.52
137	Ba	115	1957	3.12
205	Tl	209	28454	0.85
208	Pb	209	38051	1.40

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	888675	0.90	900744	98.66	70	120	
72	Ge	693617	1.22	691836	100.26	70	120	
115	In	6537693	1.64	6634288	98.54	70	120	
209	Bi	16272142	1.22	16365010	99.43	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 10:56	Sample Name	L-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	014CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	475	4.33
9	Be	45	589	2.81
11	B	45	213	8.70
23	Na	45	187072	0.24
24	Mg	45	75079	1.15
27	Al	45	26142	0.55
39	K	45	117199	0.47
44	Ca	45	4092	2.49
47	Ti	45	1508	7.61
51	V	45	49367	1.70
52	Cr	45	57479	0.64
55	Mn	45	30593	1.12
56	Fe	45	958300	0.88
59	Co	72	94946	1.52
60	Ni	72	26516	2.15
63	Cu	72	74283	1.74
66	Zn	72	11910	2.27
75	As	72	9774	0.72
78	Se	72	636	2.65
88	Sr	115	41218	0.48
95	Mo	115	38411	0.41
107	Ag	115	126475	0.65
111	Cd	115	18563	1.42
118	Sn	115	38626	1.15
121	Sb	115	58717	1.10
137	Ba	115	18171	0.63
205	Tl	209	272304	0.87
208	Pb	209	366431	0.81

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	873243	0.62	900744	96.95	70	120	
72	Ge	678023	0.58	691836	98.00	70	120	
115	In	6551099	0.64	6634288	98.75	70	120	
209	Bi	15917913	1.04	16365010	97.27	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 10:58	Sample Name	10X-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	015CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2372	1.63
9	Be	45	2923	2.25
11	B	45	1067	9.08
23	Na	45	770119	0.18
24	Mg	45	367454	0.88
27	Al	45	128655	0.92
39	K	45	399073	0.48
44	Ca	45	19370	0.75
47	Ti	45	6789	2.58
51	V	45	235086	0.94
52	Cr	45	281473	0.22
55	Mn	45	151664	1.11
56	Fe	45	4726262	0.52
59	Co	72	472848	1.31
60	Ni	72	128482	0.55
63	Cu	72	359776	1.03
66	Zn	72	59442	1.18
75	As	72	47843	0.10
78	Se	72	2827	1.34
88	Sr	115	207253	0.76
95	Mo	115	189832	0.47
107	Ag	115	625220	0.51
111	Cd	115	90493	0.63
118	Sn	115	188562	0.79
121	Sb	115	291979	0.59
137	Ba	115	91676	0.52
205	Tl	209	1369668	0.21
208	Pb	209	1836011	0.28

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	870783	0.49	900744	96.67	70	120	
72	Ge	675804	0.16	691836	97.68	70	120	
115	In	6511848	1.01	6634288	98.15	70	120	
209	Bi	15817982	1.93	16365010	96.66	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:00	Sample Name	5X-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	016CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4719	0.99
9	Be	45	6031	2.61
11	B	45	2106	2.38
23	Na	45	1487744	0.34
24	Mg	45	730325	0.75
27	Al	45	254158	1.00
39	K	45	743764	0.35
44	Ca	45	38890	0.92
47	Ti	45	13122	1.48
51	V	45	464545	0.24
52	Cr	45	553845	0.36
55	Mn	45	296245	0.64
56	Fe	45	9475567	0.90
59	Co	72	929518	0.70
60	Ni	72	254645	0.94
63	Cu	72	705956	0.91
66	Zn	72	115636	0.55
75	As	72	94999	1.00
78	Se	72	5517	1.18
88	Sr	115	407209	0.73
95	Mo	115	382159	0.27
107	Ag	115	1246974	0.27
111	Cd	115	180002	0.67
118	Sn	115	373685	0.75
121	Sb	115	581845	0.44
137	Ba	115	181959	0.36
205	Tl	209	2721048	0.56
208	Pb	209	3638595	0.14

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	867111	0.94	900744	96.27	70	120	
72	Ge	670073	0.40	691836	96.85	70	120	
115	In	6345212	1.15	6634288	95.64	70	120	
209	Bi	15774838	1.13	16365010	96.39	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:02	Sample Name	2X-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	017CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	11645	1.45
9	Be	45	14799	0.87
11	B	45	5271	3.09
23	Na	45	3674579	0.75
24	Mg	45	1829610	0.19
27	Al	45	638745	0.27
39	K	45	1790546	0.40
44	Ca	45	96796	0.45
47	Ti	45	33606	0.77
51	V	45	1166196	0.37
52	Cr	45	1399555	0.43
55	Mn	45	749211	1.10
56	Fe	45	23607094	0.99
59	Co	72	2343107	0.54
60	Ni	72	639981	0.74
63	Cu	72	1763980	0.57
66	Zn	72	293583	0.29
75	As	72	238361	0.79
78	Se	72	13619	1.02
88	Sr	115	1023414	0.41
95	Mo	115	955739	0.13
107	Ag	115	3129309	0.67
111	Cd	115	450580	1.28
118	Sn	115	940332	0.60
121	Sb	115	1446811	0.41
137	Ba	115	456887	0.89
205	Tl	209	6865122	2.34
208	Pb	209	9182346	0.28

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	863899	0.62	900744	95.91	70	120	
72	Ge	676172	1.16	691836	97.74	70	120	
115	In	6342174	1.08	6634288	95.60	70	120	
209	Bi	15798184	1.06	16365010	96.54	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:04	Sample Name	H-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	018CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	23477	0.78
9	Be	45	29678	0.77
11	B	45	10670	2.57
23	Na	45	7328693	1.45
24	Mg	45	3642987	0.46
27	Al	45	1276992	0.43
39	K	45	3571412	0.39
44	Ca	45	193325	1.27
47	Ti	45	67432	0.26
51	V	45	2342136	0.46
52	Cr	45	2811568	0.73
55	Mn	45	1497737	1.02
56	Fe	45	46607699	0.12
59	Co	72	4664541	0.37
60	Ni	72	1265436	0.57
63	Cu	72	3510221	0.93
66	Zn	72	580522	0.69
75	As	72	478495	0.53
78	Se	72	27052	0.42
88	Sr	115	2062251	0.76
95	Mo	115	1923834	1.60
107	Ag	115	6149064	1.18
111	Cd	115	897958	0.69
118	Sn	115	1885001	0.48
121	Sb	115	2931945	1.17
137	Ba	115	919713	0.73
205	Tl	209	13843577	0.15
208	Pb	209	18376231	1.17

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	865250	0.07	900744	96.06	70	120	
72	Ge	678053	0.72	691836	98.01	70	120	
115	In	6368809	0.55	6634288	96.00	70	120	
209	Bi	15682376	1.12	16365010	95.83	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:06	Sample Name	H2-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	019CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	91520	0.61
9	Be	45	117696	1.05
11	B	45	41703	2.00
23	Na	45	17804069	1.61
24	Mg	45	8905730	0.41
27	Al	45	1268	15.64
39	K	45	8700336	3.99
44	Ca	45	498064	0.89
47	Ti	45	270980	0.88
51	V	45	9279476	1.91
52	Cr	45	11100250	2.57
55	Mn	45	5906029	1.36
56	Fe	45	31079	21.18
59	Co	72	18091149	2.15
60	Ni	72	4978053	0.80
63	Cu	72	13698455	1.21
66	Zn	72	2274547	0.47
75	As	72	1927729	0.53
78	Se	72	107929	0.33
88	Sr	115	8069912	1.86
95	Mo	115	7651186	1.88
107	Ag	115	2167	27.48
111	Cd	115	3587268	0.74
118	Sn	115	7561068	0.94
121	Sb	115	4899	3.75
137	Ba	115	3678176	0.64
205	Tl	209	54027345	1.56
208	Pb	209	72597616	1.51

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	871411	0.35	900744	96.74	70	120	
72	Ge	674585	0.55	691836	97.51	70	120	
115	In	6308303	0.56	6634288	95.09	70	120	
209	Bi	15600790	0.51	16365010	95.33	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/20/2016 11:14	Sample Name	ICSA-160520
Data Batch	160520.b	Comment	ICSAICPMS_TW
Data File Name	023ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	0.178	13	11.5	1.2	0.8	
11	B	12.857	310	15.8	30	30	
51	V	-0.035	2337	3.4	10	10	
52	Cr	0.435	3153	9.6	8	5	
55	Mn	1.453	4183	2.6	8	10	
59	Co	0.572	5053	6.0	8	10	
60	Ni	0.460	1477	4.3	8	10	
63	Cu	0.966	8479	8.6	8	10	
66	Zn	1.514	1886	2.4	10	5	
75	As	0.723	788	5.3	4	5	
78	Se	0.403	84	12.1	2	5	
88	Sr	1.450	5706	4.5	10	10	
107	Ag	0.149	1757	1.5	0.8	2	
111	Cd	0.508	864	8.0	1.2	1	
118	Sn	1.337	5130	5.4	10	10	
121	Sb	0.431	2474	8.2	4	2.5	
137	Ba	0.360	641	0.8	8	10	
205	Tl	0.057	1457	3.8	4	1.5	
208	Pb	0.112	4071	5.3	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	827611	0.57	900744	91.88	70	120	
72	Ge	643920	0.43	691836	93.07	70	120	
115	In	5931990	0.71	6634288	89.41	70	120	
209	Bi	14414677	1.32	16365010	88.08	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/20/2016 11:16	Sample Name	ICSAB-160520
Data Batch	160520.b	Comment	ICSBICPMS_TW
Data File Name	024ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	40.230	179228	0.38	40	100.6	80	120	
52	Cr	45	21.180	112220	0.68	20	105.9	80	120	
55	Mn	45	20.090	56319	0.85	20	100.5	80	120	
59	Co	72	40.765	350154	0.67	40	101.9	80	120	
60	Ni	72	37.991	90057	0.27	40	95.0	80	120	
63	Cu	72	21.028	138786	0.46	20	105.1	80	120	
66	Zn	72	20.320	22160	1.43	20	101.6	80	120	
75	As	72	19.962	18332	0.50	20	99.8	80	120	
78	Se	72	20.880	1130	1.09	20	104.4	80	120	
107	Ag	115	19.272	219521	0.59	20	96.4	80	120	
111	Cd	115	10.173	16977	1.44	10	101.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	824440	0.46	900744	91.53	70	120	
72	Ge	639098	0.68	691836	92.38	70	120	
115	In	5869841	0.52	6634288	88.48	70	120	
209	Bi	14474563	1.18	16365010	88.45	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/20/2016 11:28	Sample Name	ICV-160520
Data Batch	160520.b	Comment	ICV ICPMS_TW
Data File Name	028_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	100.332	4824	1.81	100	100.3	90	110	
9	Be	45	103.176	6359	1.46	100	103.2	90	110	
11	B	45	106.105	2375	2.15	100	106.1	90	110	
23	Na	45	2619.649	1996303	0.67	2500	104.8	90	110	
24	Mg	45	2613.352	979367	0.11	2500	104.5	90	110	
27	Al	45	2492.346	335405	0.21	2500	99.7	90	110	
39	K	45	2576.179	982676	0.45	2500	103.0	90	110	
44	Ca	45	2392.260	49836	0.98	2500	95.7	90	110	
47	Ti	45	102.414	14511	1.78	100	102.4	90	110	
51	V	45	103.304	504292	0.75	100	103.3	90	110	
52	Cr	45	105.424	613523	0.38	100	105.4	90	110	
55	Mn	45	102.300	316459	1.21	100	102.3	90	110	
56	Fe	45	2567.305	12645614	0.68	2500	102.7	90	110	
59	Co	72	106.357	1016420	0.67	100	106.4	90	110	
60	Ni	72	103.434	272118	0.62	100	103.4	90	110	
63	Cu	72	102.858	746210	0.57	100	102.9	90	110	
66	Zn	72	103.642	124695	1.04	100	103.6	90	110	
75	As	72	100.339	101992	0.91	100	100.3	90	110	
78	Se	72	104.060	5986	1.79	100	104.1	90	110	
88	Sr	115	103.091	442072	0.16	100	103.1	90	110	
95	Mo	115	98.299	398988	0.75	100	98.3	90	110	
107	Ag	115	98.962	1285452	0.32	100	99.0	90	110	
111	Cd	115	99.483	189297	1.17	100	99.5	90	110	
118	Sn	115	101.471	407166	1.20	100	101.5	90	110	
121	Sb	115	98.770	607715	0.72	100	98.8	90	110	
137	Ba	115	98.652	192414	0.96	100	98.7	90	110	
205	Tl	209	101.466	2836271	0.84	100	101.5	90	110	
208	Pb	209	101.685	3816480	0.50	100	101.7	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	911084	0.27	900744	101.15	70	120	
72	Ge	711191	0.51	691836	102.80	70	120	
115	In	6694931	0.54	6634288	100.91	70	120	
209	Bi	16123032	0.92	16365010	98.52	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 11:40	Sample Name	LCVL-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	031LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.211	493	3.28	10	102.1	70	130	
9	Be	45	0.883	57	3.51	1	88.3	70	130	
11	B	45	23.200	556	15.56	20	116.0	70	130	
23	Na	45	105.249	115108	0.58	100	105.2	70	130	
24	Mg	45	100.404	37782	2.89	100	100.4	70	130	
27	Al	45	96.019	12984	1.75	100	96.0	70	130	
39	K	45	105.822	83035	0.80	100	105.8	70	130	
44	Ca	45	97.034	2194	6.79	100	97.0	70	130	
47	Ti	45	4.981	694	16.24	5	99.6	70	130	
51	V	45	0.990	7405	1.67	1	99.0	70	130	
52	Cr	45	5.164	30348	0.92	5	103.3	70	130	
55	Mn	45	4.932	15067	0.98	5	98.6	70	130	
56	Fe	45	98.316	481338	0.67	100	98.3	70	130	
59	Co	72	5.160	48099	1.92	5	103.2	70	130	
60	Ni	72	5.266	13871	3.84	5	105.3	70	130	
63	Cu	72	5.055	37891	1.05	5	101.1	70	130	
66	Zn	72	5.003	6103	1.75	5	100.1	70	130	
75	As	72	5.096	5168	1.25	5	101.9	70	130	
78	Se	72	4.860	337	3.91	5	97.2	70	130	
88	Sr	115	5.140	21310	1.33	5	102.8	70	130	
95	Mo	115	4.953	19283	2.26	5	99.1	70	130	
107	Ag	115	1.964	24482	0.47	2	98.2	70	130	
111	Cd	115	1.030	1888	5.78	1	103.0	70	130	
118	Sn	115	5.127	20100	1.89	5	102.5	70	130	
121	Sb	115	1.951	11631	2.50	2	97.6	70	130	
137	Ba	115	5.004	9363	2.13	5	100.1	70	130	
205	Tl	209	0.992	27078	1.04	1	99.2	70	130	
208	Pb	209	0.967	35772	0.59	1	96.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	893427	0.34	900744	99.19	70	120	
72	Ge	692133	0.84	691836	100.04	70	120	
115	In	6412520	1.80	6634288	96.66	70	120	
209	Bi	15729452	0.95	16365010	96.12	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/20/2016 11:45	Sample Name	ICB-160520
Data Batch	160520.b	Comment	ICB ICPMS_TW
Data File Name	033_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.079	17	24.0	2	5	
9	Be	45	0.096	10	11.9	0.4	0.3	
11	B	45	2.797	122	14.0	10	10	
23	Na	45	1.389	39897	0.2	50	100	
24	Mg	45	-0.816	636	7.3	50	100	
27	Al	45	-0.630	248	10.8	50	10	
39	K	45	4.622	48039	0.4	50	100	
44	Ca	45	0.493	236	7.3	50	100	
47	Ti	45	0.032	7	132.3	4	3	
51	V	45	0.003	2768	7.0	4	3	
52	Cr	45	-0.004	922	6.2	2	2	
55	Mn	45	0.012	149	15.9	2	3	
56	Fe	45	0.182	7778	2.3	50	50	
59	Co	72	0.001	131	10.3	2	3	
60	Ni	72	-0.045	304	13.2	2	3	
63	Cu	72	-0.086	1743	2.3	2	2	
66	Zn	72	0.005	270	10.7	4	2	
75	As	72	0.026	161	5.5	2	2	
78	Se	72	0.216	82	13.1	1	2	
88	Sr	115	-0.005	196	17.2	4	3	
95	Mo	115	0.004	49	43.3	2	2	
107	Ag	115	0.002	71	15.1	0.4	1	
111	Cd	115	-0.002	7	50.0	0.4	0.3	
118	Sn	115	0.236	1351	4.6	4	3	
121	Sb	115	0.008	189	2.7	2	0.8	
137	Ba	115	-0.002	18	57.3	2	3	
205	Tl	209	0.000	32	39.2	2	0.5	
208	Pb	209	-0.001	313	21.3	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	914027	1.10	900744	101.47	70	120	
72	Ge	707118	0.50	691836	102.21	70	120	
115	In	6559701	1.67	6634288	98.88	70	120	
209	Bi	15784059	0.77	16365010	96.45	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/20/2016 13:06	Sample Name	CCV2-160520
Data Batch	160520.b	Comment	CCV ICPMS_TW
Data File Name	066_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	206.782	9383	0.75	200	103.4	90	110	
9	Be	45	206.653	12034	2.11	200	103.3	90	110	
11	B	45	208.432	4353	3.34	200	104.2	90	110	
23	Na	45	5168.925	3686872	0.54	5000	103.4	90	110	
24	Mg	45	5109.315	1808629	0.07	5000	102.2	90	110	
27	Al	45	4965.141	631105	1.07	5000	99.3	90	110	
39	K	45	5070.813	1785627	0.49	5000	101.4	90	110	
44	Ca	45	4837.310	95013	0.31	5000	96.7	90	110	
47	Ti	45	201.140	26931	1.95	200	100.6	90	110	
51	V	45	203.158	934716	0.26	200	101.6	90	110	
52	Cr	45	203.913	1120596	0.27	200	102.0	90	110	
55	Mn	45	203.279	594158	0.25	200	101.6	90	110	
56	Fe	45	5042.514	23467994	2.63	5000	100.9	90	110	
59	Co	72	209.877	1876358	0.40	200	104.9	90	110	
60	Ni	72	207.066	509243	0.87	200	103.5	90	110	
63	Cu	72	208.708	1414211	0.15	200	104.4	90	110	
66	Zn	72	207.264	233038	0.84	200	103.6	90	110	
75	As	72	201.926	191894	0.46	200	101.0	90	110	
78	Se	72	202.755	10849	1.10	200	101.4	90	110	
88	Sr	115	204.295	814939	0.35	200	102.1	90	110	
95	Mo	115	202.212	763670	0.55	200	101.1	90	110	
107	Ag	115	205.239	2480385	1.13	200	102.6	90	110	
111	Cd	115	199.199	352656	0.69	200	99.6	90	110	
118	Sn	115	197.089	735458	0.76	200	98.5	90	110	
121	Sb	115	199.804	1143701	0.34	200	99.9	90	110	
137	Ba	115	198.088	359480	0.42	200	99.0	90	110	
205	Tl	209	200.163	5318716	0.54	200	100.1	90	110	
208	Pb	209	199.769	7127416	0.69	200	99.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861013	0.67	900744	95.59	70	120	
72	Ge	665333	0.20	691836	96.17	70	120	
115	In	6231428	2.47	6634288	93.93	70	120	
209	Bi	15327196	0.94	16365010	93.66	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 13:11	Sample Name	LCVL2-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	068LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.180	474	2.40	10	101.8	70	130	
9	Be	45	0.959	59	8.65	1	95.9	70	130	
11	B	45	21.476	500	5.81	20	107.4	70	130	
23	Na	45	114.680	117582	1.00	100	114.7	70	130	
24	Mg	45	102.970	37317	0.48	100	103.0	70	130	
27	Al	45	98.909	12880	4.15	100	98.9	70	130	
39	K	45	108.787	81036	0.93	100	108.8	70	130	
44	Ca	45	94.480	2064	3.75	100	94.5	70	130	
47	Ti	45	5.005	672	10.88	5	100.1	70	130	
51	V	45	1.123	7743	1.49	1	112.3	70	130	
52	Cr	45	5.141	29121	0.49	5	102.8	70	130	
55	Mn	45	4.988	14682	1.06	5	99.8	70	130	
56	Fe	45	99.852	470995	0.94	100	99.9	70	130	
59	Co	72	5.265	47388	0.94	5	105.3	70	130	
60	Ni	72	5.263	13389	2.18	5	105.3	70	130	
63	Cu	72	4.987	36119	2.85	5	99.7	70	130	
66	Zn	72	5.046	5941	3.03	5	100.9	70	130	
75	As	72	5.075	4969	1.43	5	101.5	70	130	
78	Se	72	4.862	326	7.08	5	97.2	70	130	
88	Sr	115	5.081	20655	2.50	5	101.6	70	130	
95	Mo	115	4.888	18659	3.10	5	97.8	70	130	
107	Ag	115	1.957	23909	0.54	2	97.8	70	130	
111	Cd	115	0.957	1719	2.72	1	95.7	70	130	
118	Sn	115	5.006	19243	1.11	5	100.1	70	130	
121	Sb	115	1.956	11427	1.88	2	97.8	70	130	
137	Ba	115	4.966	9110	2.66	5	99.3	70	130	
205	Tl	209	0.981	26754	0.55	1	98.1	70	130	
208	Pb	209	0.963	35540	1.14	1	96.3	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	860941	0.31	900744	95.58	70	120	
72	Ge	668324	0.73	691836	96.60	70	120	
115	In	6285266	1.03	6634288	94.74	70	120	
209	Bi	15704344	0.74	16365010	95.96	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/20/2016 13:20	Sample Name	CCB2-160520
Data Batch	160520.b	Comment	CCB ICPMS_TW
Data File Name	069_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.014	13	25.4	2	5	
9	Be	45	-0.006	3	34.6	0.4	0.3	
11	B	45	2.688	118	17.3	10	10	
23	Na	45	1.684	39484	2.0	50	100	
24	Mg	45	-0.399	780	2.7	50	100	
27	Al	45	-0.348	281	7.9	50	10	
39	K	45	7.540	48329	1.2	50	100	
44	Ca	45	-1.660	189	6.3	50	100	
47	Ti	45	0.008	3	100.1	4	3	
51	V	45	0.049	2943	3.7	4	3	
52	Cr	45	-0.015	847	3.8	2	2	
55	Mn	45	-0.011	78	8.9	2	3	
56	Fe	45	0.069	7107	2.5	50	50	
59	Co	72	-0.007	53	43.7	2	3	
60	Ni	72	-0.065	244	13.7	2	3	
63	Cu	72	-0.125	1426	1.3	2	2	
66	Zn	72	-0.037	213	14.9	4	2	
75	As	72	0.009	141	11.2	2	2	
78	Se	72	-0.189	58	22.2	1	2	
88	Sr	115	0.038	371	62.4	4	3	
95	Mo	115	-0.003	19	56.7	2	2	
107	Ag	115	0.003	94	22.4	0.4	1	
111	Cd	115	0.005	19	62.0	0.4	0.3	
118	Sn	115	0.076	714	4.9	4	3	
121	Sb	115	0.016	233	23.8	2	0.8	
137	Ba	115	0.007	33	17.3	2	3	
205	Tl	209	0.000	34	39.1	2	0.5	
208	Pb	209	-0.001	310	17.2	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	899519	0.65	900744	99.86	70	120	
72	Ge	688533	0.82	691836	99.52	70	120	
115	In	6468049	0.42	6634288	97.49	70	120	
209	Bi	16017395	0.29	16365010	97.88	70	120	

Method Blank Report

Date Acquired	5/20/16 1:22 PM	Sample Name	MB-75180
Data Batch	160520.b	Comment	MBLKICPMS_TWDOD
Data File Name	070_LRB.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.065	16	43.00		
9	Be	45	-0.016	3	43.30		
11	B	45	3.680	139	7.33		
23	Na	45	1.602	39357	1.68		
24	Mg	45	1.079	1323	9.33		
27	Al	45	6.638	1207	6.50		
39	K	45	6.087	47729	1.50		
44	Ca	45	17.031	570	6.85		
47	Ti	45	0.000	2	86.60		
51	V	45	0.098	3175	2.84		
52	Cr	45	0.003	946	10.81		
55	Mn	45	0.007	131	27.42		
56	Fe	45	0.701	10161	1.53		
59	Co	72	-0.006	58	35.25		
60	Ni	72	-0.056	270	9.64		
63	Cu	72	-0.120	1478	9.63		
66	Zn	72	0.584	947	5.99		
75	As	72	-0.003	131	9.62		
78	Se	72	0.231	82	12.61		
88	Sr	115	0.102	651	7.42		
95	Mo	115	-0.004	14	74.18		
107	Ag	115	0.004	98	20.55		
111	Cd	115	-0.005	0	#DIV/0!		
118	Sn	115	0.027	536	6.23		
121	Sb	115	0.014	222	8.66		
137	Ba	115	0.032	82	24.77		
205	Tl	209	0.000	47	25.75		
208	Pb	209	0.004	533	7.68		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898027	1.16	900744	99.70	70	120	
72	Ge	696733	0.54	691836	100.71	70	120	
115	In	6624535	1.15	6634288	99.85	70	120	
209	Bi	16420634	0.64	16365010	100.34	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/20/2016 13:24	Sample Name	LCS-75180
Data Batch	160520.b	Comment	LCS ICPMS_TWDOD
Data File Name	071_LFB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.477	9515	1.62	200	103.7	80	120	
9	Be	45	202.266	11905	1.32	200	101.1	80	120	
11	B	45	195.161	4124	4.40	200	97.6	80	120	
23	Na	45	5153.894	3715782	0.89	5000	103.1	80	120	
24	Mg	45	5118.954	1831544	0.71	5000	102.4	80	120	
27	Al	45	4981.246	639961	1.20	5000	99.6	80	120	
39	K	45	5041.266	1794560	0.13	5000	100.8	80	120	
44	Ca	45	4740.164	94110	0.45	5000	94.8	80	120	
47	Ti	45	192.838	26098	0.93	200	96.4	80	120	
51	V	45	200.032	930245	0.81	200	100.0	80	120	
52	Cr	45	200.955	1116256	0.75	200	100.5	80	120	
55	Mn	45	199.655	589846	0.43	200	99.8	80	120	
56	Fe	45	5071.775	23856763	1.05	5000	101.4	80	120	
59	Co	72	207.626	1874260	0.84	200	103.8	80	120	
60	Ni	72	204.682	508272	0.59	200	102.3	80	120	
63	Cu	72	205.447	1405663	1.66	200	102.7	80	120	
66	Zn	72	202.971	230430	0.68	200	101.5	80	120	
75	As	72	196.603	188655	0.16	200	98.3	80	120	
78	Se	72	200.300	10823	0.38	200	100.1	80	120	
88	Sr	115	196.190	794822	0.55	200	98.1	80	120	
95	Mo	115	195.187	748613	0.26	200	97.6	80	120	
107	Ag	115	196.529	2412668	1.27	200	98.3	80	120	
111	Cd	115	196.284	352950	1.05	200	98.1	80	120	
118	Sn	115	193.543	733613	1.09	200	96.8	80	120	
121	Sb	115	198.951	1156640	0.59	200	99.5	80	120	
137	Ba	115	195.083	359597	1.11	200	97.5	80	120	
205	Tl	209	200.277	5442896	1.66	200	100.1	80	120	
208	Pb	209	196.766	7180277	0.50	200	98.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870277	0.61	900744	96.62	70	120	
72	Ge	671795	0.07	691836	97.10	70	120	
115	In	6329080	2.64	6634288	95.40	70	120	
209	Bi	15677643	1.30	16365010	95.80	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/20/2016 13:26	Sample Name	LCSD-75180
Data Batch	160520.b	Comment	LCSDICPMS_TWDOD
Data File Name	072_LFB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	211.628	9552	1.66	200	105.8	80	120	
9	Be	45	207.907	12043	0.86	200	104.0	80	120	
11	B	45	207.539	4312	1.43	200	103.8	80	120	
23	Na	45	5362.484	3803524	0.49	5000	107.2	80	120	
24	Mg	45	5350.645	1884119	0.41	5000	107.0	80	120	
27	Al	45	4623.801	584689	0.66	5000	92.5	80	120	
39	K	45	5298.886	1854221	0.78	5000	106.0	80	120	
44	Ca	45	4926.669	96259	0.97	5000	98.5	80	120	
47	Ti	45	200.210	26667	0.20	200	100.1	80	120	
51	V	45	205.077	938586	0.55	200	102.5	80	120	
52	Cr	45	204.586	1118439	0.90	200	102.3	80	120	
55	Mn	45	205.641	597919	0.06	200	102.8	80	120	
56	Fe	45	5087.447	23550804	1.09	5000	101.7	80	120	
59	Co	72	214.414	1904053	0.24	200	107.2	80	120	
60	Ni	72	209.839	512595	0.45	200	104.9	80	120	
63	Cu	72	210.981	1419956	0.46	200	105.5	80	120	
66	Zn	72	204.234	228100	0.64	200	102.1	80	120	
75	As	72	202.120	190788	0.15	200	101.1	80	120	
78	Se	72	201.529	10711	1.06	200	100.8	80	120	
88	Sr	115	196.352	801400	0.82	200	98.2	80	120	
95	Mo	115	195.900	756939	0.79	200	98.0	80	120	
107	Ag	115	195.076	2412277	0.22	200	97.5	80	120	
111	Cd	115	198.025	358702	0.47	200	99.0	80	120	
118	Sn	115	194.683	743307	0.78	200	97.3	80	120	
121	Sb	115	195.279	1143707	0.47	200	97.6	80	120	
137	Ba	115	194.998	362068	0.19	200	97.5	80	120	
205	Tl	209	201.393	5413984	0.64	200	100.7	80	120	
208	Pb	209	200.604	7241369	0.67	200	100.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	856491	0.13	900744	95.09	70	120	
72	Ge	660905	0.92	691836	95.53	70	120	
115	In	6373621	0.51	6634288	96.07	70	120	
209	Bi	15514322	2.64	16365010	94.80	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/20/2016 13:32	Sample Name	1605097-27A SD
Data Batch	160520.b	Comment	SD ICPMS_TWDOD
Data File Name	075_SD.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	0.068	16	12.50	0.2	180.5	110	90	
9	Be	45	-0.038	1	114.56	0.1	-141.3	110	90	
11	B	45	17.535	423	8.52	77.9	112.5	110	90	
23	Na	45	35.699	62521	0.91	172.1	103.7	110	90	Good
24	Mg	45	3.836	2271	5.49	19.3	99.3	110	90	Good
27	Al	45	34.453	4743	3.67	166.6	103.4	110	90	Good
39	K	45	11.074	48015	1.21	33.2	166.9	110	90	
44	Ca	45	74.540	1693	4.14	360.4	103.4	110	90	Good
47	Ti	45	0.107	17	87.16	0.3	169.7	110	90	
51	V	45	0.073	2960	6.49	0.2	205.2	110	90	
52	Cr	45	0.197	1996	7.06	1.1	92.7	110	90	Good
55	Mn	45	0.148	544	14.36	0.8	93.8	110	90	Good
56	Fe	45	5.267	31343	1.57	26.2	100.7	110	90	Good
59	Co	72	0.009	193	14.73	0.0	121.3	110	90	
60	Ni	72	0.263	1052	2.56	1.7	76.4	110	90	
63	Cu	72	-0.047	1923	10.96	0.3	-91.9	110	90	
66	Zn	72	0.853	1217	12.34	4.1	103.4	110	90	Good
75	As	72	0.029	157	5.00	0.1	222.6	110	90	
78	Se	72	0.336	84	9.94	0.1	1399.8	110	90	
88	Sr	115	0.548	2455	2.52	2.7	102.1	110	90	Good
95	Mo	115	0.153	626	21.59	0.7	110.5	110	90	
107	Ag	115	0.009	164	25.34	0.0	250.0	110	90	
111	Cd	115	0.003	16	32.73	0.0	143.0	110	90	
118	Sn	115	0.074	696	6.98	0.2	169.5	110	90	
121	Sb	115	0.045	399	25.38	0.1	235.1	110	90	
137	Ba	115	0.117	239	11.62	0.7	90.2	110	90	Good
205	Tl	209	0.005	176	19.02	0.0	164.6	110	90	
208	Pb	209	0.027	1372	7.85	0.1	113.9	110	90	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870854	0.91	900744	96.68	70	120	
72	Ge	671393	0.27	691836	97.05	70	120	
115	In	6391281	1.83	6634288	96.34	70	120	
209	Bi	15830888	0.33	16365010	96.74	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/20/2016 13:52	Sample Name	1605097-27A PDS
Data Batch	160520.b	Comment	PDS ICPMS_TWDOD
Data File Name	085_PDS.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	208.981	9280	1.02	0.2	200	104.4	75	125	
9	Be	45	205.509	11711	0.53	0.1	200	102.7	75	125	
11	B	45	285.809	5820	2.43	77.9	200	104.0	75	125	
23	Na	45	5404.541	3770772	0.71	172.1	5000	104.6	75	125	
24	Mg	45	5227.887	1811012	0.25	19.3	5000	104.2	75	125	
27	Al	45	5186.356	645154	1.11	166.6	5000	100.4	75	125	
39	K	45	5131.767	1767946	0.81	33.2	5000	102.0	75	125	
44	Ca	45	5036.090	96794	0.63	360.4	5000	93.5	75	125	
47	Ti	45	204.672	26818	0.31	0.3	200	102.2	75	125	
51	V	45	205.614	925765	1.11	0.2	200	102.7	75	125	
52	Cr	45	209.415	1126215	0.10	1.1	200	104.2	75	125	
55	Mn	45	201.270	575717	0.99	0.8	200	100.2	75	125	
56	Fe	45	5141.790	23416040	2.86	26.2	5000	102.3	75	125	
59	Co	72	212.432	1865010	0.28	0.0	200	106.2	75	125	
60	Ni	72	206.554	498845	0.40	1.7	200	102.4	75	125	
63	Cu	72	205.509	1367501	0.81	0.3	200	102.6	75	125	
66	Zn	72	206.091	227552	0.83	4.1	200	101.0	75	125	
75	As	72	197.771	184566	0.70	0.1	200	98.9	75	125	
78	Se	72	202.393	10635	0.90	0.1	200	101.1	75	125	
88	Sr	115	206.704	815896	0.34	2.7	200	102.0	75	125	
95	Mo	115	198.384	741330	0.42	0.7	200	98.8	75	125	
107	Ag	115	184.548	2207022	0.22	0.0	200	92.3	75	125	
111	Cd	115	195.191	341931	0.27	0.0	200	97.6	75	125	
118	Sn	115	202.579	748007	0.46	0.2	200	101.2	75	125	
121	Sb	115	188.867	1069835	1.39	0.1	200	94.4	75	125	
137	Ba	115	199.288	357867	0.43	0.7	200	99.3	75	125	
205	Tl	209	199.302	5296717	0.74	0.0	200	99.6	75	125	
208	Pb	209	199.936	7134456	0.42	0.1	200	99.9	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	842584	0.33	900744	93.54	70	120	
72	Ge	653370	0.47	691836	94.44	70	120	
115	In	6164044	0.75	6634288	92.91	70	120	
209	Bi	15329899	0.74	16365010	93.67	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/20/2016 13:54	Sample Name	1605097-27A MS
Data Batch	160520.b	Comment	MS ICPMS_TWDOD
Data File Name	086_MSW.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	170.064	7584	1.95	0.2	200	84.9	80	120	
9	Be	45	170.036	9730	0.33	0.1	200	85.0	80	120	
11	B	45	211.300	4335	2.63	77.9	200	66.7	80	120	Fail
23	Na	45	5276.203	3697081	0.68	172.1	5000	102.1	80	120	
24	Mg	45	5130.074	1784373	1.29	19.3	5000	102.2	80	120	
27	Al	45	4817.494	601724	1.24	166.6	5000	93.0	80	120	
39	K	45	5034.751	1742366	0.92	33.2	5000	100.0	80	120	
44	Ca	45	4749.301	91663	0.93	360.4	5000	87.8	80	120	
47	Ti	45	161.792	21287	1.94	0.3	200	80.7	80	120	
51	V	45	167.529	757849	1.08	0.2	200	83.7	80	120	
52	Cr	45	169.182	913736	0.52	1.1	200	84.1	80	120	
55	Mn	45	167.173	480133	1.01	0.8	200	83.2	80	120	
56	Fe	45	4989.600	22816465	1.30	26.2	5000	99.3	80	120	
59	Co	72	170.716	1510248	1.41	0.0	200	85.3	80	120	
60	Ni	72	170.393	414746	0.92	1.7	200	84.3	80	120	
63	Cu	72	170.672	1144804	0.98	0.3	200	85.2	80	120	
66	Zn	72	171.664	191038	0.75	4.1	200	83.8	80	120	
75	As	72	164.901	155123	1.29	0.1	200	82.4	80	120	
78	Se	72	162.927	8642	1.69	0.1	200	81.4	80	120	
88	Sr	115	166.659	660795	1.05	2.7	200	82.0	80	120	
95	Mo	115	163.856	615005	0.41	0.7	200	81.6	80	120	
107	Ag	115	198.800	2387903	0.89	0.0	200	99.4	80	120	
111	Cd	115	165.115	290524	0.61	0.0	200	82.6	80	120	
118	Sn	115	163.476	606381	0.54	0.2	200	81.6	80	120	
121	Sb	115	201.813	1148120	0.30	0.1	200	100.9	80	120	
137	Ba	115	165.330	298187	0.64	0.7	200	82.3	80	120	
205	Tl	209	163.516	4397378	0.75	0.0	200	81.8	80	120	
208	Pb	209	161.721	5839522	0.48	0.1	200	80.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	846025	0.40	900744	93.93	70	120	
72	Ge	658505	1.30	691836	95.18	70	120	
115	In	6191469	0.95	6634288	93.33	70	120	
209	Bi	15511736	0.59	16365010	94.79	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/20/2016 13:56	Sample Name	1605097-27A MSD
Data Batch	160520.b	Comment	MSD ICPMS_TWDOD
Data File Name	087_MSW.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	205.597	9304	1.62	0.2	200	102.7	80	120	
9	Be	45	203.064	11793	1.41	0.1	200	101.5	80	120	
11	B	45	242.909	5050	4.50	77.9	200	82.5	80	120	
23	Na	45	5177.237	3682905	1.10	172.1	5000	100.1	80	120	
24	Mg	45	4993.908	1763105	0.25	19.3	5000	99.5	80	120	
27	Al	45	4936.520	625831	0.74	166.6	5000	95.4	80	120	
39	K	45	4965.228	1744703	1.20	33.2	5000	98.6	80	120	
44	Ca	45	4753.640	93125	1.29	360.4	5000	87.9	80	120	
47	Ti	45	195.210	26068	0.98	0.3	200	97.4	80	120	
51	V	45	200.675	920875	0.73	0.2	200	100.2	80	120	
52	Cr	45	203.955	1117867	0.41	1.1	200	101.4	80	120	
55	Mn	45	202.473	590229	0.83	0.8	200	100.8	80	120	
56	Fe	45	5112.057	23726119	2.33	26.2	5000	101.7	80	120	
59	Co	72	206.133	1846156	0.73	0.0	200	103.0	80	120	
60	Ni	72	206.533	508832	0.56	1.7	200	102.4	80	120	
63	Cu	72	206.199	1399718	0.23	0.3	200	103.0	80	120	
66	Zn	72	204.471	230307	1.38	4.1	200	100.2	80	120	
75	As	72	198.160	188652	0.84	0.1	200	99.0	80	120	
78	Se	72	201.130	10782	0.12	0.1	200	100.5	80	120	
88	Sr	115	201.026	801163	0.72	2.7	200	99.2	80	120	
95	Mo	115	199.764	753727	1.09	0.7	200	99.5	80	120	
107	Ag	115	197.459	2384307	0.18	0.0	200	98.7	80	120	
111	Cd	115	200.097	353929	0.48	0.0	200	100.0	80	120	
118	Sn	115	197.870	737731	0.96	0.2	200	98.8	80	120	
121	Sb	115	201.125	1150215	0.35	0.1	200	100.5	80	120	
137	Ba	115	199.346	361437	0.39	0.7	200	99.3	80	120	
205	Tl	209	195.932	5357915	0.27	0.0	200	98.0	80	120	
208	Pb	209	195.812	7189529	0.20	0.1	200	97.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	858705	0.07	900744	95.33	70	120	
72	Ge	666512	0.03	691836	96.34	70	120	
115	In	6223826	0.86	6634288	93.81	70	120	
209	Bi	15779807	2.46	16365010	96.42	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/20/2016 13:58	Sample Name	CCV3-160520
Data Batch	160520.b	Comment	CCV ICPMS_TW
Data File Name	088_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	203.180	9274	0.83	200	101.6	90	110	
9	Be	45	203.486	11920	1.02	200	101.7	90	110	
11	B	45	210.276	4416	1.73	200	105.1	90	110	
23	Na	45	5132.134	3682741	0.63	5000	102.6	90	110	
24	Mg	45	5086.454	1811320	0.58	5000	101.7	90	110	
27	Al	45	4980.080	636833	0.78	5000	99.6	90	110	
39	K	45	5081.672	1800039	0.46	5000	101.6	90	110	
44	Ca	45	4836.944	95568	0.34	5000	96.7	90	110	
47	Ti	45	200.071	26952	1.98	200	100.0	90	110	
51	V	45	203.154	940224	0.55	200	101.6	90	110	
52	Cr	45	202.100	1117262	0.18	200	101.1	90	110	
55	Mn	45	202.982	596833	0.52	200	101.5	90	110	
56	Fe	45	5019.103	23493427	1.22	5000	100.4	90	110	
59	Co	72	208.419	1864213	1.18	200	104.2	90	110	
60	Ni	72	205.434	505495	0.52	200	102.7	90	110	
63	Cu	72	209.149	1417980	1.14	200	104.6	90	110	
66	Zn	72	205.831	231556	1.37	200	102.9	90	110	
75	As	72	201.676	191753	0.22	200	100.8	90	110	
78	Se	72	204.247	10934	1.41	200	102.1	90	110	
88	Sr	115	201.502	818714	0.86	200	100.8	90	110	
95	Mo	115	199.699	768114	0.40	200	99.8	90	110	
107	Ag	115	202.247	2489708	0.73	200	101.1	90	110	
111	Cd	115	199.234	359250	0.46	200	99.6	90	110	
118	Sn	115	196.022	745053	0.39	200	98.0	90	110	
121	Sb	115	199.544	1163397	0.25	200	99.8	90	110	
137	Ba	115	198.512	366908	1.08	200	99.3	90	110	
205	Tl	209	199.782	5446376	0.37	200	99.9	90	110	
208	Pb	209	197.855	7242369	0.64	200	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	866202	1.29	900744	96.17	70	120	
72	Ge	665686	0.56	691836	96.22	70	120	
115	In	6344920	0.75	6634288	95.64	70	120	
209	Bi	15726160	1.52	16365010	96.10	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 14:04	Sample Name	LCVL3-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	090LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.230	527	10.42	10	112.3	70	130	
9	Be	45	1.010	63	17.89	1	101.0	70	130	
11	B	45	24.634	571	4.38	20	123.2	70	130	
23	Na	45	98.195	107074	0.50	100	98.2	70	130	
24	Mg	45	101.451	37176	1.95	100	101.5	70	130	
27	Al	45	99.147	13048	0.90	100	99.1	70	130	
39	K	45	103.570	80094	1.64	100	103.6	70	130	
44	Ca	45	100.317	2202	2.99	100	100.3	70	130	
47	Ti	45	5.093	691	7.81	5	101.9	70	130	
51	V	45	1.066	7563	1.15	1	106.6	70	130	
52	Cr	45	5.146	29458	1.00	5	102.9	70	130	
55	Mn	45	5.131	15261	1.50	5	102.6	70	130	
56	Fe	45	100.203	477688	0.08	100	100.2	70	130	
59	Co	72	5.197	47885	1.12	5	103.9	70	130	
60	Ni	72	5.154	13429	0.94	5	103.1	70	130	
63	Cu	72	5.013	37155	1.61	5	100.3	70	130	
66	Zn	72	5.311	6389	4.69	5	106.2	70	130	
75	As	72	4.952	4966	1.28	5	99.0	70	130	
78	Se	72	5.555	371	4.76	5	111.1	70	130	
88	Sr	115	5.152	21317	0.76	5	103.0	70	130	
95	Mo	115	4.876	18942	2.94	5	97.5	70	130	
107	Ag	115	1.956	24332	2.20	2	97.8	70	130	
111	Cd	115	0.961	1757	3.66	1	96.1	70	130	
118	Sn	115	5.019	19639	1.08	5	100.4	70	130	
121	Sb	115	2.013	11969	1.61	2	100.7	70	130	
137	Ba	115	4.958	9262	1.20	5	99.2	70	130	
205	Tl	209	0.992	27281	1.62	1	99.2	70	130	
208	Pb	209	0.977	36361	0.51	1	97.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870167	0.41	900744	96.61	70	120	
72	Ge	684121	0.81	691836	98.88	70	120	
115	In	6398204	0.37	6634288	96.44	70	120	
209	Bi	15843229	2.06	16365010	96.81	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/20/2016 14:06	Sample Name	CCB3-160520
Data Batch	160520.b	Comment	CCB ICPMS_TW
Data File Name	091_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.018	12	28.9	2	5	
9	Be	45	0.007	4	75.0	0.4	0.3	
11	B	45	5.180	166	19.3	10	10	
23	Na	45	-4.493	33660	2.0	50	100	
24	Mg	45	-1.062	516	7.2	50	100	
27	Al	45	-0.474	254	16.5	50	10	
39	K	45	5.967	46044	0.9	50	100	
44	Ca	45	0.316	221	16.5	50	100	
47	Ti	45	0.034	7	86.6	4	3	
51	V	45	0.086	3011	4.6	4	3	
52	Cr	45	0.000	899	4.6	2	2	
55	Mn	45	-0.001	103	29.6	2	3	
56	Fe	45	0.192	7426	0.8	50	50	
59	Co	72	0.009	199	23.8	2	3	
60	Ni	72	-0.070	230	15.3	2	3	
63	Cu	72	-0.120	1441	7.2	2	2	
66	Zn	72	-0.026	223	3.9	4	2	
75	As	72	0.026	155	2.8	2	2	
78	Se	72	0.144	75	6.5	1	2	
88	Sr	115	-0.007	181	12.5	4	3	
95	Mo	115	0.003	42	22.8	2	2	
107	Ag	115	0.009	161	2.4	0.4	1	
111	Cd	115	0.000	10	33.3	0.4	0.3	
118	Sn	115	0.131	907	6.1	4	3	
121	Sb	115	0.092	671	12.4	2	0.8	
137	Ba	115	0.013	44	11.5	2	3	
205	Tl	209	0.004	156	14.3	2	0.5	
208	Pb	209	0.003	463	8.5	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	867169	1.51	900744	96.27	70	120	
72	Ge	678651	0.28	691836	98.09	70	120	
115	In	6326752	0.94	6634288	95.36	70	120	
209	Bi	15694418	1.64	16365010	95.90	70	120	

Sample Report

Date Acquired	5/20/16 2:20 PM	Sample Name	1605135-46A
Data Batch	160520.b	Comment	SAMPICPMS_TWDOD
Data File Name	098_WS.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.061	16	47.19	2000	
9	Be	45	0.017	5	65.47	2000	
11	B	45	41.952	951	9.38	2000	>RL
23	Na	45	193.839	178984	1.09	25000	>RL
24	Mg	45	2.629	1876	5.79	25000	
27	Al	45	19.559	2887	1.81	10000	J
39	K	45	27.309	54730	0.70	25000	
44	Ca	45	40.449	1038	7.77	25000	
47	Ti	45	0.338	49	79.03	2000	
51	V	45	0.175	3504	3.67	2000	
52	Cr	45	1.328	8442	1.31	2000	
55	Mn	45	0.675	2143	1.38	2000	
56	Fe	45	24.254	123100	1.18	10000	
59	Co	72	0.022	319	7.85	2000	
60	Ni	72	1.163	3381	1.48	2000	
63	Cu	72	0.210	3785	2.17	2000	
66	Zn	72	2.031	2630	6.53	2000	J
75	As	72	0.022	154	13.99	2000	
78	Se	72	0.096	74	11.39	2000	
88	Sr	115	0.147	829	5.49	2000	
95	Mo	115	0.574	2294	2.01	2000	
107	Ag	115	0.004	100	23.09	500	
111	Cd	115	0.004	18	84.55	2000	
118	Sn	115	0.087	758	4.43	2000	
121	Sb	115	0.046	414	23.71	500	
137	Ba	115	0.142	289	25.39	2000	
205	Tl	209	0.001	69	38.81	2000	
208	Pb	209	0.024	1273	5.78	2000	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	888265	0.23	900744	98.61	70	120	
72	Ge	691607	1.76	691836	99.97	70	120	
115	In	6498647	1.46	6634288	97.96	70	120	
209	Bi	16227001	0.72	16365010	99.16	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/20/2016 14:24	Sample Name	CCV4-160520
Data Batch	160520.b	Comment	CCV ICPMS_TW
Data File Name	100_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.123	9388	0.80	200	104.6	90	110	
9	Be	45	208.207	11994	0.48	200	104.1	90	110	
11	B	45	203.797	4212	3.86	200	101.9	90	110	
23	Na	45	5148.990	3633551	0.68	5000	103.0	90	110	
24	Mg	45	5123.233	1794203	0.40	5000	102.5	90	110	
27	Al	45	4980.045	626267	0.50	5000	99.6	90	110	
39	K	45	5038.185	1755471	0.35	5000	100.8	90	110	
44	Ca	45	4785.666	92998	0.86	5000	95.7	90	110	
47	Ti	45	199.374	26410	2.03	200	99.7	90	110	
51	V	45	202.096	919918	0.37	200	101.0	90	110	
52	Cr	45	202.131	1098976	0.19	200	101.1	90	110	
55	Mn	45	202.769	586339	1.07	200	101.4	90	110	
56	Fe	45	5041.066	23208886	2.16	5000	100.8	90	110	
59	Co	72	207.997	1837266	0.54	200	104.0	90	110	
60	Ni	72	206.739	502343	0.77	200	103.4	90	110	
63	Cu	72	206.988	1385843	0.86	200	103.5	90	110	
66	Zn	72	203.079	225616	1.76	200	101.5	90	110	
75	As	72	199.013	186865	0.89	200	99.5	90	110	
78	Se	72	200.798	10616	0.97	200	100.4	90	110	
88	Sr	115	201.110	805597	1.18	200	100.6	90	110	
95	Mo	115	199.684	757215	0.24	200	99.8	90	110	
107	Ag	115	203.488	2469488	0.16	200	101.7	90	110	
111	Cd	115	199.985	355504	0.18	200	100.0	90	110	
118	Sn	115	197.462	739911	0.69	200	98.7	90	110	
121	Sb	115	198.318	1139914	0.61	200	99.2	90	110	
137	Ba	115	198.384	361502	0.28	200	99.2	90	110	
205	Tl	209	198.777	5414678	1.21	200	99.4	90	110	
208	Pb	209	196.887	7201152	0.36	200	98.4	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	851803	0.12	900744	94.57	70	120	
72	Ge	657385	0.52	691836	95.02	70	120	
115	In	6255271	0.87	6634288	94.29	70	120	
209	Bi	15713189	1.11	16365010	96.02	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 14:41	Sample Name	LCVL4-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	102LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.685	502	3.49	10	106.9	70	130	
9	Be	45	1.096	68	6.41	1	109.6	70	130	
11	B	45	23.853	554	7.94	20	119.3	70	130	
23	Na	45	93.918	103987	0.70	100	93.9	70	130	
24	Mg	45	99.544	36480	0.51	100	99.5	70	130	
27	Al	45	99.184	13048	0.80	100	99.2	70	130	
39	K	45	105.038	80572	0.51	100	105.0	70	130	
44	Ca	45	92.119	2039	1.77	100	92.1	70	130	
47	Ti	45	5.333	723	9.71	5	106.7	70	130	
51	V	45	1.049	7481	3.19	1	104.9	70	130	
52	Cr	45	5.152	29482	1.43	5	103.0	70	130	
55	Mn	45	4.912	14610	1.67	5	98.2	70	130	
56	Fe	45	99.465	474042	0.99	100	99.5	70	130	
59	Co	72	5.203	47305	0.83	5	104.1	70	130	
60	Ni	72	5.133	13200	2.09	5	102.7	70	130	
63	Cu	72	5.024	36741	1.23	5	100.5	70	130	
66	Zn	72	5.226	6207	1.40	5	104.5	70	130	
75	As	72	5.050	4995	1.79	5	101.0	70	130	
78	Se	72	5.706	375	1.39	5	114.1	70	130	
88	Sr	115	4.972	21117	3.12	5	99.4	70	130	
95	Mo	115	4.710	18774	0.76	5	94.2	70	130	
107	Ag	115	1.888	24096	1.18	2	94.4	70	130	
111	Cd	115	0.955	1792	2.86	1	95.5	70	130	
118	Sn	115	4.754	19110	1.41	5	95.1	70	130	
121	Sb	115	1.846	11275	1.66	2	92.3	70	130	
137	Ba	115	4.953	9493	1.16	5	99.1	70	130	
205	Tl	209	0.994	26913	0.64	1	99.4	70	130	
208	Pb	209	0.974	35718	1.32	1	97.4	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	869866	0.59	900744	96.57	70	120	
72	Ge	675027	0.39	691836	97.57	70	120	
115	In	6564471	0.91	6634288	98.95	70	120	
209	Bi	15594017	0.83	16365010	95.29	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/20/2016 14:48	Sample Name	CCB4-160520
Data Batch	160520.b	Comment	CCB ICPMS_TW
Data File Name	103_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.025	11	58.7	2	5	
9	Be	45	-0.019	2	24.7	0.4	0.3	
11	B	45	0.364	63	39.7	10	10	
23	Na	45	-7.059	30783	0.7	50	100	
24	Mg	45	-1.361	396	1.0	50	100	
27	Al	45	-0.498	243	17.8	50	10	
39	K	45	4.451	44003	0.3	50	100	
44	Ca	45	1.218	230	6.8	50	100	
47	Ti	45	0.044	8	65.5	4	3	
51	V	45	0.114	3035	8.6	4	3	
52	Cr	45	-0.015	788	5.7	2	2	
55	Mn	45	-0.019	49	10.4	2	3	
56	Fe	45	0.164	7056	6.1	50	50	
59	Co	72	-0.003	86	9.8	2	3	
60	Ni	72	-0.033	309	9.1	2	3	
63	Cu	72	-0.124	1360	4.9	2	2	
66	Zn	72	-0.033	207	14.0	4	2	
75	As	72	-0.001	124	10.6	2	2	
78	Se	72	0.097	70	21.7	1	2	
88	Sr	115	0.011	251	13.3	4	3	
95	Mo	115	-0.004	14	35.3	2	2	
107	Ag	115	0.002	71	57.9	0.4	1	
111	Cd	115	-0.004	2	86.6	0.4	0.3	
118	Sn	115	0.031	519	5.5	4	3	
121	Sb	115	0.006	166	31.5	2	0.8	
137	Ba	115	0.015	47	18.9	2	3	
205	Tl	209	0.000	26	61.6	2	0.5	
208	Pb	209	-0.002	280	20.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	838258	0.89	900744	93.06	70	120	
72	Ge	652989	0.94	691836	94.38	70	120	
115	In	6222740	1.27	6634288	93.80	70	120	
209	Bi	15341203	0.92	16365010	93.74	70	120	

