May 26, 2016

Alex Walter
Arcadis
8725 Rosehill #350
Lenexa, Kansas 66215
TEL: (913) 492-0900
FAX (913) 492-0902

Order No.: 1605071

RE: Laredo SGR

Dear Alex Walter:

DHL Analytical, Inc. received 54 sample(s) on 5/6/2016 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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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

№ 71108

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.Oenkenberger@arcadis.com

DATE: May 5, 2016 PAGE 1 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1600507-1
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=SOIL

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-DU038(0-2)-A	01	5-5-16	1027	S	Bag	1				X						X						X									
SGR-DU038(2-4)-A	02	5-5-16	1031	S	Bag	1				X						X						X									
SGR-DU038(4-6)-A	03	5-5-16	1034	S	Bag	1				X						X						X									
SGR-DU038(6-8)-A	04	5-5-16	1038	S	Bag	1				X						X						X									
SGR-DU038(8-10)-A	05	5-5-16	1045	S	Bag	1				X						X						X									
SGR-DU038(0-2)-B	06	5-5-16	1049	S	Bag	1				X						X						X									
SGR-DU038(2-4)-B	07	5-5-16	1051	S	Bag	1				X						X						X									
SGR-DU038(4-6)-B	08	5-5-16	1052	S	Bag	1				X						X						X									
SGR-DU038(6-8)-B	09	5-5-16	1056	S	Bag	1				X						X						X									
SGR-DU038(8-10)-B	10	5-5-16	1057	S	Bag	1				X						X						X									
SGR-DU038(0-2)-C	11	5-5-16	1100	S	Bag	1				X						X						X									
SGR-DU038(2-4)-C	12	5-5-16	1101	S	Bag	1				X						X						X									
SGR-DU038(4-6)-C	13	5-5-16	1102	S	Bag	1				X						X						X									
SGR-DU038(6-8)-C	14	5-5-16	1103	S	Bag	1				X						X						X									
SGR-DU038(8-10)-C	15	5-5-16	1104	S	Bag	1				X						X						X									

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[signature]	5-5-16/1800	[signature]
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5/6/16 1000	[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: 1.4, 2.1, 3.8 THERM #: 1.9, 2.1 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

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№ 71109

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 5, 2016 PAGE 2 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 16005071
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 ☐ Pb METALS 6020 ☐ TX11 ☐ 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	ICE	UNPRESERVED																							FIELD NOTES
SGR-DU038-A	16	5-5-16	0910	S	Bag	1				X							X						X											
SGR-DU038-B	17	5-5-16	0940	S	Bag	1				X							X						X											
SGR-DU038-C	18	5-5-16	1020	S	Bag	1				X							X						X											
9 SGR-DU044-SPLIT 1	~~1000~~ 1000	5-5-16	1000	S	4oz Glass	1				X							X						X											
0 SGR-DU044-SPLIT 2	~~1005~~ 1005	5-5-16	1005	S	4oz Glass	1				X							X						X											
1 SGR-DU044-SPLIT 3	~~1010~~ 1010	5-5-16	1010	S	4oz Glass	1				X							X						X											
2 SGR-DU044-SPLIT 4	~~1015~~ 1015	5-5-16	1015	S	4oz Glass	1				X							X						X											
3 SGR-DU044-SPLIT 5	~~1020~~ 1020	5-5-16	1020	S	4oz Glass	1				X							X						X											
SGR-DU038-SPLIT 1	24	5-5-16	1035	S	4oz Glass	1				X							X						X											
SGR-DU038-SPLIT 2	25	5-5-16	1040	S	4oz Glass	1				X							X						X											
SGR-DU038-SPLIT 3	26	5-5-16	1045	S	4oz Glass	1				X							X						X											
SGR-DU038-SPLIT 4	27	5-5-16	1050	S	4oz Glass	1				X							X						X											
EB04(20160505)	28	5-5-16	1115	W	Glass/Poly	2		X		X							X						X											
EB05(20160505)	29	5-5-16	1445	W	Glass/Poly	2		X		X							X						X											
DUP01(20160505)	30	5-5-16	1030	S	4oz Glass	1				X							X						X											

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RELINQUISHED BY: (Signature) DATE/TIME 5/6/16 1000 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: 14.2, 4.3, 3.8, 1.9, 2.1 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

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№ 71110

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 5, 2016 PAGE 3 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1L605071
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 ☐ 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	TPH 1005	GRO [METHOD 8015]	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
ROW-03(0-0.5)	31	5-5-16	1215	S	4oz Jar	1				X					X				X									
ROW-03(0.5-2.0)	32	5-5-16	1230	S	4oz Jar	1				X					(X)				(X)									O = Extract & Hold PAH
ROW-04(0-0.5)	33	5-5-16	1245	S	4oz Jar	1				X					X				X									Hold Metals & pmoist
ROW-05(0-0.5)	34	5-5-16	1350	S	4oz Jar	1				X					X				X									O - A. Walter 5/9/16
ROW-05(0.5-2.0)	35	5-5-16	1355	S	4oz Jar	1				X					(X)				(X)									
ROW-05(2.0-4.0)	36	5-5-16	1400	S	4oz Jar	1				X					(X)				(X)									
ROW-06(0.0-0.5)	37	5-5-16	1420	S	4oz Jar	1				X					X				X									
ROW-06(0.5-2.0)	38	5-5-16	1435	S	4oz Jar	1				X					(X)				(X)									
ROW-06(2.0-4.0)	39	5-5-16	1445	S	4oz Jar	1				X					(X)				(X)									

(X) added per A Walters 5/17/16 @ 4:39 - afo

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[signature]	5/6/16 1000	[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: 1.4, 2.4, 3.3, 1.9, 2.1, 7.8 THERM #: ___
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

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№ 70006

CHAIN-OF-CUSTODY

CLIENT: ARCADIS
ADDRESS: 8725 Rosehill, Suite 350 Lenexa, KS 66215
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DATE: MAY 5, 2016 PAGE 4 OF 4
PO #: 04245081.0000.00044 DHL WORK ORDER #: 1605071
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04245081.0000.00044 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 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX1 1 ☐ 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-DU040(0-2)-A	40	5-5-16	1358	S	Bag	1				X							X					X								
SGR-DU040(2-4)-A	41	5-5-16	1402	S	Bag	1				X							X					X								
SGR-DU040(4-6)-A	42	5-5-16	1405	S	Bag	1				X							X					X								
SGR-DU040(6-8)-A	43	5-5-16	1407	S	Bag	1				X							X					X								
SGR-DU040(8-10)-A	44	5-5-16	1410	S	Bag	1				X							X					X								
SGR-DU040(0-2)-B	45	5-5-16	1413	S	Bag	1				X							X					X								
SGR-DU040(2-4)-B	46	5-5-16	1415	S	Bag	1				X							X					X								
SGR-DU040(4-6)-B	47	5-5-16	1418	S	Bag	1				X							X					X								
SGR-DU040(6-8)-B	48	5-5-16	1422	S	Bag	1				X							X					X								
SGR-DU040(8-10)-B	49	5-5-16	1424	S	Bag	1				X							X					X								
SGR-DU040(0-2)-C	50	5-5-16	1425	S	Bag	1				X							X					X								
SGR-DU040(2-4)-C	51	5-5-16	1429	S	Bag	1				X							X					X								
SGR-DU040(4-6)-C	52	5-5-16	1431	S	Bag	1				X							X					X								
SGR-DU040(6-8)-C	53	5-5-16	1434	S	Bag	1				X							X					X								
SGR-DU040(8-10)-C	54	5-5-16	1436	S	Bag	1				X							X					X								

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[signature]	5-5-16 / 1800	[signature]
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5/6/16 0900	[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: 3.3, 1.9, 2.1, 2.8
RECEIVING TEMP: 1.4, 2.1 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: 05MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JOHN DUPONT
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: DEPT:

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FedEx Express

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5 of 2

FRI - 06 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 6799 2656
Mstr# 7762 6799 2472

0201

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 5-5-16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 05MAY16
ACTWGT: 70.00 LB
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BILL SENDER

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PO: DEPT:

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4 of 5

FRI - 06 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 6799 2954
Mstr# 7762 6799 2472

0201

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 5-5-16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 05MAY16
ACTWGT: 70.00 LB
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DIMS: 24x13x15 IN

BILL SENDER

TO JOHN DUPONT
DHL ANALYTICAL
2300 DOUBLE CREEK DR

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(512) 388-8222
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PO:
REF: 04285081.0000.00044
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1 of 5

TRK# 0201 7762 6799 2472
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FRI - 06 MAY 10:30A
PRIORITY OVERNIGHT

44 BSMA

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CUSTODY SEAL
DATE 5-5-16
SIGNATURE

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Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 05MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JOHN DUPONT
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2 of 5

FRI - 06 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 6799 3089
Mstr# 7762 6799 2472

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44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5-5-16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 05MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JOHN DUPONT
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: DEPT:

540J163239/72/F

FedEx Express

3 of 5

MPS# 0263 7762 6799 2564
Mstr# 7762 6799 2472

0201

FRI - 06 MAY 10:30A
PRIORITY OVERNIGHT

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 5-5-16
SIGNATURE

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Arcadis | Date Received: 5/6/2016

Work Order Number 1605071 | Received by JB

Checklist completed by: [signature] (Signature) 5/6/2016 (Date) | Reviewed by [initials] (Initials) 5/6/2016 (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 ☐	3.8 °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? no		Checked by [initials]
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: 5/16/16 Person contacted

Contacted by: J. Dupont Regarding: Sample Dup01(20160505) has water in it

Comments: sample may be compromised

Per client proceed with analysis, is aware of the water in sample.

Corrective Action

Page 1 of 1

DHL Analytical, Inc.
Laboratory Review Checklist: Reportable Data

Project Name: Laredo SGR	**Date:** 5/25/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605071
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			**R4-02**
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			**R7-04**
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:** 5/25/2016

Reviewer Name: Angie O'Donnell | **Laboratory Work Order:** 1605071

#[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			**S2-01**
		2) Were percent differences for each analyte within the method-required QC limits?		X			**S2-02**
		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

Scott Schroeder – Technical Director

Signature

05/26/16

Date

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 5/4/2016. A total of 54 samples were received and 51were analyzed. Sample DUP01(20160505) was compromised during shipment by melted ice; the client was notified on 5/6/2016. The laboratory proceeded with the requested analysis per the client's request (via email) on 5/9/2016. The remaining samples arrived in good condition and were properly packaged. Analysis was added to two samples per the client's request on 5/17/2016.

Exception Report R4-02

For PAH Analysis, the recovery of surrogate 4-Terphenyl-d14 for Sample EB04(20160505) was marginally below the method control limits. This is flagged accordingly in the Analytical Data Report. The remaining surrogate for this sample was within method control limits. 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 R7-03 and R7-04

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. No further corrective action was taken.

For PAH Analysis, for soil batch 75100, the recoveries of fourteen compounds for the Matrix Spike and Matrix Spike Duplicate (1605071-20 MS/MSD) were outside of the method control limits. Additionally, the RPD of Fluoranthene for the Matrix Spike Duplicate (1605071-20 MSD) was above the method control limit. These were flagged accordingly in the QC Summary Report. These

compounds were 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.

For PAH Analysis, for soil batch 75057, the recoveries/RPDs of up to fifteen compounds for the Matrix Spike Duplicate (1605047-34 MSD) were above the method control limits. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were within method control limits in the associated LCS/MS. 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.

For PAH Analysis, for soil batch 75101, the RPD(s) of nine compounds for the Matrix Spike Duplicate (1605047-71 MSD) were above the method control limit. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were within method control limits in the associated LCS/MS/MSD. 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 # 16005071-16 through -18) processed to pass a #60 sieve (250µ particle size) and sub-surface Samples (DHL WO # 1605071-01 through-15, 40-54) processed to pass #10 sieve (2mm) and the remaining samples analyzed were discreet soil samples collected in 4 ounce soil containers and ISM process not used, as per project specs.

Exception Report S2-01

For PAH Analysis, performed on 5/13/2016, the Matrix Spike Duplicate (1605047-24 MSD) was performed 20 minutes outside of the method specified 12 hour window. The subsequent DFTPP and ICV were within method control limits and showed that proper instrument conditions were met. The recovery of the MSD was within method control limits. 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 S2-02

For PAH Analysis, per DOD specifications an ending CCV is to be analyzed for 8270. For analysis performed on 5/15/2016 an ICV was analyzed subsequent to the samples and the recovery of

Indeno[1,2,3-cd]pyrene for the Initial Calibration Verification (ICV2-160515) was marginally below the method control limits for ICV as specified in SW8270D (80-120% recovery). This is flagged accordingly in the QC Summary report. This compound meets the 50-150% recovery as specified as the range for an ending CCV per DOD criteria. No further corrective action was taken.

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 5/6/2016. A Sample Summary was sent on 5/9/2016. A Sample Summary was sent on 5/18/2016. 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 5/13/2016 - from J. DuPont to L. Mott of Arcadis regarding recoveries of surrogates, recoveries/RPD of MS/MSD and MSD analyzed outside of the tune window. The client accepted the corrective action for the quality exceedances.
email communications 5/20/2016 - from J. DuPont to L. Mott of Arcadis regarding exceedance(s) for various MS/MSDs for PAH analysis and an exceedence of an LCVL for Metals Analysis. The corrective action was accepted by the client.

DHL Analytical, Inc.

Date: *26-May-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605071

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605071-01	SGR-DU038(0-2)-A		05/05/16 10:27 AM	5/6/2016
1605071-02	SGR-DU038(2-4)-A		05/05/16 10:31 AM	5/6/2016
1605071-03	SGR-DU038(4-6)-A		05/05/16 10:34 AM	5/6/2016
1605071-04	SGR-DU038(6-8)-A		05/05/16 10:38 AM	5/6/2016
1605071-05	SGR-DU038(8-10)-A		05/05/16 10:45 AM	5/6/2016
1605071-06	SGR-DU038(0-2)-B		05/05/16 10:49 AM	5/6/2016
1605071-07	SGR-DU038(2-4)-B		05/05/16 10:51 AM	5/6/2016
1605071-08	SGR-DU038(4-6)-B		05/05/16 10:52 AM	5/6/2016
1605071-09	SGR-DU038(6-8)-B		05/05/16 10:56 AM	5/6/2016
1605071-10	SGR-DU038(8-10)-B		05/05/16 10:57 AM	5/6/2016
1605071-11	SGR-DU038(0-2)-C		05/05/16 11:00 AM	5/6/2016
1605071-12	SGR-DU038(2-4)-C		05/05/16 11:01 AM	5/6/2016
1605071-13	SGR-DU038(4-6)-C		05/05/16 11:02 AM	5/6/2016
1605071-14	SGR-DU038(6-8)-C		05/05/16 11:03 AM	5/6/2016
1605071-15	SGR-DU038(8-10)-C		05/05/16 11:04 AM	5/6/2016
1605071-16	SGR-DU038-A		05/05/16 09:10 AM	5/6/2016
1605071-17	SGR-DU038-B		05/05/16 09:40 AM	5/6/2016
1605071-18	SGR-DU038-C		05/05/16 10:20 AM	5/6/2016
1605071-19	SGR-DU044-STRAT1		05/05/16 10:00 AM	5/6/2016
1605071-20	SGR-DU044-STRAT2		05/05/16 10:05 AM	5/6/2016
1605071-21	SGR-DU044-STRAT3		05/05/16 10:10 AM	5/6/2016
1605071-22	SGR-DU044-STRAT4		05/05/16 10:15 AM	5/6/2016
1605071-23	SGR-DU044-STRAT5		05/05/16 10:20 AM	5/6/2016
1605071-24	SGR-DU038-STRAT1		05/05/16 10:35 AM	5/6/2016
1605071-25	SGR-DU038-STRAT2		05/05/16 10:40 AM	5/6/2016
1605071-26	SGR-DU038-STRAT3		05/05/16 10:45 AM	5/6/2016
1605071-27	SGR-DU038-STRAT4		05/05/16 10:50 AM	5/6/2016
1605071-28	EB04(20160505)		05/05/16 11:15 AM	5/6/2016
1605071-29	EB05(20160505)		05/05/16 02:45 PM	5/6/2016
1605071-30	DUP01(20160505)		05/05/16 10:30 AM	5/6/2016
1605071-31	ROW-03(0-0.5)		05/05/16 12:15 PM	5/6/2016
1605071-32	ROW-03(0.5-2.0)		05/05/16 12:30 PM	5/6/2016
1605071-33	ROW-04(0-0.5)		05/05/16 12:45 PM	5/6/2016
1605071-34	ROW-05(0-0.5)		05/05/16 01:50 PM	5/6/2016
1605071-35	ROW-05(0.5-2.0)		05/05/16 01:55 PM	5/6/2016
1605071-36	ROW-05(2.0-4.0)		05/05/16 02:00 PM	5/6/2016
1605071-37	ROW-06(0.0-0.5)		05/05/16 02:20 PM	5/6/2016
1605071-38	ROW-06(0.5-2.0)		05/05/16 02:35 PM	5/6/2016
1605071-39	ROW-06(2.0-4.0)		05/05/16 02:45 PM	5/6/2016
1605071-40	SGR-DU040(0-2)-A		05/05/16 01:58 PM	5/6/2016
1605071-41	SGR-DU040(2-4)-A		05/05/16 02:02 PM	5/6/2016
1605071-42	SGR-DU040(4-6)-A		05/05/16 02:05 PM	5/6/2016