ICP-MS4_160526F
For

DHL Work Order
1605135

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS4_160526F SOP: MET-ICPMS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			x
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			x
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%	X			
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)	X			

Lab Data Review Check List

EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted			X	
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality			X	x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag Data/ Case Narative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data: See Run Log

Analyst: [signature] Date of Completion: 05/27/2016

Second-Level Review: Janice Whitt Date Stamp: 6/1/2016

REVIEWED BY
By Janice Whitt at 10:36:32 AM, 6/1/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160526F** **Run No.:** 86044

Analytical Run Date: 5/26/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:10:00 AM		
L2-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:12:00 AM		
L-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:14:00 AM		
10X-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:16:00 AM		
5X-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:18:00 AM		
2X-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:20:00 AM		
H-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:22:00 AM		
H2-160526	1	ICPMS_TWDOD	CAL	R86044	5/26/2016 11:24:00 AM		
ICSA-160526	1	ICPMS_TWDOD	ICSA	R86044	5/26/2016 11:32:00 AM		
ICSAB-160526	1	ICPMS_TWDOD	ICSB	R86044	5/26/2016 11:34:00 AM		
ICV-160526	1	ICPMS_TWDOD	ICV	R86044	5/26/2016 11:43:00 AM		
LCVL-160526	1	ICPMS_TWDOD	LCVL	R86044	5/26/2016 11:49:00 AM		
ICB-160526	1	ICPMS_TWDOD	ICB	R86044	5/26/2016 11:56:00 AM		
CCV5-160526	1	ICPMS_TWDOD	CCV	R86044	5/26/2016 3:24:00 PM		
LCVL5-160526	1	ICPMS_TWDOD	LCVL	R86044	5/26/2016 3:29:00 PM		
CCB5-160526	1	ICPMS_TWDOD	CCB	R86044	5/26/2016 3:32:00 PM		
MB-75287	5	ICPMS_TSDOD1	MBLK	75287	5/26/2016 3:34:00 PM		
LCS-75287	5	ICPMS_TSDOD1	LCS	75287	5/26/2016 3:36:00 PM		
LCSD-75287	5	ICPMS_TSDOD1	LCSD	75287	5/26/2016 3:38:00 PM		
1605135-36A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:42:00 PM		
1605135-36A SD	25	ICPMS_TSDOD1	SD	75287	5/26/2016 3:44:00 PM		
1605135-32A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:46:00 PM		
1605135-33A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:48:00 PM		
1605135-34A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:50:00 PM		
1605135-35A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:52:00 PM		
1605135-37A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:54:00 PM		
1605135-38A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:56:00 PM		
1605135-39A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 3:58:00 PM		
1605135-40A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:00:00 PM		
1605135-41A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:02:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160525	ICPMS CCV 200/5000 PPB		08/23/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/23/2016
MET-HCAL-16052	ICPMS High Cal 500ppb/10ppm s		08/23/2016
MET-ICV-160525	ICPMS ICV 100 ppb		08/23/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16052	ICPMS Low Cal2 1/20ppb std 2		08/23/2016
MET-LCAL-160525	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/23/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/23/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16052	ICPMS Mid Cal 250/5000ppb std		08/23/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160526F** **Run No.:** 86044

1605135-36A PDS	5	ICPMS_TSDOD1	PDS	75287	5/26/2016 4:04:00 PM		
1605135-36A MS	5	ICPMS_TSDOD1	MS	75287	5/26/2016 4:18:00 PM		
1605135-36A MSD	5	ICPMS_TSDOD1	MSD	75287	5/26/2016 4:20:00 PM		
CCV6-160526	1	ICPMS_TWDOD	CCV	R86044	5/26/2016 4:22:00 PM		
LCVL6-160526	1	ICPMS_TWDOD	LCVL	R86044	5/26/2016 4:26:00 PM		
CCB6-160526	1	ICPMS_TWDOD	CCB	R86044	5/26/2016 4:28:00 PM		
1605135-42A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:30:00 PM		
1605135-43A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:32:00 PM		
1605135-44A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:34:00 PM		
1605135-45A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:36:00 PM		
1605144-01A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:38:00 PM		
1605144-02A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:40:00 PM		
1605144-03A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:42:00 PM		
1605144-04A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:44:00 PM		
1605144-05A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:46:00 PM		
1605144-06A	5	ICPMS_TSDOD1	SAMP	75287	5/26/2016 4:48:00 PM		
CCV7-160526	1	ICPMS_TWDOD	CCV	R86044	5/26/2016 4:50:00 PM		
LCVL7-160526	1	ICPMS_TWDOD	LCVL	R86044	5/26/2016 4:54:00 PM		
CCB7-160526	1	ICPMS_TWDOD	CCB	R86044	5/26/2016 5:06:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160525	ICPMS CCV 200/5000 PPB		08/23/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/23/2016
MET-HCAL-16052	ICPMS High Cal 500ppb/10ppm s		08/23/2016
MET-ICV-160525	ICPMS ICV 100 ppb		08/23/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16052	ICPMS Low Cal2 1/20ppb std 2		08/23/2016
MET-LCAL-160525	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/23/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/23/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16052	ICPMS Mid Cal 250/5000ppb std		08/23/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160526.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160526	CAL ICPMS_TW	2102	
14	CalStd	L-160526	CAL ICPMS_TW	2103	
15	CalStd	10X-160526	CAL ICPMS_TW	2104	
16	CalStd	5X-160526	CAL ICPMS_TW	2105	
17	CalStd	2X-160526	CAL ICPMS_TW	2106	
18	CalStd	H-160526	CAL ICPMS_TW	2107	
19	CalStd	H2-160526	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	1		
13	2		
14	3		
15	4		
16	5		
17	6		
18	7		
19	8		

Sample List

20

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	CCB		CAL ICPMS_TW	1102	
22	CCB		CAL ICPMS_TW	1103	
23	CCB		CAL ICPMS_TW	1103	
24	CCB		CAL ICPMS_TW	1103	
25	CCB		CAL ICPMS_TW	1103	
26	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
27	CalStd	L2-160526	CAL ICPMS_TW	2102	
28	CalStd	L-160526	CAL ICPMS_TW	2103	
29	CalStd	10X-160526	CAL ICPMS_TW	2104	
30	CalStd	5X-160526	CAL ICPMS_TW	2105	
31	CalStd	2X-160526	CAL ICPMS_TW	2106	
32	CalStd	H-160526	CAL ICPMS_TW	2107	
33	CalStd	H2-160526	CAL ICPMS_TW	2108	
34	ICB	BLANK	CCB ICPMS_TW	1101	
35	ICB	BLANK	CCB ICPMS_TW	1102	
36	ICB	BLANK	CCB ICPMS_TW	1103	
37	ICSA	ICSA-160526	ICSAICPMS_TW	2109	
38	ICSB	ICSAB-160526	ICSBICPMS_TW	2110	
39	ICB	BLANK	CCB ICPMS_TW	1101	
40	ICB	BLANK	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
21			
22			
23			
24			
25			
26	1		
27	2		
28	3		
29	4		
30	5		
31	6		
32	7		
33	8		
34			
35			
36			
37			
38			
39			
40			

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	ICB	BLANK	CCB ICPMS_TW	1103	
42	ICV	ICV-160526	ICV ICPMS_TW	2111	
43	ICB	ICB-160526	ICB ICPMS_TW	1101	
44	ICB	ICB-160526	ICB ICPMS_TW	1103	
45	LLICV	LCVL-160526	LCVLICPMS_TW	2112	

Sample List

46	ICB	ICB-160526	ICB ICPMS_TW	1102
47	ICB	ICB-160526	ICB ICPMS_TW	1103
48	AllRef	1605194-03B	SAMPICPMS_TW	2201
49	SD	1605194-03B SD	SD ICPMS_TW	2202
50	SAMP_W	1605194-01B	SAMPICPMS_TW	2203
51	SAMP_W	1605194-02B	SAMPICPMS_TW	2204
52	SAMP_W	1605194-04B	SAMPICPMS_TW	2205
53	SAMP_W	1605194-05B	SAMPICPMS_TW	2206
54	SAMP_W	1605194-06B	SAMPICPMS_TW	2207
55	SAMP_W	1605194-07B	SAMPICPMS_TW	2208
56	SAMP_W	1605194-08B	SAMPICPMS_TW	2209
57	SAMP_W	1605194-09B	SAMPICPMS_TW	2210
58	SAMP_W	1605194-11B	SAMPICPMS_TW	2211
59	PDS	1605194-03B PDS	PDS ICPMS_TW	2212
60	CCV	CCV1-160526	CCV ICPMS_TW	1207

#	Level	Dilution	Skip
41			
42			
43			
44			
45			
46			
47			
48		10	
49		50	
50		10	
51		10	
52		10	
53		10	
54		10	
55		10	
56		10	
57		10	
58		10	
59		10	
60			

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	CCB	CCB1-160526	CCB ICPMS_TW	1102	
62	LLCCV	LCVL1-160526	LCVLICPMS_TW	2112	
63	CCB	CCB1-160526	CCB ICPMS_TW	1103	
64	SAMP_W	1605192-01A	SAMPICPMS_TW	2301	
65	SAMP_W	1605192-02A	SAMPICPMS_TW	2302	
66	SAMP_W	1605192-03A	SAMPICPMS_TW	2303	
67	SAMP_W	1605192-04A	SAMPICPMS_TW	2304	
68	SAMP_W	1605192-05A	SAMPICPMS_TW	2305	
69	SAMP_W	1605193-01A	SAMPICPMS_TW	2306	
70	SAMP_W	1605193-01A	SAMPICPMS_TW	2307	
71	SAMP_W	1605192-01A	SAMPICPMS_TW	2308	
72	SAMP_W	1605192-02A	SAMPICPMS_TW	2309	
73	SAMP_W	1605192-03A	SAMPICPMS_TW	2310	

Sample List

74	CCB	CCB2-160526	CCB ICPMS_TW	1102
75	CCB	CCB2-160526	CCB ICPMS_TW	1103
76	CCV	CCV2-160526	CCV ICPMS_TW	1207
77	CCB	CCB2-160526	CCB ICPMS_TW	1102
78	CCB	CCB2-160526	CCB ICPMS_TW	1103
79	LLCCV	LCVL2-160526	LCVLICPMS_TW	2112
80	CCB	CCB2-160526	CCB ICPMS_TW	1103

#	Level	Dilution	Skip
61			
62			
63			
64		10	
65		50	
66		10	
67		50	
68		50	
69		100	
70		10	
71		1	
72		1	
73		1	
74			
75			
76			
77			
78			
79			
80			

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605192-04A	SAMPICPMS_TW	2311	
82	SAMP_W	1605192-05A	SAMPICPMS_TW	2312	
83	CCB	RINSE	CCB ICPMS_TW	1102	
84	CCB	RINSE	CCB ICPMS_TW	1103	
85	PB_W	MB-75328	MBLKTCLP_MET	2401	
86	PB_W	MB-75315-TCLP	MBLKTCLP_MET	2402	
87	LCS_W	LCS-75328	LCS TCLP_MET	2403	
88	LCS_W	LCSD-75328	LCSDTCLP_MET	2404	
89	CCB	RINSE	CCB ICPMS_TW	1101	
90	AllRef	1605213-02A	SAMPICPMS_TSDOD	2405	
91	SD	1605213-02A SD	SD ICPMS_TSDOD	2406	
92	SAMP_W	1605206-01A	SAMPICPMS_TSDOD	2407	
93	PDS	1605213-02A PDS	PDS ICPMS_TSDOD	2408	
94	MS_W	1605213-02A MS	MS ICPMS_TSDOD	2409	
95	MS_W	1605213-02A MSD	MSD ICPMS_TSDOD	2410	
96	CCV	CCV3-160526	CCV ICPMS_TW	1207	
97	CCB	CCB3-160526	CCB ICPMS_TW	1102	
98	LLCCV	LCVL3-160526	LCVLICPMS_TW	2512	
99	CCB	CCB3-160526	CCB ICPMS_TW	1103	
100	CCB	CCB3-160526	CCB ICPMS_TW	1103	

Sample List

#	Level	Dilution	Skip
81		1	
82		1	
83			
84			
85		1	
86		1	
87		1	
88		1	
89			
90		1	
91		5	
92		1	
93		1	
94		1	
95		1	
96			
97			
98			
99			
100			

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	CCB	CCB3-160526	CCB ICPMS_TW	1103	
102	PB_W	MB-75325	MBLK200.8	3101	
103	LCS_200	LCS-75325	LCS 200.8	3102	
104	LCS_200	LCSD-75325	LCSD200.8	3103	
105	CCB	RINSE	CCB ICPMS_TW	1101	
106	AllRef	1605229-01A	SAMP200.8	3104	
107	SD	1605229-01A SD	SD 200.8	3105	
108	SAMP_W	1605237-01A	SAMP200.8	3106	
109	SAMP_W	1605237-02A	SAMP200.8	3107	
110	SAMP_W	1605238-01A	SAMP200.8	3108	
111	SAMP_W	1605238-02A	SAMP200.8	3109	
112	SAMP_W	1605238-03A	SAMP200.8	3110	
113	SAMP_W	1605238-04A	SAMP200.8	3111	
114	SAMP_W	1605238-05A	SAMP200.8	3112	
115	PDS	1605229-01A PDS	PDS 200.8	3201	
116	MS_W	1605229-01A MS	MS 200.8	3202	
117	MS_W	1605229-01A MSD	MSD 200.8	3203	
118	CCV	CCV4-160526	CCV ICPMS_TW	1207	
119	CCB	CCB4-160526	CCB ICPMS_TW	1102	
120	LLCCV	LCVL4-160526	LCVLICPMS_TW	2512	

#	Level	Dilution	Skip
101			
102		1	Skip
103		1	Skip
104		1	Skip
105			Skip
106		1	Skip
107		5	Skip

Sample List

108	1	Skip
109	1	Skip
110	1	Skip
111	1	Skip
112	1	Skip
113	1	Skip
114	1	Skip
115	1	Skip
116	1	Skip
117	1	Skip
118		Skip
119		Skip
120		Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	CCB	CCB4-160526	CCB ICPMS_TW	1103	
122	PB	MB-75327	MBLKICPMS_TS	3301	
123	LCS_S	LCS-75327	LCS ICPMS_TS	3302	
124	LCS_S	LCSD-75327	LCSDICPMS_TS	3303	
125	CCB	RINSE	CCB ICPMS_TW	1101	
126	AllRef	1605205-01C	SAMPICPMS_TS	3304	
127	SD	1605205-01C SD	SD ICPMS_TS	3305	
128	Sample	1605208-02C	SAMPICPMS_TS	3306	
129	Sample	1605202-01C	SAMPICPMS_TS	3307	
130	Sample	1605202-02C	SAMPICPMS_TS	3308	
131	Sample	1605201-02B	SAMPICPMS_TS	3309	
132	Sample	1605215-05A	SAMPICPMS_TS	3310	
133	Sample	1605215-11A	SAMPICPMS_TS	3311	
134	Sample	1605228-03A	SAMP6020A_S	3312	
135	Sample	1605228-04A	SAMP6020A_S	3401	
136	Sample	1605185-05A	SAMP6020A_S	3402	
137	PDS	1605205-01C PDS	PDS ICPMS_TS	3403	
138	MS_S	1605205-01C MS	MS ICPMS_TS	3404	
139	MS_S	1605205-01C MSD	MSD ICPMS_TS	3405	
140	CCV	CCV5-160526	CCV ICPMS_TW	1207	

#	Level	Dilution	Skip
121			Skip
122		5	Skip
123		5	Skip
124		5	Skip
125			Skip
126		5	Skip
127		25	Skip
128		5	Skip
129		5	Skip
130		5	Skip
131		5	Skip
132		5	Skip
133		5	Skip
134		5	Skip
135		5	Skip

Sample List

136	5	Skip
137	5	Skip
138	5	Skip
139	5	Skip
140		Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	CCB	CCB5-160526	CCB ICPMS_TW	1102	
142	LLCCV	LCVL5-160526	LCVLICPMS_TW	2511	
143	CCB	CCB5-160526	CCB ICPMS_TW	1103	
144	Sample	1403264-08A	SAMPICPMS_TSDOD	3507	
145	Sample	1403264-09A	SAMPICPMS_TSDOD	3508	
146	Sample	1403264-11A	SAMPICPMS_TSDOD	3509	
147	Sample	1403264-12A	SAMPICPMS_TSDOD	3510	
148	Sample	1403264-13A	SAMPICPMS_TSDOD	3511	
149	Sample	1403264-14A	SAMPICPMS_TSDOD	3512	
150	Sample	1403264-15A	SAMPICPMS_TSDOD	3310	
151	Sample	1403264-16A	SAMPICPMS_TSDOD	3311	
152	Sample	1403264-17A	SAMPICPMS_TSDOD	3312	
153	Sample	1403264-12A	SAMPICPMS_TSDOD	3510	
154	CCV	CCV6-140402	CCV ICPMS_TW	1207	
155	CCB	CCB6-140402	CCB ICPMS_TW	1102	
156	LLCCV	LCVL6-140402	LCVLICPMS_TW	2511	
157	CCB	CCB6-140402	CCB ICPMS_TW	1103	
158	CCB	CCB6-140402	CCB ICPMS_TW	1102	
159	CCB	CCB6-140402	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
141			Skip
142			Skip
143			Skip
144		5	Skip
145		5	Skip
146		5	Skip
147		5	Skip
148		5	Skip
149		5	Skip
150		5	Skip
151		5	Skip
152		5	Skip
153		5	Skip
154			Skip
155			Skip
156			Skip
157			Skip
158			Skip
159			Skip

Unknown Samples:

Blank Samples:

Sample List

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160526.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160526	CAL ICPMS_TW	2102	
14	CalStd	L-160526	CAL ICPMS_TW	2103	
15	CalStd	10X-160526	CAL ICPMS_TW	2104	
16	CalStd	5X-160526	CAL ICPMS_TW	2105	
17	CalStd	2X-160526	CAL ICPMS_TW	2106	
18	CalStd	H-160526	CAL ICPMS_TW	2107	
19	CalStd	H2-160526	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			Skip
2			Skip
3			Skip
4			Skip
5			Skip
6			Skip
7			Skip
8			Skip
9			Skip
10			Skip
11			Skip
12	1		Skip
13	2		Skip
14	3		Skip
15	4		Skip
16	5		Skip
17	6		Skip
18	7		Skip
19	8		Skip

Sample List

20			Skip		

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	CCB		CAL ICPMS_TW	1102	
22	CCB		CAL ICPMS_TW	1103	
23	CCB		CAL ICPMS_TW	1103	
24	CCB		CAL ICPMS_TW	1103	
25	CCB		CAL ICPMS_TW	1103	
26	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
27	CalStd	L2-160526	CAL ICPMS_TW	2102	
28	CalStd	L-160526	CAL ICPMS_TW	2103	
29	CalStd	10X-160526	CAL ICPMS_TW	2104	
30	CalStd	5X-160526	CAL ICPMS_TW	2105	
31	CalStd	2X-160526	CAL ICPMS_TW	2106	
32	CalStd	H-160526	CAL ICPMS_TW	2107	
33	CalStd	H2-160526	CAL ICPMS_TW	2108	
34	ICB	BLANK	CCB ICPMS_TW	1101	
35	ICB	BLANK	CCB ICPMS_TW	1102	
36	ICB	BLANK	CCB ICPMS_TW	1103	
37	ICSA	ICSA-160526	ICSAICPMS_TW	2109	
38	ICSB	ICSAB-160526	ICSBICPMS_TW	2110	
39	ICB	BLANK	CCB ICPMS_TW	1101	
40	ICB	BLANK	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
21			Skip
22			Skip
23			Skip
24			Skip
25			Skip
26	1		Skip
27	2		Skip
28	3		Skip
29	4		Skip
30	5		Skip
31	6		Skip
32	7		Skip
33	8		Skip
34			Skip
35			Skip
36			Skip
37			Skip
38			Skip
39			Skip
40			Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	ICB	BLANK	CCB ICPMS_TW	1103	
42	ICV	ICV-160526	ICV ICPMS_TW	2111	
43	ICB	ICB-160526	ICB ICPMS_TW	1101	
44	ICB	ICB-160526	ICB ICPMS_TW	1103	
45	LLICV	LCVL-160526	LCVLICPMS_TW	2112	

Sample List

46	ICB	ICB-160526	ICB ICPMS_TW	1102
47	ICB	ICB-160526	ICB ICPMS_TW	1103
48	AllRef	1605194-03B	SAMPICPMS_TW	2201
49	SD	1605194-03B SD	SD ICPMS_TW	2202
50	SAMP_W	1605194-01B	SAMPICPMS_TW	2203
51	SAMP_W	1605194-02B	SAMPICPMS_TW	2204
52	SAMP_W	1605194-04B	SAMPICPMS_TW	2205
53	SAMP_W	1605194-05B	SAMPICPMS_TW	2206
54	SAMP_W	1605194-06B	SAMPICPMS_TW	2207
55	SAMP_W	1605194-07B	SAMPICPMS_TW	2208
56	SAMP_W	1605194-08B	SAMPICPMS_TW	2209
57	SAMP_W	1605194-09B	SAMPICPMS_TW	2210
58	SAMP_W	1605194-11B	SAMPICPMS_TW	2211
59	PDS	1605194-03B PDS	PDS ICPMS_TW	2212
60	CCV	CCV1-160526	CCV ICPMS_TW	1207

#	Level	Dilution	Skip
41			Skip
42			Skip
43			Skip
44			Skip
45			Skip
46			Skip
47			Skip
48		10	Skip
49		50	Skip
50		10	Skip
51		10	Skip
52		10	Skip
53		10	Skip
54		10	Skip
55		10	Skip
56		10	Skip
57		10	Skip
58		10	Skip
59		10	Skip
60			Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	CCB	CCB1-160526	CCB ICPMS_TW	1102	
62	LLCCV	LCVL1-160526	LCVLICPMS_TW	2112	
63	CCB	CCB1-160526	CCB ICPMS_TW	1103	
64	SAMP_W	1605192-01A	SAMPICPMS_TW	2301	
65	SAMP_W	1605192-02A	SAMPICPMS_TW	2302	
66	SAMP_W	1605192-03A	SAMPICPMS_TW	2303	
67	SAMP_W	1605192-04A	SAMPICPMS_TW	2304	
68	SAMP_W	1605192-05A	SAMPICPMS_TW	2305	
69	SAMP_W	1605193-01A	SAMPICPMS_TW	2306	
70	SAMP_W	1605193-01A	SAMPICPMS_TW	2307	
71	SAMP_W	1605192-01A	SAMPICPMS_TW	2308	
72	SAMP_W	1605192-02A	SAMPICPMS_TW	2309	
73	SAMP_W	1605192-03A	SAMPICPMS_TW	2310	

Sample List

74	CCB	CCB2-160526	CCB ICPMS_TW	1102
75	CCB	CCB2-160526	CCB ICPMS_TW	1103
76	CCV	CCV2-160526	CCV ICPMS_TW	1207
77	CCB	CCB2-160526	CCB ICPMS_TW	1102
78	CCB	CCB2-160526	CCB ICPMS_TW	1103
79	LLCCV	LCVL2-160526	LCVLICPMS_TW	2112
80	CCB	CCB2-160526	CCB ICPMS_TW	1103

#	Level	Dilution	Skip
61			Skip
62			Skip
63			Skip
64		10	Skip
65		50	Skip
66		10	Skip
67		50	Skip
68		50	Skip
69		100	Skip
70		10	Skip
71		1	Skip
72		1	Skip
73		1	Skip
74			Skip
75			Skip
76			Skip
77			Skip
78			Skip
79			Skip
80			Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605192-04A	SAMPICPMS_TW	2311	
82	SAMP_W	1605192-05A	SAMPICPMS_TW	2312	
83	CCB	RINSE	CCB ICPMS_TW	1102	
84	CCB	RINSE	CCB ICPMS_TW	1103	
85	PB_W	MB-75328	MBLKTCLP_MET	2401	
86	PB_W	MB-75315-TCLP	MBLKTCLP_MET	2402	
87	LCS_W	LCS-75328	LCS TCLP_MET	2403	
88	LCS_W	LCSD-75328	LCSDTCLP_MET	2404	
89	CCB	RINSE	CCB ICPMS_TW	1101	
90	AllRef	1605213-02A	SAMPICPMS_TSDOD	2405	
91	SD	1605213-02A SD	SD ICPMS_TSDOD	2406	
92	SAMP_W	1605206-01A	SAMPICPMS_TSDOD	2407	
93	PDS	1605213-02A PDS	PDS ICPMS_TSDOD	2408	
94	MS_W	1605213-02A MS	MS ICPMS_TSDOD	2409	
95	MS_W	1605213-02A MSD	MSD ICPMS_TSDOD	2410	
96	CCV	CCV3-160526	CCV ICPMS_TW	1207	
97	CCB	CCB3-160526	CCB ICPMS_TW	1102	
98	LLCCV	LCVL3-160526	LCVLICPMS_TW	2512	
99	CCB	CCB3-160526	CCB ICPMS_TW	1103	
100	CCB	CCB3-160526	CCB ICPMS_TW	1103	

Sample List

#	Level	Dilution	Skip
81		1	Skip
82		1	Skip
83			Skip
84			Skip
85		1	Skip
86		1	Skip
87		1	Skip
88		1	Skip
89			Skip
90		1	Skip
91		5	Skip
92		1	Skip
93		1	Skip
94		1	Skip
95		1	Skip
96			Skip
97			Skip
98			Skip
99			Skip
100			Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	CCB	CCB3-160526	CCB ICPMS_TW	1103	
102	PB_W	MB-75325	MBLK200.8	3101	
103	LCS_200	LCS-75325	LCS 200.8	3102	
104	LCS_200	LCSD-75325	LCSD200.8	3103	
105	CCB	RINSE	CCB ICPMS_TW	1101	
106	AllRef	1605229-01A	SAMP200.8	3104	
107	SD	1605229-01A SD	SD 200.8	3105	
108	SAMP_W	1605237-01A	SAMP200.8	3106	
109	SAMP_W	1605237-02A	SAMP200.8	3107	
110	SAMP_W	1605238-01A	SAMP200.8	3108	
111	SAMP_W	1605238-02A	SAMP200.8	3109	
112	SAMP_W	1605238-03A	SAMP200.8	3110	
113	SAMP_W	1605238-04A	SAMP200.8	3111	
114	SAMP_W	1605238-05A	SAMP200.8	3112	
115	PDS	1605229-01A PDS	PDS 200.8	3201	
116	MS_W	1605229-01A MS	MS 200.8	3202	
117	MS_W	1605229-01A MSD	MSD 200.8	3203	
118	CCV	CCV4-160526	CCV ICPMS_TW	1207	
119	CCB	CCB4-160526	CCB ICPMS_TW	1102	
120	LLCCV	LCVL4-160526	LCVLICPMS_TW	2512	

#	Level	Dilution	Skip
101			Skip
102		1	
103		1	
104		1	
105			
106		1	
107		5	

Sample List

108	1
109	1
110	1
111	1
112	1
113	1
114	1
115	1
116	1
117	1
118	
119	
120	

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	CCB	CCB4-160526	CCB ICPMS_TW	1103	
122	PB	MB-75327	MBLKICPMS_TS	3301	
123	LCS_S	LCS-75327	LCS ICPMS_TS	3302	
124	LCS_S	LCSD-75327	LCSDICPMS_TS	3303	
125	CCB	RINSE	CCB ICPMS_TW	1101	
126	AllRef	1605205-01C	SAMPICPMS_TS	3304	
127	SD	1605205-01C SD	SD ICPMS_TS	3305	
128	Sample	1605208-02C	SAMPICPMS_TS	3306	
129	Sample	1605202-01C	SAMPICPMS_TS	3307	
130	Sample	1605202-02C	SAMPICPMS_TS	3308	
131	Sample	1605201-02B	SAMPICPMS_TS	3309	
132	Sample	1605215-05A	SAMPICPMS_TS	3310	
133	Sample	1605215-11A	SAMPICPMS_TS	3311	
134	Sample	1605228-03A	SAMP6020A_S	3312	
135	Sample	1605228-04A	SAMP6020A_S	3401	
136	Sample	1605185-05A	SAMP6020A_S	3402	
137	PDS	1605205-01C PDS	PDS ICPMS_TS	3403	
138	MS_S	1605205-01C MS	MS ICPMS_TS	3404	
139	MS_S	1605205-01C MSD	MSD ICPMS_TS	3405	
140	CCV	CCV5-160526	CCV ICPMS_TW	1207	

#	Level	Dilution	Skip
121			
122		5	
123		5	
124		5	
125			
126		5	
127		25	
128		5	
129		5	
130		5	
131		5	
132		5	
133		5	
134		5	
135		5	

Sample List

136		5			
137		5			
138		5			
139		5			
140					

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	CCB	CCB5-160526	CCB ICPMS_TW	1102	
142	LLCCV	LCVL5-160526	LCVLICPMS_TW	2511	
143	CCB	CCB5-160526	CCB ICPMS_TW	1103	
144	PB	MB-75287	MBLKICPMS_TSDOD1	4101	
145	LCS_S	LCS-75287	LCS ICPMS_TSDOD1	4102	
146	LCS_S	LCSD-75287	LCSDICPMS_TSDOD1	4103	
147	CCB	RINSE	CCB ICPMS_TW	1101	
148	AllRef	1605135-36A	SAMPICPMS_TSDOD1	4104	
149	SD	1605135-36A SD	SD ICPMS_TSDOD1	4105	
150	Sample	1605135-32A	SAMPICPMS_TSDOD1	4106	
151	Sample	1605135-33A	SAMPICPMS_TSDOD1	4107	
152	Sample	1605135-34A	SAMPICPMS_TSDOD1	4108	
153	Sample	1605135-35A	SAMPICPMS_TSDOD1	4109	
154	Sample	1605135-37A	SAMPICPMS_TSDOD1	4110	
155	Sample	1605135-38A	SAMPICPMS_TSDOD1	4111	
156	Sample	1605135-39A	SAMPICPMS_TSDOD1	4112	
157	Sample	1605135-40A	SAMPICPMS_TSDOD1	4201	
158	Sample	1605135-41A	SAMPICPMS_TSDOD1	4202	
159	PDS	1605135-36A PDS	PDS ICPMS_TSDOD1	4203	
160	MS_S	1605135-36A MS	MS ICPMS_TSDOD1	4204	

#	Level	Dilution	Skip
141			
142			
143			
144		5	
145		5	
146		5	
147			
148		5	
149		25	
150		5	
151		5	
152		5	
153		5	
154		5	
155		5	
156		5	
157		5	
158		5	
159		5	
160		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
161	MS_S	1605135-36A MSD	MSD ICPMS_TSDOD1	4205	

Sample List

162	CCV	CCV6-160526	CCV ICPMS_TW	1207
163	CCB	CCB6-160526	CCB ICPMS_TW	1102
164	LLCCV	LCVL6-160526	LCVLICPMS_TW	2511
165	CCB	CCB6-160526	CCB ICPMS_TW	1102
166	Sample	1605135-42A	SAMPICPMS_TSDOD1	4206
167	Sample	1605135-43A	SAMPICPMS_TSDOD1	4207
168	Sample	1605135-44A	SAMPICPMS_TSDOD1	4208
169	Sample	1605135-45A	SAMPICPMS_TSDOD1	4209
170	Sample	1605144-01A	SAMPICPMS_TSDOD1	4210
171	Sample	1605144-02A	SAMPICPMS_TSDOD1	4211
172	Sample	1605144-03A	SAMPICPMS_TSDOD1	4212
173	Sample	1605144-04A	SAMPICPMS_TSDOD1	4301
174	Sample	1605144-05A	SAMPICPMS_TSDOD1	4302
175	Sample	1605144-06A	SAMPICPMS_TSDOD1	4303
176	CCV	CCV7-160526	CCV ICPMS_TW	1207
177	CCB	CCB7-160526	CCB ICPMS_TW	1102
178	LLCCV	LCVL7-160526	LCVLICPMS_TW	2511
179	CCB	CCB7-160526	CCB ICPMS_TW	1102
180	CCB	CCB7-160526	CCB ICPMS_TW	1102

#	Level	Dilution	Skip
161		5	
162			
163			
164			
165			
166		5	
167		5	
168		5	
169		5	
170		5	
171		5	
172		5	
173		5	
174		5	
175		5	
176			
177			
178			
179			
180			

#	Sample Type	Sample Name	Comment	Vial#	File Name
181	CCB	CCB7-160526	CCB ICPMS_TW	1102	
182	CCB	CCB7-160526	CCB ICPMS_TW	1103	
183	CCB	CCB7-160526	CCB ICPMS_TW	1103	
184	CCB	CCB7-160526	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
181			
182			
183			

Sample List

184

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 10:33:07 AM**
Digestion:
Prep End Date:

Prep Batch **75287** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605135-32A	Soil		1.13	50	50.000	1	of	1	
1605135-33A	Soil		1.09	50	50.000	1	of	1	
1605135-34A	Soil		1.04	50	50.000	1	of	1	
1605135-35A	Soil		1.11	50	50.000	1	of	1	
1605135-36A	Soil		1.07	50	50.000	3	of	3	
1605135-36A MS	Soil		1.03	50	50.000	3	of	3	
1605135-36A MSD	Soil		1.11	50	50.000	3	of	3	
1605135-37A	Soil		1.01	50	50.000	1	of	1	
1605135-38A	Soil		1.03	50	50.000	1	of	1	
1605135-39A	Soil		1.15	50	50.000	1	of	1	
1605135-40A	Soil		1.03	50	50.000	1	of	1	
1605135-41A	Soil		1.01	50	50.000	1	of	1	
1605135-42A	Soil		1.04	50	50.000	1	of	1	
1605135-43A	Soil		1.06	50	50.000	1	of	1	
1605135-44A	Soil		1.09	50	50.000	1	of	1	
1605135-45A	Soil		1.07	50	50.000	1	of	1	
1605144-01A	Soil		1.04	50	50.000	1	of	1	
1605144-02A	Soil		1.06	50	50.000	1	of	1	
1605144-03A	Soil		1.09	50	50.000	1	of	1	
1605144-04A	Soil		1.11	50	50.000	1	of	1	
1605144-05A	Soil		1.06	50	50.000	1	of	1	
1605144-06A	Soil		1.09	50	50.000	1	of	1	
LCS-75287	Soil		1	50	50.000		of		
LCSD-75287	Soil		1	50	50.000		of		
MB-75287	Soil		1	50	50.000		of		

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160519-3	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	08/17/2016
MET-SPIKE-160519-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/17/2016
MET-SPIKE-160520-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/18/2016

11:34 - 11:44
11:49 - 13:49
14:20 - 16:20
16:41 - 16:56

REVIEWED BY
By Janice Whitt at 5:06:36 PM, 5/31/2016

5/23/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 5:00:00 PM**
Digestion: **Start: 5/16/2016 5:30:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date: **5/19/2016 9:00:00 AM**

Prep Batch **75190** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605135-16A	Soil		0	0	#Num!		of	3	
Extra sub sampled for MS/MSD									
1605135-17A	Soil		0	0	#Num!	1	of	1	
1605135-18A	Soil		0	0	#Num!	1	of	1	
1605135-19A	Soil		0	0	#Num!	1	of	1	
1605135-20A	Soil		0	0	#Num!	1	of	1	
1605135-21A	Soil		0	0	#Num!	1	of	1	
1605135-22A	Soil		0	0	#Num!	1	of	1	
1605135-23A	Soil		0	0	#Num!	1	of	1	
1605135-24A	Soil		0	0	#Num!	1	of	1	
1605135-25A	Soil		0	0	#Num!	1	of	1	
1605135-26A	Soil		0	0	#Num!	1	of	1	
1605135-27A	Soil		0	0	#Num!	1	of	1	
1605135-28A	Soil		0	0	#Num!	1	of	1	
1605135-29A	Soil		0	0	#Num!	1	of	1	
1605135-30A	Soil		0	0	#Num!	1	of	1	
1605135-31A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling hard clay									
1605135-32A	Soil		0	0	#Num!	1	of	1	
1605135-33A	Soil		0	0	#Num!	1	of	1	
1605135-34A	Soil		0	0	#Num!	1	of	1	
1605135-35A	Soil		0	0	#Num!	1	of	1	

REVIEWED BY
By Janice Whitt at 5:08:10 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 12:00:00 PM**
Digestion: **Start: 5/17/2016 1:20:00 PM / Stop: 5/19/2016 8:30:00 AM**
Prep End Date: **5/19/2016 1:00:00 PM**

Prep Batch **75205** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-36A	Soil		0	0	#Num!	of 3	
	Extra subsampled for MS/MSD						
1605135-37A	Soil		0	0	#Num!	1 of 1	
1605135-38A	Soil		0	0	#Num!	1 of 1	
1605135-39A	Soil		0	0	#Num!	1 of 1	
1605135-40A	Soil		0	0	#Num!	1 of 1	
1605135-41A	Soil		0	0	#Num!	1 of 1	
1605135-42A	Soil		0	0	#Num!	1 of 1	
1605144-01A	Soil		0	0	#Num!	1 of 1	
1605144-02A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-03A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-04A	Soil		0	0	#Num!	1 of 1	
1605144-05A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-06A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-07A	Soil		0	0	#Num!	1 of 1	
1605144-08A	Soil		0	0	#Num!	1 of 1	
1605144-09A	Soil		0	0	#Num!	1 of 1	
1605144-10A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-11A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-12A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 5:08:12 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 2:17:28 PM**
Digestion: **Start: 5/17/2016 5:00:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date: **5/18/2016 10:00:00 AM**

Prep Batch **75212** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-43A	Soil		0	0	#Num!	1 of 1	
Subsampled extra for MS/MSD							
1605135-44A	Soil		0	0	#Num!	1 of 1	
1605135-45A	Soil		0	0	#Num!	1 of 1	
1605144-13A	Soil		0	0	#Num!	1 of 1	
Subsampled extra MS/MSD							
1605144-14A	Soil		0	0	#Num!	1 of 1	
1605144-15A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 5:08:14 PM, 5/31/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/23/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

PIPETTE ID: P-01	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	5.00	5.0095	4.9995	99.99	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0068	4.9968	99.94		
3		5.0003	4.9903	99.81		
AVERAGE (MEAN)		5.006	4.996	99.91		0.094
						PASS

PIPETTE ID: P-09	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.20	0.2004	0.2000	100.00	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.1999	0.1995	99.75		
3		0.1996	0.1992	99.60		
AVERAGE (MEAN)		0.200	0.200	99.78		0.202
						PASS

PIPETTE ID:	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/23/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 5:08:16 PM, 5/31/2016

Review and Approved / Date

X:\LOGS\Syringe and Pipetter Cal Logbook\MET-HG PREP\Pipetter Accuracy Check-CVD-05.23.16

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	KL	BALANCE #:	26	
TEST DATE:	05/26/2016	Water is at Room Temperatue (70-73°F) / (21-23°C)		
PIPETTER LAB ID:	See Below	WATER TEMP (°C):	21-23°C	
TEST VOLUME:	See Below	WATER DENSITY:	0.998	(0.9980-0.9976)

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

PIPETTE ID: P-31	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	4.00	3.9943	3.9863	99.66	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		3.9791	3.9711	99.28		
3		3.9750	3.9671	99.18		
AVERAGE (MEAN)		3.983	3.975	99.37		0.255
						PASS

PIPETTE ID: P-21	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.50	0.4971	0.4961	99.22	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.4962	0.4952	99.04		
3		0.4950	0.4940	98.80		
AVERAGE (MEAN)		0.496	0.495	99.02		0.212
						PASS

PIPETTE ID: P-39	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.200	0.2003	0.1999	99.95	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.1994	0.1990	99.50		
3		0.1993	0.1989	99.45		
AVERAGE (MEAN)		0.200	0.199	99.63		0.276
						PASS

Karyn Jane 5/26/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 5:08:19 PM, 5/31/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 10:33:07 AM**
Digestion: **Start: 5/23/2016 11:34:00 AM / Stop: 5/23/2016 4:56:00 PM**
Prep End Date: **5/23/2016 5:35:27 PM**

Prep Batch **75287** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-32A	Soil		1.13	50	44.248	1 of 1	
1605135-33A	Soil		1.09	50	45.872	1 of 1	
1605135-34A	Soil		~~1.09~~ 1.04	50	45.872	1 of 1	
1605135-35A	Soil		~~1.04~~ 1.11	50	48.077	1 of 1	
1605135-36A	Soil		~~1.11~~ 1.07	50	45.045	3 of 3	
1605135-36A MS	Soil		~~1.07~~ 1.03	50	46.729	3 of	
1605135-36A MSD	Soil		~~1.03~~ 1.11	50	48.544	3 of	
1605135-36A PDS	Soil		~~1.11~~ 1.07	50	45.045	3 of	
1605135-36A SD	Soil		~~1.11~~ 1.07	50	45.045	3 of	
1605135-37A	Soil		~~1.11~~ 1.01	50	45.045	1 of 1	
1605135-38A	Soil		~~1.01~~ 1.03	50	49.505	1 of 1	
1605135-39A	Soil		~~1.03~~ 1.15	50	48.544	1 of 1	
1605135-40A	Soil		~~1.15~~ 1.03	50	43.478	1 of 1	
1605135-41A	Soil		~~1.03~~ 1.01	50	48.544	1 of 1	
1605135-42A	Soil		~~1.01~~ 1.04	50	49.505	1 of 1	
1605135-43A	Soil		~~1.04~~ 1.06	50	48.077	1 of 1	
1605135-44A	Soil		~~1.06~~ 1.09	50	47.170	1 of 1	
1605135-45A	Soil		~~1.09~~ 1.07	50	45.872	1 of 1	
1605144-01A	Soil		~~1.07~~ 1.04	50	46.729	1 of 1	
1605144-02A	Soil		~~1.04~~ 1.06	50	48.077	1 of 1	
1605144-03A	Soil		~~1.06~~ 1.09	50	47.170	1 of 1	
1605144-04A	Soil		~~1.09~~ 1.11	50	45.872	1 of 1	
1605144-05A	Soil		~~1.11~~ 1.06	50	45.045	1 of 1	
1605144-06A	Soil		~~1.06~~ 1.09	50	47.170	1 of 1	
LCS-75287	Soil		1	50	50.000	of	
LCSD-75287	Soil		1	50	50.000	of	
MB-75287	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	11/30/2017

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160519-3	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	08/17/2016
MET-SPIKE-160519-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/17/2016
MET-SPIKE-160520-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/18/2016

REVIEWED BY
By Janice Whitt at 5:16:19 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 12:00:00 PM**
Digestion: **Start: 5/17/2016 1:20:00 PM / Stop: 5/19/2016 8:30:00 AM**
Prep End Date: **5/19/2016 1:00:00 PM**

Prep Batch **75205** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-36A	Soil		0	0	#Num!	of 3	
	Extra subsampled for MS/MSD						
1605135-37A	Soil		0	0	#Num!	1 of 1	
1605135-38A	Soil		0	0	#Num!	1 of 1	
1605135-39A	Soil		0	0	#Num!	1 of 1	
1605135-40A	Soil		0	0	#Num!	1 of 1	
1605135-41A	Soil		0	0	#Num!	1 of 1	
1605135-42A	Soil		0	0	#Num!	1 of 1	
1605144-01A	Soil		0	0	#Num!	1 of 1	
1605144-02A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-03A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-04A	Soil		0	0	#Num!	1 of 1	
1605144-05A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-06A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-07A	Soil		0	0	#Num!	1 of 1	
1605144-08A	Soil		0	0	#Num!	1 of 1	
1605144-09A	Soil		0	0	#Num!	1 of 1	
1605144-10A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-11A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605144-12A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 5:18:38 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 2:17:28 PM**
Digestion: **Start: 5/17/2016 5:00:00 PM / Stop: 5/18/2016 9:00:00 AM**
Prep End Date: **5/18/2016 10:00:00 AM**

Prep Batch **75212** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-43A	Soil		0	0	#Num!	1 of 1	
Subsampled extra for MS/MSD							
1605135-44A	Soil		0	0	#Num!	1 of 1	
1605135-45A	Soil		0	0	#Num!	1 of 1	
1605144-13A	Soil		0	0	#Num!	1 of 1	
Subsampled extra MS/MSD							
1605144-14A	Soil		0	0	#Num!	1 of 1	
1605144-15A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 5:18:47 PM, 5/31/2016

BATCH 75287

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/24/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

PIPETTE ID: P-01	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	BIAS MEAN CRITERIA (± 2%)	PRECISION % RSD Calculated
1	5.00	5.0017	4.9917	99.83	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0044	4.9944	99.89		
3		4.9995	4.9895	99.79		
AVERAGE (MEAN)		5.002	4.992	99.84		0.049
						PASS

PIPETTE ID: P-09	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.20	0.2002	0.1998	99.90	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2000	0.1996	99.80		
3		0.2001	0.1997	99.85		
AVERAGE (MEAN)		0.200	0.200	99.85		0.050
						PASS

PIPETTE ID:	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/24/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 5:18:49 PM, 5/31/2016

Review and Approved / Date

X:\LOGS\Syringe and Pipetter Cal Logbook\MET-HG PREP\Pipetter Accuracy Check-CVD-05.24.16

Calibration Summary Report

Date Acquired 5/26/2016 11:10
Data Batch 160526.b

Level	Calibration File Name
1	026CALB.d
2	027CALS.d
3	028CALS.d
4	029CALS.d
5	030CALS.d
6	031CALS.d
7	032CALS.d
8	033CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0013 * x + 2.0566E-004
Be	1.0000	y = 4.9412E-005 * x + 7.0139E-007
B	0.9999	y = 1.7131E-005 * x + 6.8781E-005
Na	0.9999	y = 7.9732E-004 * x + 0.0304
Mg	1.0000	y = 3.8888E-004 * x + 6.4819E-004
Al	1.0000	y = 1.4153E-004 * x + 0.0011
K	1.0000	y = 4.0521E-004 * x + 0.0539
Ca	0.9997	y = 2.3860E-005 * x + 6.0810E-004
Ti	1.0000	y = 1.5457E-004 * x + 3.5029E-006
V	1.0000	y = 0.0050 * x + 0.0027
Cr	1.0000	y = 0.0061 * x + 0.0015
Mn	1.0000	y = 0.0033 * x + 1.6205E-004
Fe	1.0000	y = 0.0051 * x + 0.0093
Co	1.0000	y = 0.0137 * x + 5.1483E-005
Ni	1.0000	y = 0.0038 * x + 4.0195E-004
Cu	1.0000	y = 0.0106 * x + 0.0023
Zn	1.0000	y = 0.0016 * x + 5.0490E-004
Se	1.0000	y = 7.5969E-005 * x + 1.4458E-004
Sr	1.0000	y = 6.6763E-004 * x + 6.2663E-005
Mo	1.0000	y = 5.9589E-004 * x + 4.8946E-006
Ag	1.0000	y = 0.0018 * x + 5.0710E-006
Cd	1.0000	y = 2.5731E-004 * x + 1.2295E-006
Sn	1.0000	y = 5.5070E-004 * x + 1.3219E-004
Sb	1.0000	y = 7.8882E-004 * x + 2.3251E-004
Tl	1.0000	y = 0.0018 * x + 3.2448E-006
Ba	1.0000	y = 2.6902E-004 * x + 6.3036E-006
Pb	1.0000	y = 0.0023 * x + 2.2095E-004
Li	1.0000	y = 3.7462E-005 * x + 1.0137E-005

REVIEWED BY
By Janice Whitt at 4:27:22 PM, 5/26/2016

Calibration Summary Report

Level 7 Cal

Ele	Conc	Calc	%Rec
As	500	499.20	100
Be	500	506.65	101
B	500	521.64	104
Na	10000	9728.22	97
Mg	10000	10098.76	101
Al	10000	9987.94	100
K	10000	9925.25	99
Ca	10000	9454.48	95
Ti	500	505.29	101
V	500	503.79	101
Cr	500	501.60	100
Mn	500	513.33	103
Fe	10000	10005.99	100
Co	500	511.08	102
Ni	500	509.10	102
Cu	500	509.49	102
Zn	500	507.65	102
Se	500	508.31	102
Sr	500	507.39	101
Mo	500	511.41	102
Ag	500	501.38	100
Cd	500	504.21	101
Sn	500	510.91	102
Sb	500	501.03	100
Tl	500	499.40	100
Ba	500	507.27	101
Pb	500	501.82	100