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605071

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605071-43	SGR-DU040(6-8)-A		05/05/16 02:07 PM	5/6/2016
1605071-44	SGR-DU040(8-10)-A		05/05/16 02:10 PM	5/6/2016
1605071-45	SGR-DU040(0-2)-B		05/05/16 02:13 PM	5/6/2016
1605071-46	SGR-DU040(2-4)-B		05/05/16 02:15 PM	5/6/2016
1605071-47	SGR-DU040(4-6)-B		05/05/16 02:18 PM	5/6/2016
1605071-48	SGR-DU040(6-8)-B		05/05/16 02:22 PM	5/6/2016
1605071-49	SGR-DU040(8-10)-B		05/05/16 02:24 PM	5/6/2016
1605071-50	SGR-DU040(0-2)-C		05/05/16 02:25 PM	5/6/2016
1605071-51	SGR-DU040(2-4)-C		05/05/16 02:29 PM	5/6/2016
1605071-52	SGR-DU040(4-6)-C		05/05/16 02:31 PM	5/6/2016
1605071-53	SGR-DU040(6-8)-C		05/05/16 02:34 PM	5/6/2016
1605071-54	SGR-DU040(8-10)-C		05/05/16 02:36 PM	5/6/2016

Lab Order: 1605071
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605071-01A	SGR-DU038(0-2)-A	05/05/16 10:27 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(0-2)-A	05/05/16 10:27 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-02A	SGR-DU038(2-4)-A	05/05/16 10:31 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(2-4)-A	05/05/16 10:31 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-03A	SGR-DU038(4-6)-A	05/05/16 10:34 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(4-6)-A	05/05/16 10:34 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-04A	SGR-DU038(6-8)-A	05/05/16 10:38 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(6-8)-A	05/05/16 10:38 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-05A	SGR-DU038(8-10)-A	05/05/16 10:45 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(8-10)-A	05/05/16 10:45 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-06A	SGR-DU038(0-2)-B	05/05/16 10:49 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(0-2)-B	05/05/16 10:49 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-07A	SGR-DU038(2-4)-B	05/05/16 10:51 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(2-4)-B	05/05/16 10:51 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-08A	SGR-DU038(4-6)-B	05/05/16 10:52 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(4-6)-B	05/05/16 10:52 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-09A	SGR-DU038(6-8)-B	05/05/16 10:56 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(6-8)-B	05/05/16 10:56 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-10A	SGR-DU038(8-10)-B	05/05/16 10:57 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(8-10)-B	05/05/16 10:57 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-11A	SGR-DU038(0-2)-C	05/05/16 11:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(0-2)-C	05/05/16 11:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/10/16 10:30 AM	75056
1605071-12A	SGR-DU038(2-4)-C	05/05/16 11:01 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(2-4)-C	05/05/16 11:01 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-13A	SGR-DU038(4-6)-C	05/05/16 11:02 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(4-6)-C	05/05/16 11:02 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-14A	SGR-DU038(6-8)-C	05/05/16 11:03 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(6-8)-C	05/05/16 11:03 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605071-15A	SGR-DU038(8-10)-C	05/05/16 11:04 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU038(8-10)-C	05/05/16 11:04 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-16A	SGR-DU038-A	05/05/16 09:10 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/09/16 02:16 PM	75021
	SGR-DU038-A	05/05/16 09:10 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-17A	SGR-DU038-B	05/05/16 09:40 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/09/16 02:16 PM	75021
	SGR-DU038-B	05/05/16 09:40 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-18A	SGR-DU038-C	05/05/16 10:20 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/09/16 02:16 PM	75021
	SGR-DU038-C	05/05/16 10:20 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-19A	SGR-DU044-STRAT1	05/05/16 10:00 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU044-STRAT1	05/05/16 10:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU044-STRAT1	05/05/16 10:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-20A	SGR-DU044-STRAT2	05/05/16 10:05 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU044-STRAT2	05/05/16 10:05 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU044-STRAT2	05/05/16 10:05 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-21A	SGR-DU044-STRAT3	05/05/16 10:10 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU044-STRAT3	05/05/16 10:10 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU044-STRAT3	05/05/16 10:10 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-22A	SGR-DU044-STRAT4	05/05/16 10:15 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU044-STRAT4	05/05/16 10:15 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU044-STRAT4	05/05/16 10:15 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-23A	SGR-DU044-STRAT5	05/05/16 10:20 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU044-STRAT5	05/05/16 10:20 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:41 AM	75100
	SGR-DU044-STRAT5	05/05/16 10:20 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-24A	SGR-DU038-STRAT1	05/05/16 10:35 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU038-STRAT1	05/05/16 10:35 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU038-STRAT1	05/05/16 10:35 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-25A	SGR-DU038-STRAT2	05/05/16 10:40 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU038-STRAT2	05/05/16 10:40 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605071-25A	SGR-DU038-STRAT2	05/05/16 10:40 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-26A	SGR-DU038-STRAT3	05/05/16 10:45 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU038-STRAT3	05/05/16 10:45 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU038-STRAT3	05/05/16 10:45 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-27A	SGR-DU038-STRAT4	05/05/16 10:50 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU038-STRAT4	05/05/16 10:50 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU038-STRAT4	05/05/16 10:50 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-28A	EB04(20160505)	05/05/16 11:15 AM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605071-28B	EB04(20160505)	05/05/16 11:15 AM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/06/16 02:10 PM	74985
1605071-29A	EB05(20160505)	05/05/16 02:45 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605071-29B	EB05(20160505)	05/05/16 02:45 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/06/16 02:10 PM	74985
1605071-30A	DUP01(20160505)	05/05/16 10:30 AM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	DUP01(20160505)	05/05/16 10:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	DUP01(20160505)	05/05/16 10:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-31A	ROW-03(0-0.5)	05/05/16 12:15 PM	Soil	D2216	Moisture Preparation	05/10/16 12:16 PM	75073
	ROW-03(0-0.5)	05/05/16 12:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/10/16 09:17 AM	75057
	ROW-03(0-0.5)	05/05/16 12:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-32A	ROW-03(0.5-2.0)	05/05/16 12:30 PM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	ROW-03(0.5-2.0)	05/05/16 12:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	ROW-03(0.5-2.0)	05/05/16 12:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605071-33A	ROW-04(0-0.5)	05/05/16 12:45 PM	Soil	D2216	Moisture Preparation	05/10/16 12:16 PM	75073
	ROW-04(0-0.5)	05/05/16 12:45 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/10/16 09:17 AM	75057
	ROW-04(0-0.5)	05/05/16 12:45 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-34A	ROW-05(0-0.5)	05/05/16 01:50 PM	Soil	D2216	Moisture Preparation	05/10/16 12:16 PM	75073
	ROW-05(0-0.5)	05/05/16 01:50 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/10/16 09:17 AM	75057
	ROW-05(0-0.5)	05/05/16 01:50 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 09:41 AM	75099
1605071-37A	ROW-06(0.0-0.5)	05/05/16 02:20 PM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	ROW-06(0.0-0.5)	05/05/16 02:20 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/10/16 09:17 AM	75057

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605071-37A	ROW-06(0.0-0.5)	05/05/16 02:20 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-38A	ROW-06(0.5-2.0)	05/05/16 02:35 PM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	ROW-06(0.5-2.0)	05/05/16 02:35 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	ROW-06(0.5-2.0)	05/05/16 02:35 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605071-40A	SGR-DU040(0-2)-A	05/05/16 01:58 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(0-2)-A	05/05/16 01:58 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-41A	SGR-DU040(2-4)-A	05/05/16 02:02 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(2-4)-A	05/05/16 02:02 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-42A	SGR-DU040(4-6)-A	05/05/16 02:05 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(4-6)-A	05/05/16 02:05 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-43A	SGR-DU040(6-8)-A	05/05/16 02:07 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(6-8)-A	05/05/16 02:07 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-44A	SGR-DU040(8-10)-A	05/05/16 02:10 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(8-10)-A	05/05/16 02:10 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-45A	SGR-DU040(0-2)-B	05/05/16 02:13 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(0-2)-B	05/05/16 02:13 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-46A	SGR-DU040(2-4)-B	05/05/16 02:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(2-4)-B	05/05/16 02:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-47A	SGR-DU040(4-6)-B	05/05/16 02:18 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(4-6)-B	05/05/16 02:18 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-48A	SGR-DU040(6-8)-B	05/05/16 02:22 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(6-8)-B	05/05/16 02:22 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-49A	SGR-DU040(8-10)-B	05/05/16 02:24 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 09:57 AM	75101
	SGR-DU040(8-10)-B	05/05/16 02:24 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-50A	SGR-DU040(0-2)-C	05/05/16 02:25 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU040(0-2)-C	05/05/16 02:25 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-51A	SGR-DU040(2-4)-C	05/05/16 02:29 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU040(2-4)-C	05/05/16 02:29 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104

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Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605071-52A	SGR-DU040(4-6)-C	05/05/16 02:31 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU040(4-6)-C	05/05/16 02:31 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-53A	SGR-DU040(6-8)-C	05/05/16 02:34 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU040(6-8)-C	05/05/16 02:34 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605071-54A	SGR-DU040(8-10)-C	05/05/16 02:36 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU040(8-10)-C	05/05/16 02:36 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104