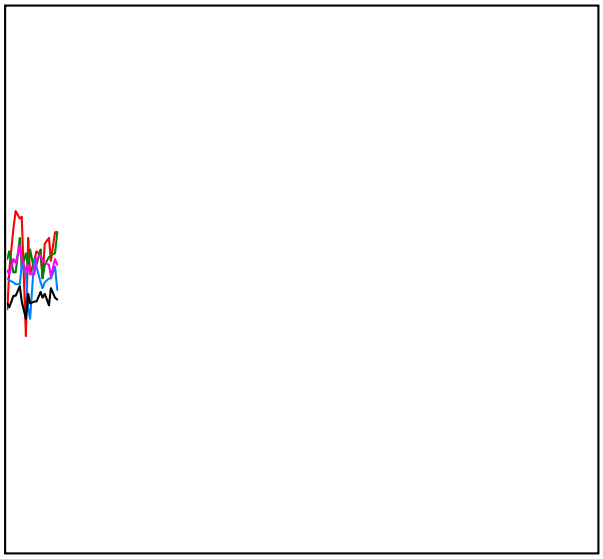
Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1999.76	100
Be	2000	1998.45	100
B	2000	1995.58	100
Na	25000	25110.08	100
Mg	25000	24949.36	100
K	25000	25033.04	100
Ca	25000	25271.73	99
Ti	2000	1998.50	100
V	2000	1998.80	100
Cr	2000	1999.48	100
Mn	2000	1995.78	100
Co	2000	1995.83	100
Ni	2000	1996.40	100
Cu	2000	1996.31	100
Zn	2000	1996.90	100
Se	2000	1996.65	100
Sr	2000	1998.64	100
Mo	2000	1997.58	100
Cd	2000	1998.88	100
Sn	2000	1996.95	100
Tl	2000	2000.91	100
Ba	2000	1998.33	100
Pb	2000	2000.13	100
Li	2000	1998.86	100

REVIEWED/APPROVED

By Sherri Herschmann at 2:39:38 PM, 5/26/2016

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
51	200	117	109.6	10.81
59	2000	1170	1074.8	4.24
89	2000	959	991.6	5.37
140	5000	2631	2636.6	2.74
205	5000	2316	2319.7	3.04
156/140	1	0.228 %	0.253 %	64.56
75	20	5	6.2	49.17
78	20	12	10.8	28.74
56	20000	12091	11969.4	3.06
31	100	50	43.3	16.60

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.52
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	8.1
Extract 2	-190.0	Cell Entrance	-40
Omega Bias	-100	Cell Exit	-60
Deflect	2.2		

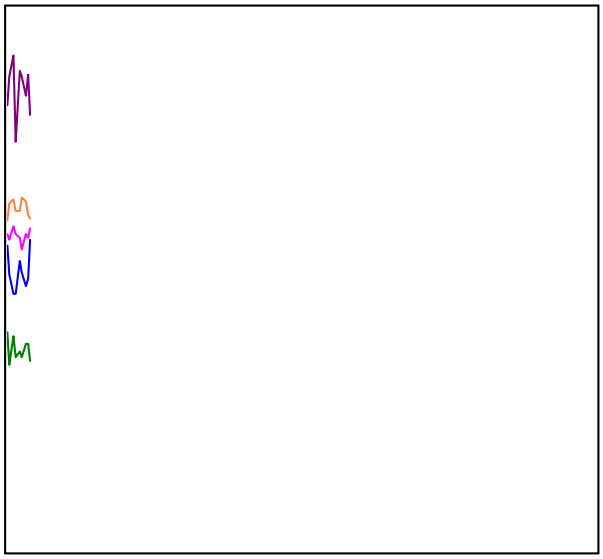
Cell Parameters

Use Gas	true	3rd Gas Flow	0
He Flow	4.7	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.22E+2	Pa	Carrier Gas(BP)	9.32E+1	kPa
Analyzer Press	1.96E-4	Pa	Reflected Power	3	W
Forward Power	1549	W			

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
7	1000	803	847.8	5.73
59	5000	1755	1851.7	5.51
89	5000	3048	3148.0	2.47
140	5000	2972	2900.8	2.20
205	2000	1781	1756.3	2.95
156/140	2	0.673 %	0.790 %	34.48
78	5000	2211	2202.4	2.20
63	1000	573	513.8	6.92
75	5000	4407	4401.0	3.57

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.52
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	8.1
Extract 2	-190.0	Cell Entrance	-40
Omega Bias	-100	Cell Exit	-60
Deflect	7.0		

Cell Parameters

Use Gas	false	3rd Gas Flow	0
He Flow	4.2	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.20E+2	Pa	Carrier Gas(BP)	9.29E+1	kPa
Analyzer Press	1.14E-4	Pa	Reflected Power	3	W
Forward Power	1550	W			

US EPA Tune Check Sample Report

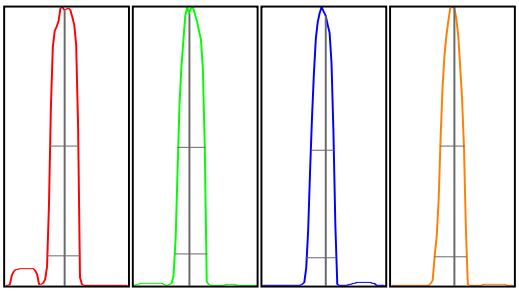
Batch Folder C:\Agilent\ICPMH\1\DATA\DHL TEMPLATE Li.b
Report Comment
Instrument Name ICPMS4 JP12361998

[No gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	549179	0.50	5.00	
59	1011732	0.61	5.00	
115	1307301	0.32	5.00	
205	1027109	0.87	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	548781	549593	551910	550867	544747
59	1007940	1015404	1018863	1003215	1013238
115	1305003	1304049	1312696	1303940	1310818
205	1014528	1037244	1029963	1021770	1032040

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	82529	7.00	6.9 - 7.1		0.784	0.850	
59	164724	58.90	58.9 - 59.1		0.761	0.850	
115	246468	115.05	114.9 - 115.1		0.715	0.850	
205	193785	205.05	204.9 - 205.1		0.779	0.850	

X% = 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Nebulizer Pump	0.10	rps
RF Matching	1.90	V	S/C Temp	2	℃
Smpl Depth	8.0	mm	Gas Switch	Dilution Gas	
Carrier Gas	0.52	L/min	Makeup/Dilution Gas	0.53	L/min
Option Gas	0.0	%			

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Cell Entrance	-40	V
Extract 2	-190.0	V	Cell Exit	-60	V
Omega Bias	-100	V	Deflect	7.0	V
Omega Lens	8.1	V	Plate Bias	-60	V

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		OctP Bias	-18.0	V
He Flow	0.0	mL/min	OctP RF	200	V
H2 Flow	0.0	mL/min	Energy Discrimination	3.0	V
3rd Gas Flow	0	%			

REVIEWED BY
By Janice Whitt at 4:27:30 PM, 5/26/2016

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: BLANK STD 1
Data File: 026CALB.d
Acquired: 05/26/2016 11:10:12

========= Detector Parameters and P/A Factors =========
Discriminator: 4.5 mV
AnalogHV: 1756 V
PulseHV: 1228 V

Acquired: 05/26/2016 10:02:14

Mass[u]	Element	P/A Factor
6	Li	0.097659
9	Be	0.110610
23	Na	0.118985
24	Mg	0.123481
27	Al	0.127642
39	K	0.129482
45	Sc	0.130875
48		0.132219
51	V	0.132364
52	Cr	0.136419
55	Mn	0.137810
59	Co	0.140965
60	Ni	0.142912
63	Cu	0.144808
66	Zn	0.144676
72		0.143383
74	Ge	0.144323
75	As	0.143027
88	Sr	0.144603
89		0.143460
95		0.142674
97	Mo	0.143568
98	Mo	0.143465
99	[Mo]	0.145747
101		0.145236
105		0.147916
111	Cd	0.149615
114	Cd	0.149822
115	In	0.149894
118	Sn	0.149825
121		0.149379
123	Sb	0.149521
135	Ba	0.149219
138		0.150277
175		0.154552
193		0.155872
205	Tl	0.156620
206	[Pb]	0.156038
207	[Pb]	0.157020
208	Pb	0.157616
209	Bi	0.157299
232		0.157679
238	U	0.157889
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

REVIEWED BY
By Janice Whitt at 4:27:33 PM, 5/26/2016

Calibration Blank Report

Date Acquired	5/26/2016 11:10	Sample Name	BLANK STD 1
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	026CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	10	52.07
9	Be	45	1	173.21
11	B	45	66	16.35
23	Na	45	28922	1.59
24	Mg	45	618	11.94
27	Al	45	1051	4.94
39	K	45	51399	1.28
44	Ca	45	579	0.93
47	Ti	45	3	100.05
51	V	45	2579	3.30
52	Cr	45	1383	4.57
55	Mn	45	154	22.15
56	Fe	45	8874	4.70
59	Co	72	34	5.60
60	Ni	72	269	11.72
63	Cu	72	1536	3.72
66	Zn	72	338	3.99
75	As	72	138	7.88
78	Se	72	97	25.67
88	Sr	115	398	11.41
95	Mo	115	31	24.74
107	Ag	115	32	31.61
111	Cd	115	8	89.21
118	Sn	115	840	6.98
121	Sb	115	1477	3.70
137	Ba	115	40	36.33
205	Tl	209	42	38.95
208	Pb	209	2879	4.54

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	952886	0.30
72	Ge	669007	0.06
115	In	6352005	1.03
209	Bi	13029062	2.26

Calibration Standard Report

Date Acquired	5/26/2016 11:12	Sample Name	L2-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	027CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	41	11.18
9	Be	45	49	16.48
11	B	45	77	11.51
23	Na	45	44782	1.84
24	Mg	45	8010	0.39
27	Al	45	3668	4.04
39	K	45	60499	0.50
44	Ca	45	1059	7.54
47	Ti	45	148	16.00
51	V	45	7507	4.40
52	Cr	45	7182	1.91
55	Mn	45	3785	1.72
56	Fe	45	104999	1.20
59	Co	72	9652	1.15
60	Ni	72	2891	1.33
63	Cu	72	8791	1.89
66	Zn	72	1436	3.12
75	As	72	985	3.75
78	Se	72	150	3.30
88	Sr	115	4642	2.26
95	Mo	115	3736	2.63
107	Ag	115	11183	1.66
111	Cd	115	1600	3.66
118	Sn	115	4328	4.23
121	Sb	115	6440	3.82
137	Ba	115	1706	2.22
205	Tl	209	22145	1.85
208	Pb	209	31503	1.81

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	963897	0.66	952886	101.16	70	120	
72	Ge	664182	0.68	669007	99.28	70	120	
115	In	6381075	0.83	6352005	100.46	70	120	
209	Bi	13588982	3.36	13029062	104.30	70	120	

Calibration Standard Report

Date Acquired	5/26/2016 11:14	Sample Name	L-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	028CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	344	5.28
9	Be	45	479	5.99
11	B	45	202	18.16
23	Na	45	183594	0.28
24	Mg	45	76179	0.41
27	Al	45	27853	1.39
39	K	45	130456	0.74
44	Ca	45	5151	4.54
47	Ti	45	1398	3.26
51	V	45	50302	0.98
52	Cr	45	60712	2.07
55	Mn	45	37654	2.80
56	Fe	45	979230	0.37
59	Co	72	95495	1.04
60	Ni	72	26348	1.50
63	Cu	72	74355	0.88
66	Zn	72	11946	1.53
75	As	72	8602	1.23
78	Se	72	625	6.99
88	Sr	115	42941	1.58
95	Mo	115	37363	3.57
107	Ag	115	112752	0.76
111	Cd	115	16336	2.03
118	Sn	115	35836	0.62
121	Sb	115	50437	1.16
137	Ba	115	17163	2.19
205	Tl	209	220341	1.19
208	Pb	209	295133	0.92

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	974743	0.18	952886	102.29	70	120	
72	Ge	675285	0.48	669007	100.94	70	120	
115	In	6460866	1.65	6352005	101.71	70	120	
209	Bi	13348850	0.92	13029062	102.45	70	120	

Calibration Standard Report

Date Acquired	5/26/2016 11:16	Sample Name	10X-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	029CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	1814	5.06
9	Be	45	2351	4.16
11	B	45	772	8.89
23	Na	45	792768	0.55
24	Mg	45	378362	0.41
27	Al	45	138968	0.80
39	K	45	443619	1.11
44	Ca	45	22454	0.74
47	Ti	45	7524	1.42
51	V	45	246252	0.71
52	Cr	45	297433	0.36
55	Mn	45	161456	1.57
56	Fe	45	4961140	0.29
59	Co	72	481433	0.54
60	Ni	72	133876	1.09
63	Cu	72	373362	0.38
66	Zn	72	56483	0.40
75	As	72	42990	0.76
78	Se	72	2746	3.35
88	Sr	115	212275	0.28
95	Mo	115	189393	0.39
107	Ag	115	576665	0.82
111	Cd	115	82440	0.83
118	Sn	115	176299	0.77
121	Sb	115	252487	0.29
137	Ba	115	85746	0.84
205	Tl	209	1122110	1.17
208	Pb	209	1495173	0.32

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	967701	0.38	952886	101.55	70	120	
72	Ge	673067	0.43	669007	100.61	70	120	
115	In	6397126	0.74	6352005	100.71	70	120	
209	Bi	13392390	2.74	13029062	102.79	70	120	

Calibration Standard Report

Date Acquired	5/26/2016 11:18	Sample Name	5X-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	030CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	3584	1.93
9	Be	45	4735	1.35
11	B	45	1675	5.66
23	Na	45	1564459	0.96
24	Mg	45	762740	0.13
27	Al	45	273309	0.45
39	K	45	828970	0.73
44	Ca	45	44166	1.64
47	Ti	45	14996	2.79
51	V	45	487641	0.24
52	Cr	45	592084	1.21
55	Mn	45	324289	0.85
56	Fe	45	9848906	2.14
59	Co	72	957922	0.25
60	Ni	72	266262	0.71
63	Cu	72	737545	0.52
66	Zn	72	113416	1.68
75	As	72	84477	0.60
78	Se	72	5394	1.09
88	Sr	115	425888	0.31
95	Mo	115	377816	0.73
107	Ag	115	1143843	0.20
111	Cd	115	166171	0.95
118	Sn	115	355323	0.42
121	Sb	115	506670	1.03
137	Ba	115	172136	0.85
205	Tl	209	2283243	0.71
208	Pb	209	3000642	0.34

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	976183	0.32	952886	102.44	70	120	
72	Ge	672158	0.16	669007	100.47	70	120	
115	In	6454463	2.11	6352005	101.61	70	120	
209	Bi	13391467	0.69	13029062	102.78	70	120	

Calibration Standard Report

Date Acquired	5/26/2016 11:20	Sample Name	2X-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	031CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	8858	1.69
9	Be	45	11693	0.36
11	B	45	4042	2.76
23	Na	45	3807285	0.56
24	Mg	45	1860266	1.26
27	Al	45	675550	0.30
39	K	45	1968739	0.28
44	Ca	45	108867	1.04
47	Ti	45	36828	1.15
51	V	45	1202528	0.47
52	Cr	45	1459690	0.21
55	Mn	45	789728	0.70
56	Fe	45	24031441	1.21
59	Co	72	2358022	0.19
60	Ni	72	649868	1.19
63	Cu	72	1816871	0.96
66	Zn	72	274799	0.62
75	As	72	210363	0.32
78	Se	72	13097	1.49
88	Sr	115	1040130	0.22
95	Mo	115	930429	0.90
107	Ag	115	2813288	0.99
111	Cd	115	406845	0.82
118	Sn	115	879504	1.05
121	Sb	115	1237977	0.23
137	Ba	115	423220	0.25
205	Tl	209	5673381	1.23
208	Pb	209	7444077	0.10

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	946571	0.14	952886	99.34	70	120	
72	Ge	662603	0.48	669007	99.04	70	120	
115	In	6312921	0.20	6352005	99.38	70	120	
209	Bi	13169813	0.35	13029062	101.08	70	120	

Calibration Standard Report

Date Acquired	5/26/2016 11:22	Sample Name	H-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	032CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	17652	1.04
9	Be	45	23335	0.23
11	B	45	8392	4.41
23	Na	45	7258001	1.28
24	Mg	45	3660978	0.50
27	Al	45	1318582	0.75
39	K	45	3798876	0.47
44	Ca	45	210824	0.15
47	Ti	45	72800	0.69
51	V	45	2360509	0.56
52	Cr	45	2865716	0.07
55	Mn	45	1559091	0.15
56	Fe	45	47406986	0.27
59	Co	72	4620879	0.48
60	Ni	72	1272422	0.31
63	Cu	72	3555007	0.10
66	Zn	72	538581	0.37
75	As	72	412021	0.29
78	Se	72	25530	0.37
88	Sr	115	2070738	0.95
95	Mo	115	1862358	0.84
107	Ag	115	5510637	0.15
111	Cd	115	792957	0.34
118	Sn	115	1720486	0.62
121	Sb	115	2416881	0.09
137	Ba	115	834040	0.17
205	Tl	209	11292290	1.09
208	Pb	209	14823685	0.79

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	932070	0.49	952886	97.82	70	120	
72	Ge	658661	0.36	669007	98.45	70	120	
115	In	6112868	1.74	6352005	96.24	70	120	
209	Bi	12887126	0.36	13029062	98.91	70	120	

Calibration Standard Report

Date Acquired	5/26/2016 11:24	Sample Name	H2-160526
Data Batch	160526.b	Comment	CAL ICPMS_TW
Data File Name	033CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	68885	0.58
9	Be	45	90832	0.21
11	B	45	31508	2.05
23	Na	45	18442850	0.72
24	Mg	45	8925160	0.17
27	Al	45	4997	5.68
39	K	45	9382057	2.87
44	Ca	45	555238	0.92
47	Ti	45	284174	1.08
51	V	45	9235385	0.93
52	Cr	45	11270428	1.16
55	Mn	45	5981914	0.55
56	Fe	45	52708	26.89
59	Co	72	17803433	1.25
60	Ni	72	4922216	0.45
63	Cu	72	13738491	0.69
66	Zn	72	2089289	0.30
75	As	72	1628042	0.38
78	Se	72	98665	0.45
88	Sr	115	8164849	2.07
95	Mo	115	7284580	1.85
107	Ag	115	3858	30.57
111	Cd	115	3146786	0.49
118	Sn	115	6730010	1.97
121	Sb	115	7161	7.29
137	Ba	115	3289217	0.21
205	Tl	209	44525992	2.48
208	Pb	209	58129077	0.75

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	919913	1.22	952886	96.54	70	120	
72	Ge	649847	0.45	669007	97.14	70	120	
115	In	6120018	2.03	6352005	96.35	70	120	
209	Bi	12682261	1.18	13029062	97.34	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/26/2016 11:32	Sample Name	ICSA-160526
Data Batch	160526.b	Comment	ICSAICPMS_TW
Data File Name	037ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	0.095	5	20.0	1.2	0.8	
11	B	20.191	383	5.7	30	30	
51	V	-0.114	1971	5.2	10	10	
52	Cr	0.406	3643	3.3	8	5	
55	Mn	1.442	4491	3.3	8	10	
59	Co	0.575	5151	6.5	8	10	
60	Ni	0.472	1422	2.6	8	10	
63	Cu	0.485	4819	2.6	8	10	
66	Zn	1.540	1936	5.4	10	5	
75	As	0.638	652	1.6	4	5	
78	Se	0.343	111	25.8	2	5	
88	Sr	1.457	6178	1.5	10	10	
107	Ag	0.145	1581	6.1	0.8	2	
111	Cd	0.450	698	2.3	1.2	1	
118	Sn	1.096	4391	3.5	10	10	
121	Sb	0.431	3417	2.9	4	2.5	
137	Ba	0.352	603	5.8	8	10	
205	Tl	0.053	1160	7.2	4	1.5	
208	Pb	0.269	10098	3.2	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	924581	1.44	952886	97.03	70	120	
72	Ge	648731	0.49	669007	96.97	70	120	
115	In	5967235	0.96	6352005	93.94	70	120	
209	Bi	12053863	1.83	13029062	92.52	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/26/2016 11:34	Sample Name	ICSAB-160526
Data Batch	160526.b	Comment	ICSBICPMS_TW
Data File Name	038ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	39.772	194011	0.88	40	99.4	80	120	
52	Cr	45	20.823	123661	1.48	20	104.1	80	120	
55	Mn	45	21.479	67228	0.38	20	107.4	80	120	
59	Co	72	40.575	372395	0.92	40	101.4	80	120	
60	Ni	72	37.792	96122	0.79	40	94.5	80	120	
63	Cu	72	20.444	146256	0.88	20	102.2	80	120	
66	Zn	72	20.174	22048	1.26	20	100.9	80	120	
75	As	72	19.878	16784	0.94	20	99.4	80	120	
78	Se	72	20.682	1147	2.23	20	103.4	80	120	
107	Ag	115	19.169	210306	0.47	20	95.8	80	120	
111	Cd	115	10.309	16189	0.65	10	103.1	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	958484	1.31	952886	100.59	70	120	
72	Ge	668531	0.45	669007	99.93	70	120	
115	In	6100412	1.12	6352005	96.04	70	120	
209	Bi	12081778	2.06	13029062	92.73	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/26/2016 11:43	Sample Name	ICV-160526
Data Batch	160526.b	Comment	ICV ICPMS_TW
Data File Name	042_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	103.830	3759	1.81	100	103.8	90	110	
9	Be	45	105.414	5021	1.50	100	105.4	90	110	
11	B	45	116.773	1995	0.26	100	116.8	90	110	Fail
23	Na	45	2610.161	2035282	0.32	2500	104.4	90	110	
24	Mg	45	2596.573	973957	0.60	2500	103.9	90	110	
27	Al	45	2539.755	347542	0.55	2500	101.6	90	110	
39	K	45	2557.845	1051048	0.54	2500	102.3	90	110	
44	Ca	45	2305.189	53603	0.81	2500	92.2	90	110	
47	Ti	45	100.663	15002	0.40	100	100.7	90	110	
51	V	45	101.932	496006	0.39	100	101.9	90	110	
52	Cr	45	104.212	616836	0.40	100	104.2	90	110	
55	Mn	45	101.512	318977	0.68	100	101.5	90	110	
56	Fe	45	2586.113	12678007	2.22	2500	103.4	90	110	
59	Co	72	106.317	980287	0.32	100	106.3	90	110	
60	Ni	72	104.428	266374	0.10	100	104.4	90	110	
63	Cu	72	102.290	729055	0.87	100	102.3	90	110	
66	Zn	72	102.713	111395	0.37	100	102.7	90	110	
75	As	72	100.751	84911	0.50	100	100.8	90	110	
78	Se	72	102.115	5307	2.14	100	102.1	90	110	
88	Sr	115	102.660	431836	1.05	100	102.7	90	110	
95	Mo	115	100.419	376689	0.38	100	100.4	90	110	
107	Ag	115	100.163	1133783	0.64	100	100.2	90	110	
111	Cd	115	100.385	162582	0.87	100	100.4	90	110	
118	Sn	115	104.543	363208	0.41	100	104.5	90	110	
121	Sb	115	101.120	503516	0.62	100	101.1	90	110	
137	Ba	115	100.049	169458	0.56	100	100.0	90	110	
205	Tl	209	96.553	2243714	0.58	100	96.6	90	110	
208	Pb	209	98.884	3004888	0.58	100	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	963914	0.18	952886	101.16	70	120	
72	Ge	671689	0.61	669007	100.40	70	120	
115	In	6295863	1.97	6352005	99.12	70	120	
209	Bi	13253003	2.95	13029062	101.72	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/26/2016 11:49	Sample Name	LCVL-160526
Data Batch	160526.b	Comment	LCVLICPMS_TW
Data File Name	045LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.560	387	1.47	10	105.6	70	130	
9	Be	45	0.984	47	16.06	1	98.4	70	130	
11	B	45	24.699	469	6.76	20	123.5	70	130	
23	Na	45	106.089	109545	0.55	100	106.1	70	130	
24	Mg	45	102.431	38582	2.08	100	102.4	70	130	
27	Al	45	98.200	14298	0.80	100	98.2	70	130	
39	K	45	100.975	90402	1.23	100	101.0	70	130	
44	Ca	45	90.591	2640	2.45	100	90.6	70	130	
47	Ti	45	5.331	789	12.06	5	106.6	70	130	
51	V	45	1.218	8408	3.27	1	121.8	70	130	
52	Cr	45	5.050	30872	1.19	5	101.0	70	130	
55	Mn	45	4.964	15569	2.79	5	99.3	70	130	
56	Fe	45	100.054	493525	0.42	100	100.1	70	130	
59	Co	72	5.069	46603	2.19	5	101.4	70	130	
60	Ni	72	5.161	13372	1.53	5	103.2	70	130	
63	Cu	72	5.017	37094	2.23	5	100.3	70	130	
66	Zn	72	5.531	6297	6.85	5	110.6	70	130	
75	As	72	4.965	4300	0.82	5	99.3	70	130	
78	Se	72	4.832	342	4.87	5	96.6	70	130	
88	Sr	115	4.990	21492	2.61	5	99.8	70	130	
95	Mo	115	4.802	18150	0.59	5	96.0	70	130	
107	Ag	115	1.953	22272	0.70	2	97.7	70	130	
111	Cd	115	0.927	1519	10.63	1	92.7	70	130	
118	Sn	115	5.282	19256	2.11	5	105.6	70	130	
121	Sb	115	1.932	11122	2.35	2	96.6	70	130	
137	Ba	115	5.110	8745	1.35	5	102.2	70	130	
205	Tl	209	0.934	21860	2.85	1	93.4	70	130	
208	Pb	209	0.931	31358	1.18	1	93.1	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	953080	0.46	952886	100.02	70	120	
72	Ge	669272	0.25	669007	100.04	70	120	
115	In	6332544	0.86	6352005	99.69	70	120	
209	Bi	13316814	1.87	13029062	102.21	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/26/2016 11:56	Sample Name	ICB-160526
Data Batch	160526.b	Comment	ICB ICPMS_TW
Data File Name	047_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.046	11	5.1	2	5	
9	Be	45	-0.007	0	173.2	0.4	0.3	
11	B	45	2.016	99	25.5	10	10	
23	Na	45	3.194	31455	1.6	50	100	
24	Mg	45	-0.459	449	10.1	50	100	
27	Al	45	-1.527	848	8.5	50	10	
39	K	45	-2.315	50678	0.9	50	100	
44	Ca	45	-4.399	481	18.8	50	100	
47	Ti	45	0.007	4	114.6	4	3	
51	V	45	0.126	3191	2.9	4	3	
52	Cr	45	-0.003	1368	1.9	2	2	
55	Mn	45	-0.001	151	11.1	2	3	
56	Fe	45	0.020	9002	3.6	50	50	
59	Co	72	-0.001	24	88.7	2	3	
60	Ni	72	-0.005	258	16.2	2	3	
63	Cu	72	-0.055	1162	4.4	2	2	
66	Zn	72	0.154	509	8.4	4	2	
75	As	72	0.006	144	4.7	2	2	
78	Se	72	0.124	104	13.6	1	2	
88	Sr	115	-0.009	362	14.1	4	3	
95	Mo	115	0.006	54	46.4	2	2	
107	Ag	115	0.002	59	45.8	0.4	1	
111	Cd	115	-0.001	7	50.0	0.4	0.3	
118	Sn	115	0.126	1289	5.8	4	3	
121	Sb	115	-0.065	1161	8.6	2	0.8	
137	Ba	115	-0.003	36	21.6	2	3	
205	Tl	209	0.000	44	22.9	2	0.5	
208	Pb	209	-0.053	1337	2.2	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	956185	0.66	952886	100.35	70	120	
72	Ge	676699	1.02	669007	101.15	70	120	
115	In	6404070	2.13	6352005	100.82	70	120	
209	Bi	13366342	1.64	13029062	102.59	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/26/2016 15:24	Sample Name	CCV5-160526
Data Batch	160526.b	Comment	CCV ICPMS_TW
Data File Name	140_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	211.307	7419	1.74	200	105.7	90	110	
9	Be	45	204.968	9481	1.68	200	102.5	90	110	
11	B	45	204.703	3347	1.57	200	102.4	90	110	
23	Na	45	5060.034	3805042	0.40	5000	101.2	90	110	
24	Mg	45	5072.725	1847239	0.71	5000	101.5	90	110	
27	Al	45	5015.048	665457	0.50	5000	100.3	90	110	
39	K	45	4950.579	1928302	0.35	5000	99.0	90	110	
44	Ca	45	4591.756	103126	0.48	5000	91.8	90	110	
47	Ti	45	201.547	29167	0.97	200	100.8	90	110	
51	V	45	202.601	954891	0.58	200	101.3	90	110	
52	Cr	45	201.560	1157374	1.25	200	100.8	90	110	
55	Mn	45	207.107	631843	0.58	200	103.6	90	110	
56	Fe	45	5077.545	24167512	3.06	5000	101.6	90	110	
59	Co	72	205.052	1884407	0.35	200	102.5	90	110	
60	Ni	72	202.450	514451	0.62	200	101.2	90	110	
63	Cu	72	202.299	1435679	0.74	200	101.1	90	110	
66	Zn	72	201.296	217281	0.86	200	100.6	90	110	
75	As	72	199.374	167344	0.18	200	99.7	90	110	
78	Se	72	201.707	10355	1.86	200	100.9	90	110	
88	Sr	115	199.257	851860	0.64	200	99.6	90	110	
95	Mo	115	201.009	766814	0.90	200	100.5	90	110	
107	Ag	115	198.439	2284448	0.72	200	99.2	90	110	
111	Cd	115	200.009	329446	0.85	200	100.0	90	110	
118	Sn	115	203.075	716746	0.77	200	101.5	90	110	
121	Sb	115	198.177	1002226	0.87	200	99.1	90	110	
137	Ba	115	202.092	348024	0.19	200	101.0	90	110	
205	Tl	209	195.544	4717205	1.31	200	97.8	90	110	
208	Pb	209	198.877	6269065	0.38	200	99.4	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	936098	0.48	952886	98.24	70	120	
72	Ge	669519	1.03	669007	100.08	70	120	
115	In	6404401	3.01	6352005	100.82	70	120	
209	Bi	13748441	0.84	13029062	105.52	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/26/2016 15:29	Sample Name	LCVL5-160526
Data Batch	160526.b	Comment	LCVLICPMS_TW
Data File Name	142LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.515	384	6.60	10	105.2	70	130	
9	Be	45	1.000	48	13.49	1	100.0	70	130	
11	B	45	26.757	501	8.48	20	133.8	70	130	Fail
23	Na	45	122.213	121456	0.37	100	122.2	70	130	
24	Mg	45	103.389	38826	2.06	100	103.4	70	130	
27	Al	45	104.429	15096	3.07	100	104.4	70	130	
39	K	45	96.636	88483	0.52	100	96.6	70	130	
44	Ca	45	97.264	2784	5.65	100	97.3	70	130	
47	Ti	45	4.940	729	10.23	5	98.8	70	130	
51	V	45	1.029	7484	1.75	1	102.9	70	130	
52	Cr	45	5.075	30931	0.54	5	101.5	70	130	
55	Mn	45	5.104	15958	3.16	5	102.1	70	130	
56	Fe	45	101.756	500371	0.61	100	101.8	70	130	
59	Co	72	5.118	47332	1.00	5	102.4	70	130	
60	Ni	72	5.126	13363	2.69	5	102.5	70	130	
63	Cu	72	5.072	37705	1.19	5	101.4	70	130	
66	Zn	72	5.362	6151	3.85	5	107.2	70	130	
75	As	72	5.024	4375	1.16	5	100.5	70	130	
78	Se	72	5.015	354	8.16	5	100.3	70	130	
88	Sr	115	5.049	22209	1.37	5	101.0	70	130	
95	Mo	115	4.854	18743	2.12	5	97.1	70	130	
107	Ag	115	2.014	23466	1.07	2	100.7	70	130	
111	Cd	115	0.974	1629	4.34	1	97.4	70	130	
118	Sn	115	5.152	19209	0.58	5	103.0	70	130	
121	Sb	115	1.917	11288	1.24	2	95.9	70	130	
137	Ba	115	5.010	8760	0.70	5	100.2	70	130	
205	Tl	209	0.940	23561	2.99	1	94.0	70	130	
208	Pb	209	0.908	32831	1.11	1	90.8	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	950420	0.40	952886	99.74	70	120	
72	Ge	673242	0.67	669007	100.63	70	120	
115	In	6469580	1.10	6352005	101.85	70	120	
209	Bi	14261665	1.88	13029062	109.46	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/26/2016 15:32	Sample Name	CCB5-160526
Data Batch	160526.b	Comment	CCB ICPMS_TW
Data File Name	143_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.427	25	38.3	2	5	
9	Be	45	0.000	1	86.6	0.4	0.3	
11	B	45	7.401	184	16.8	10	10	
23	Na	45	21.632	44877	0.1	50	100	
24	Mg	45	-0.551	409	10.9	50	100	
27	Al	45	-0.682	949	2.1	50	10	
39	K	45	-4.557	49116	0.8	50	100	
44	Ca	45	-3.952	485	12.7	50	100	
47	Ti	45	0.008	4	114.6	4	3	
51	V	45	0.069	2877	4.0	4	3	
52	Cr	45	-0.003	1352	5.5	2	2	
55	Mn	45	0.018	208	21.7	2	3	
56	Fe	45	0.199	9733	3.6	50	50	
59	Co	72	0.006	87	63.3	2	3	
60	Ni	72	-0.007	252	5.3	2	3	
63	Cu	72	-0.033	1302	3.0	2	2	
66	Zn	72	0.020	360	12.7	4	2	
75	As	72	0.015	150	17.4	2	2	
78	Se	72	-0.168	88	13.9	1	2	
88	Sr	115	0.015	462	6.1	4	3	
95	Mo	115	0.005	50	40.5	2	2	
107	Ag	115	0.017	226	10.9	0.4	1	
111	Cd	115	0.001	9	43.3	0.4	0.3	
118	Sn	115	0.006	864	7.6	4	3	
121	Sb	115	-0.144	761	3.0	2	0.8	
137	Ba	115	0.000	41	26.1	2	3	
205	Tl	209	0.006	182	17.4	2	0.5	
208	Pb	209	-0.055	1316	5.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	942811	0.33	952886	98.94	70	120	
72	Ge	669150	1.01	669007	100.02	70	120	
115	In	6386586	2.23	6352005	100.54	70	120	
209	Bi	13928422	1.63	13029062	106.90	70	120	

Method Blank Report

Date Acquired	5/26/16 3:34 PM	Sample Name	MB-75287
Data Batch	160526.b	Comment	MBLKICPMS_TSDOD1
Data File Name	144_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.142	14	35.80		
9	Be	45	-0.014	0	#DIV/0!		
11	B	45	4.978	143	12.95		
23	Na	45	27.594	48678	1.09		
24	Mg	45	2.548	1525	8.21		
27	Al	45	2.531	1359	5.73		
39	K	45	-1.218	49698	0.78		
44	Ca	45	29.795	1227	5.09		
47	Ti	45	0.202	32	26.04		
51	V	45	0.131	3130	2.92		
52	Cr	45	0.216	2580	1.57		
55	Mn	45	0.104	466	8.36		
56	Fe	45	5.788	36009	1.28		
59	Co	72	0.009	118	18.85		
60	Ni	72	0.140	621	9.48		
63	Cu	72	0.037	1792	3.25		
66	Zn	72	5.267	5987	0.70		J
75	As	72	0.018	152	5.77		
78	Se	72	-0.089	92	3.26		
88	Sr	115	0.014	474	4.93		
95	Mo	115	0.020	109	4.68		
107	Ag	115	0.017	229	9.70		
111	Cd	115	-0.001	6	34.70		
118	Sn	115	4.235	16167	0.72		J
121	Sb	115	-0.162	687	0.97		
137	Ba	115	0.058	143	18.46		
205	Tl	209	0.003	110	22.88		
208	Pb	209	-0.025	2308	4.92		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	929874	0.72	952886	97.59	70	120	
72	Ge	666443	0.20	669007	99.62	70	120	
115	In	6562798	2.37	6352005	103.32	70	120	
209	Bi	14128705	1.16	13029062	108.44	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/26/2016 15:36	Sample Name	LCS-75287
Data Batch	160526.b	Comment	LCS ICPMS_TSDOD1
Data File Name	145_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	218.031	7653	1.80	200	109.0	80	120	
9	Be	45	201.036	9296	1.27	200	100.5	80	120	
11	B	45	209.966	3430	3.34	200	105.0	80	120	
23	Na	45	5207.436	3913718	0.84	1000	520.7	80	120	Fail
24	Mg	45	5194.672	1890970	1.03	1000	519.5	80	120	Fail
27	Al	45	1031.932	137695	0.41	1000	103.2	80	120	
39	K	45	5063.300	1970274	0.60	1000	506.3	80	120	Fail
44	Ca	45	4743.626	106484	1.01	1000	474.4	80	120	Fail
47	Ti	45	206.041	29805	2.09	200	103.0	80	120	
51	V	45	208.174	980740	0.86	200	104.1	80	120	
52	Cr	45	207.678	1192009	0.46	200	103.8	80	120	
55	Mn	45	210.960	643383	0.86	200	105.5	80	120	
56	Fe	45	1036.948	4940409	0.85	1000	103.7	80	120	
59	Co	72	209.296	1916355	1.16	200	104.6	80	120	
60	Ni	72	207.579	525555	1.17	200	103.8	80	120	
63	Cu	72	207.449	1466787	0.29	200	103.7	80	120	
66	Zn	72	210.787	226667	0.54	200	105.4	80	120	
75	As	72	201.435	168453	0.55	200	100.7	80	120	
78	Se	72	203.428	10404	0.92	200	101.7	80	120	
88	Sr	115	195.781	852750	0.75	200	97.9	80	120	
95	Mo	115	198.426	771068	0.80	200	99.2	80	120	
107	Ag	115	199.755	2342765	0.66	200	99.9	80	120	
111	Cd	115	199.520	334796	1.00	200	99.8	80	120	
118	Sn	115	208.172	748555	0.88	200	104.1	80	120	
121	Sb	115	198.120	1020665	0.67	200	99.1	80	120	
137	Ba	115	202.801	355812	1.17	200	101.4	80	120	
205	Tl	209	199.141	4779555	0.77	200	99.6	80	120	
208	Pb	209	203.836	6393227	0.35	200	101.9	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	935779	0.77	952886	98.20	70	120	
72	Ge	667025	0.40	669007	99.70	70	120	
115	In	6522992	1.86	6352005	102.69	70	120	
209	Bi	13680771	1.13	13029062	105.00	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/26/2016 15:38	Sample Name	LCSD-75287
Data Batch	160526.b	Comment	LCSDICPMS_TSDOD1
Data File Name	146_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	220.588	7743	0.70	200	110.3	80	120	
9	Be	45	205.160	9488	1.14	200	102.6	80	120	
11	B	45	206.421	3374	1.91	200	103.2	80	120	
23	Na	45	5175.464	3890471	0.83	1000	517.5	80	120	Fail
24	Mg	45	5226.535	1902866	0.71	1000	522.7	80	120	Fail
27	Al	45	1036.625	138343	0.61	1000	103.7	80	120	
39	K	45	5121.880	1992834	0.37	1000	512.2	80	120	Fail
44	Ca	45	4774.693	107185	0.80	1000	477.5	80	120	Fail
47	Ti	45	202.249	29258	2.42	200	101.1	80	120	
51	V	45	207.272	976712	1.33	200	103.6	80	120	
52	Cr	45	207.277	1189932	1.32	200	103.6	80	120	
55	Mn	45	212.042	646760	0.64	200	106.0	80	120	
56	Fe	45	1038.447	4947979	0.67	1000	103.8	80	120	
59	Co	72	210.964	1932160	0.91	200	105.5	80	120	
60	Ni	72	208.581	528226	0.73	200	104.3	80	120	
63	Cu	72	207.499	1467524	0.47	200	103.7	80	120	
66	Zn	72	210.208	226122	0.62	200	105.1	80	120	
75	As	72	202.259	169182	0.66	200	101.1	80	120	
78	Se	72	203.501	10413	2.00	200	101.8	80	120	
88	Sr	115	202.059	861466	1.20	200	101.0	80	120	
95	Mo	115	204.387	777411	0.59	200	102.2	80	120	
107	Ag	115	203.647	2337473	0.75	200	101.8	80	120	
111	Cd	115	203.681	334495	1.01	200	101.8	80	120	
118	Sn	115	213.592	751670	0.59	200	106.8	80	120	
121	Sb	115	203.062	1023935	1.05	200	101.5	80	120	
137	Ba	115	207.532	356409	0.56	200	103.8	80	120	
205	Tl	209	200.782	4806829	1.29	200	100.4	80	120	
208	Pb	209	203.030	6351809	1.14	200	101.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	935915	0.70	952886	98.22	70	120	
72	Ge	667246	0.89	669007	99.74	70	120	
115	In	6384453	1.84	6352005	100.51	70	120	
209	Bi	13645546	1.06	13029062	104.73	70	120	

Sample Report

Date Acquired	5/26/16 3:42 PM	Sample Name	1605135-36A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	148_ARF.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	105.923	3706	0.87	2000	>RL
9	Be	45	2.593	120	6.51	2000	>RL
11	B	45	145.152	2381	5.15	2000	>RL
23	Na	45	5222.162	3907612	0.35	25000	>RL
24	Mg	45	10768.061	3902144	0.23	25000	>RL
27	Al	45	53694.732	7081600	0.82	10000	OUTCAL
39	K	45	10813.348	4132598	0.48	25000	>RL
44	Ca	45	213434.147	4745342	0.62	25000	OUTCAL
47	Ti	45	158.525	22836	3.88	2000	>RL
51	V	45	98.391	462869	0.99	2000	>RL
52	Cr	45	57.479	329458	0.29	2000	>RL
55	Mn	45	242.848	737376	0.37	2000	>RL
56	Fe	45	86554.880	409844037	2.27	10000	OUTCAL
59	Co	72	44.307	391321	0.96	2000	>RL
60	Ni	72	44.536	108956	1.09	2000	>RL
63	Cu	72	9.871	68727	1.16	2000	>RL
66	Zn	72	236.979	245771	0.69	2000	>RL
75	As	72	20.194	16407	0.54	2000	>RL
78	Se	72	5.314	353	9.43	2000	>RL
88	Sr	115	1617.179	6698286	1.02	2000	>RL
95	Mo	115	2.165	8033	0.48	2000	>RL
107	Ag	115	0.045	533	15.96	500	
111	Cd	115	0.054	93	10.71	2000	
118	Sn	115	5.592	19925	1.67	2000	>RL
121	Sb	115	-0.040	1246	5.09	500	
137	Ba	115	103.148	172191	1.22	2000	>RL
205	Tl	209	0.315	7414	1.67	2000	
208	Pb	209	22.989	706437	0.48	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	931720	0.54	952886	97.78	70	120	
72	Ge	643410	0.98	669007	96.17	70	120	
115	In	6203882	0.62	6352005	97.67	70	120	
209	Bi	13354408	1.40	13029062	102.50	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/26/2016 15:44	Sample Name	1605135-36A SD
Data Batch	160526.b	Comment	SD ICPMS_TSDOD1
Data File Name	149_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	21.668	785	3.65	105.9	102.3	110	90	Good
9	Be	45	0.502	24	27.36	2.6	96.8	110	90	Good
11	B	45	32.794	602	4.00	145.2	113.0	110	90	
23	Na	45	1072.314	845580	1.46	5222.2	102.7	110	90	Good
24	Mg	45	2204.496	819433	0.66	10768.1	102.4	110	90	Good
27	Al	45	11003.777	1488547	0.28	53694.7	102.5	110	90	Good
39	K	45	2171.394	891930	0.78	10813.3	100.4	110	90	Good
44	Ca	45	43113.212	983119	1.31	213434.1	101.0	110	90	Good
47	Ti	45	31.900	4713	1.92	158.5	100.6	110	90	Good
51	V	45	19.704	97094	1.25	98.4	100.1	110	90	Good
52	Cr	45	11.719	69966	0.22	57.5	101.9	110	90	Good
55	Mn	45	49.328	153673	0.79	242.8	101.6	110	90	Good
56	Fe	45	17799.014	86413537	2.18	86554.9	102.8	110	90	Good
59	Co	72	8.824	82126	0.52	44.3	99.6	110	90	Good
60	Ni	72	9.112	23703	0.16	44.5	102.3	110	90	Good
63	Cu	72	1.996	15881	2.64	9.9	101.1	110	90	Good
66	Zn	72	49.653	54517	0.37	237.0	104.8	110	90	Good
75	As	72	4.015	3548	0.84	20.2	99.4	110	90	Good
78	Se	72	0.847	142	26.11	5.3	79.7	110	90	
88	Sr	115	317.587	1375773	0.35	1617.2	98.2	110	90	Good
95	Mo	115	0.431	1697	10.11	2.2	99.5	110	90	Good
107	Ag	115	0.022	284	5.90	0.0	239.5	110	90	
111	Cd	115	0.007	20	16.65	0.1	67.0	110	90	
118	Sn	115	1.037	4561	3.48	5.6	92.7	110	90	Good
121	Sb	115	-0.172	627	19.68	0.0	2141.4	110	90	
137	Ba	115	20.226	35335	0.66	103.1	98.0	110	90	Good
205	Tl	209	0.064	1595	2.42	0.3	101.7	110	90	Good
208	Pb	209	4.629	149519	0.40	23.0	100.7	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	955142	0.48	952886	100.24	70	120	
72	Ge	677781	0.59	669007	101.31	70	120	
115	In	6486878	0.81	6352005	102.12	70	120	
209	Bi	13806473	1.20	13029062	105.97	70	120	

Sample Report

Date Acquired	5/26/16 3:46 PM	Sample Name	1605135-32A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	150SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	64.283	2273	3.14	2000	>RL
9	Be	45	2.511	117	1.97	2000	>RL
11	B	45	139.509	2311	3.96	2000	>RL
23	Na	45	3630.403	2750109	0.37	25000	>RL
24	Mg	45	9154.545	3347887	0.31	25000	>RL
27	Al	45	38372.288	5107449	0.78	10000	OUTCAL
39	K	45	11009.071	4245215	0.87	25000	>RL
44	Ca	45	104624.068	2347724	0.32	25000	OUTCAL
47	Ti	45	138.655	20153	2.38	2000	>RL
51	V	45	71.133	338399	0.63	2000	>RL
52	Cr	45	52.329	302805	0.01	2000	>RL
55	Mn	45	203.929	624869	0.84	2000	>RL
56	Fe	45	66432.297	317465179	1.53	10000	OUTCAL
59	Co	72	21.817	198221	1.06	2000	>RL
60	Ni	72	33.930	85453	0.91	2000	>RL
63	Cu	72	6.202	44977	1.52	2000	>RL
66	Zn	72	152.022	162283	0.13	2000	>RL
75	As	72	17.646	14764	0.36	2000	>RL
78	Se	72	6.281	411	2.68	2000	>RL
88	Sr	115	1855.115	7873488	0.70	2000	>RL
95	Mo	115	1.645	6264	2.61	2000	
107	Ag	115	0.038	467	13.80	500	
111	Cd	115	0.029	54	51.35	2000	
118	Sn	115	5.053	18531	2.09	2000	>RL
121	Sb	115	-0.049	1231	2.33	500	
137	Ba	115	220.259	376698	0.50	2000	>RL
205	Tl	209	0.179	4246	3.04	2000	
208	Pb	209	25.923	796170	0.78	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	940268	0.83	952886	98.68	70	120	
72	Ge	661771	0.30	669007	98.92	70	120	
115	In	6357085	0.74	6352005	100.08	70	120	
209	Bi	13352625	0.62	13029062	102.48	70	120	

Sample Report

Date Acquired	5/26/16 3:48 PM	Sample Name	1605135-33A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	151SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	94.943	3427	3.69	2000	>RL
9	Be	45	3.406	162	20.64	2000	>RL
11	B	45	127.031	2157	1.74	2000	>RL
23	Na	45	1703.685	1334199	0.60	25000	>RL
24	Mg	45	15387.460	5749649	0.72	25000	>RL
27	Al	45	84304.589	11464236	0.96	10000	OUTCAL
39	K	45	17080.342	6701308	1.56	25000	>RL
44	Ca	45	113055.338	2592174	0.86	25000	OUTCAL
47	Ti	45	253.315	37621	1.97	2000	>RL
51	V	45	120.758	585199	0.84	2000	>RL
52	Cr	45	73.515	434121	1.36	2000	>RL
55	Mn	45	728.105	2279402	0.39	2000	>RL
56	Fe	45	90267.349	440761751	1.41	10000	OUTCAL
59	Co	72	31.239	284283	0.68	2000	>RL
60	Ni	72	49.282	124199	0.23	2000	>RL
63	Cu	72	28.199	199447	0.75	2000	>RL
66	Zn	72	278.098	297079	0.79	2000	>RL
75	As	72	25.025	20916	0.22	2000	>RL
78	Se	72	7.299	463	5.84	2000	>RL
88	Sr	115	666.828	2844585	0.38	2000	>RL
95	Mo	115	2.503	9560	3.97	2000	>RL
107	Ag	115	0.147	1726	4.13	500	
111	Cd	115	0.476	789	13.30	2000	>RL
118	Sn	115	6.288	22967	2.27	2000	>RL
121	Sb	115	2.764	15417	1.69	500	>RL
137	Ba	115	576.940	991605	0.52	2000	>RL
205	Tl	209	0.624	14947	1.70	2000	
208	Pb	209	143.697	4483899	0.53	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	960739	0.16	952886	100.82	70	120	
72	Ge	662854	0.25	669007	99.08	70	120	
115	In	6389219	1.19	6352005	100.59	70	120	
209	Bi	13609399	1.83	13029062	104.45	70	120	

Sample Report

Date Acquired	5/26/16 3:50 PM	Sample Name	1605135-34A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	152SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	84.868	3056	0.25	2000	>RL
9	Be	45	3.245	154	5.24	2000	>RL
11	B	45	128.762	2179	7.47	2000	>RL
23	Na	45	5484.599	4219032	0.92	25000	>RL
24	Mg	45	14485.124	5397614	2.40	25000	>RL
27	Al	45	66513.345	9020870	0.67	10000	OUTCAL
39	K	45	14297.040	5602255	2.68	25000	>RL
44	Ca	45	82741.716	1892164	1.14	25000	OUTCAL
47	Ti	45	164.587	24380	0.54	2000	>RL
51	V	45	106.254	513839	0.18	2000	>RL
52	Cr	45	65.777	387517	0.80	2000	>RL
55	Mn	45	369.168	1152659	1.06	2000	>RL
56	Fe	45	83303.602	405666926	0.80	10000	OUTCAL
59	Co	72	27.038	248629	0.37	2000	>RL
60	Ni	72	43.990	112051	0.40	2000	>RL
63	Cu	72	13.298	95858	0.42	2000	>RL
66	Zn	72	193.152	208607	1.15	2000	>RL
75	As	72	19.980	16903	1.29	2000	>RL
78	Se	72	6.990	453	5.51	2000	>RL
88	Sr	115	394.902	1652907	0.37	2000	>RL
95	Mo	115	1.493	5609	1.25	2000	
107	Ag	115	0.060	713	12.95	500	
111	Cd	115	0.195	322	17.35	2000	
118	Sn	115	5.965	21417	1.01	2000	>RL
121	Sb	115	0.320	3041	4.33	500	
137	Ba	115	603.066	1016915	0.73	2000	>RL
205	Tl	209	0.414	9796	3.56	2000	
208	Pb	209	51.411	1585145	0.66	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	958162	0.40	952886	100.55	70	120	
72	Ge	669817	0.61	669007	100.12	70	120	
115	In	6267959	0.33	6352005	98.68	70	120	
209	Bi	13428925	0.68	13029062	103.07	70	120	

Sample Report

Date Acquired	5/26/16 3:52 PM	Sample Name	1605135-35A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	153SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	85.627	3059	2.30	2000	>RL
9	Be	45	2.619	124	12.25	2000	>RL
11	B	45	130.128	2185	4.96	2000	>RL
23	Na	45	5746.190	4384764	0.73	25000	>RL
24	Mg	45	11339.986	4193278	0.25	25000	>RL
27	Al	45	51852.201	6978050	0.87	10000	OUTCAL
39	K	45	11922.635	4644552	1.06	25000	>RL
44	Ca	45	218255.463	4951685	0.78	25000	OUTCAL
47	Ti	45	165.413	24312	2.14	2000	>RL
51	V	45	85.079	408766	0.22	2000	>RL
52	Cr	45	53.975	315776	0.46	2000	>RL
55	Mn	45	265.489	822594	0.77	2000	>RL
56	Fe	45	68072.793	328937276	0.36	10000	OUTCAL
59	Co	72	28.181	253507	1.02	2000	>RL
60	Ni	72	38.797	96702	2.12	2000	>RL
63	Cu	72	9.937	70452	1.36	2000	>RL
66	Zn	72	174.916	184833	0.46	2000	>RL
75	As	72	17.491	14493	1.76	2000	>RL
78	Se	72	5.619	375	5.78	2000	>RL
88	Sr	115	726.230	3100403	0.37	2000	>RL
95	Mo	115	1.611	6168	2.97	2000	
107	Ag	115	0.039	479	7.82	500	
111	Cd	115	0.087	151	17.13	2000	
118	Sn	115	5.185	19102	1.53	2000	>RL
121	Sb	115	0.069	1836	4.03	500	
137	Ba	115	97.053	166979	1.08	2000	>RL
205	Tl	209	0.329	7843	3.27	2000	
208	Pb	209	28.466	883856	0.63	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	950745	0.37	952886	99.78	70	120	
72	Ge	655277	0.60	669007	97.95	70	120	
115	In	6393812	0.29	6352005	100.66	70	120	
209	Bi	13503474	0.78	13029062	103.64	70	120	

Sample Report

Date Acquired	5/26/16 3:54 PM	Sample Name	1605135-37A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	154SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	58.403	2049	4.25	2000	>RL
9	Be	45	2.077	96	17.13	2000	>RL
11	B	45	129.085	2126	9.56	2000	>RL
23	Na	45	3326.305	2500292	0.23	25000	>RL
24	Mg	45	8486.515	3076779	0.54	25000	>RL
27	Al	45	35727.220	4714139	0.90	10000	OUTCAL
39	K	45	10434.087	3991142	0.19	25000	>RL
44	Ca	45	77585.005	1726053	0.68	25000	OUTCAL
47	Ti	45	147.472	21250	1.12	2000	>RL
51	V	45	63.954	301864	0.64	2000	>RL
52	Cr	45	49.701	285183	0.76	2000	>RL
55	Mn	45	189.503	575692	1.00	2000	>RL
56	Fe	45	54360.525	257529510	0.90	10000	OUTCAL
59	Co	72	19.308	174071	1.42	2000	>RL
60	Ni	72	28.692	71743	1.40	2000	>RL
63	Cu	72	5.239	37941	0.66	2000	>RL
66	Zn	72	115.653	122593	0.79	2000	>RL
75	As	72	14.781	12294	1.27	2000	>RL
78	Se	72	5.257	357	5.15	2000	>RL
88	Sr	115	876.522	3716509	0.24	2000	>RL
95	Mo	115	1.474	5605	4.12	2000	
107	Ag	115	0.033	406	7.09	500	
111	Cd	115	0.023	46	40.30	2000	
118	Sn	115	5.113	18719	2.34	2000	>RL
121	Sb	115	-0.108	936	9.06	500	
137	Ba	115	212.633	363263	0.59	2000	>RL
205	Tl	209	0.156	3766	5.83	2000	
208	Pb	209	22.730	709949	0.20	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	932097	0.41	952886	97.82	70	120	
72	Ge	656696	0.81	669007	98.16	70	120	
115	In	6350951	1.36	6352005	99.98	70	120	
209	Bi	13573346	1.37	13029062	104.18	70	120	

Sample Report

Date Acquired	5/26/16 3:56 PM	Sample Name	1605135-38A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	155SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	92.795	3283	2.27	2000	>RL
9	Be	45	3.289	154	8.79	2000	>RL
11	B	45	133.656	2221	4.37	2000	>RL
23	Na	45	1863.919	1428143	1.06	25000	>RL
24	Mg	45	15213.483	5571911	0.46	25000	>RL
27	Al	45	84742.221	11295273	1.17	10000	OUTCAL
39	K	45	17154.116	6597052	3.03	25000	>RL
44	Ca	45	93285.312	2096566	0.49	25000	OUTCAL
47	Ti	45	285.857	41614	0.60	2000	>RL
51	V	45	119.609	568169	0.29	2000	>RL
52	Cr	45	73.875	427602	0.59	2000	>RL
55	Mn	45	667.768	2049120	0.75	2000	>RL
56	Fe	45	86215.826	412647281	3.30	10000	OUTCAL
59	Co	72	29.562	266721	0.33	2000	>RL
60	Ni	72	47.339	118292	0.97	2000	>RL
63	Cu	72	25.464	178724	0.47	2000	>RL
66	Zn	72	253.773	268815	0.98	2000	>RL
75	As	72	22.546	18696	0.18	2000	>RL
78	Se	72	6.751	432	8.20	2000	>RL
88	Sr	115	571.085	2398823	0.66	2000	>RL
95	Mo	115	2.078	7819	3.28	2000	>RL
107	Ag	115	0.154	1771	1.89	500	
111	Cd	115	0.426	697	8.16	2000	>RL
118	Sn	115	6.248	22476	0.39	2000	>RL
121	Sb	115	2.734	15028	2.68	500	>RL
137	Ba	115	486.690	823661	0.05	2000	>RL
205	Tl	209	0.628	14754	1.47	2000	
208	Pb	209	161.811	4956423	0.60	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	941734	0.66	952886	98.83	70	120	
72	Ge	657206	0.37	669007	98.24	70	120	
115	In	6290638	0.15	6352005	99.03	70	120	
209	Bi	13361308	1.76	13029062	102.55	70	120	

Sample Report

Date Acquired	5/26/16 3:58 PM	Sample Name	1605135-39A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	156SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	88.593	3113	0.26	2000	>RL
9	Be	45	3.163	147	18.92	2000	>RL
11	B	45	143.974	2370	7.50	2000	>RL
23	Na	45	5471.355	4107272	0.44	25000	>RL
24	Mg	45	14923.323	5427028	0.84	25000	>RL
27	Al	45	67872.622	8983454	2.19	10000	OUTCAL
39	K	45	14836.121	5671349	0.90	25000	>RL
44	Ca	45	104693.243	2336253	0.65	25000	OUTCAL
47	Ti	45	162.212	23447	0.38	2000	>RL
51	V	45	107.999	509613	0.41	2000	>RL
52	Cr	45	67.536	388253	1.53	2000	>RL
55	Mn	45	358.973	1093858	1.90	2000	>RL
56	Fe	45	91758.820	436081885	2.67	10000	OUTCAL
59	Co	72	28.081	252226	0.63	2000	>RL
60	Ni	72	47.005	116933	1.19	2000	>RL
63	Cu	72	13.200	92945	0.33	2000	>RL
66	Zn	72	194.023	204682	1.05	2000	>RL
75	As	72	20.080	16592	1.83	2000	>RL
78	Se	72	7.162	450	8.30	2000	>RL
88	Sr	115	436.118	1829377	0.79	2000	>RL
95	Mo	115	1.444	5434	2.62	2000	
107	Ag	115	0.066	777	18.76	500	
111	Cd	115	0.208	344	6.14	2000	
118	Sn	115	5.627	20295	1.12	2000	>RL
121	Sb	115	0.231	2605	3.41	500	
137	Ba	115	528.379	892936	0.80	2000	>RL
205	Tl	209	0.407	9520	0.62	2000	
208	Pb	209	38.298	1166994	0.20	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	935026	0.57	952886	98.13	70	120	
72	Ge	654266	0.89	669007	97.80	70	120	
115	In	6281613	0.28	6352005	98.89	70	120	
209	Bi	13263479	0.81	13029062	101.80	70	120	

Sample Report

Date Acquired	5/26/16 4:00 PM	Sample Name	1605135-40A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	157SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	93.420	3261	1.24	2000	>RL
9	Be	45	2.397	111	5.52	2000	>RL
11	B	45	130.307	2138	7.49	2000	>RL
23	Na	45	5929.503	4420295	0.54	25000	>RL
24	Mg	45	11254.442	4066561	0.15	25000	>RL
27	Al	45	53665.655	7057090	0.96	10000	OUTCAL
39	K	45	11671.425	4443713	0.43	25000	>RL
44	Ca	45	223023.067	4944106	0.52	25000	OUTCAL
47	Ti	45	160.522	23055	1.54	2000	>RL
51	V	45	85.116	399589	0.89	2000	>RL
52	Cr	45	54.936	314030	0.37	2000	>RL
55	Mn	45	203.364	615735	0.25	2000	>RL
56	Fe	45	68645.220	324122236	0.63	10000	OUTCAL
59	Co	72	22.158	196303	0.29	2000	>RL
60	Ni	72	35.509	87193	0.65	2000	>RL
63	Cu	72	9.976	69648	0.52	2000	>RL
66	Zn	72	188.548	196185	0.54	2000	>RL
75	As	72	15.979	13049	0.83	2000	>RL
78	Se	72	4.968	337	10.76	2000	>RL
88	Sr	115	888.943	3673809	0.30	2000	>RL
95	Mo	115	1.488	5520	2.77	2000	
107	Ag	115	0.038	459	6.87	500	
111	Cd	115	0.090	151	8.92	2000	
118	Sn	115	5.122	18280	1.97	2000	>RL
121	Sb	115	0.049	1675	10.41	500	
137	Ba	115	80.524	134114	0.37	2000	>RL
205	Tl	209	0.333	7713	0.58	2000	
208	Pb	209	25.989	785826	0.26	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	929010	0.22	952886	97.49	70	120	
72	Ge	645309	0.71	669007	96.46	70	120	
115	In	6192132	2.49	6352005	97.48	70	120	
209	Bi	13146858	1.45	13029062	100.90	70	120	

Sample Report

Date Acquired	5/26/16 4:02 PM	Sample Name	1605135-41A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	158SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	116.659	4073	1.24	2000	>RL
9	Be	45	2.207	102	14.64	2000	>RL
11	B	45	149.605	2447	2.48	2000	>RL
23	Na	45	5721.895	4269962	0.66	25000	>RL
24	Mg	45	11011.708	3982071	0.97	25000	>RL
27	Al	45	55225.553	7267789	2.17	10000	OUTCAL
39	K	45	10495.581	4004398	0.61	25000	>RL
44	Ca	45	199077.618	4417015	0.80	25000	OUTCAL
47	Ti	45	141.971	20405	2.60	2000	>RL
51	V	45	96.947	455150	1.25	2000	>RL
52	Cr	45	58.943	337103	0.69	2000	>RL
55	Mn	45	193.220	585503	0.51	2000	>RL
56	Fe	45	86725.436	409792837	2.54	10000	OUTCAL
59	Co	72	38.184	339166	0.26	2000	>RL
60	Ni	72	42.772	105241	1.79	2000	>RL
63	Cu	72	10.254	71737	0.62	2000	>RL
66	Zn	72	240.487	250802	0.43	2000	>RL
75	As	72	18.842	15406	1.40	2000	>RL
78	Se	72	5.030	341	6.43	2000	>RL
88	Sr	115	1082.100	4462580	0.50	2000	>RL
95	Mo	115	2.085	7706	2.47	2000	>RL
107	Ag	115	0.027	327	12.78	500	
111	Cd	115	0.055	96	5.33	2000	
118	Sn	115	5.366	19069	1.40	2000	>RL
121	Sb	115	-0.150	704	7.12	500	
137	Ba	115	78.074	129769	0.85	2000	>RL
205	Tl	209	0.329	7637	0.88	2000	
208	Pb	209	22.633	685806	0.91	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	929773	0.55	952886	97.57	70	120	
72	Ge	647033	0.74	669007	96.72	70	120	
115	In	6177201	1.04	6352005	97.25	70	120	
209	Bi	13166048	0.79	13029062	101.05	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/26/2016 16:04	Sample Name	1605135-36A PDS
Data Batch	160526.b	Comment	PDS ICPMS_TSDOD1
Data File Name	159_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	323.767	11286	1.15	105.9	200	108.9	75	125	
9	Be	45	208.548	9581	1.51	2.6	200	103.0	75	125	
11	B	45	352.512	5681	6.10	145.2	200	103.7	75	125	
23	Na	45	10339.963	7693011	0.88	5222.2	5000	102.4	75	125	
24	Mg	45	16108.073	5825241	2.29	10768.1	5000	106.8	75	125	
27	Al	45	59653.689	7851759	2.79	53694.7	5000	119.2	75	125	
39	K	45	16034.340	6092114	3.67	10813.3	5000	104.4	75	125	
44	Ca	45	########	4903282	1.85	213434.1	5000	151.1	75	125	Fail
47	Ti	45	367.016	52745	0.91	158.5	200	104.2	75	125	
51	V	45	308.949	1444947	1.07	98.4	200	105.3	75	125	
52	Cr	45	264.558	1508337	1.16	57.5	200	103.5	75	125	
55	Mn	45	445.504	1349725	0.89	242.8	200	101.3	75	125	
56	Fe	45	94172.375	445013662	1.70	86554.9	5000	152.3	75	125	Fail
59	Co	72	255.398	2270069	0.74	44.3	200	105.5	75	125	
60	Ni	72	249.131	612255	0.79	44.5	200	102.3	75	125	
63	Cu	72	207.455	1423894	0.43	9.9	200	98.8	75	125	
66	Zn	72	439.902	458852	0.73	237.0	200	101.5	75	125	
75	As	72	224.216	181999	0.44	20.2	200	102.0	75	125	
78	Se	72	208.187	10334	1.76	5.3	200	101.4	75	125	
88	Sr	115	1849.136	7643659	1.59	1617.2	200	116.0	75	125	
95	Mo	115	205.248	757361	1.39	2.2	200	101.5	75	125	
107	Ag	115	196.997	2193610	1.40	0.0	200	98.5	75	125	
111	Cd	115	196.344	312840	1.37	0.1	200	98.1	75	125	
118	Sn	115	218.734	746555	0.93	5.6	200	106.6	75	125	
121	Sb	115	210.817	1030981	0.98	0.0	200	105.4	75	125	
137	Ba	115	310.453	517125	0.04	103.1	200	103.7	75	125	
205	Tl	209	196.695	4550809	0.49	0.3	200	98.2	75	125	
208	Pb	209	223.255	6749540	0.99	23.0	200	100.1	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	929763	1.38	952886	97.57	70	120	
72	Ge	647499	0.16	669007	96.79	70	120	
115	In	6192316	1.51	6352005	97.49	70	120	
209	Bi	13186151	0.31	13029062	101.21	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/26/2016 16:18	Sample Name	1605135-36A MS
Data Batch	160526.b	Comment	MS ICPMS_TSDOD1
Data File Name	160_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	342.727	11746	2.29	105.9	200	118.4	80	120	
9	Be	45	204.972	9261	3.05	2.6	200	101.2	80	120	
11	B	45	341.518	5414	6.14	145.2	200	98.2	80	120	
23	Na	45	10630.902	7777776	1.18	5222.2	1000	540.9	80	120	Fail
24	Mg	45	16593.543	5900161	0.22	10768.1	1000	582.5	80	120	Fail
27	Al	45	60734.020	7859307	0.67	53694.7	1000	703.9	80	120	Fail
39	K	45	16652.598	6218772	1.23	10813.3	1000	583.9	80	120	Fail
44	Ca	45	########	5024414	0.66	213434.1	1000	1686.9	80	120	Fail
47	Ti	45	319.634	45173	1.47	158.5	200	80.6	80	120	
51	V	45	307.642	1414933	0.47	98.4	200	104.6	80	120	
52	Cr	45	263.226	1475781	0.21	57.5	200	102.9	80	120	
55	Mn	45	431.652	1285993	0.42	242.8	200	94.4	80	120	
56	Fe	45	86074.534	399932366	1.19	86554.9	1000	-48.0	80	120	Fail
59	Co	72	244.190	2143945	0.72	44.3	200	99.9	80	120	
60	Ni	72	248.385	602971	0.53	44.5	200	101.9	80	120	
63	Cu	72	210.425	1426646	0.08	9.9	200	100.3	80	120	
66	Zn	72	431.529	444628	0.39	237.0	200	97.3	80	120	
75	As	72	220.365	176693	0.66	20.2	200	100.1	80	120	
78	Se	72	201.561	9886	1.54	5.3	200	98.1	80	120	
88	Sr	115	2182.393	8833270	2.16	1617.2	200	282.6	80	120	Fail
95	Mo	115	197.313	712846	0.40	2.2	200	97.6	80	120	
107	Ag	115	198.645	2165725	0.38	0.0	200	99.3	80	120	
111	Cd	115	199.234	310796	0.46	0.1	200	99.6	80	120	
118	Sn	115	210.513	703645	0.21	5.6	200	102.5	80	120	
121	Sb	115	62.189	298805	0.60	0.0	200	31.1	80	120	Fail
137	Ba	115	326.277	532167	0.48	103.1	200	111.6	80	120	
205	Tl	209	201.190	4564952	0.62	0.3	200	100.4	80	120	
208	Pb	209	227.568	6747004	0.23	23.0	200	102.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	914337	1.16	952886	95.95	70	120	
72	Ge	639601	0.27	669007	95.60	70	120	
115	In	6063066	1.09	6352005	95.45	70	120	
209	Bi	12931621	0.14	13029062	99.25	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/26/2016 16:20	Sample Name	1605135-36A MSD
Data Batch	160526.b	Comment	MSD ICPMS_TSDOD1
Data File Name	161_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	344.881	11912	1.10	105.9	200	119.5	80	120	
9	Be	45	209.354	9531	0.65	2.6	200	103.4	80	120	
11	B	45	362.376	5782	4.70	145.2	200	108.6	80	120	
23	Na	45	11045.210	8141188	2.60	5222.2	1000	582.3	80	120	Fail
24	Mg	45	17343.412	6214284	1.31	10768.1	1000	657.5	80	120	Fail
27	Al	45	66354.605	8652574	0.77	53694.7	1000	1266.0	80	120	Fail
39	K	45	17732.396	6669733	3.80	10813.3	1000	691.9	80	120	Fail
44	Ca	45	########	5423396	1.73	213434.1	1000	3327.2	80	120	Fail
47	Ti	45	327.713	46666	1.97	158.5	200	84.6	80	120	
51	V	45	319.261	1479464	0.35	98.4	200	110.4	80	120	
52	Cr	45	270.098	1525889	1.14	57.5	200	106.3	80	120	
55	Mn	45	453.296	1360793	0.71	242.8	200	105.2	80	120	
56	Fe	45	97726.912	457580435	3.35	86554.9	1000	1117.2	80	120	Fail
59	Co	72	249.999	2199706	1.19	44.3	200	102.8	80	120	
60	Ni	72	253.342	616312	0.42	44.5	200	104.4	80	120	
63	Cu	72	213.276	1449051	0.46	9.9	200	101.7	80	120	
66	Zn	72	457.375	472242	0.30	237.0	200	110.2	80	120	
75	As	72	225.521	181209	0.17	20.2	200	102.7	80	120	
78	Se	72	207.017	10173	1.46	5.3	200	100.9	80	120	
88	Sr	115	1742.673	7145047	0.88	1617.2	200	62.7	80	120	Fail
95	Mo	115	198.143	725115	0.29	2.2	200	98.0	80	120	
107	Ag	115	196.804	2173410	1.40	0.0	200	98.4	80	120	
111	Cd	115	197.267	311714	0.96	0.1	200	98.6	80	120	
118	Sn	115	208.960	707487	0.17	5.6	200	101.7	80	120	
121	Sb	115	63.053	306865	0.69	0.0	200	31.5	80	120	Fail
137	Ba	115	307.322	507740	0.87	103.1	200	102.1	80	120	
205	Tl	209	200.765	4555916	1.12	0.3	200	100.2	80	120	
208	Pb	209	229.642	6809735	0.35	23.0	200	103.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	921261	0.57	952886	96.68	70	120	
72	Ge	640966	0.37	669007	95.81	70	120	
115	In	6141122	0.43	6352005	96.68	70	120	
209	Bi	12934882	1.21	13029062	99.28	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/26/2016 16:22	Sample Name	CCV6-160526
Data Batch	160526.b	Comment	CCV ICPMS_TW
Data File Name	162_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	229.646	7971	1.44	200	114.8	90	110	Fail
9	Be	45	216.615	9906	0.57	200	108.3	90	110	
11	B	45	223.237	3603	1.43	200	111.6	90	110	Fail
23	Na	45	5120.261	3805981	0.58	5000	102.4	90	110	
24	Mg	45	5120.144	1843214	0.49	5000	102.4	90	110	
27	Al	45	4996.440	655402	0.24	5000	99.9	90	110	
39	K	45	4993.302	1922365	1.20	5000	99.9	90	110	
44	Ca	45	4738.934	105199	0.85	5000	94.8	90	110	
47	Ti	45	200.610	28699	0.58	200	100.3	90	110	
51	V	45	204.775	954115	0.77	200	102.4	90	110	
52	Cr	45	203.694	1156201	0.40	200	101.8	90	110	
55	Mn	45	206.545	622930	0.22	200	103.3	90	110	
56	Fe	45	5204.690	24488854	2.08	5000	104.1	90	110	
59	Co	72	206.018	1883460	1.04	200	103.0	90	110	
60	Ni	72	204.428	516781	1.47	200	102.2	90	110	
63	Cu	72	205.548	1451120	1.12	200	102.8	90	110	
66	Zn	72	201.987	216888	1.60	200	101.0	90	110	
75	As	72	200.612	167499	0.57	200	100.3	90	110	
78	Se	72	201.176	10274	1.06	200	100.6	90	110	
88	Sr	115	198.250	834087	0.31	200	99.1	90	110	
95	Mo	115	201.653	756908	0.72	200	100.8	90	110	
107	Ag	115	201.794	2285827	0.19	200	100.9	90	110	
111	Cd	115	201.636	326798	0.43	200	100.8	90	110	
118	Sn	115	204.673	710757	0.79	200	102.3	90	110	
121	Sb	115	197.813	984275	0.70	200	98.9	90	110	
137	Ba	115	203.143	344258	0.41	200	101.6	90	110	
205	Tl	209	193.959	4621501	0.74	200	97.0	90	110	
208	Pb	209	197.715	6156443	0.52	200	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	925407	0.53	952886	97.12	70	120	
72	Ge	665982	0.69	669007	99.55	70	120	
115	In	6299098	0.93	6352005	99.17	70	120	
209	Bi	13581872	1.16	13029062	104.24	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/26/2016 16:26	Sample Name	LCVL6-160526
Data Batch	160526.b	Comment	LCVLICPMS_TW
Data File Name	164LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.092	407	9.87	10	110.9	70	130	
9	Be	45	1.221	58	10.33	1	122.1	70	130	
11	B	45	31.070	574	12.90	20	155.3	70	130	Fail
23	Na	45	119.785	120254	0.77	100	119.8	70	130	
24	Mg	45	104.410	39415	1.09	100	104.4	70	130	
27	Al	45	99.367	14491	2.73	100	99.4	70	130	
39	K	45	97.597	89326	0.81	100	97.6	70	130	
44	Ca	45	99.911	2859	3.32	100	99.9	70	130	
47	Ti	45	4.641	689	5.44	5	92.8	70	130	
51	V	45	0.998	7374	2.34	1	99.8	70	130	
52	Cr	45	5.167	31637	0.74	5	103.3	70	130	
55	Mn	45	5.171	16254	1.73	5	103.4	70	130	
56	Fe	45	102.178	505081	0.57	100	102.2	70	130	
59	Co	72	5.196	48594	1.28	5	103.9	70	130	
60	Ni	72	5.187	13670	2.08	5	103.7	70	130	
63	Cu	72	5.029	37822	1.82	5	100.6	70	130	
66	Zn	72	5.377	6237	2.09	5	107.5	70	130	
75	As	72	5.015	4417	1.40	5	100.3	70	130	
78	Se	72	4.965	355	8.71	5	99.3	70	130	
88	Sr	115	5.007	21957	1.08	5	100.1	70	130	
95	Mo	115	4.842	18640	0.38	5	96.8	70	130	
107	Ag	115	2.032	23588	1.96	2	101.6	70	130	
111	Cd	115	1.047	1746	3.40	1	104.7	70	130	
118	Sn	115	5.176	19238	2.23	5	103.5	70	130	
121	Sb	115	1.864	10982	0.72	2	93.2	70	130	
137	Ba	115	5.111	8905	2.42	5	102.2	70	130	
205	Tl	209	0.977	23792	3.16	1	97.7	70	130	
208	Pb	209	0.927	32504	0.83	1	92.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	955494	0.34	952886	100.27	70	120	
72	Ge	680849	0.33	669007	101.77	70	120	
115	In	6450795	2.26	6352005	101.56	70	120	
209	Bi	13858414	0.62	13029062	106.37	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/26/2016 16:28	Sample Name	CCB6-160526
Data Batch	160526.b	Comment	CCB ICPMS_TW
Data File Name	165_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.177	16	31.3	2	5	
9	Be	45	0.028	2	132.3	0.4	0.3	
11	B	45	6.866	178	2.9	10	10	
23	Na	45	15.303	40587	0.9	50	100	
24	Mg	45	-0.472	443	12.5	50	100	
27	Al	45	-1.003	917	3.5	50	10	
39	K	45	-3.166	50224	0.2	50	100	
44	Ca	45	0.807	598	9.2	50	100	
47	Ti	45	0.000	3	100.1	4	3	
51	V	45	-0.080	2199	2.1	4	3	
52	Cr	45	-0.006	1351	10.1	2	2	
55	Mn	45	0.020	217	13.7	2	3	
56	Fe	45	0.546	11528	4.3	50	50	
59	Co	72	0.006	92	24.1	2	3	
60	Ni	72	-0.014	239	14.8	2	3	
63	Cu	72	-0.057	1153	5.6	2	2	
66	Zn	72	0.044	393	7.3	4	2	
75	As	72	-0.037	109	10.2	2	2	
78	Se	72	-0.191	89	4.2	1	2	
88	Sr	115	-0.003	398	6.5	4	3	
95	Mo	115	0.008	64	57.7	2	2	
107	Ag	115	0.024	316	11.7	0.4	1	
111	Cd	115	0.000	8	49.5	0.4	0.3	
118	Sn	115	-0.055	664	7.1	4	3	
121	Sb	115	-0.154	722	8.8	2	0.8	
137	Ba	115	0.002	46	59.1	2	3	
205	Tl	209	0.006	191	5.3	2	0.5	
208	Pb	209	-0.057	1253	6.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	953792	0.51	952886	100.10	70	120	
72	Ge	683405	0.47	669007	102.15	70	120	
115	In	6525148	0.86	6352005	102.73	70	120	
209	Bi	13799301	0.94	13029062	105.91	70	120	

Sample Report

Date Acquired	5/26/16 4:30 PM	Sample Name	1605135-42A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	166SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	67.504	2351	3.15	2000	>RL
9	Be	45	2.477	114	10.96	2000	>RL
11	B	45	145.644	2374	0.85	2000	>RL
23	Na	45	4071.494	3033431	0.85	25000	>RL
24	Mg	45	9620.447	3464146	0.76	25000	>RL
27	Al	45	42953.871	5629160	1.57	10000	OUTCAL
39	K	45	11309.685	4292569	0.58	25000	>RL
44	Ca	45	91787.753	2028074	0.93	25000	OUTCAL
47	Ti	45	128.713	18422	0.22	2000	>RL
51	V	45	76.997	360456	0.65	2000	>RL
52	Cr	45	55.724	317404	0.47	2000	>RL
55	Mn	45	218.027	657819	0.38	2000	>RL
56	Fe	45	68059.332	320228778	0.55	10000	OUTCAL
59	Co	72	19.892	180510	0.99	2000	>RL
60	Ni	72	30.902	77752	0.86	2000	>RL
63	Cu	72	6.915	49914	1.15	2000	>RL
66	Zn	72	143.423	152932	0.56	2000	>RL
75	As	72	17.201	14378	0.35	2000	>RL
78	Se	72	5.529	373	2.63	2000	>RL
88	Sr	115	647.128	2690409	0.81	2000	>RL
95	Mo	115	1.514	5648	3.39	2000	
107	Ag	115	0.037	447	16.82	500	
111	Cd	115	0.026	49	17.16	2000	
118	Sn	115	5.251	18825	1.15	2000	>RL
121	Sb	115	-0.045	1225	11.87	500	
137	Ba	115	116.326	194864	0.57	2000	>RL
205	Tl	209	0.205	4806	1.74	2000	
208	Pb	209	29.993	912337	0.68	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	925770	0.32	952886	97.15	70	120	
72	Ge	660947	0.37	669007	98.80	70	120	
115	In	6226600	1.24	6352005	98.03	70	120	
209	Bi	13231547	0.83	13029062	101.55	70	120	

Sample Report

Date Acquired	5/26/16 4:32 PM	Sample Name	1605135-43A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	167SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	66.837	2391	4.07	2000	>RL
9	Be	45	2.805	133	15.40	2000	>RL
11	B	45	86.662	1477	2.99	2000	>RL
23	Na	45	419.761	347110	0.33	25000	>RL
24	Mg	45	11644.770	4306607	0.13	25000	>RL
27	Al	45	61417.241	8265931	1.73	10000	OUTCAL
39	K	45	16219.026	6300447	0.23	25000	>RL
44	Ca	45	36215.660	822235	0.71	25000	OUTCAL
47	Ti	45	204.837	30107	1.05	2000	>RL
51	V	45	84.994	408390	0.78	2000	>RL
52	Cr	45	54.446	318560	0.35	2000	>RL
55	Mn	45	572.303	1773290	0.11	2000	>RL
56	Fe	45	62288.914	301106788	2.58	10000	OUTCAL
59	Co	72	22.283	203689	0.58	2000	>RL
60	Ni	72	35.585	90154	1.64	2000	>RL
63	Cu	72	21.504	153139	0.46	2000	>RL
66	Zn	72	249.315	267538	1.09	2000	>RL
75	As	72	16.864	14202	0.82	2000	>RL
78	Se	72	5.205	359	3.51	2000	>RL
88	Sr	115	193.576	801529	1.17	2000	>RL
95	Mo	115	1.147	4268	2.12	2000	
107	Ag	115	0.139	1582	3.20	500	
111	Cd	115	0.464	748	11.75	2000	>RL
118	Sn	115	5.867	20848	0.26	2000	>RL
121	Sb	115	1.607	9298	2.62	500	
137	Ba	115	354.359	591008	0.31	2000	>RL
205	Tl	209	0.489	11447	0.72	2000	
208	Pb	209	104.260	3177848	0.64	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	951014	1.52	952886	99.80	70	120	
72	Ge	665790	0.54	669007	99.52	70	120	
115	In	6199411	0.75	6352005	97.60	70	120	
209	Bi	13289559	1.53	13029062	102.00	70	120	

Sample Report

Date Acquired	5/26/16 4:34 PM	Sample Name	1605135-44A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	168SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	64.407	2305	1.44	2000	>RL
9	Be	45	2.582	122	21.69	2000	>RL
11	B	45	83.003	1418	3.82	2000	>RL
23	Na	45	413.514	342456	1.16	25000	>RL
24	Mg	45	11670.327	4317177	0.41	25000	>RL
27	Al	45	58385.308	7860479	1.41	10000	OUTCAL
39	K	45	15996.461	6216373	1.04	25000	>RL
44	Ca	45	39628.473	899896	0.41	25000	OUTCAL
47	Ti	45	172.741	25399	1.06	2000	>RL
51	V	45	83.136	399647	0.48	2000	>RL
52	Cr	45	53.553	313448	0.58	2000	>RL
55	Mn	45	573.196	1776505	0.52	2000	>RL
56	Fe	45	59896.976	289547348	0.89	10000	OUTCAL
59	Co	72	20.932	189934	0.66	2000	>RL
60	Ni	72	34.627	87089	0.55	2000	>RL
63	Cu	72	23.264	164342	1.45	2000	>RL
66	Zn	72	264.617	281880	1.16	2000	>RL
75	As	72	16.936	14158	0.73	2000	>RL
78	Se	72	5.682	381	8.58	2000	>RL
88	Sr	115	199.988	838539	0.43	2000	>RL
95	Mo	115	1.103	4156	3.19	2000	
107	Ag	115	0.153	1758	5.23	500	
111	Cd	115	0.516	841	5.10	2000	>RL
118	Sn	115	5.401	19502	0.74	2000	>RL
121	Sb	115	1.774	10245	1.56	500	
137	Ba	115	357.153	603170	0.80	2000	>RL
205	Tl	209	0.464	10896	2.29	2000	
208	Pb	209	118.796	3635508	0.34	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	951118	0.12	952886	99.81	70	120	
72	Ge	660931	0.76	669007	98.79	70	120	
115	In	6278428	1.38	6352005	98.84	70	120	
209	Bi	13343481	0.88	13029062	102.41	70	120	

Sample Report

Date Acquired	5/26/16 4:36 PM	Sample Name	1605135-45A
Data Batch	160526.b	Comment	SAMPICPMS_TSDOD1
Data File Name	169SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	62.499	2245	0.88	2000	>RL
9	Be	45	2.502	119	13.96	2000	>RL
11	B	45	84.502	1448	4.02	2000	>RL
23	Na	45	457.475	377208	0.77	25000	>RL
24	Mg	45	11978.911	4447963	0.38	25000	>RL
27	Al	45	59052.645	7980172	2.34	10000	OUTCAL
39	K	45	15738.718	6140108	1.03	25000	>RL
44	Ca	45	44215.970	1007794	0.87	25000	OUTCAL
47	Ti	45	185.545	27384	2.47	2000	>RL
51	V	45	84.118	405858	0.88	2000	>RL
52	Cr	45	53.423	313864	0.25	2000	>RL
55	Mn	45	596.095	1854398	0.09	2000	>RL
56	Fe	45	60165.656	291924504	0.73	10000	OUTCAL
59	Co	72	21.117	191658	0.55	2000	>RL
60	Ni	72	34.486	86755	0.14	2000	>RL
63	Cu	72	22.623	159882	0.85	2000	>RL
66	Zn	72	269.221	286829	2.11	2000	>RL
75	As	72	16.869	14105	1.36	2000	>RL
78	Se	72	5.307	362	0.41	2000	>RL
88	Sr	115	210.681	882689	1.47	2000	>RL
95	Mo	115	1.155	4347	4.77	2000	
107	Ag	115	0.130	1495	5.94	500	
111	Cd	115	0.571	929	4.13	2000	>RL
118	Sn	115	5.358	19339	0.73	2000	>RL
121	Sb	115	1.679	9769	2.20	500	
137	Ba	115	377.807	637668	0.69	2000	>RL
205	Tl	209	0.452	10761	2.36	2000	
208	Pb	209	123.434	3822376	0.90	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	954702	0.62	952886	100.19	70	120	
72	Ge	661064	0.45	669007	98.81	70	120	
115	In	6274032	1.27	6352005	98.77	70	120	
209	Bi	13505236	1.72	13029062	103.65	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/26/2016 16:50	Sample Name	CCV7-160526
Data Batch	160526.b	Comment	CCV ICPMS_TW
Data File Name	176_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	228.449	7917	0.49	200	114.2	90	110	Fail
9	Be	45	211.777	9672	2.00	200	105.9	90	110	
11	B	45	214.519	3459	0.39	200	107.3	90	110	
23	Na	45	5065.308	3760166	1.02	5000	101.3	90	110	
24	Mg	45	5011.370	1801342	0.76	5000	100.2	90	110	
27	Al	45	4929.455	645678	0.05	5000	98.6	90	110	
39	K	45	4937.024	1898474	0.64	5000	98.7	90	110	
44	Ca	45	4668.222	103484	0.60	5000	93.4	90	110	
47	Ti	45	204.003	29142	2.43	200	102.0	90	110	
51	V	45	205.291	955094	0.29	200	102.6	90	110	
52	Cr	45	205.633	1165549	0.78	200	102.8	90	110	
55	Mn	45	208.664	628391	0.20	200	104.3	90	110	
56	Fe	45	5165.716	24267992	0.43	5000	103.3	90	110	
59	Co	72	207.551	1896717	0.45	200	103.8	90	110	
60	Ni	72	205.207	518542	0.73	200	102.6	90	110	
63	Cu	72	205.887	1452922	0.25	200	102.9	90	110	
66	Zn	72	200.378	215074	0.21	200	100.2	90	110	
75	As	72	200.085	167001	1.28	200	100.0	90	110	
78	Se	72	199.696	10196	0.80	200	99.8	90	110	
88	Sr	115	194.319	838875	0.99	200	97.2	90	110	
95	Mo	115	198.470	764390	0.71	200	99.2	90	110	
107	Ag	115	196.898	2288442	0.95	200	98.4	90	110	
111	Cd	115	197.845	328998	0.16	200	98.9	90	110	
118	Sn	115	200.899	715917	1.03	200	100.4	90	110	
121	Sb	115	195.365	997436	0.26	200	97.7	90	110	
137	Ba	115	198.819	345682	0.18	200	99.4	90	110	
205	Tl	209	193.879	4644626	0.87	200	96.9	90	110	
208	Pb	209	197.700	6188723	0.47	200	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	924113	1.22	952886	96.98	70	120	
72	Ge	665727	0.38	669007	99.51	70	120	
115	In	6464774	2.37	6352005	101.78	70	120	
209	Bi	13655478	1.94	13029062	104.81	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/26/2016 16:54	Sample Name	LCVL7-160526
Data Batch	160526.b	Comment	LCVLICPMS_TW
Data File Name	178LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.294	402	4.09	10	112.9	70	130	
9	Be	45	1.076	50	25.53	1	107.6	70	130	
11	B	45	27.786	506	9.61	20	138.9	70	130	Fail
23	Na	45	116.221	114147	0.69	100	116.2	70	130	
24	Mg	45	101.873	37362	1.18	100	101.9	70	130	
27	Al	45	98.687	13984	1.33	100	98.7	70	130	
39	K	45	96.263	86246	0.36	100	96.3	70	130	
44	Ca	45	95.930	2688	3.40	100	95.9	70	130	
47	Ti	45	4.912	708	4.38	5	98.2	70	130	
51	V	45	0.919	6795	1.25	1	91.9	70	130	
52	Cr	45	5.093	30300	0.95	5	101.9	70	130	
55	Mn	45	5.077	15499	2.62	5	101.5	70	130	
56	Fe	45	102.796	493414	0.76	100	102.8	70	130	
59	Co	72	5.167	47418	0.40	5	103.3	70	130	
60	Ni	72	5.187	13416	1.43	5	103.7	70	130	
63	Cu	72	5.003	36926	2.00	5	100.1	70	130	
66	Zn	72	5.090	5810	7.09	5	101.8	70	130	
75	As	72	5.067	4378	3.37	5	101.3	70	130	
78	Se	72	4.748	338	16.41	5	95.0	70	130	
88	Sr	115	4.693	21250	1.58	5	93.9	70	130	
95	Mo	115	4.791	19007	1.21	5	95.8	70	130	
107	Ag	115	1.943	23250	2.84	2	97.2	70	130	
111	Cd	115	0.903	1553	3.16	1	90.3	70	130	
118	Sn	115	4.777	18368	1.17	5	95.5	70	130	
121	Sb	115	1.710	10513	3.31	2	85.5	70	130	
137	Ba	115	4.845	8703	2.95	5	96.9	70	130	
205	Tl	209	0.962	23168	0.27	1	96.2	70	130	
208	Pb	209	0.936	32409	0.21	1	93.6	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	927901	0.19	952886	97.38	70	120	
72	Ge	668100	0.95	669007	99.86	70	120	
115	In	6651507	2.97	6352005	104.72	70	120	
209	Bi	13702069	1.15	13029062	105.17	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/26/2016 17:06	Sample Name	CCB7-160526
Data Batch	160526.b	Comment	CCB ICPMS_TW
Data File Name	184_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.076	12	41.7	2	5	
9	Be	45	0.008	1	173.2	0.4	0.3	
11	B	45	3.085	112	19.8	10	10	
23	Na	45	13.475	37943	1.8	50	100	
24	Mg	45	-0.627	373	5.6	50	100	
27	Al	45	-1.097	876	8.0	50	10	
39	K	45	-5.687	47674	1.9	50	100	
44	Ca	45	-3.544	484	7.5	50	100	
47	Ti	45	0.024	7	132.3	4	3	
51	V	45	0.004	2519	1.8	4	3	
52	Cr	45	0.010	1396	6.8	2	2	
55	Mn	45	0.010	179	14.0	2	3	
56	Fe	45	0.349	10237	4.8	50	50	
59	Co	72	0.002	49	20.8	2	3	
60	Ni	72	-0.014	231	8.7	2	3	
63	Cu	72	-0.074	1001	6.3	2	2	
66	Zn	72	0.030	367	6.4	4	2	
75	As	72	-0.021	119	5.0	2	2	
78	Se	72	-0.235	84	21.7	1	2	
88	Sr	115	0.013	451	0.9	4	3	
95	Mo	115	-0.001	28	68.2	2	2	
107	Ag	115	0.011	156	23.5	0.4	1	
111	Cd	115	-0.003	2	86.6	0.4	0.3	
118	Sn	115	-0.145	330	24.8	4	3	
121	Sb	115	-0.181	568	12.1	2	0.8	
137	Ba	115	0.014	64	33.7	2	3	
205	Tl	209	0.000	50	17.6	2	0.5	
208	Pb	209	-0.070	828	3.1	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	923386	0.91	952886	96.90	70	120	
72	Ge	663388	1.04	669007	99.16	70	120	
115	In	6348906	1.70	6352005	99.95	70	120	
209	Bi	13541688	0.92	13029062	103.93	70	120	

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DHL ANALYTICAL
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Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70027

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Denkenberger@arcadis.com

DATE: May 12, 2016 PAGE 1 OF 2
PO #: 04285091.0000.00044 DHL WORK ORDER #: 1605144
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285091.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) / TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ / GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐ / VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ / SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ / 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ / 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ / 8321 HERB ☐ T PHOS, AMMONIA ☐ / METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ 1 each / RCRA ☐ TX11 ☐ / PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ / CHLORIDE ☐ ANIONS ☐ / TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ / TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ / RCI ☐ FLASHPOINT ☐ DGAS ☐ / TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐ (METHOD 8021)	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-D4083(0-2)-A	01	5-12-16	936	S	Bag	1				X						X						X									
SGR-D4083(2-4)-A	02	5-12-16	937	S	Bag	1				X						X						X									
SGR-D4083(4-6)-A	03	5-12-16	938	S	Bag	1				X						X						X									
SGR-D4083(6-8)-A	04	5-12-16	939	S	Bag	1				X						X						X									
SGR-D4083(0-2)-B	05	5-12-16	948	S	Bag	1				X						X						X									
SGR-D4083(2-4)-B	06	5-12-16	949	S	Bag	1				X						X						X									
SGR-D4083(4-6)-B	07	5-12-16	950	S	Bag	1				X						X						X									
SGR-D4083(6-8)-B	08	5-12-16	951	S	Bag	1				X						X						X									
SGR-D4083(0-2)-C	09	5-12-16	958	S	Bag	1				X						X						X									
SGR-D4083(2-4)-C	10	5-12-16	959	S	Bag	1				X						X						X									
SGR-D4083(4-6)-C	11	5-12-16	1000	S	Bag	1				X						X						X									
SGR-D4083(6-8)-C	12	5-12-16	1001	S	Bag	1				X						X						X									
SGR-D4146-A	13	5-12-16	910	S	Bag	1				X						X						X									
SGR-D4146-B	14	5-12-16	1000	S	Bag	1				X						X						X									
SGR-D4146-C	15	5-12-16	1030	S	Bag	1				X						X						X									

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-12-16/1800	Fedex
Fedex	5/13/16 10:30	[signature]

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 13/0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

☐ DHL DISPOSAL @ $5.00 each ☐ Return

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70028

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Deikenberger@arcadis.com

DATE: May 12, 2016 PAGE 2 OF 2
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605144
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8015] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ Lead	RCRA ☐ TX11 ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
EB18(20160512)	16	5-12-16	1100	W	6 Glass/Poly	2		X		X						X					X										
SGR-D4146-SMAT1	17	5-12-16	0830	S	4oz Jar	1				X						X					X										
SGR-D4146-SMAT2	18	5-12-16	0835	S	4oz Jar	1				X						X					X										
SGR-D4146-SMAT3	19	5-12-16	0840	S	4oz Jar	1				X						X					X										
SGR-D4146-SMAT4	20	5-12-16	0845	S	4oz Jar	1				X						X					X										
DUP7(20160512)	21	5-12-16	0900	S	4oz Jar	1				X						X					X										

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-12-16 11:00	FedEx
FedEx	5/13/16 10:30	[signature]

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.2 / 0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

☐ DHL DISPOSAL @ $5.00 each ☐ Return

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Arcadis** Date Received: **5/13/2016**