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ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605071-01A	SGR-DU038(0-2)-A	5/5/2016 10:27:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-02A	SGR-DU038(2-4)-A	5/5/2016 10:31:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-03A	SGR-DU038(4-6)-A	5/5/2016 10:34:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-04A	SGR-DU038(6-8)-A	5/5/2016 10:38:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-05A	SGR-DU038(8-10)-A	5/5/2016 10:45:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-06A	SGR-DU038(0-2)-B	5/5/2016 10:49:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-07A	SGR-DU038(2-4)-B	5/5/2016 10:51:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-08A	SGR-DU038(4-6)-B	5/5/2016 10:52:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-09A	SGR-DU038(6-8)-B	5/5/2016 10:56:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-10A	SGR-DU038(8-10)-B	5/5/2016 10:57:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-11A	SGR-DU038(0-2)-C	5/5/2016 11:00:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-12A	SGR-DU038(2-4)-C	5/5/2016 11:01:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-13A	SGR-DU038(4-6)-C	5/5/2016 11:02:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-14A	SGR-DU038(6-8)-C	5/5/2016 11:03:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-15A	SGR-DU038(8-10)-C	5/5/2016 11:04:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-16A	SGR-DU038-A	5/5/2016 9:10:00 AM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/7/2016 3:15:00 PM	74999
1605071-17A	SGR-DU038-B	5/5/2016 9:40:00 AM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/7/2016 3:15:00 PM	74999
1605071-18A	SGR-DU038-C	5/5/2016 10:20:00 AM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/7/2016 3:15:00 PM	74999
1605071-40A	SGR-DU040(0-2)-A	5/5/2016 1:58:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-41A	SGR-DU040(2-4)-A	5/5/2016 2:02:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-42A	SGR-DU040(4-6)-A	5/5/2016 2:05:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-43A	SGR-DU040(6-8)-A	5/5/2016 2:07:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-44A	SGR-DU040(8-10)-A	5/5/2016 2:10:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-45A	SGR-DU040(0-2)-B	5/5/2016 2:13:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-46A	SGR-DU040(2-4)-B	5/5/2016 2:15:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-47A	SGR-DU040(4-6)-B	5/5/2016 2:18:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-48A	SGR-DU040(6-8)-B	5/5/2016 2:22:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-49A	SGR-DU040(8-10)-B	5/5/2016 2:24:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988

Lab Order: 1605071
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
1605071-50A	SGR-DU040(0-2)-C	5/5/2016 2:25:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-51A	SGR-DU040(2-4)-C	5/5/2016 2:29:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-52A	SGR-DU040(4-6)-C	5/5/2016 2:31:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-53A	SGR-DU040(6-8)-C	5/5/2016 2:34:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988
1605071-54A	SGR-DU040(8-10)-C	5/5/2016 2:36:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/6/2016 4:59:48 PM	74988

Lab Order: 1605071
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
1605071-01A	SGR-DU038(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 10:43 AM	GCMS6_160513A
	SGR-DU038(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 06:51 PM	ICP-MS4_160511C
1605071-02A	SGR-DU038(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75100	50	05/13/16 11:23 AM	GCMS6_160513A
	SGR-DU038(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 06:53 PM	ICP-MS4_160511C
1605071-03A	SGR-DU038(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75100	50	05/13/16 12:02 PM	GCMS6_160513A
	SGR-DU038(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 06:55 PM	ICP-MS4_160511C
1605071-04A	SGR-DU038(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 12:42 PM	GCMS6_160513A
	SGR-DU038(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 06:57 PM	ICP-MS4_160511C
1605071-05A	SGR-DU038(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 01:22 PM	GCMS6_160513A
	SGR-DU038(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 06:59 PM	ICP-MS4_160511C
1605071-06A	SGR-DU038(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 02:01 PM	GCMS6_160513A
	SGR-DU038(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 07:01 PM	ICP-MS4_160511C
1605071-07A	SGR-DU038(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75100	100	05/13/16 02:41 PM	GCMS6_160513A
	SGR-DU038(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 07:03 PM	ICP-MS4_160511C
1605071-08A	SGR-DU038(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 03:21 PM	GCMS6_160513A
	SGR-DU038(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 07:05 PM	ICP-MS4_160511C
1605071-09A	SGR-DU038(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 04:01 PM	GCMS6_160513A
	SGR-DU038(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 06:16 PM	ICP-MS4_160511C
1605071-10A	SGR-DU038(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 04:40 PM	GCMS6_160513A
	SGR-DU038(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 07:07 PM	ICP-MS4_160511C
1605071-11A	SGR-DU038(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 09:16 PM	GCMS6_160513A
	SGR-DU038(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75056	5	05/11/16 07:09 PM	ICP-MS4_160511C
1605071-12A	SGR-DU038(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75100	50	05/13/16 09:56 PM	GCMS6_160513A
	SGR-DU038(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:46 PM	ICP-MS4_160516B
1605071-13A	SGR-DU038(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 10:36 PM	GCMS6_160513A
	SGR-DU038(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:48 PM	ICP-MS4_160516B
1605071-14A	SGR-DU038(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 11:16 PM	GCMS6_160513A
	SGR-DU038(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:50 PM	ICP-MS4_160516B

Lab Order: 1605071
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
1605071-15A	SGR-DU038(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 11:56 PM	GCMS6_160513A
	SGR-DU038(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:52 PM	ICP-MS4_160516B
1605071-16A	SGR-DU038-A	Soil	SW8270D-LL	PAHs: GC/MS	75021	10	05/13/16 04:17 AM	GCMS8_160512A
	SGR-DU038-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:54 PM	ICP-MS4_160516B
1605071-17A	SGR-DU038-B	Soil	SW8270D-LL	PAHs: GC/MS	75021	10	05/13/16 04:53 AM	GCMS8_160512A
	SGR-DU038-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:42 PM	ICP-MS4_160516B
1605071-18A	SGR-DU038-C	Soil	SW8270D-LL	PAHs: GC/MS	75021	10	05/13/16 05:30 AM	GCMS8_160512A
	SGR-DU038-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:56 PM	ICP-MS4_160516B
1605071-19A	SGR-DU044-STRAT1	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/14/16 12:35 AM	GCMS6_160513A
	SGR-DU044-STRAT1	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU044-STRAT1	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 04:58 PM	ICP-MS4_160516B
1605071-20A	SGR-DU044-STRAT2	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/13/16 05:20 PM	GCMS6_160513A
	SGR-DU044-STRAT2	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU044-STRAT2	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:00 PM	ICP-MS4_160516B
1605071-21A	SGR-DU044-STRAT3	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/14/16 01:15 AM	GCMS6_160513A
	SGR-DU044-STRAT3	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU044-STRAT3	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:02 PM	ICP-MS4_160516B
1605071-22A	SGR-DU044-STRAT4	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/14/16 01:54 AM	GCMS6_160513A
	SGR-DU044-STRAT4	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU044-STRAT4	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:18 PM	ICP-MS4_160516B
1605071-23A	SGR-DU044-STRAT5	Soil	SW8270D-LL	PAHs: GC/MS	75100	10	05/14/16 02:33 AM	GCMS6_160513A
	SGR-DU044-STRAT5	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU044-STRAT5	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:20 PM	ICP-MS4_160516B
1605071-24A	SGR-DU038-STRAT1	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 04:06 PM	GCMS8_160513A
	SGR-DU038-STRAT1	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU038-STRAT1	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:22 PM	ICP-MS4_160516B
1605071-25A	SGR-DU038-STRAT2	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 04:43 PM	GCMS8_160513A
	SGR-DU038-STRAT2	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B

Lab Order: 1605071
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ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605071-25A	SGR-DU038-STRAT2	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:24 PM	ICP-MS4_160516B
1605071-26A	SGR-DU038-STRAT3	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 05:20 PM	GCMS8_160513A
	SGR-DU038-STRAT3	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU038-STRAT3	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:26 PM	ICP-MS4_160516B
1605071-27A	SGR-DU038-STRAT4	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 05:57 PM	GCMS8_160513A
	SGR-DU038-STRAT4	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU038-STRAT4	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:28 PM	ICP-MS4_160516B
1605071-28A	EB04(20160505)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 01:40 PM	ICP-MS4_160520C
1605071-28B	EB04(20160505)	Equip Blank	SW8270D-LL	PAHs: GC/MS	74985	1	05/09/16 11:07 PM	GCMS6_160509B
1605071-29A	EB05(20160505)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 01:42 PM	ICP-MS4_160520C
1605071-29B	EB05(20160505)	Equip Blank	SW8270D-LL	PAHs: GC/MS	74985	1	05/09/16 11:47 PM	GCMS6_160509B
1605071-30A	DUP01(20160505)	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 06:33 PM	GCMS8_160513A
	DUP01(20160505)	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	DUP01(20160505)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:30 PM	ICP-MS4_160516B
1605071-31A	ROW-03(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75057	10	05/11/16 09:48 PM	GCMS6_160511A
	ROW-03(0-0.5)	Soil	D2216	Percent Moisture	75073	1	05/11/16 09:30 AM	PMOIST_160510A
	ROW-03(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:32 PM	ICP-MS4_160516B
1605071-32A	ROW-03(0.5-2.0)	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/19/16 02:22 AM	GCMS8_160518D
	ROW-03(0.5-2.0)	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	ROW-03(0.5-2.0)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:24 PM	ICP-MS4_160523F
1605071-33A	ROW-04(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75057	10	05/11/16 10:27 PM	GCMS6_160511A
	ROW-04(0-0.5)	Soil	D2216	Percent Moisture	75073	1	05/11/16 09:30 AM	PMOIST_160510A
	ROW-04(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:34 PM	ICP-MS4_160516B
1605071-34A	ROW-05(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75057	10	05/11/16 11:07 PM	GCMS6_160511A
	ROW-05(0-0.5)	Soil	D2216	Percent Moisture	75073	1	05/11/16 09:30 AM	PMOIST_160510A
	ROW-05(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75099	5	05/16/16 05:36 PM	ICP-MS4_160516B
1605071-37A	ROW-06(0.0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75057	10	05/11/16 11:47 PM	GCMS6_160511A
	ROW-06(0.0-0.5)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A