Work Order Number **1605144** Received by **JT**

Checklist completed by: Signature 5/13/2016 Date Reviewed by Initials 5/13/2016 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	1.3 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted?		Checked by
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605144-01
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:36 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	67.6	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 04:38 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:38 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0556	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/25/16 04:11 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 04:11 PM
Anthracene	0.233	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[a]anthracene	1.65	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[a]pyrene	2.14	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[b]fluoranthene	1.97	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[e]pyrene	1.58	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[g,h,i]perylene	1.43	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[j]fluoranthene	1.03	0.0497	0.0993	0.0745	N	mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[k]fluoranthene	1.01	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Chrysene	1.96	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Dibenz[a,h]anthracene	0.356	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Fluoranthene	2.88	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 04:11 PM
Indeno[1,2,3-cd]pyrene	1.31	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Phenanthrene	1.10	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Pyrene	2.45	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
IS: Acenaphthene-d10	71.1	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Chrysene-d12	73.3	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Perylene-d12	73.7	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Phenanthrene-d10	68.5	0	50-200	0		%REC	10	05/25/16 04:11 PM
Surr: 2-Fluorobiphenyl	78.6	0	46-115	0		%REC	10	05/25/16 04:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605144-01
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:36 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.7	0	58-133	0		%REC	10	05/25/16 04:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605144-02
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:37 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.69	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 04:40 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Acenaphthylene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[a]anthracene	0.303	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[a]pyrene	0.617	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[b]fluoranthene	0.575	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[e]pyrene	0.473	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[g,h,i]perylene	0.470	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[j]fluoranthene	0.284	0.0492	0.0983	0.0737	N	mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[k]fluoranthene	0.266	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Chrysene	0.420	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Dibenz[a,h]anthracene	0.111	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Fluoranthene	0.257	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Fluorene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Indeno[1,2,3-cd]pyrene	0.419	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Phenanthrene	0.0691	0.0492	0.0983	0.0737	J	mg/Kg-dry	10	05/25/16 04:51 PM
Pyrene	0.270	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
IS: Acenaphthene-d10	69.5	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Chrysene-d12	70.9	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Perylene-d12	71.3	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Phenanthrene-d10	66.9	0	50-200	0		%REC	10	05/25/16 04:51 PM
Surr: 2-Fluorobiphenyl	80.7	0	46-115	0		%REC	10	05/25/16 04:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605144-02
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:37 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.9	0	58-133	0		%REC	10	05/25/16 04:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605144-03
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:38 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.78	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 04:42 PM
IS: Bismuth	99.0	0	30-120	0		%REC	5	05/26/16 04:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Acenaphthylene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[a]anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[a]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[b]fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[e]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[g,h,i]perylene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[j]fluoranthene	0.0738	0.0492	0.0984	0.0738	NU	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[k]fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Chrysene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Dibenz[a,h]anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Fluorene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Indeno[1,2,3-cd]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Phenanthrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
IS: Acenaphthene-d10	70.6	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Chrysene-d12	73.3	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Perylene-d12	73.9	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Phenanthrene-d10	69.3	0	50-200	0		%REC	10	05/25/16 05:31 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/25/16 05:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605144-03
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:38 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.8	0	58-133	0		%REC	10	05/25/16 05:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605144-04
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:39 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.91	0.0901	0.270	0.135		mg/Kg-dry	5	05/26/16 04:44 PM
IS: Bismuth	98.5	0	30-120	0		%REC	5	05/26/16 04:44 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Acenaphthylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[a]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[a]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[b]fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[e]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[g,h,i]perylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[j]fluoranthene	0.0750	0.0500	0.100	0.0750	NU	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[k]fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Chrysene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Dibenz[a,h]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Fluorene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Indeno[1,2,3-cd]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Phenanthrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Chrysene-d12	72.4	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Perylene-d12	73.0	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Phenanthrene-d10	69.0	0	50-200	0		%REC	10	05/25/16 06:12 PM
Surr: 2-Fluorobiphenyl	74.1	0	46-115	0		%REC	10	05/25/16 06:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605144-04
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:39 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.8	0	58-133	0		%REC	10	05/25/16 06:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605144-05
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:48 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	31.3	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 04:46 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0662	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/25/16 06:52 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 06:52 PM
Anthracene	0.357	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[a]anthracene	1.70	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[a]pyrene	1.75	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[b]fluoranthene	1.66	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[e]pyrene	1.31	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[g,h,i]perylene	1.11	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[j]fluoranthene	0.911	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[k]fluoranthene	0.843	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Chrysene	1.93	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Dibenz[a,h]anthracene	0.291	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Fluoranthene	3.45	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Fluorene	0.0536	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/25/16 06:52 PM
Indeno[1,2,3-cd]pyrene	1.02	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Phenanthrene	1.61	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Pyrene	2.75	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
IS: Acenaphthene-d10	66.0	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Chrysene-d12	67.9	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Perylene-d12	67.7	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Phenanthrene-d10	63.9	0	50-200	0		%REC	10	05/25/16 06:52 PM
Surr: 2-Fluorobiphenyl	79.6	0	46-115	0		%REC	10	05/25/16 06:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605144-05
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:48 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/25/16 06:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605144-06
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:49 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	9.64	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 04:48 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0716	0.0477	0.0954	0.0716	U	mg/Kg-dry	10	05/25/16 11:27 PM
Acenaphthylene	0.0716	0.0477	0.0954	0.0716	U	mg/Kg-dry	10	05/25/16 11:27 PM
Anthracene	0.228	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[a]anthracene	0.698	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[a]pyrene	0.602	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[b]fluoranthene	0.546	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[e]pyrene	0.432	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[g,h,i]perylene	0.362	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[j]fluoranthene	0.324	0.0477	0.0954	0.0716	N	mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[k]fluoranthene	0.300	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Chrysene	0.719	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Dibenz[a,h]anthracene	0.0995	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Fluoranthene	1.62	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Fluorene	0.0716	0.0477	0.0954	0.0716	U	mg/Kg-dry	10	05/25/16 11:27 PM
Indeno[1,2,3-cd]pyrene	0.329	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Phenanthrene	0.972	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Pyrene	1.24	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Chrysene-d12	72.2	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Perylene-d12	72.9	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Phenanthrene-d10	67.3	0	50-200	0		%REC	10	05/25/16 11:27 PM
Surr: 2-Fluorobiphenyl	79.2	0	46-115	0		%REC	10	05/25/16 11:27 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605144-06
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:49 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.5	0	58-133	0		%REC	10	05/25/16 11:27 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605144-07
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:50 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.60	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 08:54 PM
IS: Bismuth	77.3	0	30-120	0		%REC	5	05/26/16 08:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[a]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[a]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[b]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[e]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[g,h,i]perylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[j]fluoranthene	0.0748	0.0499	0.0997	0.0748	NU	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[k]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Chrysene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Indeno[1,2,3-cd]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Phenanthrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
IS: Acenaphthene-d10	66.8	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Chrysene-d12	71.1	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Perylene-d12	71.3	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Phenanthrene-d10	67.4	0	50-200	0		%REC	10	05/26/16 12:07 AM
Surr: 2-Fluorobiphenyl	83.1	0	46-115	0		%REC	10	05/26/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605144-07
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:50 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.7	0	58-133	0		%REC	10	05/26/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605144-08
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:51 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.83	0.0990	0.297	0.149		mg/Kg-dry	5	05/26/16 09:00 PM
IS: Bismuth	77.1	0	30-120	0		%REC	5	05/26/16 09:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[a]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[a]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[b]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[e]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[g,h,i]perylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[j]fluoranthene	0.0735	0.0490	0.0980	0.0735	NU	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[k]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Chrysene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Dibenz[a,h]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Indeno[1,2,3-cd]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Phenanthrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
IS: Acenaphthene-d10	68.4	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Chrysene-d12	72.9	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Perylene-d12	73.1	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Phenanthrene-d10	68.3	0	50-200	0		%REC	10	05/26/16 12:47 AM
Surr: 2-Fluorobiphenyl	77.3	0	46-115	0		%REC	10	05/26/16 12:47 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605144-08
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:51 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/26/16 12:47 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605144-09
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:58 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	43.9	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 09:06 PM
IS: Bismuth	74.9	0	30-120	0		%REC	5	05/26/16 09:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0558	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/26/16 01:27 AM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 01:27 AM
Anthracene	0.388	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[a]anthracene	1.94	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[a]pyrene	1.99	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[b]fluoranthene	1.90	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[e]pyrene	1.49	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[g,h,i]perylene	1.31	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[j]fluoranthene	1.04	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[k]fluoranthene	0.992	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Chrysene	2.18	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Dibenz[a,h]anthracene	0.333	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Fluoranthene	3.86	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 01:27 AM
Indeno[1,2,3-cd]pyrene	1.18	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Phenanthrene	1.75	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Pyrene	3.08	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
IS: Acenaphthene-d10	71.0	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Chrysene-d12	71.6	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Perylene-d12	72.0	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Phenanthrene-d10	68.8	0	50-200	0		%REC	10	05/26/16 01:27 AM
Surr: 2-Fluorobiphenyl	75.5	0	46-115	0		%REC	10	05/26/16 01:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605144-09
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:58 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.8	0	58-133	0		%REC	10	05/26/16 01:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605144-10
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:59 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.82	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 09:12 PM
IS: Bismuth	79.0	0	30-120	0		%REC	5	05/26/16 09:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/26/16 02:06 AM
Acenaphthylene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/26/16 02:06 AM
Anthracene	0.150	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[a]anthracene	0.443	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[a]pyrene	0.392	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[b]fluoranthene	0.359	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[e]pyrene	0.271	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[g,h,i]perylene	0.223	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[j]fluoranthene	0.201	0.0496	0.0991	0.0743	N	mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[k]fluoranthene	0.189	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Chrysene	0.462	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Dibenz[a,h]anthracene	0.0650	0.0496	0.0991	0.0743	J	mg/Kg-dry	10	05/26/16 02:06 AM
Fluoranthene	0.979	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Fluorene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/26/16 02:06 AM
Indeno[1,2,3-cd]pyrene	0.211	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Phenanthrene	0.563	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Pyrene	0.739	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
IS: Acenaphthene-d10	63.4	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Chrysene-d12	67.1	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Naphthalene-d8	98.3	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Perylene-d12	67.3	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Phenanthrene-d10	62.8	0	50-200	0		%REC	10	05/26/16 02:06 AM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/26/16 02:06 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605144-10
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:59 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.7	0	58-133	0		%REC	10	05/26/16 02:06 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605144-11
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.20	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 09:18 PM
IS: Bismuth	80.6	0	30-120	0		%REC	5	05/26/16 09:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[a]anthracene	0.0566	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[a]pyrene	0.0669	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[b]fluoranthene	0.0993 ~~0.0662~~	UB 0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[e]pyrene	0.0549	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[g,h,i]perylene	0.0521	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Chrysene	0.0680	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Fluoranthene	0.108	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/26/16 02:46 AM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Pyrene	0.0923	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
IS: Acenaphthene-d10	69.0	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Chrysene-d12	73.0	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Perylene-d12	73.3	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Phenanthrene-d10	67.7	0	50-200	0		%REC	10	05/26/16 02:46 AM
Surr: 2-Fluorobiphenyl	75.0	0	46-115	0		%REC	10	05/26/16 02:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605144-11
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.6	0	58-133	0		%REC	10	05/26/16 02:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605144-12
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:01 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.31	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 09:24 PM
IS: Bismuth	78.7	0	30-120	0		%REC	5	05/26/16 09:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
IS: Acenaphthene-d10	67.7	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Chrysene-d12	72.1	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Perylene-d12	72.3	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Phenanthrene-d10	68.5	0	50-200	0		%REC	10	05/26/16 03:25 AM
Surr: 2-Fluorobiphenyl	79.7	0	46-115	0		%REC	10	05/26/16 03:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605144-12
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:01 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.8	0	58-133	0		%REC	10	05/26/16 03:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-A
Project:	Laredo SGR	**Lab ID:**	1605144-13
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:10 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.2	0.0862	0.259	0.129		mg/Kg-dry	5	05/26/16 08:42 PM
IS: Bismuth	79.7	0	30-120	0		%REC	5	05/26/16 08:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Acenaphthylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[a]anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[a]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[b]fluoranthene	0.0987 ~~0.0554~~ UB	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[e]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[g,h,i]perylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[j]fluoranthene	0.0740	0.0494	0.0987	0.0740	NU	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[k]fluoranthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Chrysene	0.0987 ~~0.0501~~ UB	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
Dibenz[a,h]anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Fluoranthene	0.0987 ~~0.0898~~ UB	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
Fluorene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Indeno[1,2,3-cd]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Phenanthrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Pyrene	0.0987 ~~0.0728~~ UB	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
IS: Acenaphthene-d10	99.8	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Chrysene-d12	78.3	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Naphthalene-d8	94.1	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Perylene-d12	82.2	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Phenanthrene-d10	73.9	0	50-200	0		%REC	10	05/25/16 05:02 PM
Surr: 2-Fluorobiphenyl	91.4	0	46-115	0		%REC	10	05/25/16 05:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-A
Project:	Laredo SGR	**Lab ID:**	1605144-13
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:10 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	81.3	0	58-133	0		%REC	10	05/25/16 05:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU~~0~~1-B
Project:	Laredo SGR	**Lab ID:**	1605144-14
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	34.6	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 09:30 PM
IS: Bismuth	77.7	0	30-120	0		%REC	5	05/26/16 09:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Acenaphthylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[a]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[a]pyrene	0.0988 ~~0.0510~~ UB	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[b]fluoranthene	0.0988 ~~0.0576~~ UB	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[e]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[g,h,i]perylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[j]fluoranthene	0.0741	0.0494	0.0988	0.0741	NU	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[k]fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Chrysene	0.0988 ~~0.0528~~ UB	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Dibenz[a,h]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Fluoranthene	0.0988 ~~0.0952~~ UB	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Fluorene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Indeno[1,2,3-cd]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Phenanthrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Pyrene	0.0988 ~~0.0782~~ UB	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Chrysene-d12	79.0	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Naphthalene-d8	96.1	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Perylene-d12	83.2	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Phenanthrene-d10	74.7	0	50-200	0		%REC	10	05/25/16 05:38 PM
Surr: 2-Fluorobiphenyl	94.9	0	46-115	0		%REC	10	05/25/16 05:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU046-B
Project:	Laredo SGR	**Lab ID:**	1605144-14
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.3	0	58-133	0		%REC	10	05/25/16 05:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-C
Project:	Laredo SGR	**Lab ID:**	1605144-15
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	30.3	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 09:36 PM
IS: Bismuth	86.3	0	30-120	0		%REC	5	05/26/16 09:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Acenaphthylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[a]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[a]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[b]fluoranthene	0.100 ~~0.0511~~ UB	0.0500	0.100	0.0750	J	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[e]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[g,h,i]perylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[j]fluoranthene	0.0750	0.0500	0.100	0.0750	NU	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[k]fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Chrysene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Dibenz[a,h]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Fluoranthene	0.100 ~~0.0812~~ UB	0.0500	0.100	0.0750	J	mg/Kg-dry	10	05/25/16 06:16 PM
Fluorene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Indeno[1,2,3-cd]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Phenanthrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Pyrene	0.100 ~~0.0662~~ UB	0.0500	0.100	0.0750	J	mg/Kg-dry	10	05/25/16 06:16 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Perylene-d12	89.8	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/25/16 06:16 PM
Surr: 2-Fluorobiphenyl	91.1	0	46-115	0		%REC	10	05/25/16 06:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-C
Project:	Laredo SGR	**Lab ID:**	1605144-15
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.0	0	58-133	0		%REC	10	05/25/16 06:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB18(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-16
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 11:00 AM
Lab Order:	1605144	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:22 PM
IS: Bismuth	99.6	0	30-120	0		%REC	1	05/20/16 02:22 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Acenaphthylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[a]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[a]pyrene	0.0000467	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Benzo[b]fluoranthene	0.0000452	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Benzo[e]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[g,h,i]perylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[j]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	NU	mg/L	1	05/19/16 01:08 AM
Benzo[k]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Chrysene	0.0000401	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Dibenz[a,h]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Fluoranthene	0.0000606	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Fluorene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Indeno[1,2,3-cd]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Phenanthrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Pyrene	0.0000523	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
IS: Acenaphthene-d10	89.5	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Chrysene-d12	89.6	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Naphthalene-d8	90.2	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Perylene-d12	90.5	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Phenanthrene-d10	86.0	0	50-200	0		%REC	1	05/19/16 01:08 AM
Surr: 2-Fluorobiphenyl	63.6	0	53-106	0		%REC	1	05/19/16 01:08 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB18(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-16
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 11:00 AM
Lab Order:	1605144	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.9	0	58-132	0		%REC	1	05/19/16 01:08 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605144-17
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	27.4	0.106	0.318	0.159		mg/Kg-dry	5	05/26/16 09:42 PM
IS: Bismuth	83.5	0	30-120	0		%REC	5	05/26/16 09:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Acenaphthylene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Anthracene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[a]anthracene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[a]pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[b]fluoranthene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[e]pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[g,h,i]perylene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[j]fluoranthene	0.0934	0.0623	0.125	0.0934	NU	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[k]fluoranthene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Chrysene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Dibenz[a,h]anthracene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Fluoranthene	0.125 ~~0.0638~~ UB	0.0623	0.125	0.0934	J	mg/Kg-dry	10	05/25/16 06:53 PM
Fluorene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Indeno[1,2,3-cd]pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Phenanthrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Perylene-d12	86.8	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Phenanthrene-d10	77.8	0	50-200	0		%REC	10	05/25/16 06:53 PM
Surr: 2-Fluorobiphenyl	76.9	0	46-115	0		%REC	10	05/25/16 06:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605144-17
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/25/16 06:53 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	20.7	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605144-18
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:35 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	39.4	0.119	0.358	0.179		mg/Kg-dry	5	05/26/16 10:36 PM
IS: Bismuth	82.7	0	30-120	0		%REC	5	05/26/16 10:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Acenaphthylene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Anthracene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[a]anthracene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[a]pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[b]fluoranthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[e]pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[g,h,i]perylene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[j]fluoranthene	0.0864	0.0576	0.115	0.0864	NU	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[k]fluoranthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Chrysene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Dibenz[a,h]anthracene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Fluoranthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Fluorene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Indeno[1,2,3-cd]pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Phenanthrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Chrysene-d12	83.7	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Perylene-d12	88.1	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Phenanthrene-d10	79.2	0	50-200	0		%REC	10	05/25/16 07:30 PM
Surr: 2-Fluorobiphenyl	81.6	0	46-115	0		%REC	10	05/25/16 07:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605144-18
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:35 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/25/16 07:30 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	18.5	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605144-19
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:40 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	29.6	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 10:42 PM
IS: Bismuth	81.7	0	30-120	0		%REC	5	05/26/16 10:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Acenaphthylene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Anthracene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[a]anthracene	0.0828	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[a]pyrene	0.0864	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[b]fluoranthene	0.0894	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[e]pyrene	0.0652	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[g,h,i]perylene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[j]fluoranthene	0.0787	0.0524	0.105	0.0787	NU	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[k]fluoranthene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Chrysene	0.100	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Dibenz[a,h]anthracene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Fluoranthene	0.192	0.0524	0.105	0.0787		mg/Kg-dry	10	05/25/16 10:36 PM
Fluorene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Indeno[1,2,3-cd]pyrene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Phenanthrene	0.106	0.0524	0.105	0.0787		mg/Kg-dry	10	05/25/16 10:36 PM
Pyrene	0.153	0.0524	0.105	0.0787		mg/Kg-dry	10	05/25/16 10:36 PM
IS: Acenaphthene-d10	97.2	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Chrysene-d12	80.6	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Perylene-d12	83.4	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Phenanthrene-d10	72.7	0	50-200	0		%REC	10	05/25/16 10:36 PM
Surr: 2-Fluorobiphenyl	95.4	0	46-115	0		%REC	10	05/25/16 10:36 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605144-19
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:40 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.5	0	58-133	0		%REC	10	05/25/16 10:36 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	5.14	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605144-20
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:45 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	64.8	0.112	0.337	0.169		mg/Kg-dry	5	05/26/16 10:48 PM
IS: Bismuth	82.9	0	30-120	0		%REC	5	05/26/16 10:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Acenaphthylene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Anthracene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[a]anthracene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[a]pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[b]fluoranthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[e]pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[g,h,i]perylene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[j]fluoranthene	0.0951	0.0634	0.127	0.0951	NU	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[k]fluoranthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Chrysene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Dibenz[a,h]anthracene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Fluoranthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Fluorene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Indeno[1,2,3-cd]pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Phenanthrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
IS: Acenaphthene-d10	99.6	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Chrysene-d12	79.1	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Perylene-d12	83.1	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Phenanthrene-d10	73.4	0	50-200	0		%REC	10	05/25/16 11:12 PM
Surr: 2-Fluorobiphenyl	89.5	0	46-115	0		%REC	10	05/25/16 11:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605144-20
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:45 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.9	0	58-133	0		%REC	10	05/25/16 11:12 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	21.9	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP7(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-21
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	26.4	0.109	0.326	0.163		mg/Kg-dry	5	05/26/16 10:54 PM
IS: Bismuth	82.4	0	30-120	0		%REC	5	05/26/16 10:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Acenaphthylene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Anthracene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[a]anthracene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[a]pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[b]fluoranthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[e]pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[g,h,i]perylene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[j]fluoranthene	0.0942	0.0628	0.126	0.0942	NU	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[k]fluoranthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Chrysene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Dibenz[a,h]anthracene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Fluoranthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Fluorene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Indeno[1,2,3-cd]pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Phenanthrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Perylene-d12	86.7	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/25/16 11:49 PM
Surr: 2-Fluorobiphenyl	86.1	0	46-115	0		%REC	10	05/25/16 11:49 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP7(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-21
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.3	0	58-133	0		%REC	10	05/25/16 11:49 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	20.6	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

June 03, 2016

Alex Walter
Arcadis
8725 Rosehill #350
Lenexa, Kansas 66215
TEL: (913) 492-0900
FAX (913) 492-0902

Order No.: 1605144

RE: Laredo SGR

Dear Alex Walter:

DHL Analytical, Inc. received 21 sample(s) on 5/13/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of DoD QSM Ver 5 and NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. This report shall not be reproduced except in full without the written approval of DHL Analytical, Inc. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas & DoD Laboratory Certification Number: T104704211-16-16 & DoD-ELAP #L15-426

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№ 70027

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Denkenberger@arcadis.com

DATE: May 12, 2016 PAGE 1 OF 2
PO #: 04285091.0000.00044 DHL WORK ORDER #: 1605144
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285091.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ (METHOD 8021) / TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ / GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐ / VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ / SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ / 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ / 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ / 8321 HERB ☐ T PHOS, AMMONIA ☐ / METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ 1 each / RCRA ☐ TX11 ☐ / PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ / CHLORIDE ☐ ANIONS ☐ / TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ / TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ / RCI ☐ FLASHPOINT ☐ DGAS ☐ / TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐ (METHOD 8021)	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-D4083(0-2)-A	01	5-12-16	936	S	Bag	1				X						X						X									
SGR-D4083(2-4)-A	02	5-12-16	937	S	Bag	1				X						X						X									
SGR-D4083(4-6)-A	03	5-12-16	938	S	Bag	1				X						X						X									
SGR-D4083(6-8)-A	04	5-12-16	939	S	Bag	1				X						X						X									
SGR-D4083(0-2)-B	05	5-12-16	948	S	Bag	1				X						X						X									
SGR-D4083(2-4)-B	06	5-12-16	949	S	Bag	1				X						X						X									
SGR-D4083(4-6)-B	07	5-12-16	950	S	Bag	1				X						X						X									
SGR-D4083(6-8)-B	08	5-12-16	951	S	Bag	1				X						X						X									
SGR-D4083(0-2)-C	09	5-12-16	958	S	Bag	1				X						X						X									
SGR-D4083(2-4)-C	10	5-12-16	959	S	Bag	1				X						X						X									
SGR-D4083(4-6)-C	11	5-12-16	1000	S	Bag	1				X						X						X									
SGR-D4083(6-8)-C	12	5-12-16	1001	S	Bag	1				X						X						X									
SGR-D4146-A	13	5-12-16	910	S	Bag	1				X						X						X									
SGR-D4146-B	14	5-12-16	1000	S	Bag	1				X						X						X									
SGR-D4146-C	15	5-12-16	1030	S	Bag	1				X						X						X									

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-12-16/1800	Fedex
Fedex	5/13/16 10:30	[signature]

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 13/0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

☐ DHL DISPOSAL @ $5.00 each ☐ Return

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70028

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Deikenberger@arcadis.com

DATE: May 12, 2016 PAGE 2 OF 2
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605144
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: G. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8015] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ Lead	RCRA ☐ TX11 ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
EB18(20160512)	16	5-12-16	1100	W	6 Glass/Poly	2		X		X						X					X										
SGR-D4146-SMAT1	17	5-12-16	0830	S	4oz Jar	1				X						X					X										
SGR-D4146-SMAT2	18	5-12-16	0835	S	4oz Jar	1				X						X					X										
SGR-D4146-SMAT3	19	5-12-16	0840	S	4oz Jar	1				X						X					X										
SGR-D4146-SMAT4	20	5-12-16	0845	S	4oz Jar	1				X						X					X										
DUP7(20160512)	21	5-12-16	0900	S	4oz Jar	1				X						X					X										

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-12-16 11:00	FedEx
FedEx	5/13/16 10:30	[signature]

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.2 / 0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

☐ DHL DISPOSAL @ $5.00 each ☐ Return

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 12MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1/6323/727F

FedEx Express

E

1 of 2

FRI - 13 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7763 3137 6287
MASTER

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental C
800-255-3950 • 304-25

CUSTODY SEAL
DATE 5.12.16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
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SHIP DATE: 12MAY16
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BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
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INV:
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540J1/6323/727F

FedEx Express

E

2 of 2

FRI - 13 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7763 3137 6015
Mstr# 7763 3137 6287 0201

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 5.12.16
SIGNATURE

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Arcadis** Date Received: **5/13/2016**

Work Order Number **1605144** Received by **JT**

Checklist completed by: Signature 5/13/2016 Date Reviewed by Initials 5/13/2016 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	1.3 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted?		Checked by
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc.
Laboratory Review Checklist: Reportable Data

Project Name: Laredo SGR	**Date:** 6/3/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605144
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				**R1-01**
		2) Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample detection limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?	X				
		7) Were % moisture (or solids) reported for all soil and sediment samples?	X				
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			X		
		9) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	X				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			**R7-03**
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				**R10-01**
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.
Laboratory Review Checklist (continued): Supporting Data

Project Name: Laredo SGR | **Date:** 6/3/2016

Reviewer Name: Angie O'Donnell | **Laboratory Work Order:** 1605144

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	X				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on June 1-5, 2015. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

John DuPont – General Manager		06/03/16
Scott Schroeder – Technical Director	Signature	Date

DHL Analytical, Inc. **Date:** *03-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605144

CASE NARRATIVE

This case narrative describes abnormalities and deviations that may affect the results and summarizes all known issues that need to be highlighted for the data user to assess the results. This case narrative and the report contents are compliant with DoD QSM Ver. 5.0 and NELAC.

The "U" flag indicates the results for that sample are nondetect.

Samples were analyzed using the methods outlined in the following references:

Method SW8270D-LL - PAH Analysis (The compound Benzo[j]fluoranthene is not NELAC or DOD Certified)
Method SW6020A- Metals Analysis

Exception Report R1-01

Samples were received on and log-in performed on 5/13/2016. A total of 21 samples were received and analyzed. The sample arrived in good condition and were properly packaged.

Exception Report R7-03

For Metals Analysis, for water Batch 75180, the recovery of Lead for the Matrix Spike (1605097-27 MS) was below the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

Exception Report R10-01

For PAH Analysis, the samples were diluted due to observed color of extract; dilution meets project specifications.

For all of the surface and subsurface samples in this project, DHL Analytical performed an Incremental Sampling Method (ISM) according to an internal SOP, as approved by the client and included in the project QAPP. This workorder consist of the following sample types: surface soil Samples (DHL WO # 1605144-13 through -15) processed to pass a #60 sieve (250µ particle size); sub-surface Samples (DHL WO # 1605144-01 through -12) processed to pass #10 sieve (2mm). The remaining samples analyzed were discreet soil samples collected in 4 ounce soil containers and ISM process not used, as per project specs.

CASE NARRATIVE

A summary of project communication follows:

The Subcontract Agreement No. D16-003 for Arcadis Project No. 04285081.0000.00043 was sent to DHL Analytical from client and signed on 1/6/2016, the contract for work signed and approved by both parties on 1/12/2016. A Modification No. 01-D16-003 was signed by both parties on 4/21/2016.

The bottlekit was requested from Ana Gutierrez of Arcadis sent via email to John DuPont on 4/21/2016.
The following DHL Bottle Orders:
#6941 sent on 4/28/2016 via Lonestar Overnight Ground to arrive by 5/2/2016
#6942 sent on 5/3/2016 via Lonestar Overnight Ground to arrive by 5/4/2016
#6943 sent on 5/6/2016 via Lonestar Overnight Ground to arrive by 5/9/2016
#6944 sent on 5/10/2016 via Lonestar Overnight Ground to arrive by 5/11/2016.

This sample delivery group arrives at DHL Analytical on and a Sample Summary was sent on 5/13/2016. Associated shipping documents are kept in the project folder and/or client folder as part of the Administrative records filed in the QA office.

DHL project manager/qa staff discussed with client the following issues:
email communications 5/13/2016 - from J. DuPont to the Arcadis Kansas Laredo email group regarding request to dilute based on color of extract
email communications 5/27/2016 - from J. DuPont to L. Mott of Arcadis regarding exceedance(s) for the recovery of MS for Lead. The client accepted the corrective action for the quality exceedances on 5/31/2016.

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605144

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605144-01	SGR-DU083(0-2)-A		05/12/16 09:36 AM	5/13/2016
1605144-02	SGR-DU083(2-4)-A		05/12/16 09:37 AM	5/13/2016
1605144-03	SGR-DU083(4-6)-A		05/12/16 09:38 AM	5/13/2016
1605144-04	SGR-DU083(6-8)-A		05/12/16 09:39 AM	5/13/2016
1605144-05	SGR-DU083(0-2)-B		05/12/16 09:48 AM	5/13/2016
1605144-06	SGR-DU083(2-4)-B		05/12/16 09:49 AM	5/13/2016
1605144-07	SGR-DU083(4-6)-B		05/12/16 09:50 AM	5/13/2016
1605144-08	SGR-DU083(6-8)-B		05/12/16 09:51 AM	5/13/2016
1605144-09	SGR-DU083(0-2)-C		05/12/16 09:58 AM	5/13/2016
1605144-10	SGR-DU083(2-4)-C		05/12/16 09:59 AM	5/13/2016
1605144-11	SGR-DU083(4-6)-C		05/12/16 10:00 AM	5/13/2016
1605144-12	SGR-DU083(6-8)-C		05/12/16 10:01 AM	5/13/2016
1605144-13	SGR-DU146-A		05/12/16 09:10 AM	5/13/2016
1605144-14	SGR-DU046-B		05/12/16 10:00 AM	5/13/2016
1605144-15	SGR-DU146-C		05/12/16 10:30 AM	5/13/2016
1605144-16	EB18(20160512)		05/12/16 11:00 AM	5/13/2016
1605144-17	SGR-DU146-STRAT1		05/12/16 08:30 AM	5/13/2016
1605144-18	SGR-DU146-STRAT2		05/12/16 08:35 AM	5/13/2016
1605144-19	SGR-DU146-STRAT3		05/12/16 08:40 AM	5/13/2016
1605144-20	SGR-DU146-STRAT4		05/12/16 08:45 AM	5/13/2016
1605144-21	DUP7(20160512)		05/12/16 09:00 AM	5/13/2016

DHL Analytical, Inc.

03-Jun-16

Lab Order: 1605144
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605144-01A	SGR-DU083(0-2)-A	05/12/16 09:36 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(0-2)-A	05/12/16 09:36 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605144-02A	SGR-DU083(2-4)-A	05/12/16 09:37 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(2-4)-A	05/12/16 09:37 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605144-03A	SGR-DU083(4-6)-A	05/12/16 09:38 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(4-6)-A	05/12/16 09:38 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605144-04A	SGR-DU083(6-8)-A	05/12/16 09:39 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(6-8)-A	05/12/16 09:39 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605144-05A	SGR-DU083(0-2)-B	05/12/16 09:48 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(0-2)-B	05/12/16 09:48 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605144-06A	SGR-DU083(2-4)-B	05/12/16 09:49 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(2-4)-B	05/12/16 09:49 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 10:33 AM	75287
1605144-07A	SGR-DU083(4-6)-B	05/12/16 09:50 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(4-6)-B	05/12/16 09:50 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-08A	SGR-DU083(6-8)-B	05/12/16 09:51 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(6-8)-B	05/12/16 09:51 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-09A	SGR-DU083(0-2)-C	05/12/16 09:58 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(0-2)-C	05/12/16 09:58 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-10A	SGR-DU083(2-4)-C	05/12/16 09:59 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(2-4)-C	05/12/16 09:59 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-11A	SGR-DU083(4-6)-C	05/12/16 10:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(4-6)-C	05/12/16 10:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-12A	SGR-DU083(6-8)-C	05/12/16 10:01 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/23/16 08:54 AM	75281
	SGR-DU083(6-8)-C	05/12/16 10:01 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-13A	SGR-DU146-A	05/12/16 09:10 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU146-A	05/12/16 09:10 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-14A	SGR-DU046-B	05/12/16 10:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU046-B	05/12/16 10:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292

Lab Order: 1605144
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605144-15A	SGR-DU146-C	05/12/16 10:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU146-C	05/12/16 10:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-16A	EB18(20160512)	05/12/16 11:00 AM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605144-16B	EB18(20160512)	05/12/16 11:00 AM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 01:00 PM	75146
1605144-17A	SGR-DU146-STRAT1	05/12/16 08:30 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	SGR-DU146-STRAT1	05/12/16 08:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU146-STRAT1	05/12/16 08:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-18A	SGR-DU146-STRAT2	05/12/16 08:35 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	SGR-DU146-STRAT2	05/12/16 08:35 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU146-STRAT2	05/12/16 08:35 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-19A	SGR-DU146-STRAT3	05/12/16 08:40 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	SGR-DU146-STRAT3	05/12/16 08:40 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU146-STRAT3	05/12/16 08:40 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-20A	SGR-DU146-STRAT4	05/12/16 08:45 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	SGR-DU146-STRAT4	05/12/16 08:45 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	SGR-DU146-STRAT4	05/12/16 08:45 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292
1605144-21A	DUP7(20160512)	05/12/16 09:00 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	DUP7(20160512)	05/12/16 09:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/19/16 01:57 PM	75241
	DUP7(20160512)	05/12/16 09:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/23/16 11:15 AM	75292

DHL Analytical, Inc.

03-Jun-16

Lab Order: 1605144
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605144-01A	SGR-DU083(0-2)-A	5/12/2016 9:36:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-02A	SGR-DU083(2-4)-A	5/12/2016 9:37:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-03A	SGR-DU083(4-6)-A	5/12/2016 9:38:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-04A	SGR-DU083(6-8)-A	5/12/2016 9:39:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-05A	SGR-DU083(0-2)-B	5/12/2016 9:48:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-06A	SGR-DU083(2-4)-B	5/12/2016 9:49:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-07A	SGR-DU083(4-6)-B	5/12/2016 9:50:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-08A	SGR-DU083(6-8)-B	5/12/2016 9:51:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-09A	SGR-DU083(0-2)-C	5/12/2016 9:58:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-10A	SGR-DU083(2-4)-C	5/12/2016 9:59:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-11A	SGR-DU083(4-6)-C	5/12/2016 10:00:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-12A	SGR-DU083(6-8)-C	5/12/2016 10:01:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/17/2016 12:00:00 PM	75205
1605144-13A	SGR-DU146-A	5/12/2016 9:10:00 AM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/17/2016 2:17:28 PM	75212
1605144-14A	SGR-DU046-B	5/12/2016 10:00:00 AM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/17/2016 2:17:28 PM	75212
1605144-15A	SGR-DU146-C	5/12/2016 10:30:00 AM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/17/2016 2:17:28 PM	75212

Lab Order: 1605144
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605144-01A	SGR-DU083(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 04:11 PM	GCMS6_160525A
	SGR-DU083(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:38 PM	ICP-MS4_160526F
1605144-02A	SGR-DU083(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 04:51 PM	GCMS6_160525A
	SGR-DU083(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:40 PM	ICP-MS4_160526F
1605144-03A	SGR-DU083(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 05:31 PM	GCMS6_160525A
	SGR-DU083(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:42 PM	ICP-MS4_160526F
1605144-04A	SGR-DU083(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 06:12 PM	GCMS6_160525A
	SGR-DU083(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:44 PM	ICP-MS4_160526F
1605144-05A	SGR-DU083(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 06:52 PM	GCMS6_160525A
	SGR-DU083(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:46 PM	ICP-MS4_160526F
1605144-06A	SGR-DU083(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/25/16 11:27 PM	GCMS6_160525A
	SGR-DU083(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75287	5	05/26/16 04:48 PM	ICP-MS4_160526F
1605144-07A	SGR-DU083(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/26/16 12:07 AM	GCMS6_160525A
	SGR-DU083(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 08:54 PM	ICP-MS3_160526A
1605144-08A	SGR-DU083(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/26/16 12:47 AM	GCMS6_160525A
	SGR-DU083(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:00 PM	ICP-MS3_160526A
1605144-09A	SGR-DU083(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/26/16 01:27 AM	GCMS6_160525A
	SGR-DU083(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:06 PM	ICP-MS3_160526A
1605144-10A	SGR-DU083(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/26/16 02:06 AM	GCMS6_160525A
	SGR-DU083(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:12 PM	ICP-MS3_160526A
1605144-11A	SGR-DU083(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/26/16 02:46 AM	GCMS6_160525A
	SGR-DU083(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:18 PM	ICP-MS3_160526A
1605144-12A	SGR-DU083(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75281	10	05/26/16 03:25 AM	GCMS6_160525A
	SGR-DU083(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:24 PM	ICP-MS3_160526A
1605144-13A	SGR-DU146-A	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 05:02 PM	GCMS8_160525A
	SGR-DU146-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 08:42 PM	ICP-MS3_160526A
1605144-14A	SGR-DU046-B	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 05:38 PM	GCMS8_160525A
	SGR-DU046-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:30 PM	ICP-MS3_160526A

Lab Order: 1605144
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605144-15A	SGR-DU146-C	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 06:16 PM	GCMS8_160525A
	SGR-DU146-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:36 PM	ICP-MS3_160526A
1605144-16A	EB18(20160512)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 02:22 PM	ICP-MS4_160520C
1605144-16B	EB18(20160512)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/19/16 01:08 AM	GCMS8_160518B
1605144-17A	SGR-DU146-STRAT1	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 06:53 PM	GCMS8_160525A
	SGR-DU146-STRAT1	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	SGR-DU146-STRAT1	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 09:42 PM	ICP-MS3_160526A
1605144-18A	SGR-DU146-STRAT2	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 07:30 PM	GCMS8_160525A
	SGR-DU146-STRAT2	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	SGR-DU146-STRAT2	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 10:36 PM	ICP-MS3_160526A
1605144-19A	SGR-DU146-STRAT3	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 10:36 PM	GCMS8_160525A
	SGR-DU146-STRAT3	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	SGR-DU146-STRAT3	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 10:42 PM	ICP-MS3_160526A
1605144-20A	SGR-DU146-STRAT4	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 11:12 PM	GCMS8_160525A
	SGR-DU146-STRAT4	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	SGR-DU146-STRAT4	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 10:48 PM	ICP-MS3_160526A
1605144-21A	DUP7(20160512)	Soil	SW8270D-LL	PAHs: GC/MS	75241	10	05/25/16 11:49 PM	GCMS8_160525A
	DUP7(20160512)	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	DUP7(20160512)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75292	5	05/26/16 10:54 PM	ICP-MS3_160526A

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605144-01
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:36 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	67.6	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 04:38 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:38 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0556	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/25/16 04:11 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 04:11 PM
Anthracene	0.233	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[a]anthracene	1.65	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[a]pyrene	2.14	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[b]fluoranthene	1.97	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[e]pyrene	1.58	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[g,h,i]perylene	1.43	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[j]fluoranthene	1.03	0.0497	0.0993	0.0745	N	mg/Kg-dry	10	05/25/16 04:11 PM
Benzo[k]fluoranthene	1.01	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Chrysene	1.96	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Dibenz[a,h]anthracene	0.356	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Fluoranthene	2.88	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/25/16 04:11 PM
Indeno[1,2,3-cd]pyrene	1.31	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Phenanthrene	1.10	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
Pyrene	2.45	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/25/16 04:11 PM
IS: Acenaphthene-d10	71.1	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Chrysene-d12	73.3	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Perylene-d12	73.7	0	50-200	0		%REC	10	05/25/16 04:11 PM
IS: Phenanthrene-d10	68.5	0	50-200	0		%REC	10	05/25/16 04:11 PM
Surr: 2-Fluorobiphenyl	78.6	0	46-115	0		%REC	10	05/25/16 04:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605144-01
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:36 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.7	0	58-133	0		%REC	10	05/25/16 04:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605144-02
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:37 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.69	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 04:40 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Acenaphthylene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[a]anthracene	0.303	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[a]pyrene	0.617	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[b]fluoranthene	0.575	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[e]pyrene	0.473	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[g,h,i]perylene	0.470	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[j]fluoranthene	0.284	0.0492	0.0983	0.0737	N	mg/Kg-dry	10	05/25/16 04:51 PM
Benzo[k]fluoranthene	0.266	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Chrysene	0.420	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Dibenz[a,h]anthracene	0.111	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Fluoranthene	0.257	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Fluorene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/25/16 04:51 PM
Indeno[1,2,3-cd]pyrene	0.419	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
Phenanthrene	0.0691	0.0492	0.0983	0.0737	J	mg/Kg-dry	10	05/25/16 04:51 PM
Pyrene	0.270	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/25/16 04:51 PM
IS: Acenaphthene-d10	69.5	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Chrysene-d12	70.9	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Perylene-d12	71.3	0	50-200	0		%REC	10	05/25/16 04:51 PM
IS: Phenanthrene-d10	66.9	0	50-200	0		%REC	10	05/25/16 04:51 PM
Surr: 2-Fluorobiphenyl	80.7	0	46-115	0		%REC	10	05/25/16 04:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605144-02
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:37 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.9	0	58-133	0		%REC	10	05/25/16 04:51 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605144-03
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:38 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.78	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 04:42 PM
IS: Bismuth	99.0	0	30-120	0		%REC	5	05/26/16 04:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Acenaphthylene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[a]anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[a]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[b]fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[e]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[g,h,i]perylene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[j]fluoranthene	0.0738	0.0492	0.0984	0.0738	NU	mg/Kg-dry	10	05/25/16 05:31 PM
Benzo[k]fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Chrysene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Dibenz[a,h]anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Fluorene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Indeno[1,2,3-cd]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Phenanthrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
Pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/25/16 05:31 PM
IS: Acenaphthene-d10	70.6	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Chrysene-d12	73.3	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Perylene-d12	73.9	0	50-200	0		%REC	10	05/25/16 05:31 PM
IS: Phenanthrene-d10	69.3	0	50-200	0		%REC	10	05/25/16 05:31 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/25/16 05:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605144-03
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:38 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.8	0	58-133	0		%REC	10	05/25/16 05:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605144-04
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:39 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.91	0.0901	0.270	0.135		mg/Kg-dry	5	05/26/16 04:44 PM
IS: Bismuth	98.5	0	30-120	0		%REC	5	05/26/16 04:44 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Acenaphthylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[a]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[a]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[b]fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[e]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[g,h,i]perylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[j]fluoranthene	0.0750	0.0500	0.100	0.0750	NU	mg/Kg-dry	10	05/25/16 06:12 PM
Benzo[k]fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Chrysene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Dibenz[a,h]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Fluorene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Indeno[1,2,3-cd]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Phenanthrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
Pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:12 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Chrysene-d12	72.4	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Perylene-d12	73.0	0	50-200	0		%REC	10	05/25/16 06:12 PM
IS: Phenanthrene-d10	69.0	0	50-200	0		%REC	10	05/25/16 06:12 PM
Surr: 2-Fluorobiphenyl	74.1	0	46-115	0		%REC	10	05/25/16 06:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605144-04
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:39 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.8	0	58-133	0		%REC	10	05/25/16 06:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605144-05
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:48 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	31.3	0.0943	0.283	0.142		mg/Kg-dry	5	05/26/16 04:46 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0662	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/25/16 06:52 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/25/16 06:52 PM
Anthracene	0.357	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[a]anthracene	1.70	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[a]pyrene	1.75	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[b]fluoranthene	1.66	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[e]pyrene	1.31	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[g,h,i]perylene	1.11	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[j]fluoranthene	0.911	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/25/16 06:52 PM
Benzo[k]fluoranthene	0.843	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Chrysene	1.93	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Dibenz[a,h]anthracene	0.291	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Fluoranthene	3.45	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Fluorene	0.0536	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/25/16 06:52 PM
Indeno[1,2,3-cd]pyrene	1.02	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Phenanthrene	1.61	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
Pyrene	2.75	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/25/16 06:52 PM
IS: Acenaphthene-d10	66.0	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Chrysene-d12	67.9	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Perylene-d12	67.7	0	50-200	0		%REC	10	05/25/16 06:52 PM
IS: Phenanthrene-d10	63.9	0	50-200	0		%REC	10	05/25/16 06:52 PM
Surr: 2-Fluorobiphenyl	79.6	0	46-115	0		%REC	10	05/25/16 06:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605144-05
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:48 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/25/16 06:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605144-06
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:49 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	9.64	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 04:48 PM
IS: Bismuth	101	0	30-120	0		%REC	5	05/26/16 04:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0716	0.0477	0.0954	0.0716	U	mg/Kg-dry	10	05/25/16 11:27 PM
Acenaphthylene	0.0716	0.0477	0.0954	0.0716	U	mg/Kg-dry	10	05/25/16 11:27 PM
Anthracene	0.228	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[a]anthracene	0.698	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[a]pyrene	0.602	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[b]fluoranthene	0.546	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[e]pyrene	0.432	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[g,h,i]perylene	0.362	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[j]fluoranthene	0.324	0.0477	0.0954	0.0716	N	mg/Kg-dry	10	05/25/16 11:27 PM
Benzo[k]fluoranthene	0.300	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Chrysene	0.719	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Dibenz[a,h]anthracene	0.0995	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Fluoranthene	1.62	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Fluorene	0.0716	0.0477	0.0954	0.0716	U	mg/Kg-dry	10	05/25/16 11:27 PM
Indeno[1,2,3-cd]pyrene	0.329	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Phenanthrene	0.972	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
Pyrene	1.24	0.0477	0.0954	0.0716		mg/Kg-dry	10	05/25/16 11:27 PM
IS: Acenaphthene-d10	68.6	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Chrysene-d12	72.2	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Perylene-d12	72.9	0	50-200	0		%REC	10	05/25/16 11:27 PM
IS: Phenanthrene-d10	67.3	0	50-200	0		%REC	10	05/25/16 11:27 PM
Surr: 2-Fluorobiphenyl	79.2	0	46-115	0		%REC	10	05/25/16 11:27 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605144-06
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:49 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.5	0	58-133	0		%REC	10	05/25/16 11:27 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605144-07
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:50 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.60	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 08:54 PM
IS: Bismuth	77.3	0	30-120	0		%REC	5	05/26/16 08:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[a]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[a]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[b]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[e]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[g,h,i]perylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[j]fluoranthene	0.0748	0.0499	0.0997	0.0748	NU	mg/Kg-dry	10	05/26/16 12:07 AM
Benzo[k]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Chrysene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Indeno[1,2,3-cd]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Phenanthrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
Pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/26/16 12:07 AM
IS: Acenaphthene-d10	66.8	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Chrysene-d12	71.1	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Perylene-d12	71.3	0	50-200	0		%REC	10	05/26/16 12:07 AM
IS: Phenanthrene-d10	67.4	0	50-200	0		%REC	10	05/26/16 12:07 AM
Surr: 2-Fluorobiphenyl	83.1	0	46-115	0		%REC	10	05/26/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605144-07
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:50 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.7	0	58-133	0		%REC	10	05/26/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605144-08
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:51 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.83	0.0990	0.297	0.149		mg/Kg-dry	5	05/26/16 09:00 PM
IS: Bismuth	77.1	0	30-120	0		%REC	5	05/26/16 09:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[a]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[a]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[b]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[e]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[g,h,i]perylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[j]fluoranthene	0.0735	0.0490	0.0980	0.0735	NU	mg/Kg-dry	10	05/26/16 12:47 AM
Benzo[k]fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Chrysene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Dibenz[a,h]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Fluoranthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Indeno[1,2,3-cd]pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Phenanthrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
Pyrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/26/16 12:47 AM
IS: Acenaphthene-d10	68.4	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Chrysene-d12	72.9	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Perylene-d12	73.1	0	50-200	0		%REC	10	05/26/16 12:47 AM
IS: Phenanthrene-d10	68.3	0	50-200	0		%REC	10	05/26/16 12:47 AM
Surr: 2-Fluorobiphenyl	77.3	0	46-115	0		%REC	10	05/26/16 12:47 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605144-08
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:51 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/26/16 12:47 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605144-09
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:58 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	43.9	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 09:06 PM
IS: Bismuth	74.9	0	30-120	0		%REC	5	05/26/16 09:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0558	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/26/16 01:27 AM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 01:27 AM
Anthracene	0.388	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[a]anthracene	1.94	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[a]pyrene	1.99	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[b]fluoranthene	1.90	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[e]pyrene	1.49	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[g,h,i]perylene	1.31	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[j]fluoranthene	1.04	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/26/16 01:27 AM
Benzo[k]fluoranthene	0.992	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Chrysene	2.18	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Dibenz[a,h]anthracene	0.333	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Fluoranthene	3.86	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 01:27 AM
Indeno[1,2,3-cd]pyrene	1.18	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Phenanthrene	1.75	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
Pyrene	3.08	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/26/16 01:27 AM
IS: Acenaphthene-d10	71.0	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Chrysene-d12	71.6	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Perylene-d12	72.0	0	50-200	0		%REC	10	05/26/16 01:27 AM
IS: Phenanthrene-d10	68.8	0	50-200	0		%REC	10	05/26/16 01:27 AM
Surr: 2-Fluorobiphenyl	75.5	0	46-115	0		%REC	10	05/26/16 01:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605144-09
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:58 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.8	0	58-133	0		%REC	10	05/26/16 01:27 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605144-10
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:59 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.82	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 09:12 PM
IS: Bismuth	79.0	0	30-120	0		%REC	5	05/26/16 09:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/26/16 02:06 AM
Acenaphthylene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/26/16 02:06 AM
Anthracene	0.150	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[a]anthracene	0.443	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[a]pyrene	0.392	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[b]fluoranthene	0.359	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[e]pyrene	0.271	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[g,h,i]perylene	0.223	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[j]fluoranthene	0.201	0.0496	0.0991	0.0743	N	mg/Kg-dry	10	05/26/16 02:06 AM
Benzo[k]fluoranthene	0.189	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Chrysene	0.462	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Dibenz[a,h]anthracene	0.0650	0.0496	0.0991	0.0743	J	mg/Kg-dry	10	05/26/16 02:06 AM
Fluoranthene	0.979	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Fluorene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/26/16 02:06 AM
Indeno[1,2,3-cd]pyrene	0.211	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Phenanthrene	0.563	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
Pyrene	0.739	0.0496	0.0991	0.0743		mg/Kg-dry	10	05/26/16 02:06 AM
IS: Acenaphthene-d10	63.4	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Chrysene-d12	67.1	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Naphthalene-d8	98.3	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Perylene-d12	67.3	0	50-200	0		%REC	10	05/26/16 02:06 AM
IS: Phenanthrene-d10	62.8	0	50-200	0		%REC	10	05/26/16 02:06 AM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/26/16 02:06 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605144-10
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:59 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.7	0	58-133	0		%REC	10	05/26/16 02:06 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605144-11
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.20	0.0917	0.275	0.138		mg/Kg-dry	5	05/26/16 09:18 PM
IS: Bismuth	80.6	0	30-120	0		%REC	5	05/26/16 09:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[a]anthracene	0.0566	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[a]pyrene	0.0669	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[b]fluoranthene	0.0662	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[e]pyrene	0.0549	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[g,h,i]perylene	0.0521	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/26/16 02:46 AM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Chrysene	0.0680	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Fluoranthene	0.108	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/26/16 02:46 AM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/26/16 02:46 AM
Pyrene	0.0923	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/26/16 02:46 AM
IS: Acenaphthene-d10	69.0	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Chrysene-d12	73.0	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Perylene-d12	73.3	0	50-200	0		%REC	10	05/26/16 02:46 AM
IS: Phenanthrene-d10	67.7	0	50-200	0		%REC	10	05/26/16 02:46 AM
Surr: 2-Fluorobiphenyl	75.0	0	46-115	0		%REC	10	05/26/16 02:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605144-11
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.6	0	58-133	0		%REC	10	05/26/16 02:46 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605144-12
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:01 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.31	0.0971	0.291	0.146		mg/Kg-dry	5	05/26/16 09:24 PM
IS: Bismuth	78.7	0	30-120	0		%REC	5	05/26/16 09:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/26/16 03:25 AM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/26/16 03:25 AM
IS: Acenaphthene-d10	67.7	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Chrysene-d12	72.1	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Perylene-d12	72.3	0	50-200	0		%REC	10	05/26/16 03:25 AM
IS: Phenanthrene-d10	68.5	0	50-200	0		%REC	10	05/26/16 03:25 AM
Surr: 2-Fluorobiphenyl	79.7	0	46-115	0		%REC	10	05/26/16 03:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU083(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605144-12
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:01 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.8	0	58-133	0		%REC	10	05/26/16 03:25 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-A
Project:	Laredo SGR	**Lab ID:**	1605144-13
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:10 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.2	0.0862	0.259	0.129		mg/Kg-dry	5	05/26/16 08:42 PM
IS: Bismuth	79.7	0	30-120	0		%REC	5	05/26/16 08:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Acenaphthylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[a]anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[a]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[b]fluoranthene	0.0554	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[e]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[g,h,i]perylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[j]fluoranthene	0.0740	0.0494	0.0987	0.0740	NU	mg/Kg-dry	10	05/25/16 05:02 PM
Benzo[k]fluoranthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Chrysene	0.0501	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
Dibenz[a,h]anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Fluoranthene	0.0898	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
Fluorene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Indeno[1,2,3-cd]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Phenanthrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/25/16 05:02 PM
Pyrene	0.0728	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/25/16 05:02 PM
IS: Acenaphthene-d10	99.8	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Chrysene-d12	78.3	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Naphthalene-d8	94.1	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Perylene-d12	82.2	0	50-200	0		%REC	10	05/25/16 05:02 PM
IS: Phenanthrene-d10	73.9	0	50-200	0		%REC	10	05/25/16 05:02 PM
Surr: 2-Fluorobiphenyl	91.4	0	46-115	0		%REC	10	05/25/16 05:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-A
Project:	Laredo SGR	**Lab ID:**	1605144-13
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:10 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	81.3	0	58-133	0		%REC	10	05/25/16 05:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU046-B
Project:	Laredo SGR	**Lab ID:**	1605144-14
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	34.6	0.0952	0.286	0.143		mg/Kg-dry	5	05/26/16 09:30 PM
IS: Bismuth	77.7	0	30-120	0		%REC	5	05/26/16 09:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Acenaphthylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[a]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[a]pyrene	0.0510	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[b]fluoranthene	0.0576	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[e]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[g,h,i]perylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[j]fluoranthene	0.0741	0.0494	0.0988	0.0741	NU	mg/Kg-dry	10	05/25/16 05:38 PM
Benzo[k]fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Chrysene	0.0528	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Dibenz[a,h]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Fluoranthene	0.0952	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
Fluorene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Indeno[1,2,3-cd]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Phenanthrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/25/16 05:38 PM
Pyrene	0.0782	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/25/16 05:38 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Chrysene-d12	79.0	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Naphthalene-d8	96.1	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Perylene-d12	83.2	0	50-200	0		%REC	10	05/25/16 05:38 PM
IS: Phenanthrene-d10	74.7	0	50-200	0		%REC	10	05/25/16 05:38 PM
Surr: 2-Fluorobiphenyl	94.9	0	46-115	0		%REC	10	05/25/16 05:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU046-B
Project:	Laredo SGR	**Lab ID:**	1605144-14
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.3	0	58-133	0		%REC	10	05/25/16 05:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-C
Project:	Laredo SGR	**Lab ID:**	1605144-15
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	30.3	0.0962	0.288	0.144		mg/Kg-dry	5	05/26/16 09:36 PM
IS: Bismuth	86.3	0	30-120	0		%REC	5	05/26/16 09:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Acenaphthylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[a]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[a]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[b]fluoranthene	0.0511	0.0500	0.100	0.0750	J	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[e]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[g,h,i]perylene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[j]fluoranthene	0.0750	0.0500	0.100	0.0750	NU	mg/Kg-dry	10	05/25/16 06:16 PM
Benzo[k]fluoranthene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Chrysene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Dibenz[a,h]anthracene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Fluoranthene	0.0812	0.0500	0.100	0.0750	J	mg/Kg-dry	10	05/25/16 06:16 PM
Fluorene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Indeno[1,2,3-cd]pyrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Phenanthrene	0.0750	0.0500	0.100	0.0750	U	mg/Kg-dry	10	05/25/16 06:16 PM
Pyrene	0.0662	0.0500	0.100	0.0750	J	mg/Kg-dry	10	05/25/16 06:16 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Perylene-d12	89.8	0	50-200	0		%REC	10	05/25/16 06:16 PM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/25/16 06:16 PM
Surr: 2-Fluorobiphenyl	91.1	0	46-115	0		%REC	10	05/25/16 06:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-C
Project:	Laredo SGR	**Lab ID:**	1605144-15
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 10:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.0	0	58-133	0		%REC	10	05/25/16 06:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB18(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-16
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 11:00 AM
Lab Order:	1605144	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:22 PM
IS: Bismuth	99.6	0	30-120	0		%REC	1	05/20/16 02:22 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Acenaphthylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[a]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[a]pyrene	0.0000467	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Benzo[b]fluoranthene	0.0000452	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Benzo[e]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[g,h,i]perylene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Benzo[j]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	NU	mg/L	1	05/19/16 01:08 AM
Benzo[k]fluoranthene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Chrysene	0.0000401	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Dibenz[a,h]anthracene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Fluoranthene	0.0000606	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
Fluorene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Indeno[1,2,3-cd]pyrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Phenanthrene	0.0000622	0.0000389	0.0000778	0.0000622	U	mg/L	1	05/19/16 01:08 AM
Pyrene	0.0000523	0.0000389	0.0000778	0.0000622	J	mg/L	1	05/19/16 01:08 AM
IS: Acenaphthene-d10	89.5	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Chrysene-d12	89.6	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Naphthalene-d8	90.2	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Perylene-d12	90.5	0	50-200	0		%REC	1	05/19/16 01:08 AM
IS: Phenanthrene-d10	86.0	0	50-200	0		%REC	1	05/19/16 01:08 AM
Surr: 2-Fluorobiphenyl	63.6	0	53-106	0		%REC	1	05/19/16 01:08 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB18(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-16
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 11:00 AM
Lab Order:	1605144	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.9	0	58-132	0		%REC	1	05/19/16 01:08 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605144-17
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	27.4	0.106	0.318	0.159		mg/Kg-dry	5	05/26/16 09:42 PM
IS: Bismuth	83.5	0	30-120	0		%REC	5	05/26/16 09:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Acenaphthylene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Anthracene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[a]anthracene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[a]pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[b]fluoranthene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[e]pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[g,h,i]perylene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[j]fluoranthene	0.0934	0.0623	0.125	0.0934	NU	mg/Kg-dry	10	05/25/16 06:53 PM
Benzo[k]fluoranthene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Chrysene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Dibenz[a,h]anthracene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Fluoranthene	0.0638	0.0623	0.125	0.0934	J	mg/Kg-dry	10	05/25/16 06:53 PM
Fluorene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Indeno[1,2,3-cd]pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Phenanthrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
Pyrene	0.0934	0.0623	0.125	0.0934	U	mg/Kg-dry	10	05/25/16 06:53 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Perylene-d12	86.8	0	50-200	0		%REC	10	05/25/16 06:53 PM
IS: Phenanthrene-d10	77.8	0	50-200	0		%REC	10	05/25/16 06:53 PM
Surr: 2-Fluorobiphenyl	76.9	0	46-115	0		%REC	10	05/25/16 06:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605144-17
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:30 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/25/16 06:53 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	20.7	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605144-18
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:35 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	39.4	0.119	0.358	0.179		mg/Kg-dry	5	05/26/16 10:36 PM
IS: Bismuth	82.7	0	30-120	0		%REC	5	05/26/16 10:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Acenaphthylene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Anthracene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[a]anthracene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[a]pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[b]fluoranthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[e]pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[g,h,i]perylene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[j]fluoranthene	0.0864	0.0576	0.115	0.0864	NU	mg/Kg-dry	10	05/25/16 07:30 PM
Benzo[k]fluoranthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Chrysene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Dibenz[a,h]anthracene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Fluoranthene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Fluorene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Indeno[1,2,3-cd]pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Phenanthrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
Pyrene	0.0864	0.0576	0.115	0.0864	U	mg/Kg-dry	10	05/25/16 07:30 PM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Chrysene-d12	83.7	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Perylene-d12	88.1	0	50-200	0		%REC	10	05/25/16 07:30 PM
IS: Phenanthrene-d10	79.2	0	50-200	0		%REC	10	05/25/16 07:30 PM
Surr: 2-Fluorobiphenyl	81.6	0	46-115	0		%REC	10	05/25/16 07:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605144-18
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:35 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/25/16 07:30 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	18.5	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605144-19
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:40 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	29.6	0.0893	0.268	0.134		mg/Kg-dry	5	05/26/16 10:42 PM
IS: Bismuth	81.7	0	30-120	0		%REC	5	05/26/16 10:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Acenaphthylene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Anthracene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[a]anthracene	0.0828	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[a]pyrene	0.0864	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[b]fluoranthene	0.0894	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[e]pyrene	0.0652	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[g,h,i]perylene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[j]fluoranthene	0.0787	0.0524	0.105	0.0787	NU	mg/Kg-dry	10	05/25/16 10:36 PM
Benzo[k]fluoranthene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Chrysene	0.100	0.0524	0.105	0.0787	J	mg/Kg-dry	10	05/25/16 10:36 PM
Dibenz[a,h]anthracene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Fluoranthene	0.192	0.0524	0.105	0.0787		mg/Kg-dry	10	05/25/16 10:36 PM
Fluorene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Indeno[1,2,3-cd]pyrene	0.0787	0.0524	0.105	0.0787	U	mg/Kg-dry	10	05/25/16 10:36 PM
Phenanthrene	0.106	0.0524	0.105	0.0787		mg/Kg-dry	10	05/25/16 10:36 PM
Pyrene	0.153	0.0524	0.105	0.0787		mg/Kg-dry	10	05/25/16 10:36 PM
IS: Acenaphthene-d10	97.2	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Chrysene-d12	80.6	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Perylene-d12	83.4	0	50-200	0		%REC	10	05/25/16 10:36 PM
IS: Phenanthrene-d10	72.7	0	50-200	0		%REC	10	05/25/16 10:36 PM
Surr: 2-Fluorobiphenyl	95.4	0	46-115	0		%REC	10	05/25/16 10:36 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605144-19
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:40 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.5	0	58-133	0		%REC	10	05/25/16 10:36 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	5.14	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605144-20
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:45 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	64.8	0.112	0.337	0.169		mg/Kg-dry	5	05/26/16 10:48 PM
IS: Bismuth	82.9	0	30-120	0		%REC	5	05/26/16 10:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Acenaphthylene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Anthracene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[a]anthracene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[a]pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[b]fluoranthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[e]pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[g,h,i]perylene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[j]fluoranthene	0.0951	0.0634	0.127	0.0951	NU	mg/Kg-dry	10	05/25/16 11:12 PM
Benzo[k]fluoranthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Chrysene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Dibenz[a,h]anthracene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Fluoranthene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Fluorene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Indeno[1,2,3-cd]pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Phenanthrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
Pyrene	0.0951	0.0634	0.127	0.0951	U	mg/Kg-dry	10	05/25/16 11:12 PM
IS: Acenaphthene-d10	99.6	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Chrysene-d12	79.1	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Perylene-d12	83.1	0	50-200	0		%REC	10	05/25/16 11:12 PM
IS: Phenanthrene-d10	73.4	0	50-200	0		%REC	10	05/25/16 11:12 PM
Surr: 2-Fluorobiphenyl	89.5	0	46-115	0		%REC	10	05/25/16 11:12 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU146-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605144-20
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 08:45 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.9	0	58-133	0		%REC	10	05/25/16 11:12 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	21.9	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP7(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-21
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	26.4	0.109	0.326	0.163		mg/Kg-dry	5	05/26/16 10:54 PM
IS: Bismuth	82.4	0	30-120	0		%REC	5	05/26/16 10:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Acenaphthylene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Anthracene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[a]anthracene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[a]pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[b]fluoranthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[e]pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[g,h,i]perylene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[j]fluoranthene	0.0942	0.0628	0.126	0.0942	NU	mg/Kg-dry	10	05/25/16 11:49 PM
Benzo[k]fluoranthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Chrysene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Dibenz[a,h]anthracene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Fluoranthene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Fluorene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Indeno[1,2,3-cd]pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Phenanthrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
Pyrene	0.0942	0.0628	0.126	0.0942	U	mg/Kg-dry	10	05/25/16 11:49 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Perylene-d12	86.7	0	50-200	0		%REC	10	05/25/16 11:49 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/25/16 11:49 PM
Surr: 2-Fluorobiphenyl	86.1	0	46-115	0		%REC	10	05/25/16 11:49 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP7(20160512)
Project:	Laredo SGR	**Lab ID:**	1605144-21
Project No:	04285081.0000.00044	**Collection Date:**	05/12/16 09:00 AM
Lab Order:	1605144	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.3	0	58-133	0		%REC	10	05/25/16 11:49 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	20.6	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160518B