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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
1605071-37A	ROW-06(0.0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 05:59 PM	ICP-MS4_160516B
1605071-38A	ROW-06(0.5-2.0)	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/19/16 01:45 AM	GCMS8_160518D
	ROW-06(0.5-2.0)	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	ROW-06(0.5-2.0)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:26 PM	ICP-MS4_160523F
1605071-40A	SGR-DU040(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 07:10 PM	GCMS8_160513A
	SGR-DU040(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:01 PM	ICP-MS4_160516B
1605071-41A	SGR-DU040(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 07:47 PM	GCMS8_160513A
	SGR-DU040(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:03 PM	ICP-MS4_160516B
1605071-42A	SGR-DU040(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 08:24 PM	GCMS8_160513A
	SGR-DU040(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:05 PM	ICP-MS4_160516B
1605071-43A	SGR-DU040(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 09:00 PM	GCMS8_160513A
	SGR-DU040(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:07 PM	ICP-MS4_160516B
1605071-44A	SGR-DU040(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 09:37 PM	GCMS8_160513A
	SGR-DU040(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:09 PM	ICP-MS4_160516B
1605071-45A	SGR-DU040(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 10:13 PM	GCMS8_160513A
	SGR-DU040(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:11 PM	ICP-MS4_160516B
1605071-46A	SGR-DU040(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/13/16 10:50 PM	GCMS8_160513A
	SGR-DU040(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:13 PM	ICP-MS4_160516B
1605071-47A	SGR-DU040(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/14/16 02:31 AM	GCMS8_160513A
	SGR-DU040(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:15 PM	ICP-MS4_160516B
1605071-48A	SGR-DU040(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/14/16 03:08 AM	GCMS8_160513A
	SGR-DU040(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:31 PM	ICP-MS4_160516B
1605071-49A	SGR-DU040(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75101	10	05/14/16 03:45 AM	GCMS8_160513A
	SGR-DU040(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:33 PM	ICP-MS4_160516B
1605071-50A	SGR-DU040(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 01:55 PM	GCMS6_160515A
	SGR-DU040(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:35 PM	ICP-MS4_160516B
1605071-51A	SGR-DU040(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 02:35 PM	GCMS6_160515A
	SGR-DU040(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:37 PM	ICP-MS4_160516B

Lab Order: 1605071
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
1605071-52A	SGR-DU040(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 03:15 PM	GCMS6_160515A
	SGR-DU040(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:39 PM	ICP-MS4_160516B
1605071-53A	SGR-DU040(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 03:55 PM	GCMS6_160515A
	SGR-DU040(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 05:54 PM	ICP-MS4_160516B
1605071-54A	SGR-DU040(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 04:34 PM	GCMS6_160515A
	SGR-DU040(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:41 PM	ICP-MS4_160516B

DHL Analytical, Inc.