Sample ID	**DCS1-74845**	Batch ID:	**74845**	TestNo:	**SW6020A**	Units:	**mg/Kg**
SampType:	**DCS**	Run ID:	**ICP-MS3_160518B**	Analysis Date:	**5/18/2016 2:52:00 PM**	Prep Date:	**4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.289	0.300	0.2500	0	116	80	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

The QC data in batch 75292 applies to the following samples: 1605144-07A, 1605144-08A, 1605144-09A, 1605144-10A, 1605144-11A, 1605144-12A, 1605144-13A, 1605144-14A, 1605144-15A, 1605144-17A, 1605144-18A, 1605144-19A, 1605144-20A, 1605144-21A

Sample ID **MB-75292** Batch ID: **75292** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 8:18:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		87.7	30	120			

Sample ID **LCS-75292** Batch ID: **75292** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 8:24:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.1	0.300	50.00	0	96.2	84	118			
IS: Bismuth	50.0		200.0		85.5	30	120			

Sample ID **LCSD-75292** Batch ID: **75292** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 8:30:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.1	0.300	50.00	0	96.2	84	118	0.052	20	
IS: Bismuth	50.0		200.0		86.4	30	120	0	0	

Sample ID **1605144-13A SD** Batch ID: **75292** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 8:48:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	29.6	1.29	0	31.16				5.00	10	
IS: Bismuth	216		172.4		86.7	30	120	0	0	

Sample ID **1605144-13A PDS** Batch ID: **75292** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 9:48:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	74.8	0.259	43.10	31.16	101	80	120			
IS: Bismuth	43.1		862.1		86.0	30	120			

Sample ID **1605144-13A MS** Batch ID: **75292** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS3_160526A** Analysis Date: **5/26/2016 9:54:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	74.4	0.268	44.64	31.16	96.7	84	118			
IS: Bismuth	44.6		178.6		86.2	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

Sample ID	**1605144-13A MSD**	Batch ID:	**75292**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 10:00:00 PM**	Prep Date:	**5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	74.8	0.283	47.17	31.16	92.4	84	118	0.552	20	
IS: Bismuth	47.2		188.7		86.5	30	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

Sample ID	**ICV1-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 12:59:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0982	0.00100	0.100	0	98.2	90	110			
IS: Bismuth	0.200		0.200		97.6	30	120			

Sample ID	**ILCVL-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 1:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00101	0.00100	0.00100	0	101	80	120			
IS: Bismuth	0.200		0.200		101	30	120			

Sample ID	**CCV4-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 7:53:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.191	0.00100	0.200	0	95.6	90	110			
IS: Bismuth	0.200		0.200		82.7	30	120			

Sample ID	**LCVL4-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 8:05:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		82.6	30	120			

Sample ID	**CCV5-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 10:12:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.187	0.00100	0.200	0	93.7	90	110			
IS: Bismuth	0.200		0.200		83.6	30	120			

Sample ID	**LCVL5-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 10:24:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00104	0.00100	0.00100	0	104	80	120			
IS: Bismuth	0.200		0.200		89.7	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160526A

Sample ID	**CCV6-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 11:00:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.190	0.00100	0.200	0	95.1	90	110			
IS: Bismuth	0.200		0.200		85.9	30	120			

Sample ID	**LCVL6-160526**	Batch ID:	**R86047**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_160526A**	Analysis Date:	**5/26/2016 11:12:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00106	0.00100	0.00100	0	106	80	120			
IS: Bismuth	0.200		0.200		94.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160427C

Sample ID	**DCS1-74736**	Batch ID:	**74736**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**DCS**	Run ID:	**ICP-MS4_160427C**	Analysis Date:	**4/27/2016 4:25:00 PM**	Prep Date:	**4/21/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000486	0.00100	0.000500	0	97.2	80	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160429A

Sample ID	**DCS1-74845**	Batch ID:	**74845**	TestNo:	**SW6020A**	Units:	**mg/Kg**
SampType:	**DCS**	Run ID:	**ICP-MS4_160429A**	Analysis Date:	**4/29/2016 12:19:00 PM**	Prep Date:	**4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.310	0.300	0.2500	0	124	70	130	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160520C**

The QC data in batch 75180 applies to the following samples: 1605144-16A

Sample ID **MB-75180** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:22:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000900	0.00100								U
IS: Bismuth	0.200		0.200		100	30	120			

Sample ID **LCS-75180** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:24:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	88	115			
IS: Bismuth	0.200		0.200		95.8	30	120			

Sample ID **LCSD-75180** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:26:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	100	88	115	1.93	20	
IS: Bismuth	0.200		0.200		94.8	30	120	0	0	

Sample ID **1605097-27A SD** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **SD** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:32:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00450	0.00500	0	0				0	10	U
IS: Bismuth	1.00		0.200		96.7	30	120	0	0	

Sample ID **1605097-27A PDS** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **PDS** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:52:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	100	80	120			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID **1605097-27A MS** Batch ID: **75180** TestNo: **SW6020A** Units: **mg/L**
SampType: **MS** Run ID: **ICP-MS4_160520C** Analysis Date: **5/20/2016 1:54:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.162	0.00100	0.200	0	80.9	88	115			S
IS: Bismuth	0.200		0.200		94.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID	**1605097-27A MSD**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:56:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.196	0.00100	0.200	0	97.9	88	115	19.1	20	
IS: Bismuth	0.200		0.200		96.4	30	120	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160520C**

Sample ID	**ICV-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 11:28:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.102	0.00100	0.100	0	102	90	110			
IS: Bismuth	0.200		0.200		98.5	30	120			

Sample ID	**LCVL-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 11:40:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000967	0.00100	0.00100	0	96.7	80	120			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID	**CCV2-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:06:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	99.9	90	110			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID	**LCVL2-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000963	0.00100	0.00100	0	96.3	80	120			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID	**CCV3-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:58:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.9	90	110			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID	**LCVL3-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 2:04:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000977	0.00100	0.00100	0	97.7	80	120			
IS: Bismuth	0.200		0.200		96.8	30	120			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160520C**

Sample ID	**CCV4-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 2:24:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	90	110			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID	**LCVL4-160520**	Batch ID:	**R85935**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 2:41:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000974	0.00100	0.00100	0	97.4	80	120			
IS: Bismuth	0.200		0.200		95.3	30	120			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160526F**

The QC data in batch 75287 applies to the following samples: 1605144-01A, 1605144-02A, 1605144-03A, 1605144-04A, 1605144-05A, 1605144-06A

Sample ID **MB-75287** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:34:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		108	30	120			

Sample ID **LCS-75287** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:36:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.0	0.300	50.00	0	102	84	118			
IS: Bismuth	50.0		200.0		105	30	120			

Sample ID **LCSD-75287** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:38:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.8	0.300	50.00	0	102	84	118	0.396	20	
IS: Bismuth	50.0		200.0		105	30	120	0	0	

Sample ID **1605135-36A SD** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 3:44:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	5.41	1.40	0	5.371				0.676	10	
IS: Bismuth	234		186.9		106	30	120	0	0	

Sample ID **1605135-36A PDS** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 4:04:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	52.2	0.280	46.73	5.371	100	80	120			
IS: Bismuth	46.7		934.6		101	30	120			

Sample ID **1605135-36A MS** Batch ID: **75287** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160526F** Analysis Date: **5/26/2016 4:18:00 PM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	55.2	0.291	48.54	5.371	103	84	118			
IS: Bismuth	48.5		194.2		99.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160526F**

Sample ID	**1605135-36A MSD**	Batch ID:	**75287**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:20:00 PM**	Prep Date:	**5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.7	0.270	45.05	5.371	103	84	118	6.57	20	
IS: Bismuth	45.0		180.2		99.3	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160526F**

Sample ID	**ICV-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 11:43:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0989	0.00100	0.100	0	98.9	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**LCVL-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 11:49:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000931	0.00100	0.00100	0	93.1	80	120			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**CCV5-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 3:24:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.199	0.00100	0.200	0	99.4	90	110			
IS: Bismuth	0.200		0.200		106	30	120			

Sample ID	**LCVL5-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 3:29:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000908	0.00100	0.00100	0	90.8	80	120			
IS: Bismuth	0.200		0.200		109	30	120			

Sample ID	**CCV6-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:22:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.9	90	110			
IS: Bismuth	0.200		0.200		104	30	120			

Sample ID	**LCVL6-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:26:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000927	0.00100	0.00100	0	92.7	80	120			
IS: Bismuth	0.200		0.200		106	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160526F**

Sample ID	**CCV7-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:50:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.8	90	110			
IS: Bismuth	0.200		0.200		105	30	120			

Sample ID	**LCVL7-160526**	Batch ID:	**R86044**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160526F**	Analysis Date:	**5/26/2016 4:54:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000936	0.00100	0.00100	0	93.6	80	120			
IS: Bismuth	0.200		0.200		105	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160502D**

Sample ID	**DCS-74876**	Batch ID:	**74876**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**DCS**	Run ID:	**GCMS6_160502D**	Analysis Date:	**5/2/2016 1:24:00 PM**	Prep Date:	**4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00921	0.0100	0.01000	0	92.1	20	200	0	0	
Acenaphthylene	0.00964	0.0100	0.01000	0	96.4	20	200	0	0	
Anthracene	0.00923	0.0100	0.01000	0	92.3	20	200	0	0	
Benzo[a]anthracene	0.00934	0.0100	0.01000	0	93.4	20	200	0	0	
Benzo[a]pyrene	0.00897	0.0100	0.01000	0	89.7	20	200	0	0	
Benzo[b]fluoranthene	0.00923	0.0100	0.01000	0	92.3	20	200	0	0	
Benzo[e]pyrene	0.00939	0.0100	0.01000	0	93.9	20	200	0	0	
Benzo[g,h,i]perylene	0.0109	0.0100	0.01000	0	109	20	200	0	0	
Benzo[j]fluoranthene	0.00874	0.0100	0.01000	0	87.4	20	200	0	0	N
Benzo[k]fluoranthene	0.00895	0.0100	0.01000	0	89.5	20	200	0	0	
Chrysene	0.00935	0.0100	0.01000	0	93.5	20	200	0	0	
Dibenz[a,h]anthracene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Fluoranthene	0.0109	0.0100	0.01000	0	109	20	200	0	0	
Fluorene	0.00957	0.0100	0.01000	0	95.7	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Phenanthrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160525A

The QC data in batch 75281 applies to the following samples: 1605144-01A, 1605144-02A, 1605144-03A, 1605144-04A, 1605144-05A, 1605144-06A, 1605144-07A, 1605144-08A, 1605144-09A, 1605144-10A, 1605144-11A, 1605144-12A

Sample ID **LCS-75281** Batch ID: **75281** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 10:14:00 AM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.678	0.0100	1.000	0	67.8	44	111			
Acenaphthylene	0.721	0.0100	1.000	0	72.1	39	116			
Anthracene	0.734	0.0100	1.000	0	73.4	50	114			
Benzo[a]anthracene	0.768	0.0100	1.000	0	76.8	54	122			
Benzo[a]pyrene	0.737	0.0100	1.000	0	73.7	50	125			
Benzo[b]fluoranthene	0.762	0.0100	1.000	0	76.2	53	128			
Benzo[e]pyrene	0.852	0.0100	1.000	0	85.2	43	140			
Benzo[g,h,i]perylene	0.699	0.0100	1.000	0	69.9	49	127			
Benzo[j]fluoranthene	0.807	0.0100	1.000	0	80.7	45	125			N
Benzo[k]fluoranthene	0.749	0.0100	1.000	0	74.9	56	123			
Chrysene	0.737	0.0100	1.000	0	73.7	57	118			
Dibenz[a,h]anthracene	0.728	0.0100	1.000	0	72.9	50	129			
Fluoranthene	0.772	0.0100	1.000	0	77.2	55	119			
Fluorene	0.744	0.0100	1.000	0	74.4	47	114			
Indeno[1,2,3-cd]pyrene	0.708	0.0100	1.000	0	70.8	49	130			
Phenanthrene	0.712	0.0100	1.000	0	71.2	49	113			
Pyrene	0.744	0.0100	1.000	0	74.4	55	117			
IS: Acenaphthene-d10	4.00		4.000		70.2	50	200			
IS: Chrysene-d12	4.00		4.000		76.1	50	200			
IS: Naphthalene-d8	4.00		4.000		103	50	200			
IS: Perylene-d12	4.00		4.000		75.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		75.5	50	200			
Surr: 2-Fluorobiphenyl	0.728		1.000		72.8	46	115			
Surr: 4-Terphenyl-d14	0.693		1.000		69.3	58	133			

Sample ID **MB-75281** Batch ID: **75281** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 10:53:00 AM** Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID **MB-75281**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 10:53:00 AM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		71.7	50	200			
IS: Chrysene-d12	4.00		4.000		75.0	50	200			
IS: Naphthalene-d8	4.00		4.000		105	50	200			
IS: Perylene-d12	4.00		4.000		74.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.5	50	200			
Surr: 2-Fluorobiphenyl	0.720		1.000		72.0	46	115			
Surr: 4-Terphenyl-d14	0.694		1.000		69.4	58	133			

Sample ID **1605135-36AMS**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 7:32:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.729	0.0988	0.9881	0	73.7	44	111			
Acenaphthylene	0.767	0.0988	0.9881	0	77.6	39	116			
Anthracene	0.777	0.0988	0.9881	0	78.6	50	114			
Benzo[a]anthracene	0.796	0.0988	0.9881	0	80.6	54	122			
Benzo[a]pyrene	0.779	0.0988	0.9881	0	78.8	50	125			
Benzo[b]fluoranthene	0.797	0.0988	0.9881	0	80.7	53	128			
Benzo[e]pyrene	0.901	0.0988	0.9881	0	91.2	43	140			
Benzo[g,h,i]perylene	0.769	0.0988	0.9881	0	77.8	49	127			
Benzo[j]fluoranthene	0.832	0.0988	0.9881	0	84.2	45	125			N
Benzo[k]fluoranthene	0.779	0.0988	0.9881	0	78.9	56	123			
Chrysene	0.793	0.0988	0.9881	0	80.3	57	118			
Dibenz[a,h]anthracene	0.769	0.0988	0.9881	0	77.8	50	129			
Fluoranthene	0.879	0.0988	0.9881	0	88.9	55	119			
Fluorene	0.722	0.0988	0.9881	0	73.0	47	114			
Indeno[1,2,3-cd]pyrene	0.786	0.0988	0.9881	0	79.6	49	130			
Phenanthrene	0.793	0.0988	0.9881	0	80.2	49	113			
Pyrene	0.863	0.0988	0.9881	0	87.4	55	117			
IS: Acenaphthene-d10	39.5		3.953		63.0	50	200			
IS: Chrysene-d12	39.5		3.953		65.8	50	200			
IS: Naphthalene-d8	39.5		3.953		98.2	50	200			
IS: Perylene-d12	39.5		3.953		66.0	50	200			
IS: Phenanthrene-d10	39.5		3.953		62.3	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID **1605135-36AMS**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 7:32:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.808		0.9881		81.8	46	115			
Surr: 4-Terphenyl-d14	0.756		0.9881		76.5	58	133			

Sample ID **1605135-36AMSD**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 8:12:00 PM**	Prep Date: **5/23/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.696	0.0989	0.9891	0	70.4	44	111	0	20	
Acenaphthylene	0.708	0.0989	0.9891	0	71.6	39	116	0	20	
Anthracene	0.727	0.0989	0.9891	0	73.6	50	114	0	20	
Benzo[a]anthracene	0.747	0.0989	0.9891	0	75.5	54	122	0	20	
Benzo[a]pyrene	0.710	0.0989	0.9891	0	71.8	50	125	0	20	
Benzo[b]fluoranthene	0.734	0.0989	0.9891	0	74.2	53	128	0	20	
Benzo[e]pyrene	0.828	0.0989	0.9891	0	83.7	43	140	0	20	
Benzo[g,h,i]perylene	0.721	0.0989	0.9891	0	72.9	49	127	0	20	
Benzo[j]fluoranthene	0.773	0.0989	0.9891	0	78.1	45	125	0	20	N
Benzo[k]fluoranthene	0.722	0.0989	0.9891	0	73.0	56	123	0	20	
Chrysene	0.729	0.0989	0.9891	0	73.7	57	118	0	20	
Dibenz[a,h]anthracene	0.722	0.0989	0.9891	0	73.0	50	129	0	20	
Fluoranthene	0.817	0.0989	0.9891	0	82.6	55	119	0	20	
Fluorene	0.692	0.0989	0.9891	0	70.0	47	114	0	20	
Indeno[1,2,3-cd]pyrene	0.730	0.0989	0.9891	0	73.8	49	130	0	20	
Phenanthrene	0.748	0.0989	0.9891	0	75.6	49	113	0	20	
Pyrene	0.797	0.0989	0.9891	0	80.6	55	117	0	20	
IS: Acenaphthene-d10	39.6		3.956		68.7	50	200	0	0	
IS: Chrysene-d12	39.6		3.956		72.5	50	200	0	0	
IS: Naphthalene-d8	39.6		3.956		107	50	200	0	0	
IS: Perylene-d12	39.6		3.956		72.5	50	200	0	0	
IS: Phenanthrene-d10	39.6		3.956		69.1	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.756		0.9891		76.4	46	115	0	0	
Surr: 4-Terphenyl-d14	0.704		0.9891		71.2	58	133	0	0	

Sample ID **SB-160525**	Batch ID: **75281**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 10:47:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID	**SB-160525**	Batch ID:	**75281**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS6_160525A**	Analysis Date:	**5/25/2016 10:47:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID **ICV-160525** Batch ID: **R86008** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 9:34:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.86	0.0100	2.000	0	92.9	80	120			
Acenaphthylene	1.97	0.0100	2.000	0	98.3	80	120			
Anthracene	1.74	0.0100	2.000	0	87.1	80	120			
Benzo[a]anthracene	1.91	0.0100	2.000	0	95.3	80	120			
Benzo[a]pyrene	1.83	0.0100	2.000	0	91.7	80	120			
Benzo[b]fluoranthene	1.86	0.0100	2.000	0	93.1	80	120			
Benzo[e]pyrene	1.87	0.0100	2.000	0	93.3	80	120			
Benzo[g,h,i]perylene	1.74	0.0100	2.000	0	87.0	80	120			
Benzo[j]fluoranthene	1.89	0.0100	2.000	0	94.5	80	120			N
Benzo[k]fluoranthene	1.86	0.0100	2.000	0	92.8	80	120			
Chrysene	1.81	0.0100	2.000	0	90.5	80	120			
Dibenz[a,h]anthracene	1.80	0.0100	2.000	0	90.1	80	120			
Fluoranthene	1.91	0.0100	2.000	0	95.5	80	120			
Fluorene	1.84	0.0100	2.000	0	91.8	80	120			
Indeno[1,2,3-cd]pyrene	1.75	0.0100	2.000	0	87.7	80	120			
Phenanthrene	1.81	0.0100	2.000	0	90.3	80	120			
Pyrene	1.84	0.0100	2.000	0	92.1	80	120			
IS: Acenaphthene-d10	4.00		4.000		110	50	200			
IS: Chrysene-d12	4.00		4.000		108	50	200			
IS: Naphthalene-d8	4.00		4.000		131	50	200			
IS: Perylene-d12	4.00		4.000		107	50	200			
IS: Phenanthrene-d10	4.00		4.000		104	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		101	65	120			
Surr: 4-Terphenyl-d14	1.84		2.000		92.1	65	120			

Sample ID **ICV2-160525** Batch ID: **R86008** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160525A** Analysis Date: **5/25/2016 9:28:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.88	0.0100	2.000	0	94.2	80	120			
Acenaphthylene	1.98	0.0100	2.000	0	99.1	80	120			
Anthracene	1.76	0.0100	2.000	0	87.8	80	120			
Benzo[a]anthracene	1.92	0.0100	2.000	0	95.8	80	120			
Benzo[a]pyrene	1.83	0.0100	2.000	0	91.3	80	120			
Benzo[b]fluoranthene	1.86	0.0100	2.000	0	93.1	80	120			
Benzo[e]pyrene	1.85	0.0100	2.000	0	92.6	80	120			
Benzo[g,h,i]perylene	1.79	0.0100	2.000	0	89.4	80	120			
Benzo[j]fluoranthene	1.87	0.0100	2.000	0	93.3	80	120			N
Benzo[k]fluoranthene	1.80	0.0100	2.000	0	90.1	80	120			
Chrysene	1.81	0.0100	2.000	0	90.3	80	120			
Dibenz[a,h]anthracene	1.86	0.0100	2.000	0	93.1	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160525A**

Sample ID **ICV2-160525**	Batch ID: **R86008**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160525A**	Analysis Date: **5/25/2016 9:28:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.92	0.0100	2.000	0	96.2	80	120			
Fluorene	1.81	0.0100	2.000	0	90.6	80	120			
Indeno[1,2,3-cd]pyrene	1.81	0.0100	2.000	0	90.6	80	120			
Phenanthrene	1.79	0.0100	2.000	0	89.4	80	120			
Pyrene	1.86	0.0100	2.000	0	92.8	80	120			
IS: Acenaphthene-d10	4.00		4.000		113	50	200			
IS: Chrysene-d12	4.00		4.000		109	50	200			
IS: Naphthalene-d8	4.00		4.000		141	50	200			
IS: Perylene-d12	4.00		4.000		110	50	200			
IS: Phenanthrene-d10	4.00		4.000		105	50	200			
Surr: 2-Fluorobiphenyl	2.05		2.000		102	65	120			
Surr: 4-Terphenyl-d14	1.85		2.000		92.6	65	120			

Sample ID **CCV1-160525**	Batch ID: **R86008**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS6_160525A**	Analysis Date: **5/26/2016 4:05:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.860	0.0100	1.000	0	86.0	50	150			
Acenaphthylene	0.926	0.0100	1.000	0	92.6	50	150			
Anthracene	0.881	0.0100	1.000	0	88.1	50	150			
Benzo[a]anthracene	0.899	0.0100	1.000	0	89.9	50	150			
Benzo[a]pyrene	0.866	0.0100	1.000	0	86.6	50	150			
Benzo[b]fluoranthene	0.876	0.0100	1.000	0	87.6	50	150			
Benzo[e]pyrene	0.900	0.0100	1.000	0	90.0	50	150			
Benzo[g,h,i]perylene	0.855	0.0100	1.000	0	85.5	50	150			
Benzo[j]fluoranthene	0.911	0.0100	1.000	0	91.1	50	150			N
Benzo[k]fluoranthene	0.884	0.0100	1.000	0	88.4	50	150			
Chrysene	0.854	0.0100	1.000	0	85.4	50	150			
Dibenz[a,h]anthracene	0.881	0.0100	1.000	0	88.1	50	150			
Fluoranthene	0.923	0.0100	1.000	0	92.3	50	150			
Fluorene	0.828	0.0100	1.000	0	82.8	50	150			
Indeno[1,2,3-cd]pyrene	0.866	0.0100	1.000	0	86.6	50	150			
Phenanthrene	0.841	0.0100	1.000	0	84.1	50	150			
Pyrene	0.890	0.0100	1.000	0	89.0	50	150			
IS: Acenaphthene-d10	4.00		4.000		84.7	50	200			
IS: Chrysene-d12	4.00		4.000		85.5	50	200			
IS: Naphthalene-d8	4.00		4.000		127	50	200			
IS: Perylene-d12	4.00		4.000		85.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.6	50	200			
Surr: 2-Fluorobiphenyl	1.01		1.000		101	50	150			
Surr: 4-Terphenyl-d14	0.899		1.000		89.9	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160510B**

Sample ID	**DCS-74876**	Batch ID:	**74876**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**DCS**	Run ID:	**GCMS8_160510B**	Analysis Date:	**5/11/2016 4:29:00 AM**	Prep Date:	**4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0113	0.0100	0.01000	0	113	20	200	0	0	
Acenaphthylene	0.0116	0.0100	0.01000	0	116	20	200	0	0	
Anthracene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Benzo[a]anthracene	0.0111	0.0100	0.01000	0	111	20	200	0	0	
Benzo[a]pyrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Benzo[b]fluoranthene	0.0105	0.0100	0.01000	0	105	20	200	0	0	
Benzo[e]pyrene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[g,h,i]perylene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[j]fluoranthene	0.0106	0.0100	0.01000	0	106	20	200	0	0	N
Benzo[k]fluoranthene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Chrysene	0.0118	0.0100	0.01000	0	118	20	200	0	0	
Dibenz[a,h]anthracene	0.0119	0.0100	0.01000	0	119	20	200	0	0	
Fluoranthene	0.0133	0.0100	0.01000	0	133	20	200	0	0	
Fluorene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	
Phenanthrene	0.0127	0.0100	0.01000	0	127	20	200	0	0	
Pyrene	0.0133	0.0100	0.01000	0	133	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518A**

Sample ID	**DCS-75209**	Batch ID:	**75209**	TestNo:	**SW8270D-LL**	Units:	**mg/L**
SampType:	**DCS**	Run ID:	**GCMS8_160518A**	Analysis Date:	**5/18/2016 10:22:00 AM**	Prep Date:	**5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000307	0.0000500	0.0000400	0	76.8	20	170	0	0	
Acenaphthylene	0.0000308	0.0000500	0.0000400	0	77.0	20	170	0	0	
Anthracene	0.0000322	0.0000500	0.0000400	0	80.5	20	170	0	0	
Benzo[a]anthracene	0.0000306	0.0000500	0.0000400	0	76.4	20	170	0	0	
Benzo[a]pyrene	0.0000288	0.0000500	0.0000400	0	72.0	20	170	0	0	
Benzo[b]fluoranthene	0.0000304	0.0000500	0.0000400	0	76.0	20	170	0	0	
Benzo[e]pyrene	0.0000308	0.0000500	0.0000400	0	76.9	20	170	0	0	
Benzo[g,h,i]perylene	0.0000282	0.0000500	0.0000400	0	70.4	20	170	0	0	
Benzo[j]fluoranthene	0.0000254	0.0000500	0.0000400	0	63.6	20	170	0	0	N
Benzo[k]fluoranthene	0.0000283	0.0000500	0.0000400	0	70.8	20	170	0	0	
Chrysene	0.0000293	0.0000500	0.0000400	0	73.4	20	170	0	0	
Dibenz[a,h]anthracene	0.0000221	0.0000500	0.0000400	0	55.2	20	170	0	0	
Fluoranthene	0.0000331	0.0000500	0.0000400	0	82.7	20	170	0	0	
Fluorene	0.0000302	0.0000500	0.0000400	0	75.4	20	170	0	0	
Indeno[1,2,3-cd]pyrene	0.0000275	0.0000500	0.0000400	0	68.8	20	170	0	0	
Phenanthrene	0.0000339	0.0000500	0.0000400	0	84.6	20	170	0	0	
Pyrene	0.0000328	0.0000500	0.0000400	0	81.9	20	170	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

The QC data in batch 75146 applies to the following samples: 1605144-16B

Sample ID **LCS-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:03:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00262	0.0000500	0.00400	0	65.5	48	114			
Acenaphthylene	0.00261	0.0000500	0.00400	0	65.4	35	121			
Anthracene	0.00247	0.0000500	0.00400	0	61.7	53	119			
Benzo[a]anthracene	0.00297	0.0000500	0.00400	0	74.3	59	120			
Benzo[a]pyrene	0.00301	0.0000500	0.00400	0	75.2	53	120			
Benzo[b]fluoranthene	0.00309	0.0000500	0.00400	0	77.3	53	126			
Benzo[e]pyrene	0.00295	0.0000500	0.00400	0	73.6	40	140			
Benzo[g,h,i]perylene	0.00300	0.0000500	0.00400	0	74.9	44	128			
Benzo[j]fluoranthene	0.00295	0.0000500	0.00400	0	73.8	45	124			N
Benzo[k]fluoranthene	0.00309	0.0000500	0.00400	0	77.1	54	125			
Chrysene	0.00298	0.0000500	0.00400	0	74.6	57	120			
Dibenz[a,h]anthracene	0.00302	0.0000500	0.00400	0	75.4	44	131			
Fluoranthene	0.00291	0.0000500	0.00400	0	72.7	58	120			
Fluorene	0.00272	0.0000500	0.00400	0	68.0	50	118			
Indeno[1,2,3-cd]pyrene	0.00300	0.0000500	0.00400	0	75.0	48	130			
Phenanthrene	0.00259	0.0000500	0.00400	0	64.8	53	115			
Pyrene	0.00292	0.0000500	0.00400	0	73.0	53	121			
IS: Acenaphthene-d10	0.00800		0.00800		78.1	50	200			
IS: Chrysene-d12	0.00800		0.00800		77.8	50	200			
IS: Naphthalene-d8	0.00800		0.00800		81.0	50	200			
IS: Perylene-d12	0.00800		0.00800		76.7	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		78.1	50	200			
Surr: 2-Fluorobiphenyl	4.48		8.000		56.0	53	106			
Surr: 4-Terphenyl-d14	5.28		8.000		65.9	58	132			

Sample ID **MB-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:40:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500								U
Acenaphthylene	0.0000400	0.0000500								U
Anthracene	0.0000400	0.0000500								U
Benzo[a]anthracene	0.0000400	0.0000500								U
Benzo[a]pyrene	0.0000400	0.0000500								U
Benzo[b]fluoranthene	0.0000400	0.0000500								U
Benzo[e]pyrene	0.0000400	0.0000500								U
Benzo[g,h,i]perylene	0.0000400	0.0000500								U
Benzo[j]fluoranthene	0.0000400	0.0000500								NU
Benzo[k]fluoranthene	0.0000400	0.0000500								U
Chrysene	0.0000400	0.0000500								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **MB-75146**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 2:40:00 PM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.0000400	0.0000500								U
Fluoranthene	0.0000400	0.0000500								U
Fluorene	0.0000400	0.0000500								U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500								U
Phenanthrene	0.0000400	0.0000500								U
Pyrene	0.0000400	0.0000500								U
IS: Acenaphthene-d10	0.00800		0.00800		82.7	50	200			
IS: Chrysene-d12	0.00800		0.00800		85.3	50	200			
IS: Naphthalene-d8	0.00800		0.00800		85.3	50	200			
IS: Perylene-d12	0.00800		0.00800		85.3	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		84.3	50	200			
Surr: 2-Fluorobiphenyl	4.61		8.000		57.6	53	106			
Surr: 4-Terphenyl-d14	5.33		8.000		66.7	58	132			

Sample ID **SBLK-160518**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **SBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 10:03:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500	0							U
Acenaphthylene	0.0000400	0.0000500	0							U
Anthracene	0.0000400	0.0000500	0							U
Benzo[a]anthracene	0.0000400	0.0000500	0							U
Benzo[a]pyrene	0.0000400	0.0000500	0							U
Benzo[b]fluoranthene	0.0000400	0.0000500	0							U
Benzo[e]pyrene	0.0000400	0.0000500	0							U
Benzo[g,h,i]perylene	0.0000400	0.0000500	0							U
Benzo[j]fluoranthene	0.0000400	0.0000500	0							NU
Benzo[k]fluoranthene	0.0000400	0.0000500	0							U
Chrysene	0.0000400	0.0000500	0							U
Dibenz[a,h]anthracene	0.0000400	0.0000500	0							U
Fluoranthene	0.0000400	0.0000500	0							U
Fluorene	0.0000400	0.0000500	0							U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500	0							U
Phenanthrene	0.0000400	0.0000500	0							U
Pyrene	0.0000400	0.0000500	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

Sample ID **ICV-160518** Batch ID: **R85875** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 9:35:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	101	80	120			
Acenaphthylene	2.01	0.0000500	2.00	0	101	80	120			
Anthracene	1.88	0.0000500	2.00	0	93.9	80	120			
Benzo[a]anthracene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[b]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.11	0.0000500	2.00	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Chrysene	2.11	0.0000500	2.00	0	106	80	120			
Dibenz[a,h]anthracene	2.11	0.0000500	2.00	0	105	80	120			
Fluoranthene	2.14	0.0000500	2.00	0	107	80	120			
Fluorene	2.02	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.10	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.88	0.0000500	2.00	0	94.0	80	120			
Pyrene	2.14	0.0000500	2.00	0	107	80	120			
IS: Acenaphthene-d10	4.00		4.00		87.5	50	200			
IS: Chrysene-d12	4.00		4.00		88.7	50	200			
IS: Naphthalene-d8	4.00		4.00		88.3	50	200			
IS: Perylene-d12	4.00		4.00		87.9	50	200			
IS: Phenanthrene-d10	4.00		4.00		86.7	50	200			
Surr: 2-Fluorobiphenyl	1910		2000		95.7	65	120			
Surr: 4-Terphenyl-d14	2040		2000		102	65	120			

Sample ID **ICV2-160518** Batch ID: **R85875** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 8:49:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	100	80	120			
Acenaphthylene	1.99	0.0000500	2.00	0	99.7	80	120			
Anthracene	1.86	0.0000500	2.00	0	93.0	80	120			
Benzo[a]anthracene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.13	0.0000500	2.00	0	107	80	120			
Benzo[b]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.14	0.0000500	2.00	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.19	0.0000500	2.00	0	109	80	120			
Chrysene	2.10	0.0000500	2.00	0	105	80	120			
Dibenz[a,h]anthracene	2.13	0.0000500	2.00	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518B**

Sample ID **ICV2-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 8:49:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.07	0.0000500	2.00	0	104	80	120			
Fluorene	2.01	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.11	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.86	0.0000500	2.00	0	93.1	80	120			
Pyrene	2.07	0.0000500	2.00	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.00		96.3	50	200			
IS: Chrysene-d12	4.00		4.00		93.5	50	200			
IS: Naphthalene-d8	4.00		4.00		94.6	50	200			
IS: Perylene-d12	4.00		4.00		93.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		93.3	50	200			
Surr: 2-Fluorobiphenyl	1920		2000		96.2	65	120			
Surr: 4-Terphenyl-d14	2030		2000		102	65	120			

Sample ID **CCV-160520**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **CCV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/19/2016 2:59:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.989	0.0000500	1.00	0	98.9	50	150			
Acenaphthylene	0.998	0.0000500	1.00	0	99.8	50	150			
Anthracene	0.938	0.0000500	1.00	0	93.8	50	150			
Benzo[a]anthracene	1.00	0.0000500	1.00	0	100	50	150			
Benzo[a]pyrene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[b]fluoranthene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[e]pyrene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[g,h,i]perylene	1.02	0.0000500	1.00	0	102	50	150			
Benzo[j]fluoranthene	1.01	0.0000500	1.00	0	101	50	150			N
Benzo[k]fluoranthene	1.04	0.0000500	1.00	0	104	50	150			
Chrysene	1.00	0.0000500	1.00	0	100	50	150			
Dibenz[a,h]anthracene	1.02	0.0000500	1.00	0	102	50	150			
Fluoranthene	0.983	0.0000500	1.00	0	98.3	50	150			
Fluorene	0.978	0.0000500	1.00	0	97.8	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0000500	1.00	0	102	50	150			
Phenanthrene	0.940	0.0000500	1.00	0	94.0	50	150			
Pyrene	0.984	0.0000500	1.00	0	98.4	50	150			
IS: Acenaphthene-d10	4.00		4.00		105	50	200			
IS: Chrysene-d12	4.00		4.00		94.9	50	200			
IS: Naphthalene-d8	4.00		4.00		100	50	200			
IS: Perylene-d12	4.00		4.00		96.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		95.2	50	200			
Surr: 2-Fluorobiphenyl	1000		1000		100	50	150			
Surr: 4-Terphenyl-d14	999		1000		99.9	50	150			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

The QC data in batch 75241 applies to the following samples: 1605144-13A, 1605144-14A, 1605144-15A, 1605144-17A, 1605144-18A, 1605144-19A, 1605144-20A, 1605144-21A

Sample ID **LCS-75241** Batch ID: **75241** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 10:11:00 AM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.807	0.0100	1.000	0	80.7	44	111			
Acenaphthylene	0.822	0.0100	1.000	0	82.2	39	116			
Anthracene	0.768	0.0100	1.000	0	76.8	50	114			
Benzo[a]anthracene	0.826	0.0100	1.000	0	82.6	54	122			
Benzo[a]pyrene	0.801	0.0100	1.000	0	80.1	50	125			
Benzo[b]fluoranthene	0.826	0.0100	1.000	0	82.6	53	128			
Benzo[e]pyrene	0.920	0.0100	1.000	0	92.0	43	140			
Benzo[g,h,i]perylene	0.810	0.0100	1.000	0	81.0	49	127			
Benzo[j]fluoranthene	0.854	0.0100	1.000	0	85.4	45	125			N
Benzo[k]fluoranthene	0.827	0.0100	1.000	0	82.7	56	123			
Chrysene	0.830	0.0100	1.000	0	83.0	57	118			
Dibenz[a,h]anthracene	0.809	0.0100	1.000	0	80.9	50	129			
Fluoranthene	0.900	0.0100	1.000	0	90.0	55	119			
Fluorene	0.757	0.0100	1.000	0	75.7	47	114			
Indeno[1,2,3-cd]pyrene	0.818	0.0100	1.000	0	81.8	49	130			
Phenanthrene	0.781	0.0100	1.000	0	78.1	49	113			
Pyrene	0.911	0.0100	1.000	0	91.1	55	117			
IS: Acenaphthene-d10	4.00		4.000		81.4	50	200			
IS: Chrysene-d12	4.00		4.000		81.8	50	200			
IS: Naphthalene-d8	4.00		4.000		84.5	50	200			
IS: Perylene-d12	4.00		4.000		83.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		68.8	50	200			
Surr: 2-Fluorobiphenyl	0.811		1.000		81.1	46	115			
Surr: 4-Terphenyl-d14	0.761		1.000		76.1	58	133			

Sample ID **MB-75241** Batch ID: **75241** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 10:48:00 AM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

Sample ID	**MB-75241**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MBLK**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/25/2016 10:48:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		91.7	50	200			
IS: Chrysene-d12	4.00		4.000		83.6	50	200			
IS: Naphthalene-d8	4.00		4.000		88.6	50	200			
IS: Perylene-d12	4.00		4.000		86.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.7	50	200			
Surr: 2-Fluorobiphenyl	0.807		1.000		80.7	46	115			
Surr: 4-Terphenyl-d14	0.745		1.000		74.5	58	133			

Sample ID	**SBLK-160525**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/25/2016 9:59:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID	**SBLK-160525**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/25/2016 9:59:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.000160		0							
Surr: 4-Terphenyl-d14	0.000420		0							

Sample ID	**1605135-14AMS**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/26/2016 12:27:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.775	0.100	1.000	0	77.5	44	111			
Acenaphthylene	0.785	0.100	1.000	0	78.5	39	116			
Anthracene	0.734	0.100	1.000	0	73.4	50	114			
Benzo[a]anthracene	0.701	0.100	1.000	0	70.1	54	122			
Benzo[a]pyrene	0.666	0.100	1.000	0	66.6	50	125			
Benzo[b]fluoranthene	0.675	0.100	1.000	0	67.5	53	128			
Benzo[e]pyrene	0.779	0.100	1.000	0	77.9	43	140			
Benzo[g,h,i]perylene	0.682	0.100	1.000	0	68.2	49	127			
Benzo[j]fluoranthene	0.683	0.100	1.000	0	68.3	45	125			N
Benzo[k]fluoranthene	0.625	0.100	1.000	0	62.5	56	123			
Chrysene	0.710	0.100	1.000	0	71.0	57	118			
Dibenz[a,h]anthracene	0.619	0.100	1.000	0	61.9	50	129			
Fluoranthene	0.785	0.100	1.000	0	78.5	55	119			
Fluorene	0.700	0.100	1.000	0	70.0	47	114			
Indeno[1,2,3-cd]pyrene	0.673	0.100	1.000	0	67.3	49	130			
Phenanthrene	0.760	0.100	1.000	0	76.0	49	113			
Pyrene	0.785	0.100	1.000	0	78.5	55	117			
IS: Acenaphthene-d10	40.0		4.000		106	50	200			
IS: Chrysene-d12	40.0		4.000		85.5	50	200			
IS: Naphthalene-d8	40.0		4.000		102	50	200			
IS: Perylene-d12	40.0		4.000		88.4	50	200			
IS: Phenanthrene-d10	40.0		4.000		78.7	50	200			
Surr: 2-Fluorobiphenyl	0.876		1.000		87.6	46	115			
Surr: 4-Terphenyl-d14	0.730		1.000		73.0	58	133			

Sample ID	**1605135-14AMSD**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/26/2016 1:04:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.806	0.0985	0.9852	0	81.8	44	111	3.93	20	
Acenaphthylene	0.817	0.0985	0.9852	0	82.9	39	116	3.99	20	
Anthracene	0.751	0.0985	0.9852	0	76.2	50	114	2.28	20	
Benzo[a]anthracene	0.714	0.0985	0.9852	0	72.5	54	122	1.79	20	
Benzo[a]pyrene	0.675	0.0985	0.9852	0	68.5	50	125	1.43	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID	**1605135-14AMSD**	Batch ID:	**75241**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**GCMS8_160525A**	Analysis Date:	**5/26/2016 1:04:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.683	0.0985	0.9852	0	69.3	53	128	1.13	20	
Benzo[e]pyrene	0.789	0.0985	0.9852	0	80.1	43	140	1.31	20	
Benzo[g,h,i]perylene	0.691	0.0985	0.9852	0	70.1	49	127	1.29	20	
Benzo[j]fluoranthene	0.695	0.0985	0.9852	0	70.6	45	125	1.75	20	N
Benzo[k]fluoranthene	0.637	0.0985	0.9852	0	64.6	56	123	1.81	20	
Chrysene	0.727	0.0985	0.9852	0	73.7	57	118	2.30	20	
Dibenz[a,h]anthracene	0.629	0.0985	0.9852	0	63.8	50	129	1.58	20	
Fluoranthene	0.806	0.0985	0.9852	0	81.8	55	119	2.63	20	
Fluorene	0.715	0.0985	0.9852	0	72.6	47	114	2.05	20	
Indeno[1,2,3-cd]pyrene	0.682	0.0985	0.9852	0	69.2	49	130	1.32	20	
Phenanthrene	0.773	0.0985	0.9852	0	78.4	49	113	1.72	20	
Pyrene	0.815	0.0985	0.9852	0	82.7	55	117	3.74	20	
IS: Acenaphthene-d10	39.4		3.941		104	50	200	0	0	
IS: Chrysene-d12	39.4		3.941		85.2	50	200	0	0	
IS: Naphthalene-d8	39.4		3.941		101	50	200	0	0	
IS: Perylene-d12	39.4		3.941		89.3	50	200	0	0	
IS: Phenanthrene-d10	39.4		3.941		76.2	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.880		0.9852		89.3	46	115	0	0	
Surr: 4-Terphenyl-d14	0.729		0.9852		74.0	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID **ICV-160525** Batch ID: **R86005** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 9:31:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.04	0.0100	2.000	0	102	80	120			
Acenaphthylene	2.06	0.0100	2.000	0	103	80	120			
Anthracene	1.86	0.0100	2.000	0	92.8	80	120			
Benzo[a]anthracene	2.12	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.11	0.0100	2.000	0	105	80	120			
Benzo[e]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.10	0.0100	2.000	0	105	80	120			
Benzo[j]fluoranthene	2.10	0.0100	2.000	0	105	80	120			N
Benzo[k]fluoranthene	2.05	0.0100	2.000	0	103	80	120			
Chrysene	2.10	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.11	0.0100	2.000	0	106	80	120			
Fluoranthene	2.07	0.0100	2.000	0	103	80	120			
Fluorene	1.90	0.0100	2.000	0	94.9	80	120			
Indeno[1,2,3-cd]pyrene	2.12	0.0100	2.000	0	106	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.6	80	120			
Pyrene	2.06	0.0100	2.000	0	103	80	120			
IS: Acenaphthene-d10	4.00		4.000		97.9	50	200			
IS: Chrysene-d12	4.00		4.000		83.1	50	200			
IS: Naphthalene-d8	4.00		4.000		89.7	50	200			
IS: Perylene-d12	4.00		4.000		86.5	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.1	50	200			
Surr: 2-Fluorobiphenyl	2.22		2.000		111	65	120			
Surr: 4-Terphenyl-d14	1.94		2.000		97.2	65	120			

Sample ID **ICV2-160525** Batch ID: **R86005** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160525A** Analysis Date: **5/25/2016 8:44:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.07	0.0100	2.000	0	103	80	120			
Anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Benzo[a]anthracene	2.12	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.10	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.10	0.0100	2.000	0	105	80	120			
Benzo[e]pyrene	2.13	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.12	0.0100	2.000	0	106	80	120			
Benzo[j]fluoranthene	2.08	0.0100	2.000	0	104	80	120			N
Benzo[k]fluoranthene	2.07	0.0100	2.000	0	104	80	120			
Chrysene	2.12	0.0100	2.000	0	106	80	120			
Dibenz[a,h]anthracene	2.13	0.0100	2.000	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160525A**

Sample ID **ICV2-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/25/2016 8:44:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.01	0.0100	2.000	0	100	80	120			
Fluorene	1.89	0.0100	2.000	0	94.4	80	120			
Indeno[1,2,3-cd]pyrene	2.13	0.0100	2.000	0	107	80	120			
Phenanthrene	1.88	0.0100	2.000	0	93.8	80	120			
Pyrene	2.01	0.0100	2.000	0	100	80	120			
IS: Acenaphthene-d10	4.00		4.000		101	50	200			
IS: Chrysene-d12	4.00		4.000		81.0	50	200			
IS: Naphthalene-d8	4.00		4.000		91.7	50	200			
IS: Perylene-d12	4.00		4.000		84.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		81.6	50	200			
Surr: 2-Fluorobiphenyl	2.23		2.000		112	65	120			
Surr: 4-Terphenyl-d14	1.99		2.000		99.6	65	120			

Sample ID **CCV-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/26/2016 2:55:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.01	0.0100	1.000	0	101	50	150			
Acenaphthylene	1.03	0.0100	1.000	0	103	50	150			
Anthracene	0.920	0.0100	1.000	0	92.0	50	150			
Benzo[a]anthracene	1.02	0.0100	1.000	0	102	50	150			
Benzo[a]pyrene	1.01	0.0100	1.000	0	101	50	150			
Benzo[b]fluoranthene	1.02	0.0100	1.000	0	102	50	150			
Benzo[e]pyrene	1.03	0.0100	1.000	0	103	50	150			
Benzo[g,h,i]perylene	1.00	0.0100	1.000	0	100	50	150			
Benzo[j]fluoranthene	1.01	0.0100	1.000	0	101	50	150			N
Benzo[k]fluoranthene	0.990	0.0100	1.000	0	99.0	50	150			
Chrysene	1.02	0.0100	1.000	0	102	50	150			
Dibenz[a,h]anthracene	1.01	0.0100	1.000	0	101	50	150			
Fluoranthene	1.00	0.0100	1.000	0	100	50	150			
Fluorene	0.926	0.0100	1.000	0	92.6	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0100	1.000	0	102	50	150			
Phenanthrene	0.939	0.0100	1.000	0	93.9	50	150			
Pyrene	1.01	0.0100	1.000	0	101	50	150			
IS: Acenaphthene-d10	4.00		4.000		123	50	200			
IS: Chrysene-d12	4.00		4.000		99.1	50	200			
IS: Naphthalene-d8	4.00		4.000		115	50	200			
IS: Perylene-d12	4.00		4.000		102	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.9	50	200			
Surr: 2-Fluorobiphenyl	1.11		1.000		111	50	150			
Surr: 4-Terphenyl-d14	0.982		1.000		98.2	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160519A

The QC data in batch 75243 applies to the following samples: 1605144-17A, 1605144-18A, 1605144-19A, 1605144-20A, 1605144-21A

Sample ID	**1605187-01A DUP**	Batch ID:	**75243**	TestNo:	**D2216**	Units:	**WT%**
SampType:	**DUP**	Run ID:	**PMOIST_160519A**	Analysis Date:	**5/20/2016 9:12:00 AM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	3.08	0	0	3.135				1.83	30	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

DHL Analytical, Inc.