Date: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605071-01
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:27 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	14.1	0.0962	0.288	0.144		mg/Kg-dry	5	05/11/16 06:51 PM
IS: Bismuth	93.9	0	30-120	0		%REC	5	05/11/16 06:51 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 10:43 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 10:43 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[a]anthracene	0.224	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[a]pyrene	0.276	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[b]fluoranthene	0.262	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[e]pyrene	0.213	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[g,h,i]perylene	0.220	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[j]fluoranthene	0.136	0.0498	0.0996	0.0747	N	mg/Kg-dry	10	05/13/16 10:43 AM
Benzo[k]fluoranthene	0.137	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Chrysene	0.264	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 10:43 AM
Fluoranthene	0.396	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 10:43 AM
Indeno[1,2,3-cd]pyrene	0.178	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Phenanthrene	0.163	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
Pyrene	0.341	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 10:43 AM
IS: Acenaphthene-d10	78.1	0	50-200	0		%REC	10	05/13/16 10:43 AM
IS: Chrysene-d12	85.4	0	50-200	0		%REC	10	05/13/16 10:43 AM
IS: Naphthalene-d8	123	0	50-200	0		%REC	10	05/13/16 10:43 AM
IS: Perylene-d12	87.9	0	50-200	0		%REC	10	05/13/16 10:43 AM
IS: Phenanthrene-d10	84.0	0	50-200	0		%REC	10	05/13/16 10:43 AM
Surr: 2-Fluorobiphenyl	77.7	0	46-115	0		%REC	10	05/13/16 10:43 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605071-01
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:27 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	67.9	0	58-133	0		%REC	10	05/13/16 10:43 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605071-02
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:31 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.4	0.0901	0.270	0.135		mg/Kg-dry	5	05/11/16 06:53 PM
IS: Bismuth	91.8	0	30-120	0		%REC	5	05/11/16 06:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.369	0.246	0.492	0.369	U	mg/Kg-dry	50	05/13/16 11:23 AM
Acenaphthylene	0.369	0.246	0.492	0.369	U	mg/Kg-dry	50	05/13/16 11:23 AM
Anthracene	0.369	0.246	0.492	0.369	U	mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[a]anthracene	0.831	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[a]pyrene	0.854	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[b]fluoranthene	0.800	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[e]pyrene	0.611	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[g,h,i]perylene	0.569	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[j]fluoranthene	0.431	0.246	0.492	0.369	JN	mg/Kg-dry	50	05/13/16 11:23 AM
Benzo[k]fluoranthene	0.431	0.246	0.492	0.369	J	mg/Kg-dry	50	05/13/16 11:23 AM
Chrysene	0.914	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Dibenz[a,h]anthracene	0.369	0.246	0.492	0.369	U	mg/Kg-dry	50	05/13/16 11:23 AM
Fluoranthene	1.68	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Fluorene	0.369	0.246	0.492	0.369	U	mg/Kg-dry	50	05/13/16 11:23 AM
Indeno[1,2,3-cd]pyrene	0.479	0.246	0.492	0.369	J	mg/Kg-dry	50	05/13/16 11:23 AM
Phenanthrene	0.789	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
Pyrene	1.37	0.246	0.492	0.369		mg/Kg-dry	50	05/13/16 11:23 AM
IS: Acenaphthene-d10	75.6	0	50-200	0		%REC	50	05/13/16 11:23 AM
IS: Chrysene-d12	81.0	0	50-200	0		%REC	50	05/13/16 11:23 AM
IS: Naphthalene-d8	120	0	50-200	0		%REC	50	05/13/16 11:23 AM
IS: Perylene-d12	81.5	0	50-200	0		%REC	50	05/13/16 11:23 AM
IS: Phenanthrene-d10	79.4	0	50-200	0		%REC	50	05/13/16 11:23 AM
Surr: 2-Fluorobiphenyl	89.1	0	46-115	0		%REC	50	05/13/16 11:23 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605071-02
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:31 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	77.2	0	58-133	0		%REC	50	05/13/16 11:23 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605071-03
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:34 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	9.16	0.0870	0.261	0.130		mg/Kg-dry	5	05/11/16 06:55 PM
IS: Bismuth	90.6	0	30-120	0		%REC	5	05/11/16 06:55 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.355	0.237	0.473	0.355	U	mg/Kg-dry	50	05/13/16 12:02 PM
Acenaphthylene	0.355	0.237	0.473	0.355	U	mg/Kg-dry	50	05/13/16 12:02 PM
Anthracene	0.355	0.237	0.473	0.355	U	mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[a]anthracene	0.490	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[a]pyrene	0.638	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[b]fluoranthene	0.609	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[e]pyrene	0.481	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[g,h,i]perylene	0.467	0.237	0.473	0.355	J	mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[j]fluoranthene	0.316	0.237	0.473	0.355	JN	mg/Kg-dry	50	05/13/16 12:02 PM
Benzo[k]fluoranthene	0.313	0.237	0.473	0.355	J	mg/Kg-dry	50	05/13/16 12:02 PM
Chrysene	0.573	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
Dibenz[a,h]anthracene	0.355	0.237	0.473	0.355	U	mg/Kg-dry	50	05/13/16 12:02 PM
Fluoranthene	0.706	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
Fluorene	0.355	0.237	0.473	0.355	U	mg/Kg-dry	50	05/13/16 12:02 PM
Indeno[1,2,3-cd]pyrene	0.377	0.237	0.473	0.355	J	mg/Kg-dry	50	05/13/16 12:02 PM
Phenanthrene	0.260	0.237	0.473	0.355	J	mg/Kg-dry	50	05/13/16 12:02 PM
Pyrene	0.615	0.237	0.473	0.355		mg/Kg-dry	50	05/13/16 12:02 PM
IS: Acenaphthene-d10	77.0	0	50-200	0		%REC	50	05/13/16 12:02 PM
IS: Chrysene-d12	79.9	0	50-200	0		%REC	50	05/13/16 12:02 PM
IS: Naphthalene-d8	116	0	50-200	0		%REC	50	05/13/16 12:02 PM
IS: Perylene-d12	79.9	0	50-200	0		%REC	50	05/13/16 12:02 PM
IS: Phenanthrene-d10	80.0	0	50-200	0		%REC	50	05/13/16 12:02 PM
Surr: 2-Fluorobiphenyl	82.6	0	46-115	0		%REC	50	05/13/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605071-03
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:34 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.5	0	58-133	0		%REC	50	05/13/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605071-04
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:38 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.29	0.0990	0.297	0.149		mg/Kg-dry	5	05/11/16 06:57 PM
IS: Bismuth	89.4	0	30-120	0		%REC	5	05/11/16 06:57 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/13/16 12:42 PM
Acenaphthylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/13/16 12:42 PM
Anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[a]anthracene	0.0957	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[a]pyrene	0.107	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[b]fluoranthene	0.101	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[e]pyrene	0.0793	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[g,h,i]perylene	0.0826	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[j]fluoranthene	0.0547	0.0496	0.0992	0.0744	JN	mg/Kg-dry	10	05/13/16 12:42 PM
Benzo[k]fluoranthene	0.0556	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/13/16 12:42 PM
Chrysene	0.117	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/13/16 12:42 PM
Dibenz[a,h]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/13/16 12:42 PM
Fluoranthene	0.175	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/13/16 12:42 PM
Fluorene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/13/16 12:42 PM
Indeno[1,2,3-cd]pyrene	0.0647	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/13/16 12:42 PM
Phenanthrene	0.0840	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/13/16 12:42 PM
Pyrene	0.153	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/13/16 12:42 PM
IS: Acenaphthene-d10	76.9	0	50-200	0		%REC	10	05/13/16 12:42 PM
IS: Chrysene-d12	84.2	0	50-200	0		%REC	10	05/13/16 12:42 PM
IS: Naphthalene-d8	116	0	50-200	0		%REC	10	05/13/16 12:42 PM
IS: Perylene-d12	82.5	0	50-200	0		%REC	10	05/13/16 12:42 PM
IS: Phenanthrene-d10	85.5	0	50-200	0		%REC	10	05/13/16 12:42 PM
Surr: 2-Fluorobiphenyl	79.7	0	46-115	0		%REC	10	05/13/16 12:42 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605071-04
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:38 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	69.3	0	58-133	0		%REC	10	05/13/16 12:42 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605071-05
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:45 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.18	0.0909	0.273	0.136		mg/Kg-dry	5	05/11/16 06:59 PM
IS: Bismuth	90.3	0	30-120	0		%REC	5	05/11/16 06:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/13/16 01:22 PM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 01:22 PM
IS: Acenaphthene-d10	79.3	0	50-200	0		%REC	10	05/13/16 01:22 PM
IS: Chrysene-d12	84.4	0	50-200	0		%REC	10	05/13/16 01:22 PM
IS: Naphthalene-d8	122	0	50-200	0		%REC	10	05/13/16 01:22 PM
IS: Perylene-d12	87.2	0	50-200	0		%REC	10	05/13/16 01:22 PM
IS: Phenanthrene-d10	85.2	0	50-200	0		%REC	10	05/13/16 01:22 PM
Surr: 2-Fluorobiphenyl	77.7	0	46-115	0		%REC	10	05/13/16 01:22 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605071-05
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:45 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	68.5	0	58-133	0		%REC	10	05/13/16 01:22 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605071-06
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:49 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.1	0.0952	0.286	0.143		mg/Kg-dry	5	05/11/16 07:01 PM
IS: Bismuth	89.3	0	30-120	0		%REC	5	05/11/16 07:01 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/13/16 02:01 PM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/13/16 02:01 PM
Anthracene	0.0659	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[a]anthracene	0.337	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[a]pyrene	0.363	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[b]fluoranthene	0.352	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[e]pyrene	0.279	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[g,h,i]perylene	0.262	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[j]fluoranthene	0.187	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/13/16 02:01 PM
Benzo[k]fluoranthene	0.182	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Chrysene	0.390	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Dibenz[a,h]anthracene	0.0613	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/13/16 02:01 PM
Fluoranthene	0.681	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/13/16 02:01 PM
Indeno[1,2,3-cd]pyrene	0.219	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Phenanthrene	0.323	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
Pyrene	0.556	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/13/16 02:01 PM
IS: Acenaphthene-d10	75.1	0	50-200	0		%REC	10	05/13/16 02:01 PM
IS: Chrysene-d12	80.9	0	50-200	0		%REC	10	05/13/16 02:01 PM
IS: Naphthalene-d8	118	0	50-200	0		%REC	10	05/13/16 02:01 PM
IS: Perylene-d12	83.0	0	50-200	0		%REC	10	05/13/16 02:01 PM
IS: Phenanthrene-d10	81.6	0	50-200	0		%REC	10	05/13/16 02:01 PM
Surr: 2-Fluorobiphenyl	83.5	0	46-115	0		%REC	10	05/13/16 02:01 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605071-06
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:49 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.1	0	58-133	0		%REC	10	05/13/16 02:01 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605071-07
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:51 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.9	0.0962	0.288	0.144		mg/Kg-dry	5	05/11/16 07:03 PM
IS: Bismuth	90.8	0	30-120	0		%REC	5	05/11/16 07:03 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.756	0.504	1.01	0.756	U	mg/Kg-dry	100	05/13/16 02:41 PM
Acenaphthylene	0.756	0.504	1.01	0.756	U	mg/Kg-dry	100	05/13/16 02:41 PM
Anthracene	0.756	0.504	1.01	0.756	U	mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[a]anthracene	0.891	0.504	1.01	0.756	J	mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[a]pyrene	1.35	0.504	1.01	0.756		mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[b]fluoranthene	1.15	0.504	1.01	0.756		mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[e]pyrene	0.942	0.504	1.01	0.756	J	mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[g,h,i]perylene	1.02	0.504	1.01	0.756		mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[j]fluoranthene	0.615	0.504	1.01	0.756	JN	mg/Kg-dry	100	05/13/16 02:41 PM
Benzo[k]fluoranthene	0.625	0.504	1.01	0.756	J	mg/Kg-dry	100	05/13/16 02:41 PM
Chrysene	1.06	0.504	1.01	0.756		mg/Kg-dry	100	05/13/16 02:41 PM
Dibenz[a,h]anthracene	0.756	0.504	1.01	0.756	U	mg/Kg-dry	100	05/13/16 02:41 PM
Fluoranthene	1.15	0.504	1.01	0.756		mg/Kg-dry	100	05/13/16 02:41 PM
Fluorene	0.756	0.504	1.01	0.756	U	mg/Kg-dry	100	05/13/16 02:41 PM
Indeno[1,2,3-cd]pyrene	0.852	0.504	1.01	0.756	J	mg/Kg-dry	100	05/13/16 02:41 PM
Phenanthrene	0.756	0.504	1.01	0.756	U	mg/Kg-dry	100	05/13/16 02:41 PM
Pyrene	1.05	0.504	1.01	0.756		mg/Kg-dry	100	05/13/16 02:41 PM
IS: Acenaphthene-d10	79.1	0	50-200	0		%REC	100	05/13/16 02:41 PM
IS: Chrysene-d12	81.5	0	50-200	0		%REC	100	05/13/16 02:41 PM
IS: Naphthalene-d8	118	0	50-200	0		%REC	100	05/13/16 02:41 PM
IS: Perylene-d12	83.1	0	50-200	0		%REC	100	05/13/16 02:41 PM
IS: Phenanthrene-d10	81.8	0	50-200	0		%REC	100	05/13/16 02:41 PM
Surr: 2-Fluorobiphenyl	83.4	0	46-115	0		%REC	100	05/13/16 02:41 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605071-07
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:51 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	74.7	0	58-133	0		%REC	100	05/13/16 02:41 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605071-08
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:52 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	97.5	0.0935	0.280	0.140		mg/Kg-dry	5	05/11/16 07:05 PM
IS: Bismuth	91.4	0	30-120	0		%REC	5	05/11/16 07:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 03:21 PM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 03:21 PM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[a]anthracene	0.219	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[a]pyrene	0.399	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[b]fluoranthene	0.379	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[e]pyrene	0.314	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[g,h,i]perylene	0.353	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[j]fluoranthene	0.176	0.0498	0.0995	0.0746	N	mg/Kg-dry	10	05/13/16 03:21 PM
Benzo[k]fluoranthene	0.179	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Chrysene	0.305	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Dibenz[a,h]anthracene	0.0758	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/13/16 03:21 PM
Fluoranthene	0.272	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 03:21 PM
Indeno[1,2,3-cd]pyrene	0.268	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
Phenanthrene	0.0736	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/13/16 03:21 PM
Pyrene	0.275	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 03:21 PM
IS: Acenaphthene-d10	75.0	0	50-200	0		%REC	10	05/13/16 03:21 PM
IS: Chrysene-d12	79.6	0	50-200	0		%REC	10	05/13/16 03:21 PM
IS: Naphthalene-d8	124	0	50-200	0		%REC	10	05/13/16 03:21 PM
IS: Perylene-d12	79.3	0	50-200	0		%REC	10	05/13/16 03:21 PM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/13/16 03:21 PM
Surr: 2-Fluorobiphenyl	88.0	0	46-115	0		%REC	10	05/13/16 03:21 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605071-08
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:52 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/13/16 03:21 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605071-09
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:56 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.81	0.0962	0.288	0.144		mg/Kg-dry	5	05/11/16 06:16 PM
IS: Bismuth	92.3	0	30-120	0		%REC	5	05/11/16 06:16 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/13/16 04:01 PM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Fluoranthene	0.0697	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/13/16 04:01 PM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 04:01 PM
Pyrene	0.0550	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/13/16 04:01 PM
IS: Acenaphthene-d10	74.8	0	50-200	0		%REC	10	05/13/16 04:01 PM
IS: Chrysene-d12	77.6	0	50-200	0		%REC	10	05/13/16 04:01 PM
IS: Naphthalene-d8	117	0	50-200	0		%REC	10	05/13/16 04:01 PM
IS: Perylene-d12	79.3	0	50-200	0		%REC	10	05/13/16 04:01 PM
IS: Phenanthrene-d10	77.1	0	50-200	0		%REC	10	05/13/16 04:01 PM
Surr: 2-Fluorobiphenyl	86.9	0	46-115	0		%REC	10	05/13/16 04:01 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605071-09
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:56 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.6	0	58-133	0		%REC	10	05/13/16 04:01 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605071-10
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:57 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.70	0.0847	0.254	0.127		mg/Kg-dry	5	05/11/16 07:07 PM
IS: Bismuth	89.1	0	30-120	0		%REC	5	05/11/16 07:07 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Acenaphthylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[a]anthracene	0.0679	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[a]pyrene	0.0748	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[b]fluoranthene	0.0675	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[e]pyrene	0.0528	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[g,h,i]perylene	0.0506	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[j]fluoranthene	0.0718	0.0478	0.0957	0.0718	NU	mg/Kg-dry	10	05/13/16 04:40 PM
Benzo[k]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Chrysene	0.0750	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Dibenz[a,h]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Fluoranthene	0.153	0.0478	0.0957	0.0718		mg/Kg-dry	10	05/13/16 04:40 PM
Fluorene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Indeno[1,2,3-cd]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/13/16 04:40 PM
Phenanthrene	0.0811	0.0478	0.0957	0.0718	J	mg/Kg-dry	10	05/13/16 04:40 PM
Pyrene	0.124	0.0478	0.0957	0.0718		mg/Kg-dry	10	05/13/16 04:40 PM
IS: Acenaphthene-d10	77.6	0	50-200	0		%REC	10	05/13/16 04:40 PM
IS: Chrysene-d12	80.7	0	50-200	0		%REC	10	05/13/16 04:40 PM
IS: Naphthalene-d8	120	0	50-200	0		%REC	10	05/13/16 04:40 PM
IS: Perylene-d12	83.1	0	50-200	0		%REC	10	05/13/16 04:40 PM
IS: Phenanthrene-d10	79.1	0	50-200	0		%REC	10	05/13/16 04:40 PM
Surr: 2-Fluorobiphenyl	82.6	0	46-115	0		%REC	10	05/13/16 04:40 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605071-10
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:57 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.3	0	58-133	0		%REC	10	05/13/16 04:40 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605071-11
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:00 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	13.8	0.0971	0.291	0.146		mg/Kg-dry	5	05/11/16 07:09 PM
IS: Bismuth	89.5	0	30-120	0		%REC	5	05/11/16 07:09 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 09:16 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 09:16 PM
Anthracene	0.0705	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[a]anthracene	0.349	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[a]pyrene	0.379	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[b]fluoranthene	0.364	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[e]pyrene	0.288	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[g,h,i]perylene	0.280	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[j]fluoranthene	0.198	0.0495	0.0990	0.0743	N	mg/Kg-dry	10	05/13/16 09:16 PM
Benzo[k]fluoranthene	0.190	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Chrysene	0.412	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Dibenz[a,h]anthracene	0.0733	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/13/16 09:16 PM
Fluoranthene	0.663	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/13/16 09:16 PM
Indeno[1,2,3-cd]pyrene	0.232	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Phenanthrene	0.350	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
Pyrene	0.537	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/13/16 09:16 PM
IS: Acenaphthene-d10	74.2	0	50-200	0		%REC	10	05/13/16 09:16 PM
IS: Chrysene-d12	78.4	0	50-200	0		%REC	10	05/13/16 09:16 PM
IS: Naphthalene-d8	115	0	50-200	0		%REC	10	05/13/16 09:16 PM
IS: Perylene-d12	81.4	0	50-200	0		%REC	10	05/13/16 09:16 PM
IS: Phenanthrene-d10	78.5	0	50-200	0		%REC	10	05/13/16 09:16 PM
Surr: 2-Fluorobiphenyl	83.9	0	46-115	0		%REC	10	05/13/16 09:16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605071-11
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:00 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.8	0	58-133	0		%REC	10	05/13/16 09:16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605071-12
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:01 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	18.3	0.0917	0.275	0.138		mg/Kg-dry	5	05/16/16 04:46 PM
IS: Bismuth	97.0	0	30-120	0		%REC	5	05/16/16 04:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.249	0.249	0.497	0.373	J	mg/Kg-dry	50	05/13/16 09:56 PM
Acenaphthylene	0.373	0.249	0.497	0.373	U	mg/Kg-dry	50	05/13/16 09:56 PM
Anthracene	1.48	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[a]anthracene	4.54	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[a]pyrene	4.48	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[b]fluoranthene	4.18	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[e]pyrene	3.14	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[g,h,i]perylene	2.80	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[j]fluoranthene	2.26	0.249	0.497	0.373	N	mg/Kg-dry	50	05/13/16 09:56 PM
Benzo[k]fluoranthene	2.15	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Chrysene	4.95	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Dibenz[a,h]anthracene	0.735	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Fluoranthene	9.72	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Fluorene	0.307	0.249	0.497	0.373	J	mg/Kg-dry	50	05/13/16 09:56 PM
Indeno[1,2,3-cd]pyrene	2.45	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Phenanthrene	5.88	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
Pyrene	7.42	0.249	0.497	0.373		mg/Kg-dry	50	05/13/16 09:56 PM
IS: Acenaphthene-d10	78.4	0	50-200	0		%REC	50	05/13/16 09:56 PM
IS: Chrysene-d12	83.6	0	50-200	0		%REC	50	05/13/16 09:56 PM
IS: Naphthalene-d8	124	0	50-200	0		%REC	50	05/13/16 09:56 PM
IS: Perylene-d12	83.8	0	50-200	0		%REC	50	05/13/16 09:56 PM
IS: Phenanthrene-d10	79.6	0	50-200	0		%REC	50	05/13/16 09:56 PM
Surr: 2-Fluorobiphenyl	80.8	0	46-115	0		%REC	50	05/13/16 09:56 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605071-12
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:01 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.0	0	58-133	0		%REC	50	05/13/16 09:56 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605071-13
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:02 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	10.3	0.0943	0.283	0.142		mg/Kg-dry	5	05/16/16 04:48 PM
IS: Bismuth	96.6	0	30-120	0		%REC	5	05/16/16 04:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0694	0.0463	0.0925	0.0694	U	mg/Kg-dry	10	05/13/16 10:36 PM