Date: *03-Jun-16*

CLIENT: Arcadis
Work Order: 1605144
Project: Laredo SGR

MQL SUMMARY REPORT

TestNo: SW6020A	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Lead	0.100	0.300

TestNo: SW6020A	MDL	MQL
Analyte	**mg/L**	**mg/L**
Lead	0.000300	0.00100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Acenaphthene	0.00500	0.0100
Acenaphthylene	0.00500	0.0100
Anthracene	0.00500	0.0100
Benzo[a]anthracene	0.00500	0.0100
Benzo[a]pyrene	0.00500	0.0100
Benzo[b]fluoranthene	0.00500	0.0100
Benzo[e]pyrene	0.00500	0.0100
Benzo[g,h,i]perylene	0.00500	0.0100
Benzo[j]fluoranthene	0.00500	0.0100
Benzo[k]fluoranthene	0.00500	0.0100
Chrysene	0.00500	0.0100
Dibenz[a,h]anthracene	0.00500	0.0100
Fluoranthene	0.00500	0.0100
Fluorene	0.00500	0.0100
Indeno[1,2,3-cd]pyrene	0.00500	0.0100
Phenanthrene	0.00500	0.0100
Pyrene	0.00500	0.0100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/L**	**mg/L**
Acenaphthene	0.0000250	0.0000500
Acenaphthylene	0.0000250	0.0000500
Anthracene	0.0000250	0.0000500
Benzo[a]anthracene	0.0000250	0.0000500
Benzo[a]pyrene	0.0000250	0.0000500
Benzo[b]fluoranthene	0.0000250	0.0000500
Benzo[e]pyrene	0.0000250	0.0000500
Benzo[g,h,i]perylene	0.0000250	0.0000500
Benzo[j]fluoranthene	0.0000250	0.0000500
Benzo[k]fluoranthene	0.0000250	0.0000500
Chrysene	0.0000250	0.0000500
Dibenz[a,h]anthracene	0.0000250	0.0000500
Fluoranthene	0.0000250	0.0000500
Fluorene	0.0000250	0.0000500
Indeno[1,2,3-cd]pyrene	0.0000250	0.0000500
Phenanthrene	0.0000250	0.0000500
Pyrene	0.0000250	0.0000500

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

GCMS6
For

DHL Work Order
1605144

GCMS6_160525A
For

DHL Work Order
1605144

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS6_160525A
Batch Number(s): See Run Log.	SOP: ORGANICS-PAH-01
Matrix: See Run Log.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List

EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	x
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	x
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Analyst: Karyn Lane Lauren Garcia Date: 5/26/2016

Second-Level Review: Janice Whitt Date: 6/1/2016

REVIEWED BY
By Janice Whitt at 12:52:19 PM, 6/1/2016

DHL Analytical, Inc.

Run ID: **GCMS6_160525A** **Run No.:** 86008

Analytical Run Date: 5/25/2016 **InstrumentID:** GCMS6

Analyst: Karyn Lane **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160525	1	PAH_LL_SDOD1	TUNE	R86008	5/25/2016 8:58:00 AM		
ICV-160525	1	PAH_LL_SDOD1	ICV	R86008	5/25/2016 9:34:00 AM		
LCS-75281	1	PAH_LL_SDOD1	LCS	75281	5/25/2016 10:14:00 AM		
MB-75281	1	PAH_LL_SDOD1	MBLK	75281	5/25/2016 10:53:00 AM		
1605135-36A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 11:33:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605135-37A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 12:13:00 PM		
1605135-38A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 12:53:00 PM		
1605135-39A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 1:32:00 PM		
1605135-40A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 2:12:00 PM		
1605135-41A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 2:52:00 PM		
1605135-42A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 3:32:00 PM		
1605144-01A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 4:11:00 PM		
1605144-02A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 4:51:00 PM		
1605144-03A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 5:31:00 PM		
1605144-04A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 6:12:00 PM		
1605144-05A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 6:52:00 PM		
1605135-36AMS	10	PAH_LL_SDOD1	MS	75281	5/25/2016 7:32:00 PM		
1605135-36AMSD	10	PAH_LL_SDOD1	MSD	75281	5/25/2016 8:12:00 PM		
DFTPP2-160525	1	PAH_LL_SDOD1	TUNE	R86008	5/25/2016 8:51:00 PM		
ICV2-160525	1	PAH_LL_SDOD1	ICV	R86008	5/25/2016 9:28:00 PM		
SB-160525	1	PAH_LL_SDOD1	SBLK	75281	5/25/2016 10:47:00 PM		
1605144-06A	10	PAH_LL_SDOD1	SAMP	75281	5/25/2016 11:27:00 PM		
1605144-07A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 12:07:00 AM		
1605144-08A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 12:47:00 AM		
1605144-09A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 1:27:00 AM		
1605144-10A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 2:06:00 AM		
1605144-11A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 2:46:00 AM		
1605144-12A	10	PAH_LL_SDOD1	SAMP	75281	5/26/2016 3:25:00 AM		
CCV1-160525	1	PAH_LL_SDOD1	CCV	R86008	5/26/2016 4:05:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\HPCHEM\1\SEQUENCE\160525.S
Comment:
Operator: AR
Data Path: C:\HPCHEM\1\DATA\160525\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	16052501	DFTPPPAH	DFTPP-160525
2	Sample	2	16052502	PP160421	ICV-160525
3	Sample	3	16052503	PP160421	LCS 75281
4	Sample	4	16052504	PP160421	MB-75281
5	Sample	5	16052505	PP160421	1605135-36A
6	Sample	6	16052506	PP160421	1605135-37A
7	Sample	7	16052507	PP160421	1605135-38A
8	Sample	8	16052508	PP160421	1605135-39A
9	Sample	9	16052509	PP160421	1605135-40A
10	Sample	10	16052510	PP160421	1605135-41A
11	Sample	11	16052511	PP160421	1605135-42A
12	Sample	12	16052512	PP160421	1605144-01A
13	Sample	13	16052513	PP160421	1605144-02A
14	Sample	14	16052514	PP160421	1605144-03A
15	Sample	15	16052515	PP160421	1605144-04A
16	Sample	16	16052516	PP160421	1605144-05A
17	Sample	17	16052517	PP160421	1605135-36AMS
18	Sample	18	16052518	PP160421	1605135-36AMSD
19	Sample	19	16052519	DFTPPPAH	DFTPP2-160525
20	Sample	20	16052520	PP160421	ICV2-160525
21	Sample	21	16052521	PP160421	SBLK
22	Sample	22	16052522	PP160421	SB-160525
23	Sample	23	16052523	PP160421	1605144-06A
24	Sample	24	16052524	PP160421	1605144-07A
25	Sample	25	16052525	PP160421	1605144-08A
26	Sample	26	16052526	PP160421	1605144-09A
27	Sample	27	16052527	PP160421	1605144-10A
28	Sample	28	16052528	PP160421	1605144-11A
29	Sample	29	16052529	PP160421	1605144-12A
30	Sample	30	16052530	PP160421	CCV1-160525

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 8:54:01 AM**
Digestion:
Prep End Date: **5/23/2016 3:00:00 PM**

Prep Batch **75281** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-36A	Soil		10.04	10	0.996	12 of 3	
1605135-36AMS	Soil		10.12	10	0.988	1 of	
1605135-36AMSD	Soil		10.11	10	0.989	1 of	
1605135-37A	Soil		10.02	10	0.998	1 of 1	
1605135-38A	Soil		10.01	10	0.999	1 of 1	
1605135-39A	Soil		10.01	10	0.999	1 of 1	
1605135-40A	Soil		10.02	10	0.998	1 of 1	
1605135-41A	Soil		10.06	10	0.994	1 of 1	
1605135-42A	Soil		10.05	10	0.995	1 of 1	
1605144-01A	Soil		10.07	10	0.993	1 of 1	
1605144-02A	Soil		10.17	10	0.983	1 of 1	
1605144-03A	Soil		10.16	10	0.984	1 of 1	
1605144-04A	Soil		10	10	1.000	1 of 1	
1605144-05A	Soil		10.02	10	0.998	1 of 1	
1605144-06A	Soil		10.48	10	0.954	1 of 1	
1605144-07A	Soil		10.03	10	0.997	1 of 1	
1605144-08A	Soil		10.2	10	0.980	1 of 1	
1605144-09A	Soil		10.02	10	0.998	1 of 1	
1605144-10A	Soil		10.09	10	0.991	1 of 1	
1605144-11A	Soil		10.07	10	0.993	1 of 1	
1605144-12A	Soil		10.02	10	0.998	1 of 1	
LCS-75281	Soil		10	10	1.000	of	
MB-75281	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10383	1:1 MeCl2/Acetone	120	ml	05/19/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 12:13:51 PM, 6/1/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/23/2016 8:54:01 AM**
Digestion:
Prep End Date: 5/23/16 @ 3:00 PM

Prep Batch **75281** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605135-36A	Soil		10 .04	10	1.000	1,2	of	3	
1605135-36AMS	Soil		10 .12	10	1.000	1	of	3	
1605135-36AMSD	Soil		10 .11	10	1.000	1	of	3	
1605135-37A	Soil		10 .02	10	1.000	1	of	1	
1605135-38A	Soil		10 .01	10	1.000	1	of	1	
1605135-39A	Soil		10 .01	10	1.000	1	of	1	
1605135-40A	Soil		10 .02	10	1.000	1	of	1	
1605135-41A	Soil		10 .06	10	1.000	1	of	1	
1605135-42A	Soil		10 .05	10	1.000	1	of	1	
1605144-01A	Soil		10 .07	10	1.000	1	of	1	
1605144-02A	Soil		10 .17	10	1.000	1	of	1	
1605144-03A	Soil		10 .16	10	1.000	1	of	1	
1605144-04A	Soil		10 .00	10	1.000	1	of	1	
1605144-05A	Soil		10 .02	10	1.000	1	of	1	
1605144-06A	Soil		10 .48	10	1.000	1	of	1	
1605144-07A	Soil		10 .03	10	1.000	1	of	1	
1605144-08A	Soil		10 .20	10	1.000	1	of	1	
1605144-09A	Soil		10 .02	10	1.000	1	of	1	
1605144-10A	Soil		10 .09	10	1.000	1	of	1	
1605144-11A	Soil		10 .07	10	1.000	1	of	1	
1605144-12A	Soil		10 .02	10	1.000	1	of	1	
LCS-75281	Soil		10	10	1.000		of		
MB-75281	Soil		10	10	1.000		of		

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10383	1:1 MeCl2/Acetone	120	ml	05/19/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 12:13:48 PM, 6/1/2016

5/23/16 AR 5/23/16

DHL Analytical, Inc.

PREP BATCH REPORT

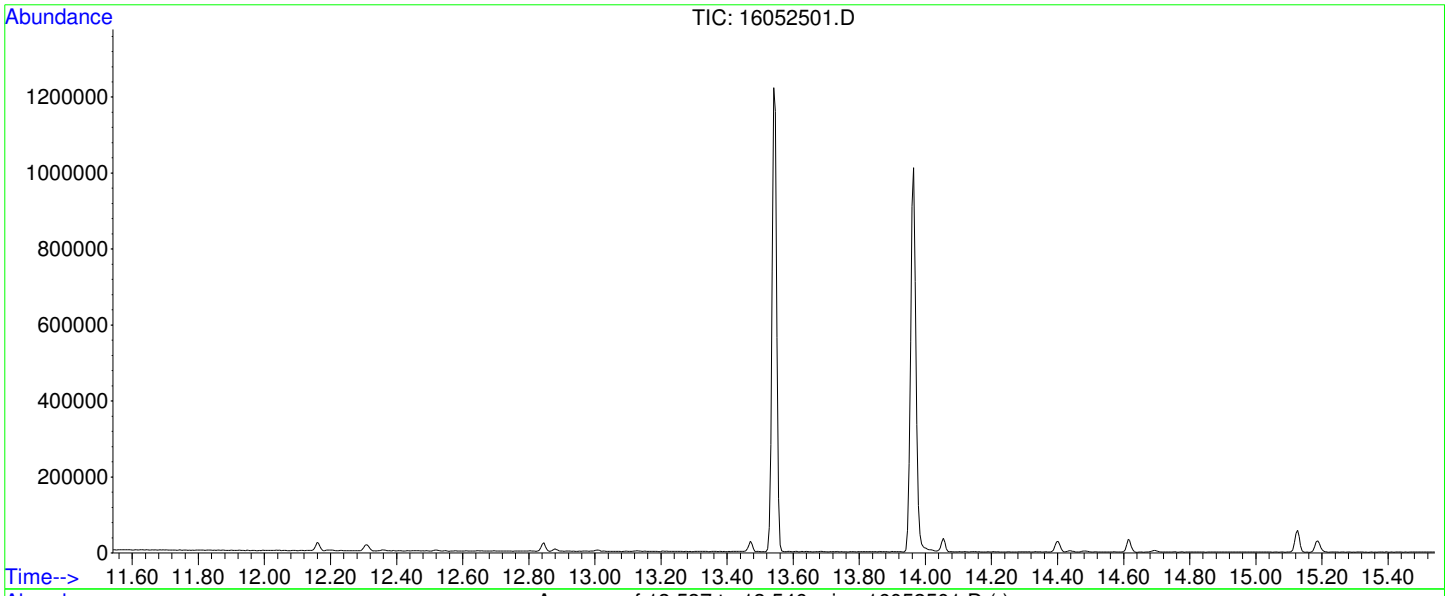
Prep Start Date: **5/17/2016 12:00:00 PM**
Digestion: **Start: 5/17/2016 1:20:00 PM / Stop: 5/19/2016 8:30:00 AM**
Prep End Date: **5/19/2016 1:00:00 PM**

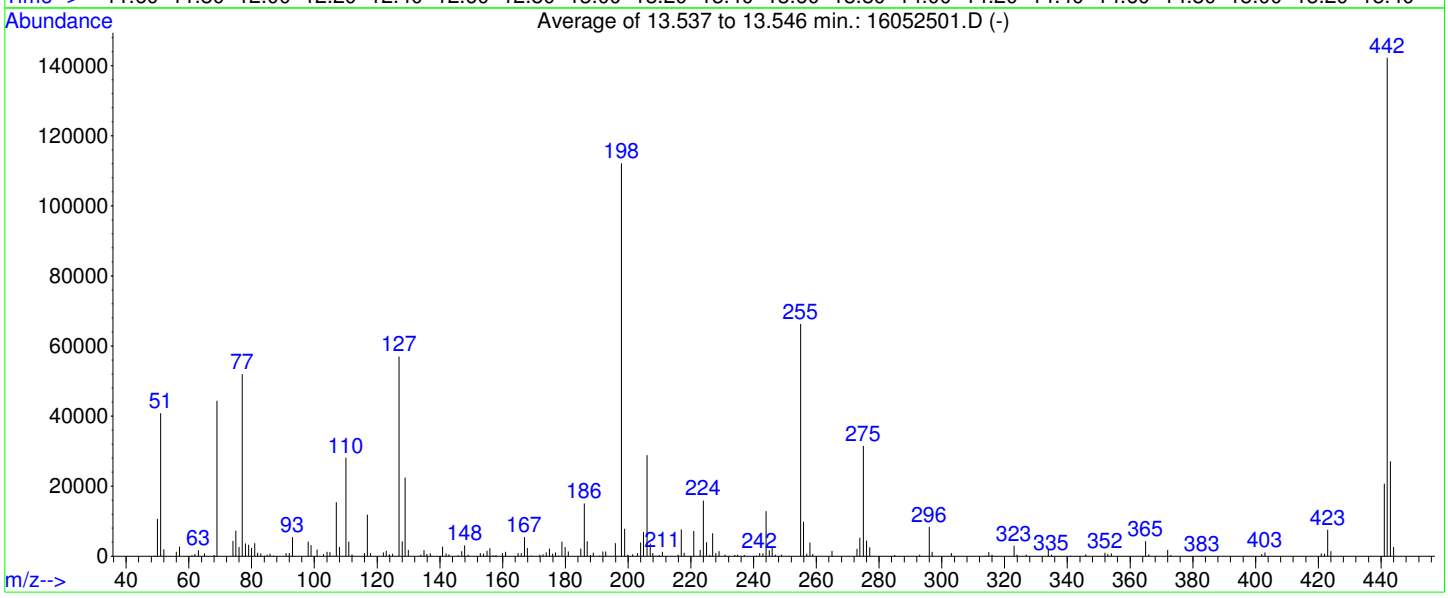
Prep Batch **75205** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605135-36A	Soil		0	0	#Num!	of 3	
Extra subsampled for MS/MSD							
1605135-37A	Soil		0	0	#Num!	1 of 1	
1605135-38A	Soil		0	0	#Num!	1 of 1	
1605135-39A	Soil		0	0	#Num!	1 of 1	
1605135-40A	Soil		0	0	#Num!	1 of 1	
1605135-41A	Soil		0	0	#Num!	1 of 1	
1605135-42A	Soil		0	0	#Num!	1 of 1	
1605144-01A	Soil		0	0	#Num!	1 of 1	
1605144-02A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-03A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-04A	Soil		0	0	#Num!	1 of 1	
1605144-05A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-06A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-07A	Soil		0	0	#Num!	1 of 1	
1605144-08A	Soil		0	0	#Num!	1 of 1	
1605144-09A	Soil		0	0	#Num!	1 of 1	
1605144-10A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-11A	Soil		0	0	#Num!	1 of 1	
Sieve only no subsampling hard clay							
1605144-12A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 12:13:59 PM, 6/1/2016

Data File : C:\HPCHEM\1\DATA\160525\16052501.D Vial: 1
Acq On : 25 May 2016 8:58 am Operator: AR
Sample : DFTPP-160525 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration



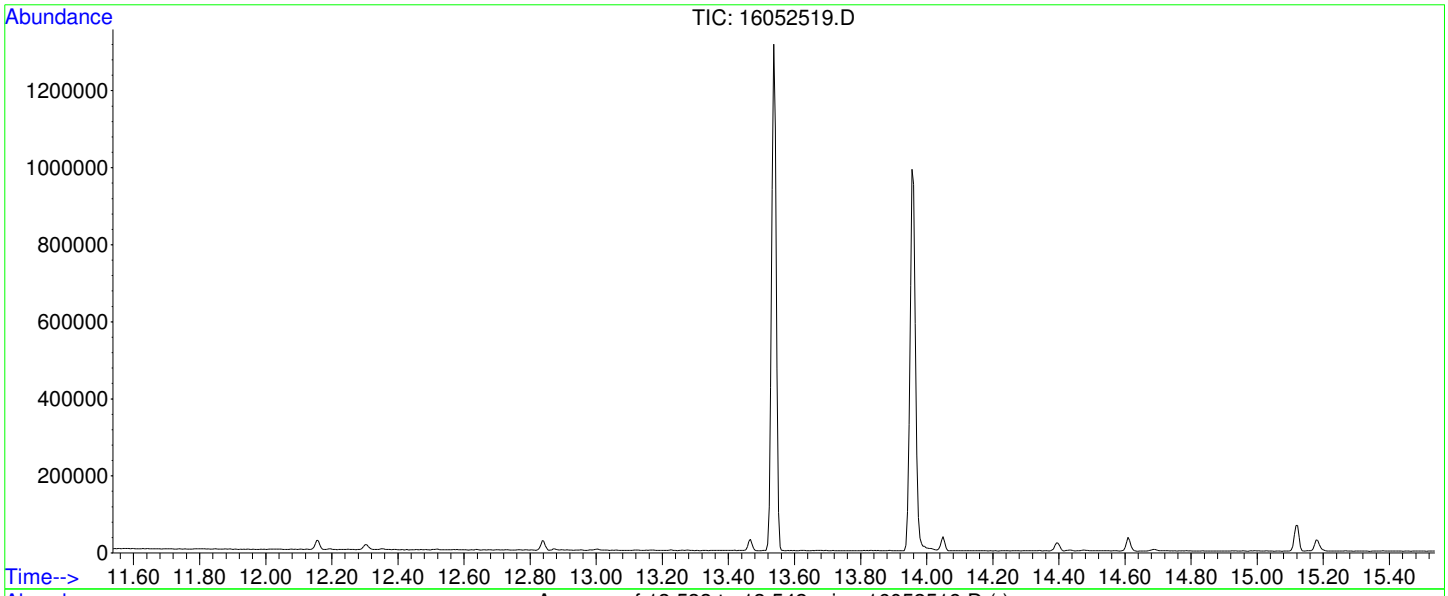


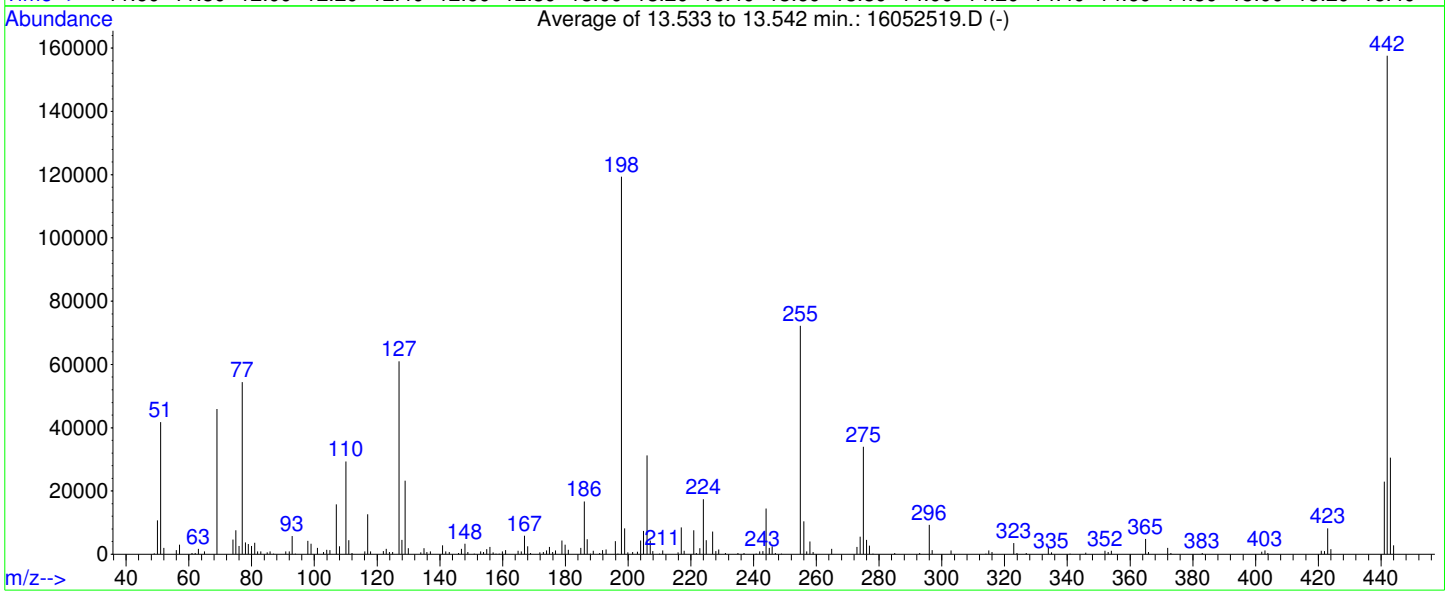
AutoFind: Scans 1584, 1585, 1586; Background Corrected with Scan 1578

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.4	40811	PASS
68	69	0.00	2	0.8	348	PASS
69	198	0.00	100	39.6	44405	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	50.8	57016	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	112152	PASS
199	198	5	9	7.0	7819	PASS
275	198	10	60	28.1	31501	PASS
365	198	1	200	3.9	4340	PASS
441	442	0.01	24	14.6	20724	PASS
442	198	50	400	126.9	142267	PASS
443	442	15	24	19.1	27112	PASS

REVIEWED BY
By Janice Whitt at 12:14:01 PM, 6/1/2016

Data File : C:\HPCHEM\1\DATA\160525\16052519.D Vial: 19
Acq On : 25 May 2016 8:51 pm Operator: AR
Sample : DFTPP2-160525 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration





AutoFind: Scans 1583, 1584, 1585; Background Corrected with Scan 1577

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.0	41794	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	38.5	45952	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	51.1	61045	PASS
197	198	0.00	2	0.2	213	PASS
198	198	100	100	100.0	119349	PASS
199	198	5	9	6.9	8197	PASS
275	198	10	60	28.5	33963	PASS
365	198	1	200	4.1	4874	PASS
441	442	0.01	24	14.6	22978	PASS
442	198	50	400	132.1	157616	PASS
443	442	15	24	19.4	30509	PASS

REVIEWED BY
By Janice Whitt at 12:14:03 PM, 6/1/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052502.D Vial: 2
Acq On : 25 May 2016 9:34 am Operator: AR
Sample : ICV-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1521214	4000.00	ug/kg	131
5) Acenaphthene-d10	13.25	164	1271940	4000.00	ug/kg	110
11) Phenanthrene-d10	15.34	188	2118305	4000.00	ug/kg	104
17) Chrysene-d12	21.05	240	2449305	4000.00	ug/kg	108
20) Perylene-d12	26.20	264	2201661	4000.00	ug/kg	107

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	745844	2010.17	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 50.25%			
16) 4-Terphenyl-d14	17.82	244	1009599	1842.19	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 46.05%			

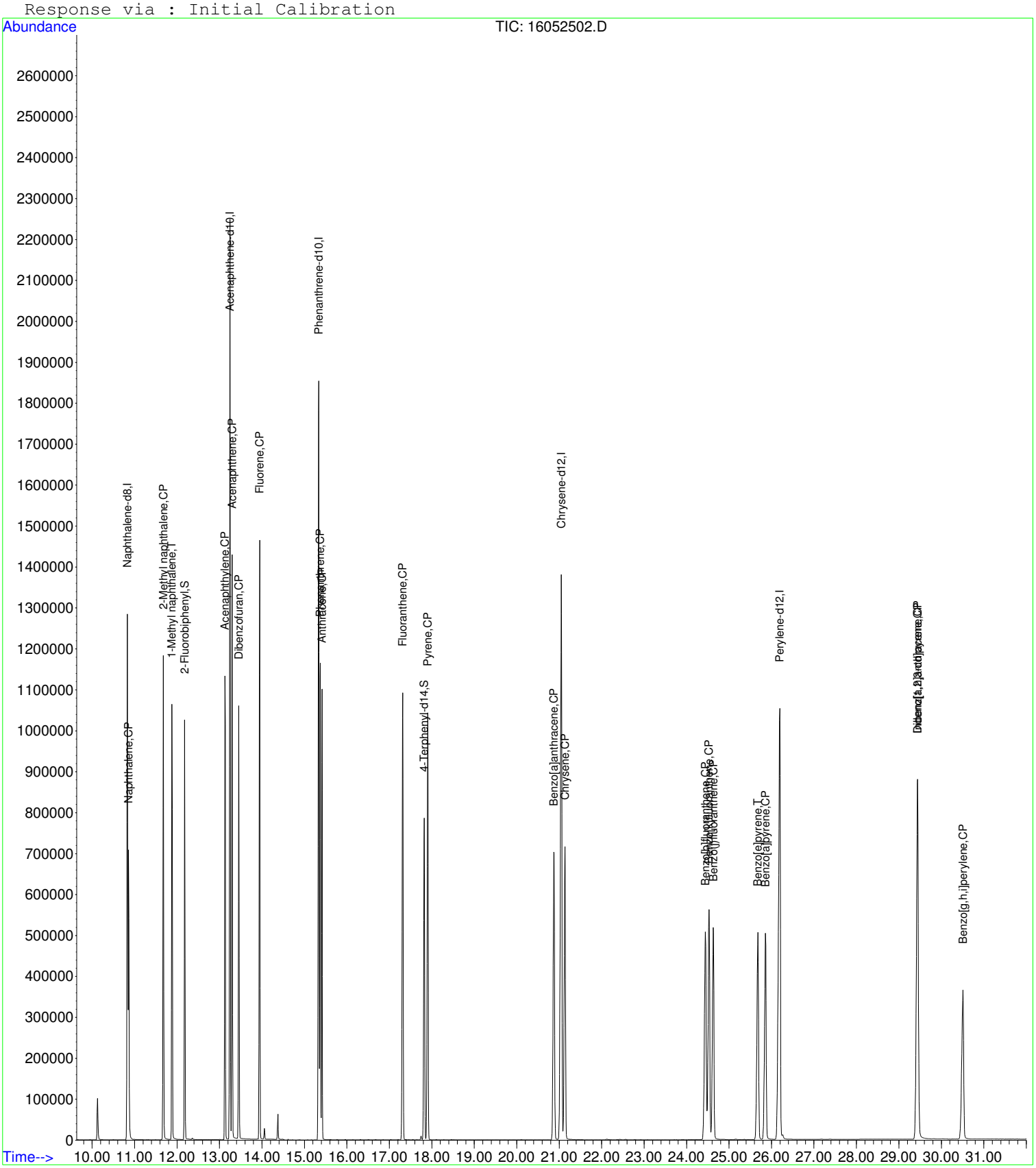
Target Compounds						Qvalue
2) Naphthalene	10.86	128	709737	1865.22	ug/kg	99
3) 2-Methyl naphthalene	11.68	142	617645	1837.60	ug/kg	99
4) 1-Methyl naphthalene	11.88	142	558552	1814.45	ug/kg	92
6) Dibenzofuran	13.45	168	887923	1862.61	ug/kg	98
8) Acenaphthylene	13.13	152	1077448	1966.96	ug/kg	99
9) Acenaphthene	13.30	154	631895	1858.53	ug/kg	98
10) Fluorene	13.95	166	758210	1836.26	ug/kg	98
12) Phenanthrene	15.37	178	1005639	1805.20	ug/kg	100
13) Anthracene	15.41	178	918976	1742.86	ug/kg	100
14) Fluoranthene	17.31	202	1100558	1909.09	ug/kg	99
15) Pyrene	17.90	202	1102805	1841.57	ug/kg	99
18) Benzo[a]anthracene	20.87	228	1093660	1905.95	ug/kg	99
19) Chrysene	21.13	228	1003949	1810.82	ug/kg	100
21) Benzo[b]fluoranthene	24.44	252	1080780	1862.51	ug/kg	100
22) Benzo[k]fluoranthene	24.53	252	1009879	1855.17	ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	916454	1889.95	ug/kg	99
24) Benzo[e]pyrene	25.68	252	969641	1865.86	ug/kg	100
25) Benzo[a]pyrene	25.86	252	973785	1833.71	ug/kg	99
26) Dibenz[a,h]anthracene	29.44	278	871865	1802.72	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.44	276	1012042	1754.08	ug/kg	98
28) Benzo[g,h,i]perylene	30.51	276	783204	1740.83	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052502.D Vial: 2
Acq On : 25 May 2016 9:34 am Operator: AR
Sample : ICV-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

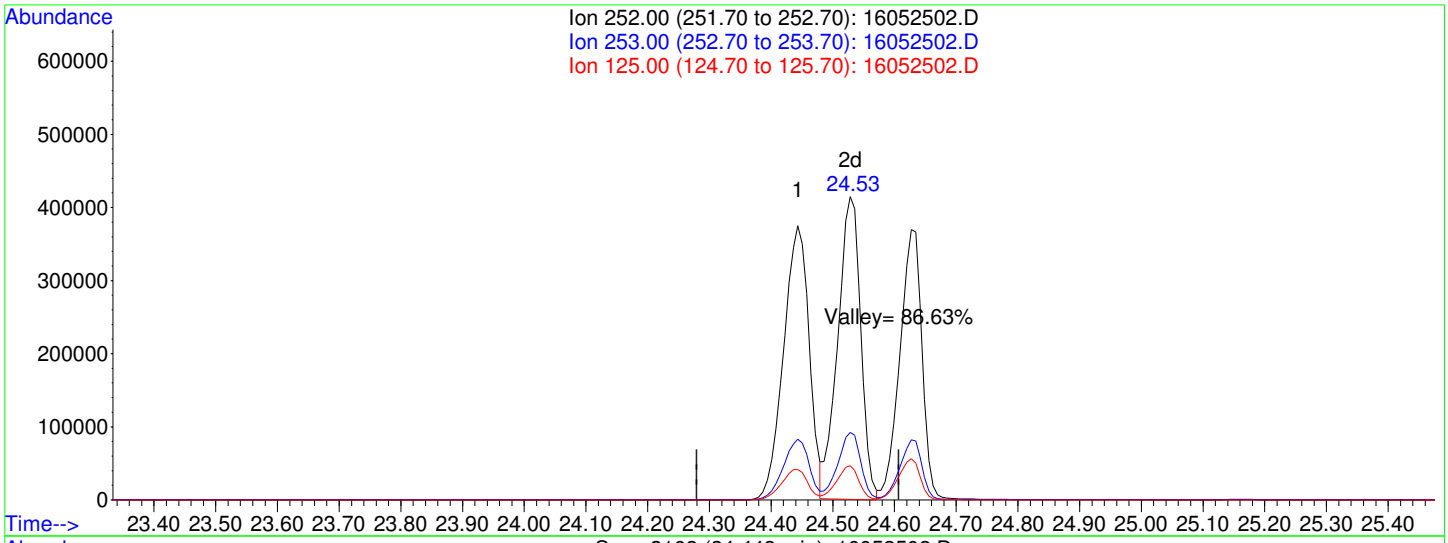
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

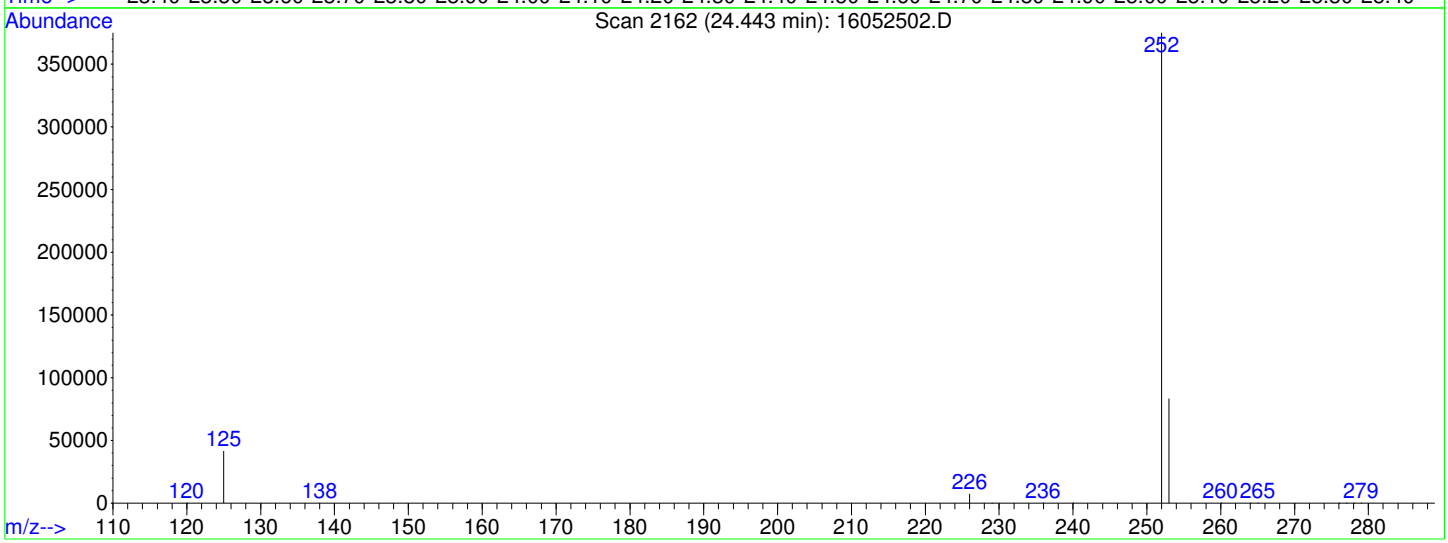


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160525\16052502.D Vial: 2
Acq On : 25 May 2016 9:34 am Operator: AR
Sample : ICV-160525 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Multiple Level Calibration





TIC: 16052502.D

(21) Benzo[b]fluoranthene (CP)

24.44min 1862.51ug/kg

response 1080780

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.11
125.00	11.00	11.09
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052503.D Vial: 3
Acq On : 25 May 2016 10:14 am Operator: AR
Sample : LCS 75281 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1193315	4000.00 ug/kg	103
5) Acenaphthene-d10	13.25	164	808464	4000.00 ug/kg	70
11) Phenanthrene-d10	15.33	188	1541875	4000.00 ug/kg	75
17) Chrysene-d12	21.04	240	1727529	4000.00 ug/kg	76
20) Perylene-d12	26.18	264	1552127	4000.00 ug/kg	75

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	171661	727.88 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.20%#		
16) 4-Terphenyl-d14	17.81	244	276427	692.96 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.32%#		

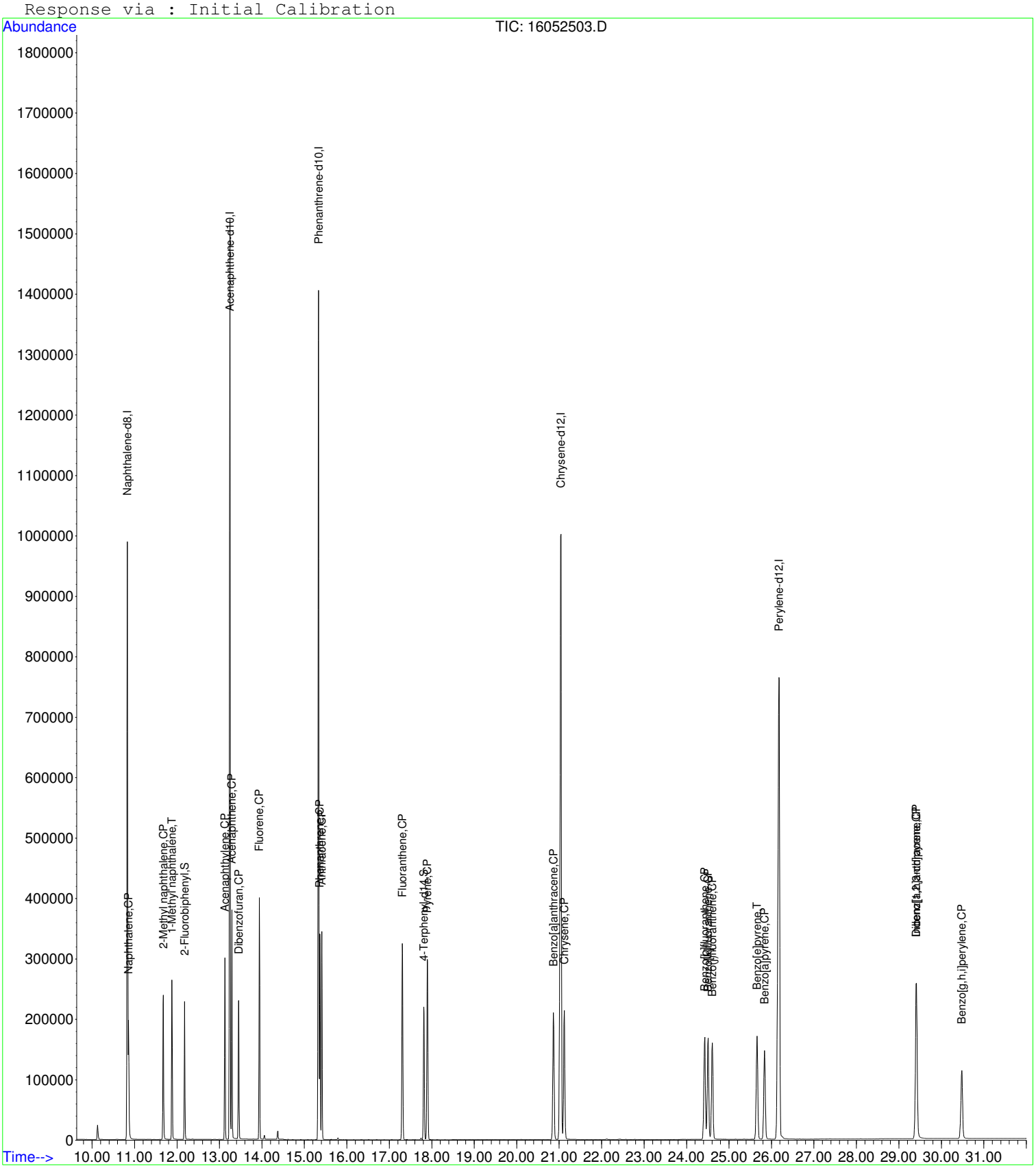
Target Compounds					Qvalue
2) Naphthalene	10.86	128	179846	602.51 ug/kg	99
3) 2-Methyl naphthalene	11.68	142	142501	540.46 ug/kg	97
4) 1-Methyl naphthalene	11.88	142	131368	544.01 ug/kg	94
6) Dibenzofuran	13.46	168	231780	764.94 ug/kg	99
8) Acenaphthylene	13.13	152	251148	721.33 ug/kg	99
9) Acenaphthene	13.29	154	146480	677.81 ug/kg	99
10) Fluorene	13.94	166	195209	743.79 ug/kg	99
12) Phenanthrene	15.36	178	288678	711.93 ug/kg	99
13) Anthracene	15.41	178	281708	734.00 ug/kg	99
14) Fluoranthene	17.31	202	323978	772.09 ug/kg	99
15) Pyrene	17.90	202	324260	743.91 ug/kg	99
18) Benzo[a]anthracene	20.87	228	310647	767.56 ug/kg	99
19) Chrysene	21.12	228	288045	736.62 ug/kg	100
21) Benzo[b]fluoranthene	24.43	252	311835	762.27 ug/kg	99
22) Benzo[k]fluoranthene	24.51	252	287314	748.68 ug/kg	99
23) Benzo(j)fluoranthene	24.61	252	275967	807.27 ug/kg	100
24) Benzo[e]pyrene	25.66	252	312192	852.14 ug/kg	100
25) Benzo[a]pyrene	25.84	252	275948	737.09 ug/kg	100
26) Dibenz[a,h]anthracene	29.41	278	248386	728.50 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.41	276	288082	708.26 ug/kg	95
28) Benzo[g,h,i]perylene	30.48	276	221843	699.44 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052503.D Vial: 3
Acq On : 25 May 2016 10:14 am Operator: AR
Sample : LCS 75281 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052504.D Vial: 4
Acq On : 25 May 2016 10:53 am Operator: AR
Sample : MB-75281 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1213768	4000.00	ug/kg	105
5) Acenaphthene-d10	13.25	164	825448	4000.00	ug/kg	72
11) Phenanthrene-d10	15.33	188	1501189	4000.00	ug/kg	74
17) Chrysene-d12	21.04	240	1702950	4000.00	ug/kg	75
20) Perylene-d12	26.18	264	1524157	4000.00	ug/kg	74

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.18	172	173421	720.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.01%#			
16) 4-Terphenyl-d14	17.81	244	269519	693.95	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.35%#			

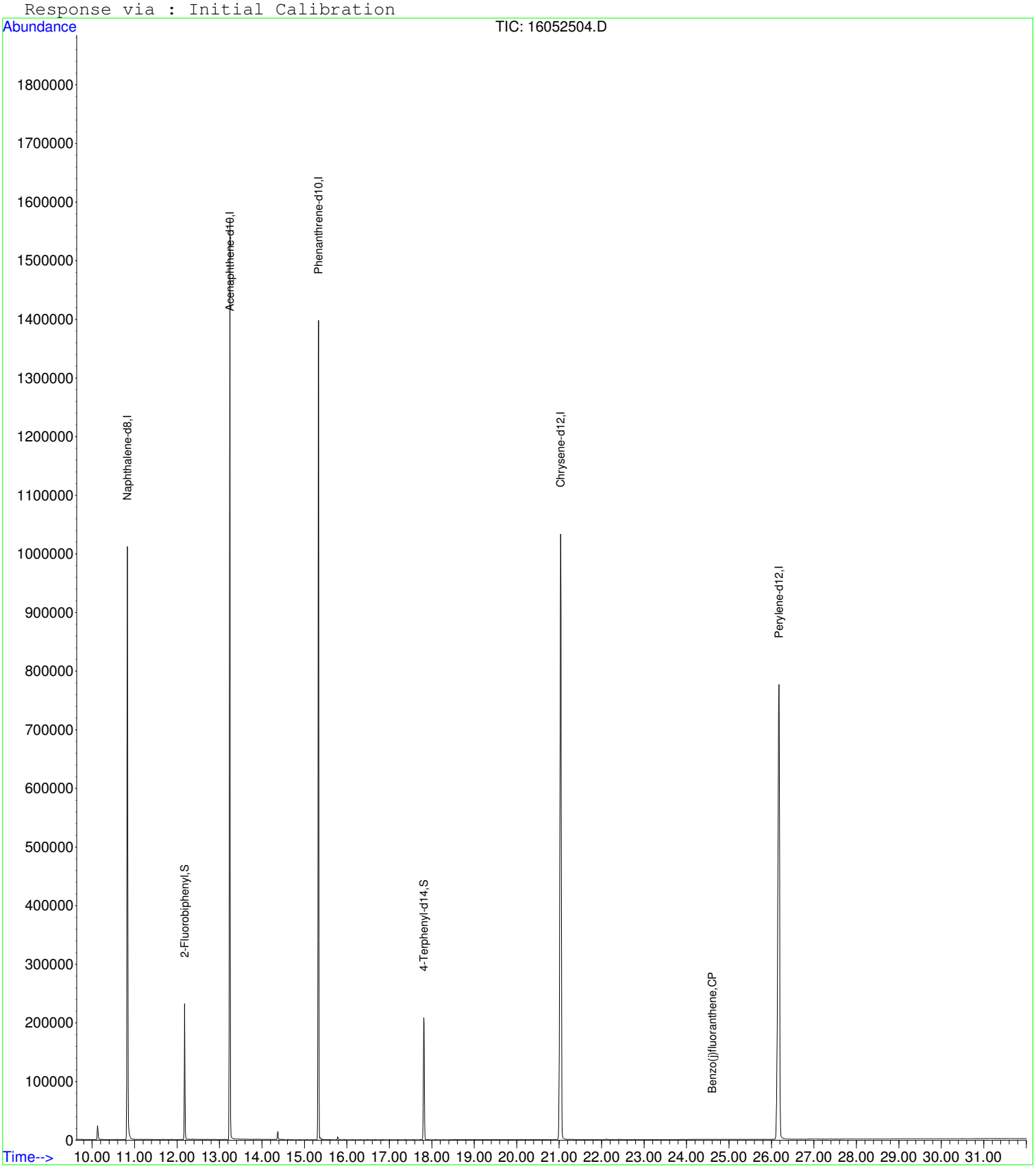
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.61	252	71	0.21	ug/kg	68

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052504.D Vial: 4
Acq On : 25 May 2016 10:53 am Operator: AR
Sample : MB-75281 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 25 16:23 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052512.D Vial: 12
Acq On : 25 May 2016 4:11 pm Operator: AR
Sample : 1605144-01A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:43 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1247227	4000.00 ug/kg	108
5) Acenaphthene-d10	13.25	164	818000	4000.00 ug/kg	71
11) Phenanthrene-d10	15.33	188	1398068	4000.00 ug/kg	68
17) Chrysene-d12	21.04	240	1665253	4000.00 ug/kg	73
20) Perylene-d12	26.18	264	1518957	4000.00 ug/kg	74

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18765	78.64 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.97%#	
16) 4-Terphenyl-d14	17.82	244	26283	72.66 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.82%#	

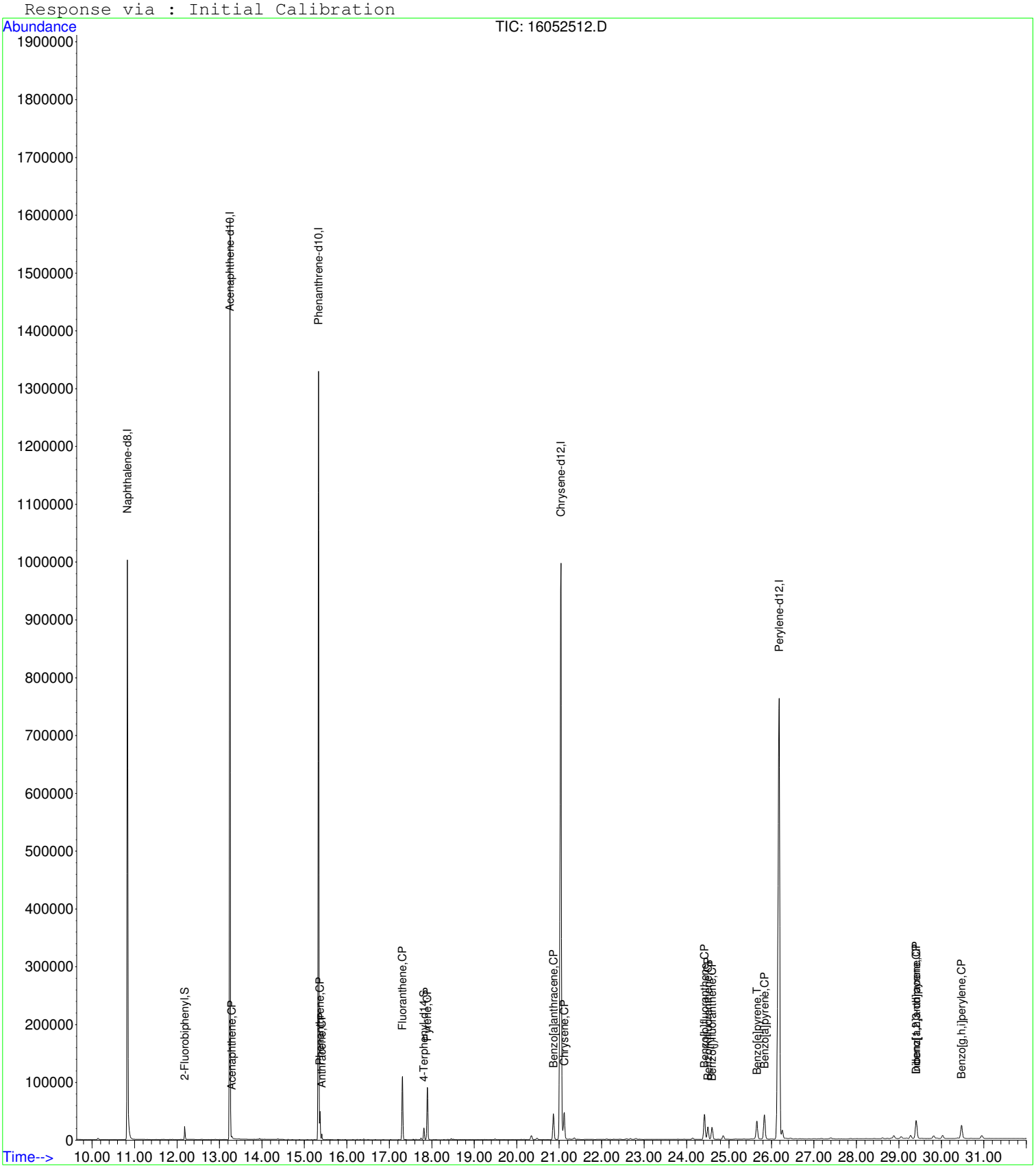
Target Compounds					Qvalue
9) Acenaphthene	13.29	154	1224	5.60 ug/kg	98
12) Phenanthrene	15.37	178	40567	110.34 ug/kg	99
13) Anthracene	15.41	178	8160	23.45 ug/kg	98
14) Fluoranthene	17.31	202	110403	290.17 ug/kg	98
15) Pyrene	17.90	202	97653	247.08 ug/kg	99
18) Benzo[a]anthracene	20.87	228	64737	165.94 ug/kg	99
19) Chrysene	21.12	228	74572	197.83 ug/kg	100
21) Benzo[b]fluoranthene	24.42	252	79439	198.43 ug/kg	99
22) Benzo[k]fluoranthene	24.50	252	38197	101.71 ug/kg	97
23) Benzo(j)fluoranthene	24.60	252	34830	104.11 ug/kg	91
24) Benzo[e]pyrene	25.66	252	57051	159.12 ug/kg	99
25) Benzo[a]pyrene	25.84	252	79121	215.96 ug/kg	100
26) Dibenz[a,h]anthracene	29.40	278	11958	35.84 ug/kg	94
27) Indeno[1,2,3-cd]pyrene	29.41	276	52396	131.63 ug/kg	92
28) Benzo[g,h,i]perylene	30.47	276	44690	143.98 ug/kg	98

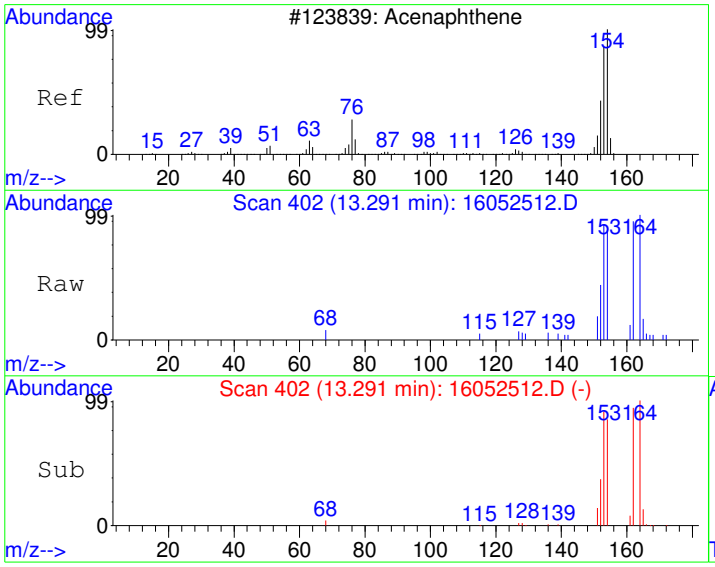
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052512.D Vial: 12
Acq On : 25 May 2016 4:11 pm Operator: AR
Sample : 1605144-01A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:43 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

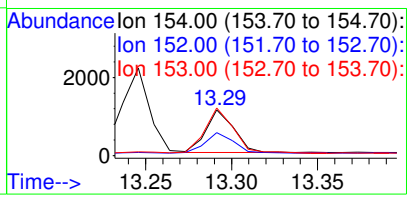


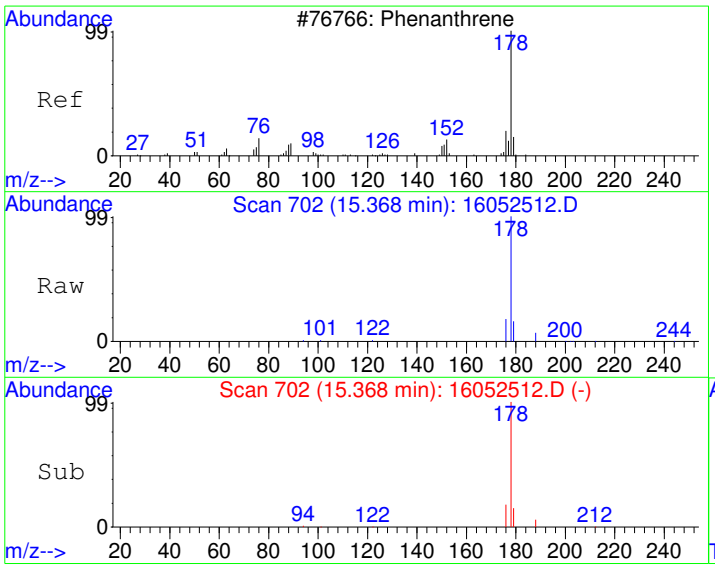


#9
Acenaphthene
Concen: 5.60 ug/kg
RT: 13.29 min Scan# 402
Delta R.T. -0.01 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:154 Resp: 1224

Ion	Ratio	Lower	Upper
154	100		
152	48.1	18.9	78.9
153	107.4	75.2	135.2

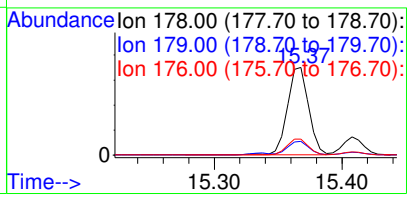


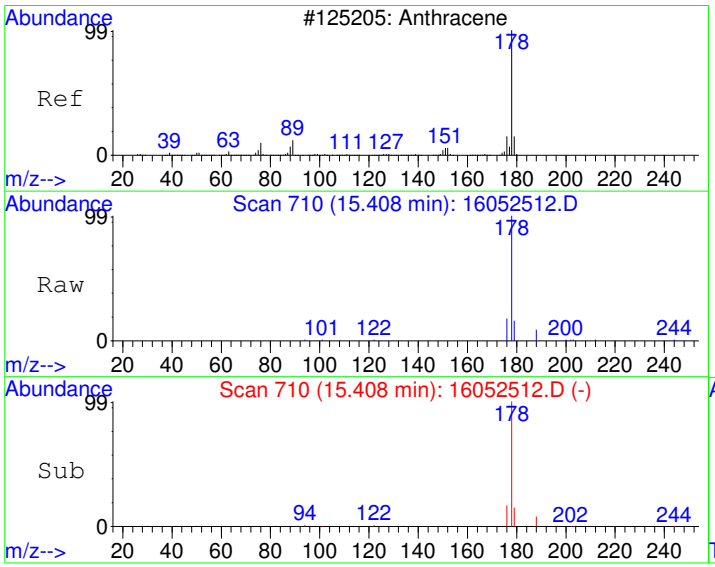


#12
Phenanthrene
Concen: 110.34 ug/kg
RT: 15.37 min Scan# 702
Delta R.T. -0.00 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:178 Resp: 40567

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	45.9
176	17.9	0.0	48.5

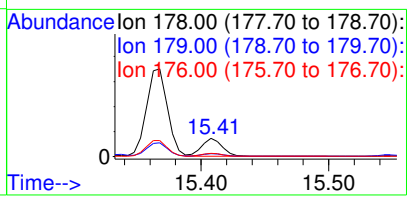


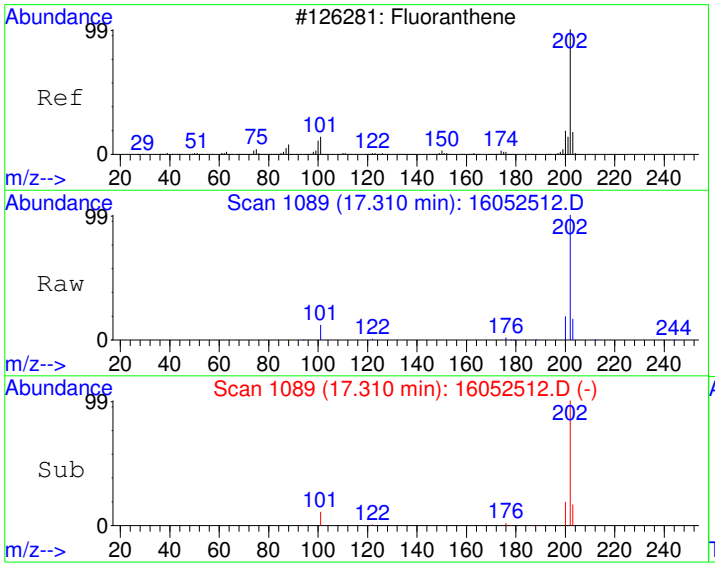


#13
Anthracene
Concen: 23.45 ug/kg
RT: 15.41 min Scan# 710
Delta R.T. -0.00 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:178 Resp: 8160

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.9
176	17.2	0.0	48.2

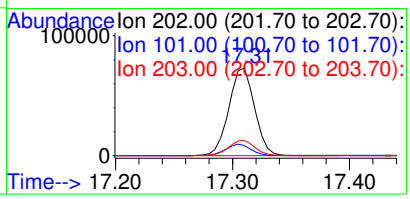


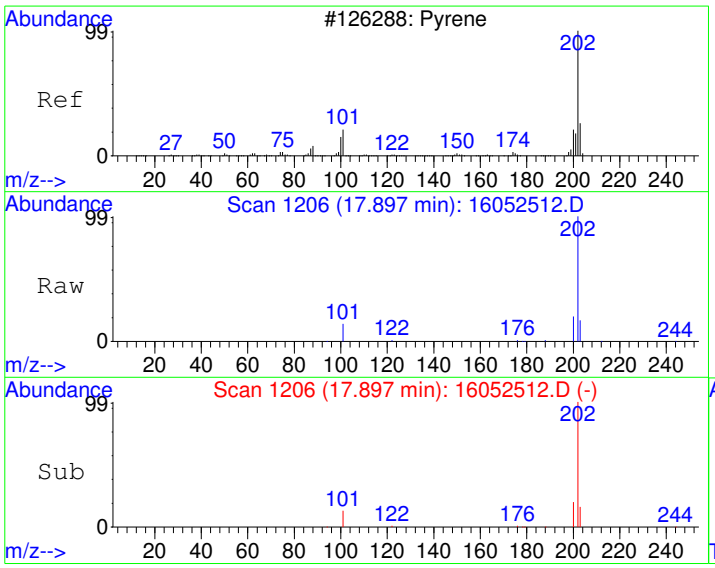


#14
Fluoranthene
Concen: 290.17 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.00 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:202 Resp: 110403

Ion	Ratio	Lower	Upper
202	100		
101	11.4	0.0	43.0
203	17.4	0.0	47.9

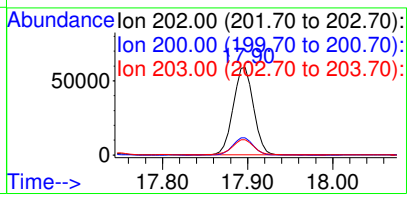


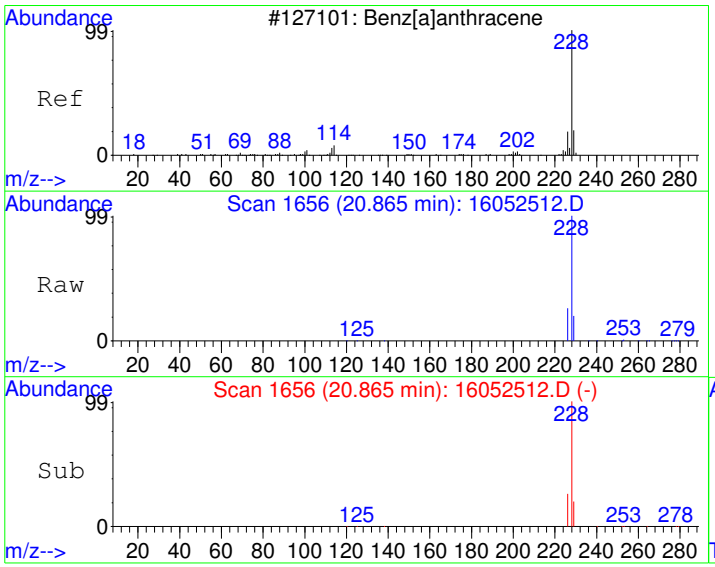


#15
Pyrene
Concen: 247.08 ug/kg
RT: 17.90 min Scan# 1206
Delta R.T. -0.00 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:202 Resp: 97653

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	17.4	0.0	48.0

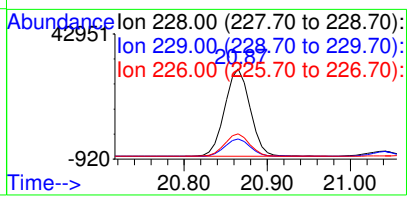


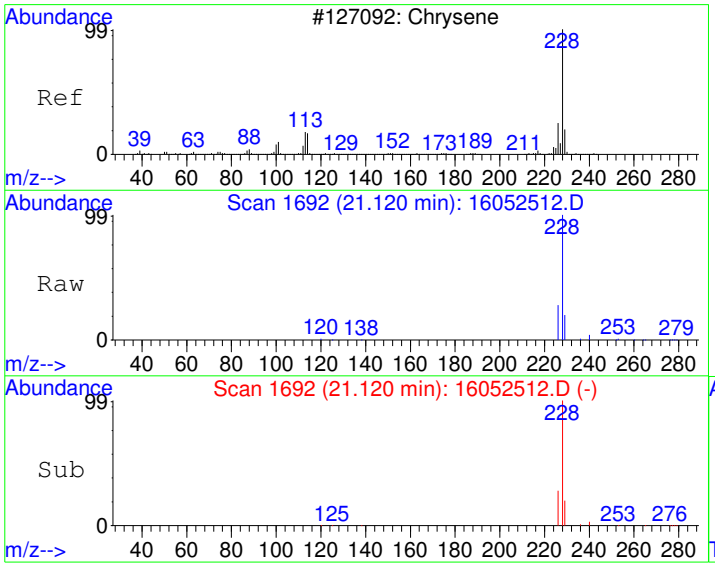


#18
Benzo[a]anthracene
Concen: 165.94 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.01 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:228 Resp: 64737

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.0	50.1
226	25.8	0.0	55.2

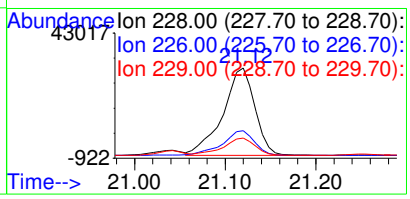


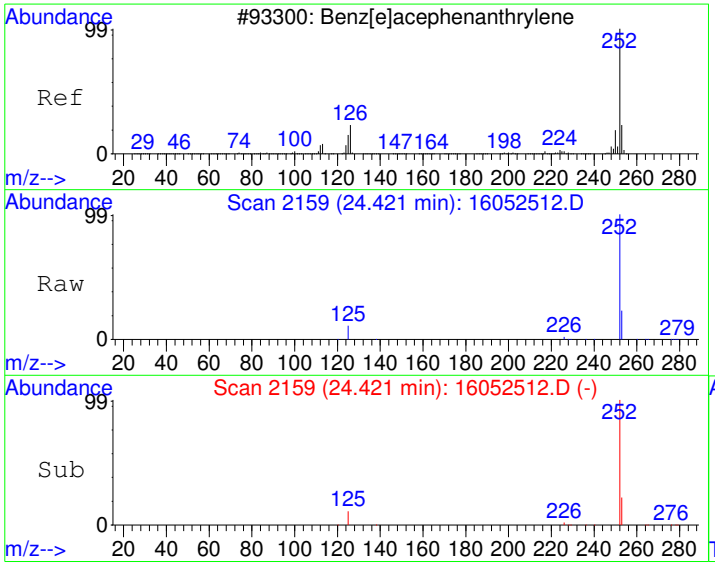


#19
Chrysene
Concen: 197.83 ug/kg
RT: 21.12 min Scan# 1692
Delta R.T. -0.01 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:228 Resp: 74572

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.1
229	19.8	0.0	50.1

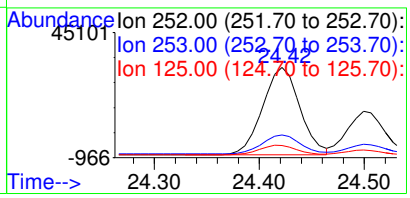


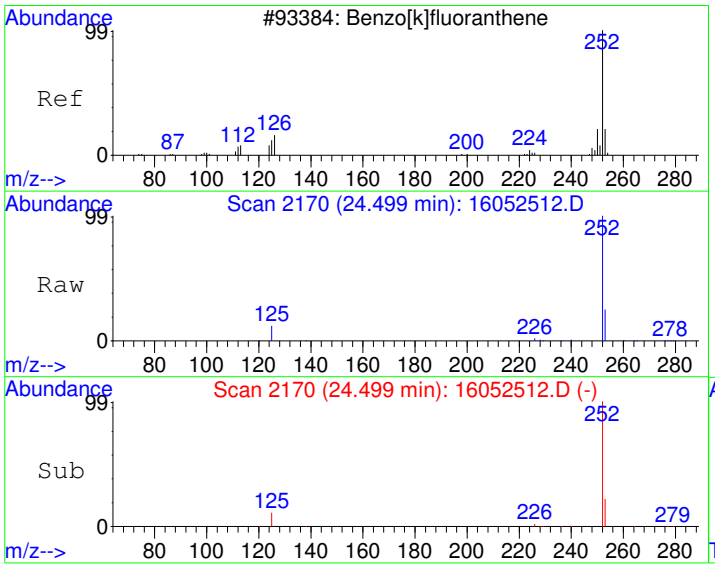


#21
Benzo[b]fluoranthene
Concen: 198.43 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.02 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:252 Resp: 79439

Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	52.2
125	10.8	0.0	41.0

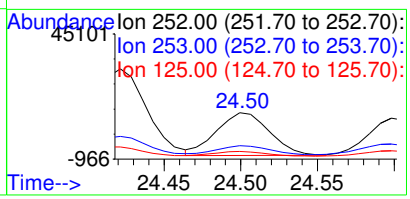


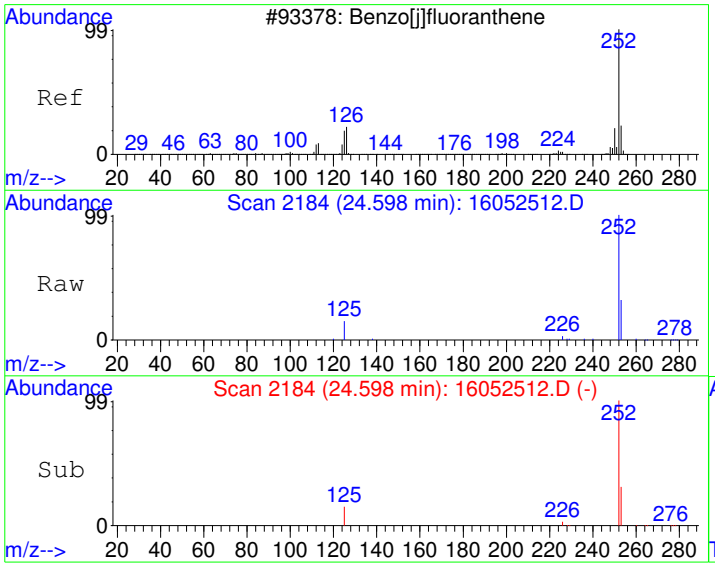


#22
Benzo[k]fluoranthene
Concen: 101.71 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.03 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:252 Resp: 38197

Ion	Ratio	Lower	Upper
252	100		
253	20.3	2.1	42.1
125	11.0	0.0	31.3

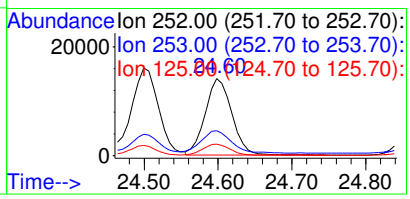


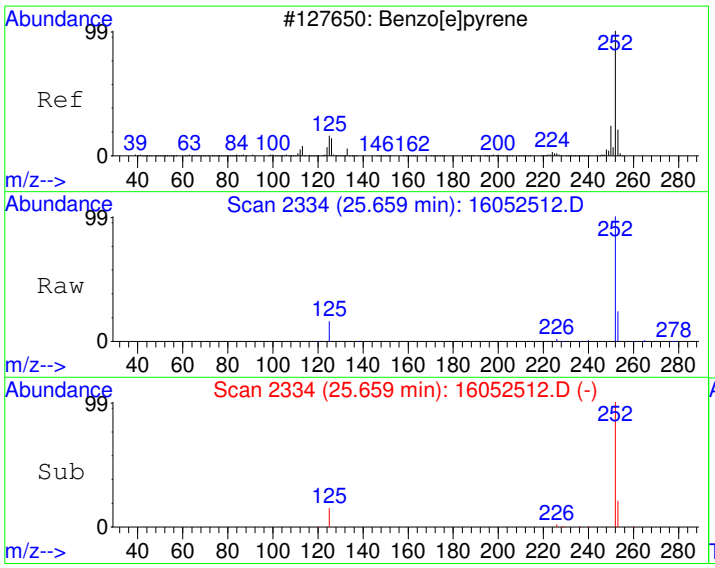


#23
Benzo(j)fluoranthene
Concen: 104.11 ug/kg
RT: 24.60 min Scan# 2184
Delta R.T. -0.03 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:252 Resp: 34830

Ion	Ratio	Lower	Upper
252	100		
253	29.4	2.1	42.1
125	14.5	0.0	34.4

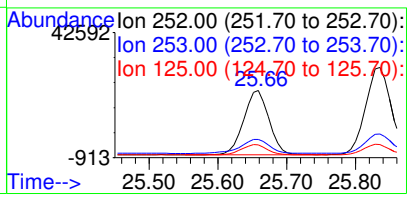


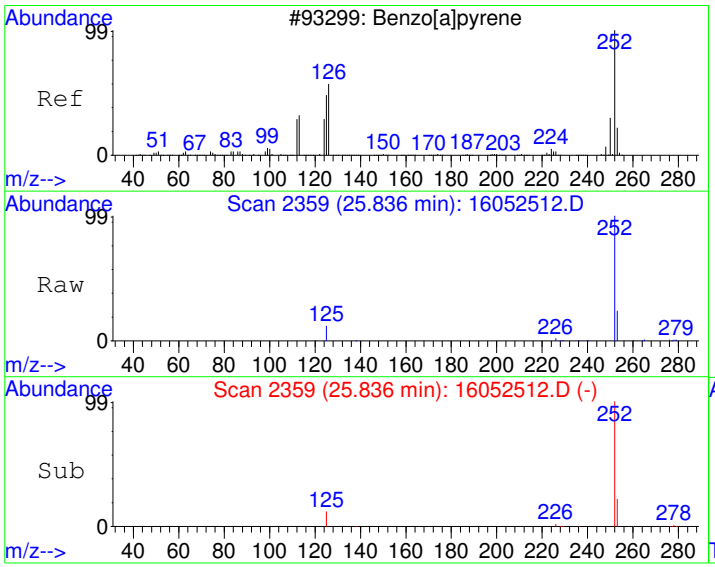


#24
Benzo[e]pyrene
Concen: 159.12 ug/kg
RT: 25.66 min Scan# 2334
Delta R.T. -0.02 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:252 Resp: 57051

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.2	42.2
125	15.4	0.0	36.1

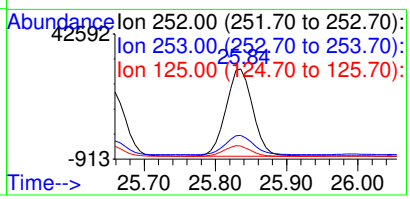


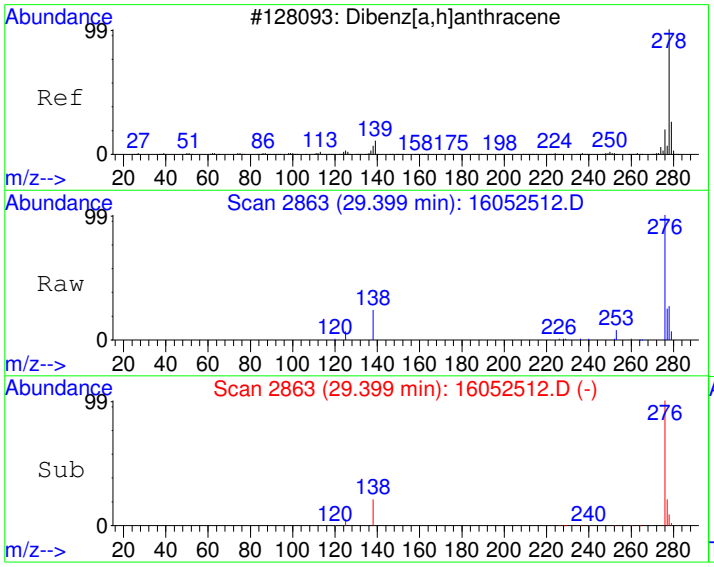


#25
Benzo[a]pyrene
Concen: 215.96 ug/kg
RT: 25.84 min Scan# 2359
Delta R.T. -0.02 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:252 Resp: 79121

Ion	Ratio	Lower	Upper
252	100		
253	22.1	1.9	41.9
125	11.6	0.0	31.7

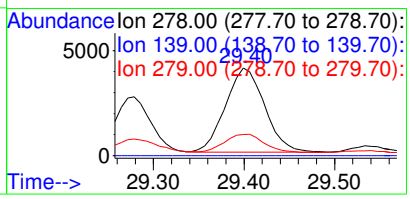


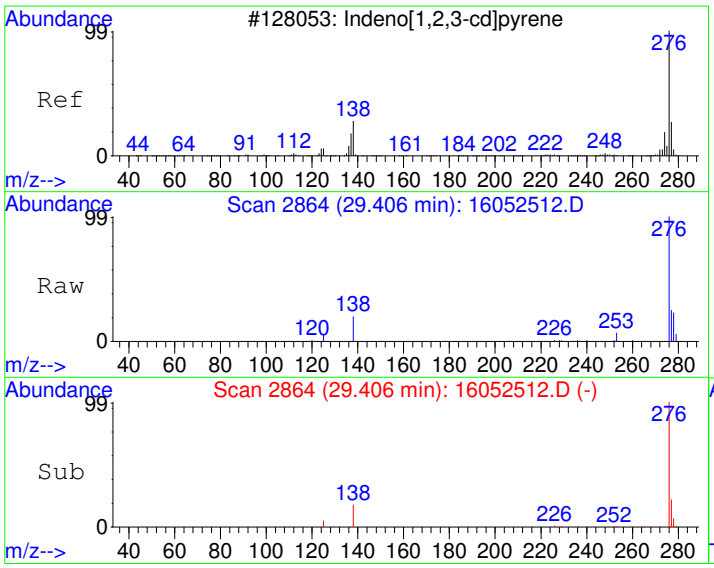


#26
Dibenz[a,h]anthracene
Concen: 35.84 ug/kg
RT: 29.40 min Scan# 2863
Delta R.T. -0.04 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:278 Resp: 11958

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.2	4.2	44.2

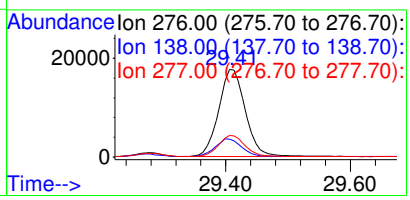


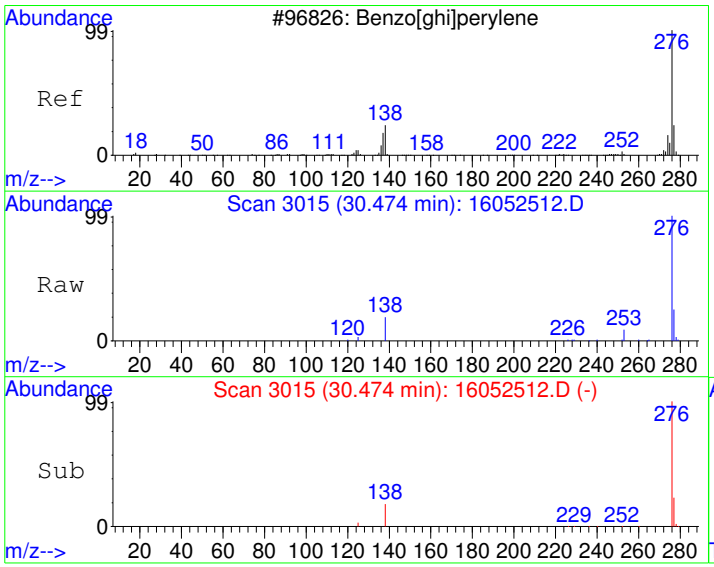


#27
Indeno[1,2,3-cd]pyrene
Concen: 131.63 ug/kg
RT: 29.41 min Scan# 2864
Delta R.T. -0.04 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:276 Resp: 52396

Ion	Ratio	Lower	Upper
276	100		
138	19.9	6.7	46.7
277	24.6	5.8	45.8

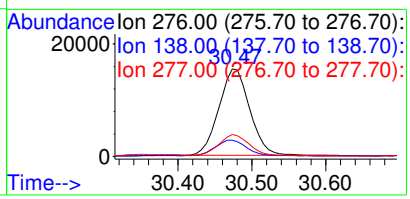




#28
Benzo[g,h,i]perylene
Concen: 143.98 ug/kg
RT: 30.47 min Scan# 3015
Delta R.T. -0.04 min
Lab File: 16052512.D
Acq: 25 May 2016 4:11 pm

Tgt Ion:276 Resp: 44690

Ion	Ratio	Lower	Upper
276	100		
138	18.0	0.0	39.1
277	24.7	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160525\16052513.D Vial: 13
Acq On : 25 May 2016 4:51 pm Operator: AR
Sample : 1605144-02A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:43 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.83	136	1196429	4000.00 ug/kg	103
5) Acenaphthene-d10	13.25	164	800016	4000.00 ug/kg	69
11) Phenanthrene-d10	15.33	188	1367245	4000.00 ug/kg	67
17) Chrysene-d12	21.04	240	1610544	4000.00 ug/kg	71
20) Perylene-d12	26.17	264	1468163	4000.00 ug/kg	71

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.18	172	18824	80.66 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.02%#		
16) 4-Terphenyl-d14	17.82	244	26484	74.87 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.87%#		

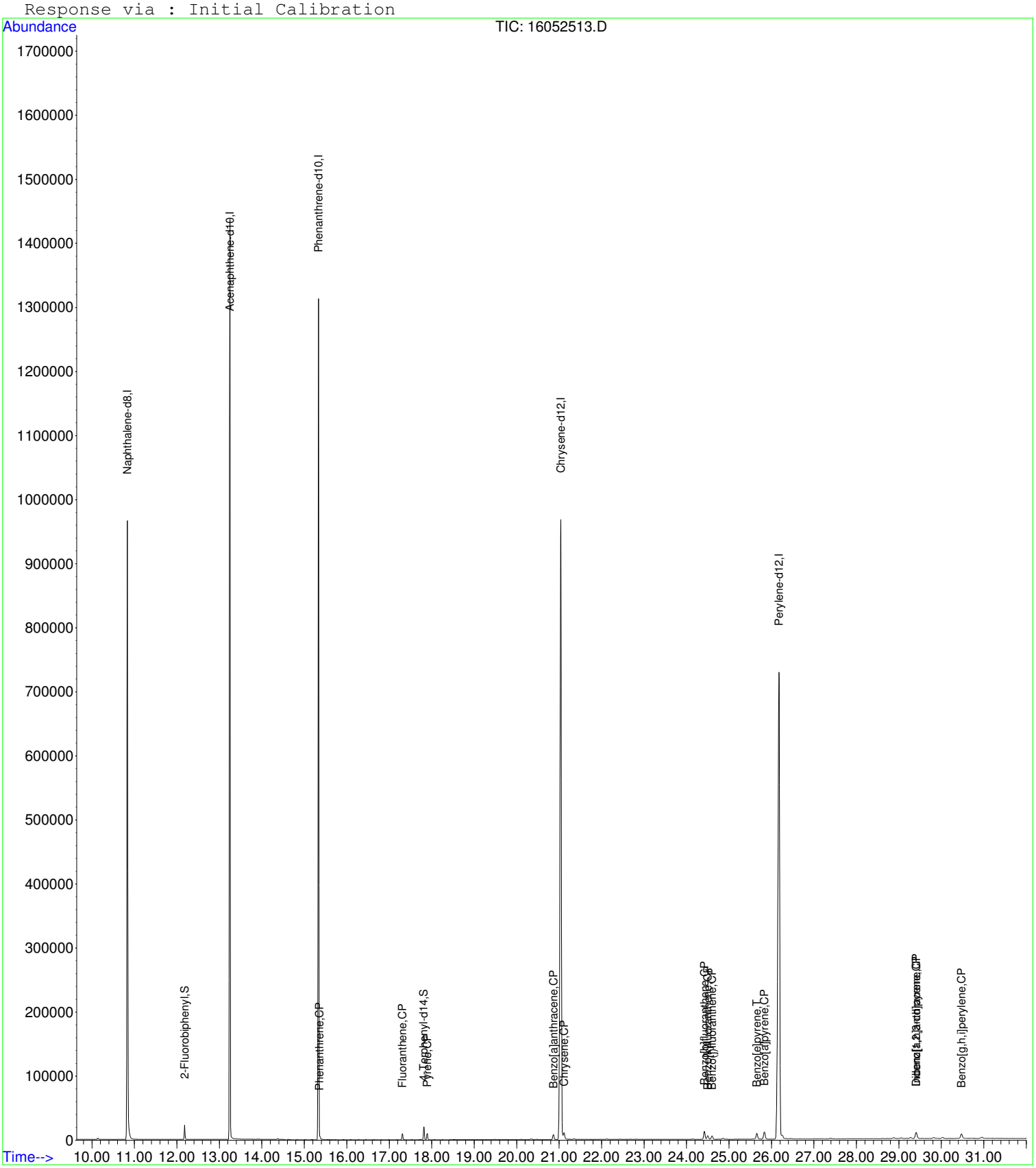
Target Compounds					Qvalue
12) Phenanthrene	15.36	178	2526	7.03 ug/kg	99
14) Fluoranthene	17.31	202	9713	26.10 ug/kg	98
15) Pyrene	17.89	202	10594	27.41 ug/kg	98
18) Benzo[a]anthracene	20.87	228	11627	30.82 ug/kg	99
19) Chrysene	21.11	228	15581	42.74 ug/kg	98
21) Benzo[b]fluoranthene	24.42	252	22644	58.52 ug/kg	100
22) Benzo[k]fluoranthene	24.50	252	9833	27.09 ug/kg	96
23) Benzo(j)fluoranthene	24.60	252	9344	28.90 ug/kg	90
24) Benzo[e]pyrene	25.65	252	16672	48.11 ug/kg	99
25) Benzo[a]pyrene	25.84	252	22224	62.76 ug/kg	99
26) Dibenz[a,h]anthracene	29.40	278	3648	11.31 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.41	276	16407	42.64 ug/kg	91
28) Benzo[g,h,i]perylene	30.47	276	14328	47.76 ug/kg	98

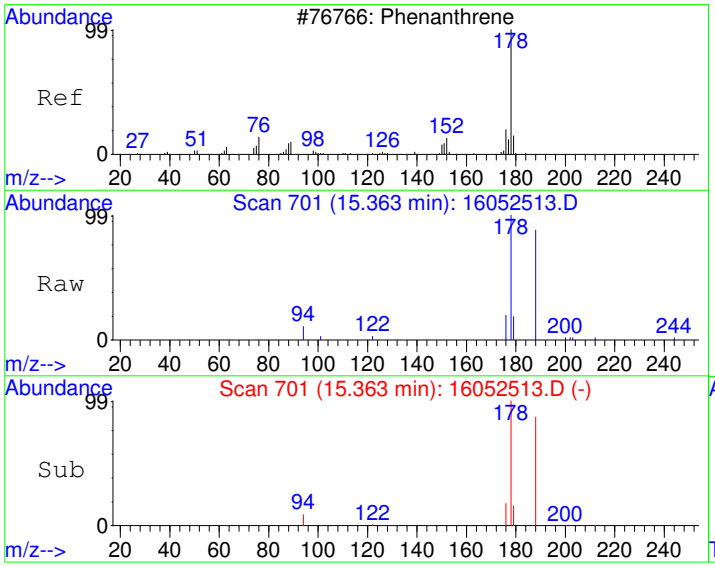
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160525\16052513.D Vial: 13
Acq On : 25 May 2016 4:51 pm Operator: AR
Sample : 1605144-02A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:43 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Wed May 25 16:21:31 2016
Response via : Initial Calibration

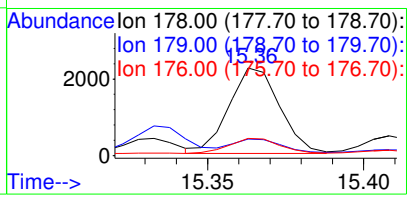


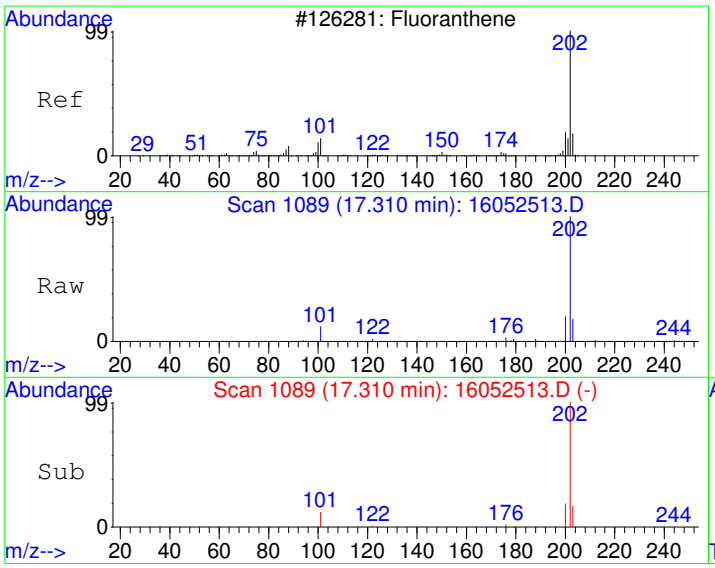


#12
Phenanthrene
Concen: 7.03 ug/kg
RT: 15.36 min Scan# 701
Delta R.T. -0.01 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:178 Resp: 2526

Ion	Ratio	Lower	Upper
178	100		
179	15.9	0.0	45.9
176	17.9	0.0	48.5

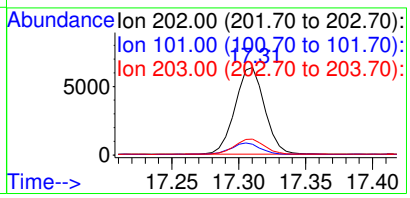


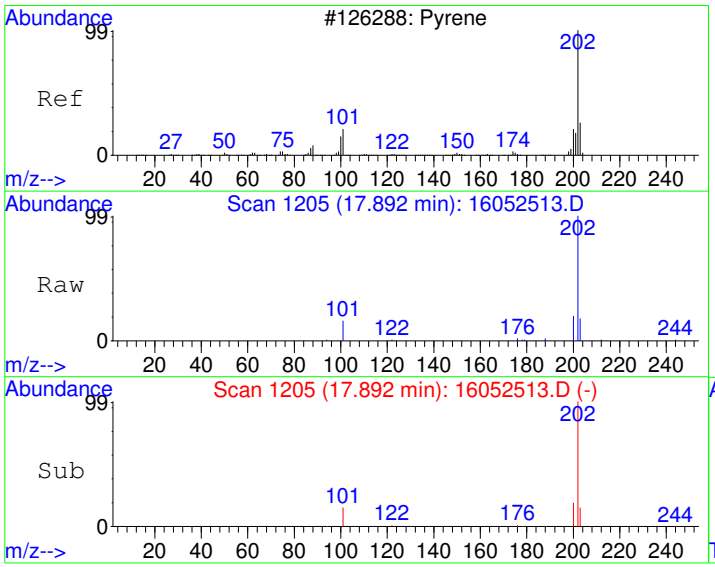


#14
Fluoranthene
Concen: 26.10 ug/kg
RT: 17.31 min Scan# 1089
Delta R.T. -0.00 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:202 Resp: 9713

Ion	Ratio	Lower	Upper
202	100		
101	11.6	0.0	43.0
203	17.3	0.0	47.9

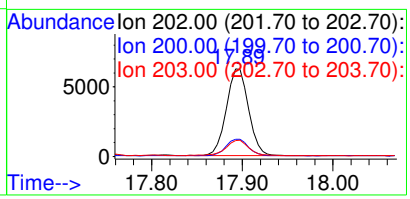


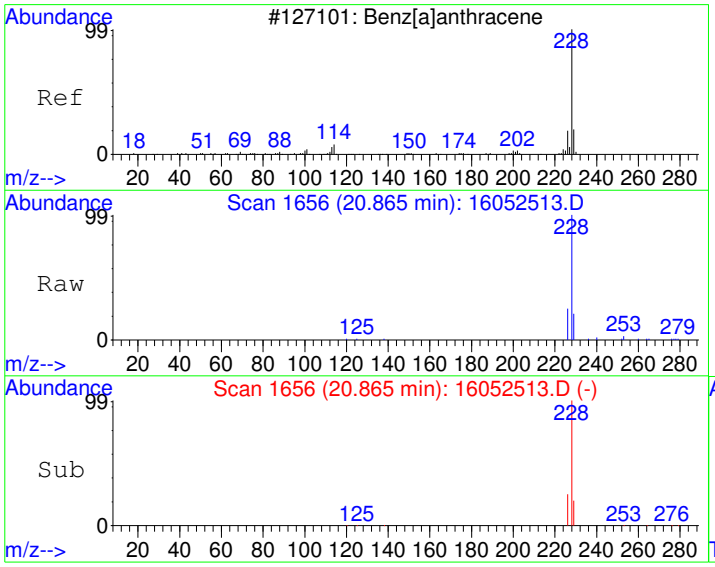


#15
Pyrene
Concen: 27.41 ug/kg
RT: 17.89 min Scan# 1205
Delta R.T. -0.01 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:202 Resp: 10594

Ion	Ratio	Lower	Upper
202	100		
200	19.1	0.0	50.0
203	17.4	0.0	48.0

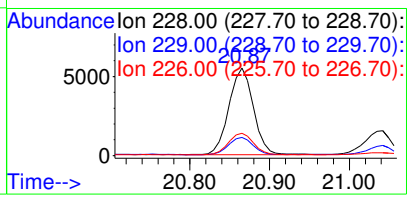


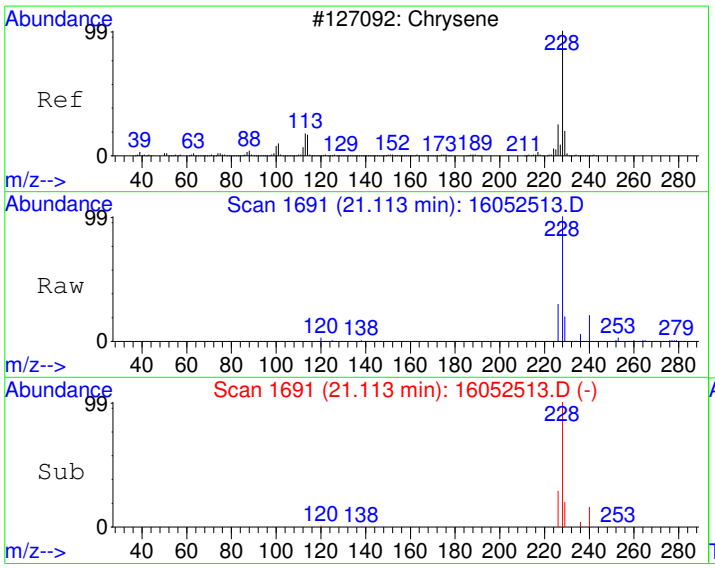


#18
Benzo[a]anthracene
Concen: 30.82 ug/kg
RT: 20.87 min Scan# 1656
Delta R.T. -0.01 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:228 Resp: 11627

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	24.8	0.0	55.2

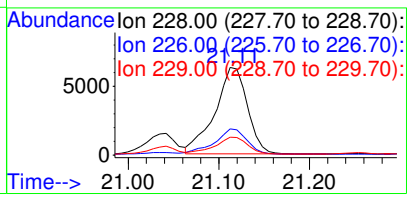


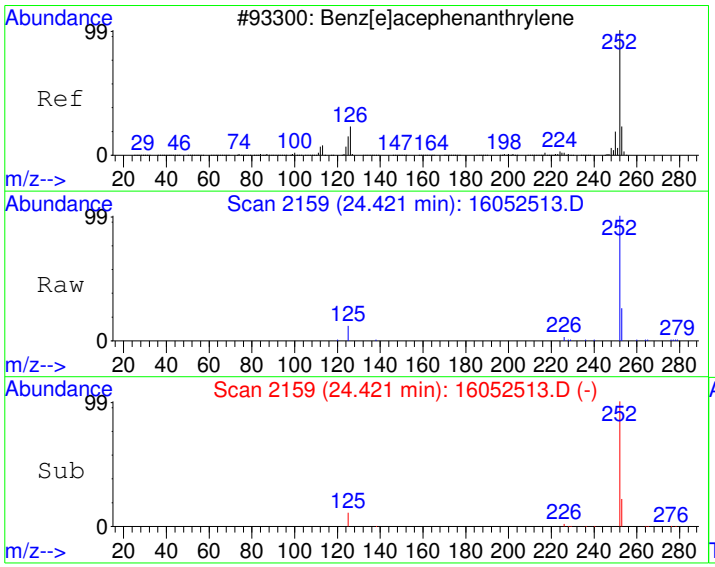


#19
Chrysene
Concen: 42.74 ug/kg
RT: 21.11 min Scan# 1691
Delta R.T. -0.02 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:228 Resp: 15581

Ion	Ratio	Lower	Upper
228	100		
226	29.1	0.0	58.1
229	19.7	0.0	50.1

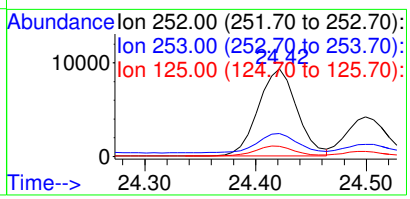


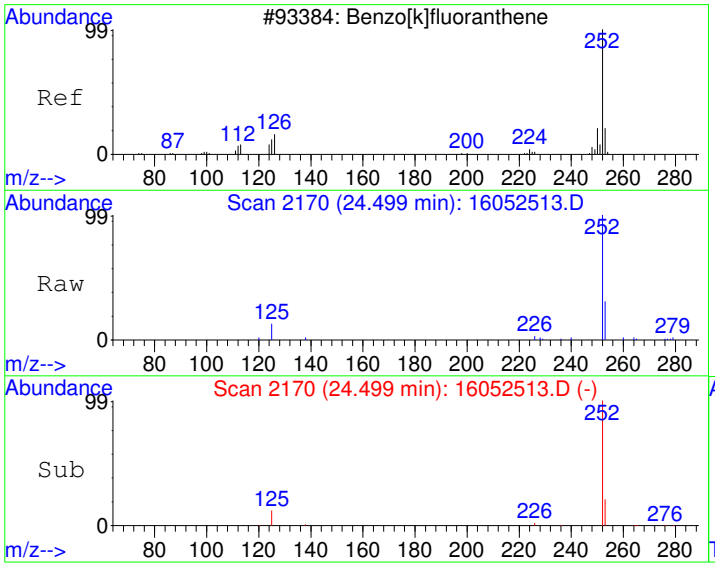


#21
Benzo[b]fluoranthene
Concen: 58.52 ug/kg
RT: 24.42 min Scan# 2159
Delta R.T. -0.02 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:252 Resp: 22644

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	52.2
125	10.9	0.0	41.0

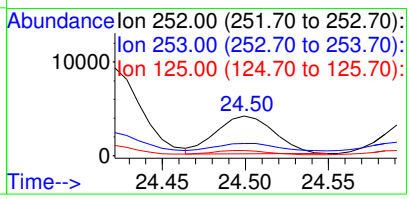


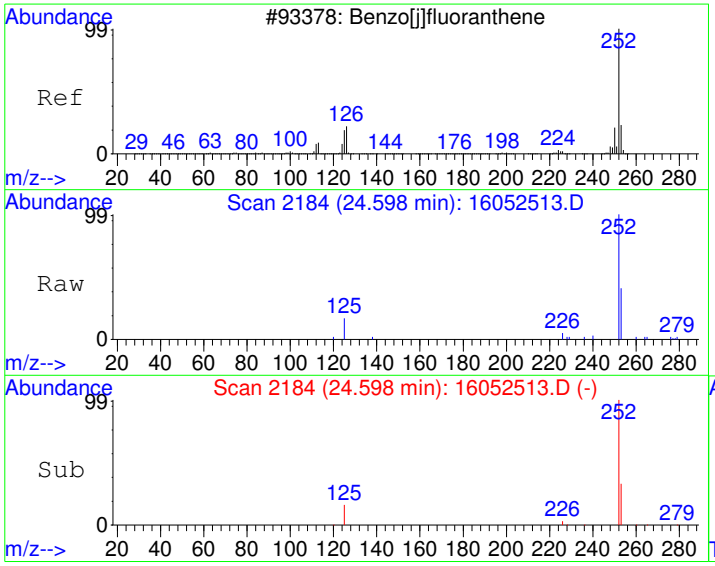


#22
Benzo[k]fluoranthene
Concen: 27.09 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.03 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:252 Resp: 9833

Ion	Ratio	Lower	Upper
252	100		
253	19.6	2.1	42.1
125	11.3	0.0	31.3

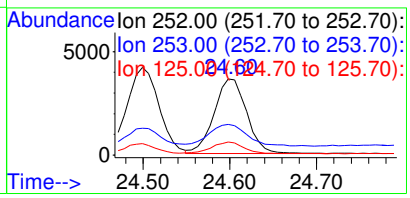


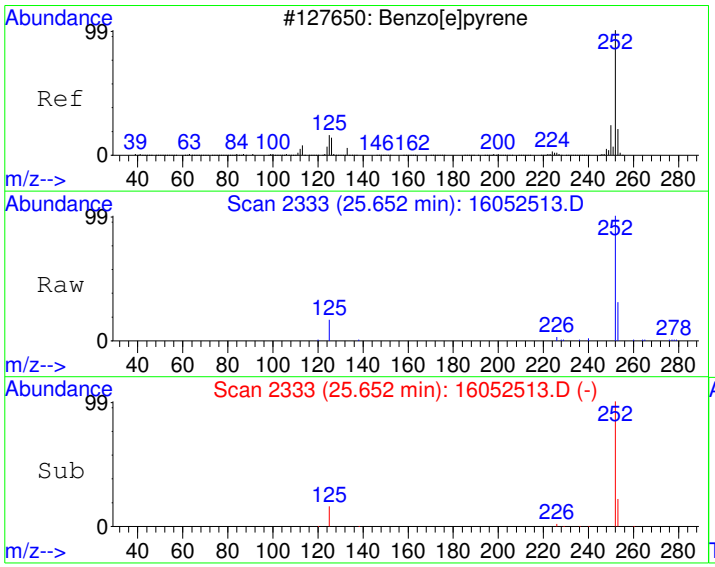


#23
Benzo(j)fluoranthene
Concen: 28.90 ug/kg
RT: 24.60 min Scan# 2184
Delta R.T. -0.03 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

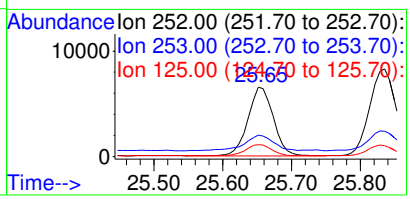
Tgt Ion:252 Resp: 9344

Ion	Ratio	Lower	Upper
252	100		
253	29.1	2.1	42.1
125	16.0	0.0	34.4





#24
Benzo[e]pyrene
Concen: 48.11 ug/kg
RT: 25.65 min Scan# 2333
Delta R.T. -0.03 min
Lab File: 16052513.D
Acq: 25 May 2016 4:51 pm

Tgt Ion:252 Resp: 16672

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.2	42.2
125	16.3	0.0	36.1