Acenaphthylene	0.0694	0.0463	0.0925	0.0694	U	mg/Kg-dry	10	05/13/16 10:36 PM
Anthracene	0.0694	0.0463	0.0925	0.0694	U	mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[a]anthracene	0.117	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[a]pyrene	0.132	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[b]fluoranthene	0.127	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[e]pyrene	0.100	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[g,h,i]perylene	0.101	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[j]fluoranthene	0.0662	0.0463	0.0925	0.0694	JN	mg/Kg-dry	10	05/13/16 10:36 PM
Benzo[k]fluoranthene	0.0658	0.0463	0.0925	0.0694	J	mg/Kg-dry	10	05/13/16 10:36 PM
Chrysene	0.133	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Dibenz[a,h]anthracene	0.0694	0.0463	0.0925	0.0694	U	mg/Kg-dry	10	05/13/16 10:36 PM
Fluoranthene	0.224	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Fluorene	0.0694	0.0463	0.0925	0.0694	U	mg/Kg-dry	10	05/13/16 10:36 PM
Indeno[1,2,3-cd]pyrene	0.0824	0.0463	0.0925	0.0694	J	mg/Kg-dry	10	05/13/16 10:36 PM
Phenanthrene	0.101	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
Pyrene	0.185	0.0463	0.0925	0.0694		mg/Kg-dry	10	05/13/16 10:36 PM
IS: Acenaphthene-d10	75.2	0	50-200	0		%REC	10	05/13/16 10:36 PM
IS: Chrysene-d12	79.4	0	50-200	0		%REC	10	05/13/16 10:36 PM
IS: Naphthalene-d8	114	0	50-200	0		%REC	10	05/13/16 10:36 PM
IS: Perylene-d12	79.3	0	50-200	0		%REC	10	05/13/16 10:36 PM
IS: Phenanthrene-d10	79.7	0	50-200	0		%REC	10	05/13/16 10:36 PM
Surr: 2-Fluorobiphenyl	80.3	0	46-115	0		%REC	10	05/13/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605071-13
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:02 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	69.1	0	58-133	0		%REC	10	05/13/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605071-14
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:03 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.5	0.0855	0.256	0.128		mg/Kg-dry	5	05/16/16 04:50 PM
IS: Bismuth	95.2	0	30-120	0		%REC	5	05/16/16 04:50 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.208	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Acenaphthylene	0.0730	0.0486	0.0973	0.0730	U	mg/Kg-dry	10	05/13/16 11:16 PM
Anthracene	0.311	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[a]anthracene	2.46	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[a]pyrene	2.93	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[b]fluoranthene	2.05	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[e]pyrene	1.71	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[g,h,i]perylene	1.61	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[j]fluoranthene	1.48	0.0486	0.0973	0.0730	N	mg/Kg-dry	10	05/13/16 11:16 PM
Benzo[k]fluoranthene	1.34	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Chrysene	3.28	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Dibenz[a,h]anthracene	0.440	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Fluoranthene	3.96	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Fluorene	0.0883	0.0486	0.0973	0.0730	J	mg/Kg-dry	10	05/13/16 11:16 PM
Indeno[1,2,3-cd]pyrene	1.42	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Phenanthrene	1.58	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
Pyrene	4.19	0.0486	0.0973	0.0730		mg/Kg-dry	10	05/13/16 11:16 PM
IS: Acenaphthene-d10	75.2	0	50-200	0		%REC	10	05/13/16 11:16 PM
IS: Chrysene-d12	80.7	0	50-200	0		%REC	10	05/13/16 11:16 PM
IS: Naphthalene-d8	114	0	50-200	0		%REC	10	05/13/16 11:16 PM
IS: Perylene-d12	81.9	0	50-200	0		%REC	10	05/13/16 11:16 PM
IS: Phenanthrene-d10	80.4	0	50-200	0		%REC	10	05/13/16 11:16 PM
Surr: 2-Fluorobiphenyl	79.2	0	46-115	0		%REC	10	05/13/16 11:16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605071-14
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:03 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	67.8	0	58-133	0		%REC	10	05/13/16 11:16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605071-15
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:04 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.49	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 04:52 PM
IS: Bismuth	90.7	0	30-120	0		%REC	5	05/16/16 04:52 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Acenaphthylene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Anthracene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[a]anthracene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[a]pyrene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[b]fluoranthene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[e]pyrene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[g,h,i]perylene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[j]fluoranthene	0.0704	0.0469	0.0939	0.0704	NU	mg/Kg-dry	10	05/13/16 11:56 PM
Benzo[k]fluoranthene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Chrysene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Dibenz[a,h]anthracene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Fluoranthene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Fluorene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Indeno[1,2,3-cd]pyrene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Phenanthrene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
Pyrene	0.0704	0.0469	0.0939	0.0704	U	mg/Kg-dry	10	05/13/16 11:56 PM
IS: Acenaphthene-d10	76.4	0	50-200	0		%REC	10	05/13/16 11:56 PM
IS: Chrysene-d12	79.5	0	50-200	0		%REC	10	05/13/16 11:56 PM
IS: Naphthalene-d8	118	0	50-200	0		%REC	10	05/13/16 11:56 PM
IS: Perylene-d12	81.3	0	50-200	0		%REC	10	05/13/16 11:56 PM
IS: Phenanthrene-d10	78.9	0	50-200	0		%REC	10	05/13/16 11:56 PM
Surr: 2-Fluorobiphenyl	78.9	0	46-115	0		%REC	10	05/13/16 11:56 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605071-15
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:04 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	67.2	0	58-133	0		%REC	10	05/13/16 11:56 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-A
Project:	Laredo SGR	**Lab ID:**	1605071-16
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 09:10 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	10.3	0.0962	0.288	0.144		mg/Kg-dry	5	05/16/16 04:54 PM
IS: Bismuth	92.1	0	30-120	0		%REC	5	05/16/16 04:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 04:17 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 04:17 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[a]anthracene	0.289	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[a]pyrene	0.390	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[b]fluoranthene	0.346	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[e]pyrene	0.293	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[g,h,i]perylene	0.312	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[j]fluoranthene	0.183	0.0498	0.0996	0.0747	N	mg/Kg-dry	10	05/13/16 04:17 AM
Benzo[k]fluoranthene	0.175	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Chrysene	0.353	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 04:17 AM
Fluoranthene	0.462	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 04:17 AM
Indeno[1,2,3-cd]pyrene	0.246	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Phenanthrene	0.200	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
Pyrene	0.435	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 04:17 AM
IS: Acenaphthene-d10	116	0	50-200	0		%REC	10	05/13/16 04:17 AM
IS: Chrysene-d12	96.6	0	50-200	0		%REC	10	05/13/16 04:17 AM
IS: Naphthalene-d8	98.1	0	50-200	0		%REC	10	05/13/16 04:17 AM
IS: Perylene-d12	102	0	50-200	0		%REC	10	05/13/16 04:17 AM
IS: Phenanthrene-d10	102	0	50-200	0		%REC	10	05/13/16 04:17 AM
Surr: 2-Fluorobiphenyl	82.4	0	46-115	0		%REC	10	05/13/16 04:17 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-A
Project:	Laredo SGR	**Lab ID:**	1605071-16
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 09:10 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	77.4	0	58-133	0		%REC	10	05/13/16 04:17 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-B
Project:	Laredo SGR	**Lab ID:**	1605071-17
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 09:40 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	10.3	0.0862	0.259	0.129		mg/Kg-dry	5	05/16/16 04:42 PM
IS: Bismuth	95.8	0	30-120	0		%REC	5	05/16/16 04:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/13/16 04:53 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/13/16 04:53 AM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[a]anthracene	0.319	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[a]pyrene	0.395	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[b]fluoranthene	0.379	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[e]pyrene	0.307	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[g,h,i]perylene	0.320	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[j]fluoranthene	0.197	0.0495	0.0989	0.0742	N	mg/Kg-dry	10	05/13/16 04:53 AM
Benzo[k]fluoranthene	0.192	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Chrysene	0.408	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/13/16 04:53 AM
Fluoranthene	0.541	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/13/16 04:53 AM
Indeno[1,2,3-cd]pyrene	0.255	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Phenanthrene	0.237	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
Pyrene	0.466	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/13/16 04:53 AM
IS: Acenaphthene-d10	114	0	50-200	0		%REC	10	05/13/16 04:53 AM
IS: Chrysene-d12	89.5	0	50-200	0		%REC	10	05/13/16 04:53 AM
IS: Naphthalene-d8	92.9	0	50-200	0		%REC	10	05/13/16 04:53 AM
IS: Perylene-d12	92.5	0	50-200	0		%REC	10	05/13/16 04:53 AM
IS: Phenanthrene-d10	99.9	0	50-200	0		%REC	10	05/13/16 04:53 AM
Surr: 2-Fluorobiphenyl	86.7	0	46-115	0		%REC	10	05/13/16 04:53 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-B
Project:	Laredo SGR	**Lab ID:**	1605071-17
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 09:40 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	79.8	0	58-133	0		%REC	10	05/13/16 04:53 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-C
Project:	Laredo SGR	**Lab ID:**	1605071-18
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:20 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.2	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 04:56 PM
IS: Bismuth	91.9	0	30-120	0		%REC	5	05/16/16 04:56 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/13/16 05:30 AM
Acenaphthylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/13/16 05:30 AM
Anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[a]anthracene	0.250	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[a]pyrene	0.321	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[b]fluoranthene	0.305	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[e]pyrene	0.245	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[g,h,i]perylene	0.272	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[j]fluoranthene	0.159	0.0494	0.0988	0.0741	N	mg/Kg-dry	10	05/13/16 05:30 AM
Benzo[k]fluoranthene	0.155	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Chrysene	0.319	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Dibenz[a,h]anthracene	0.0566	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/13/16 05:30 AM
Fluoranthene	0.419	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Fluorene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/13/16 05:30 AM
Indeno[1,2,3-cd]pyrene	0.211	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Phenanthrene	0.184	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
Pyrene	0.361	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/13/16 05:30 AM
IS: Acenaphthene-d10	116	0	50-200	0		%REC	10	05/13/16 05:30 AM
IS: Chrysene-d12	90.8	0	50-200	0		%REC	10	05/13/16 05:30 AM
IS: Naphthalene-d8	95.0	0	50-200	0		%REC	10	05/13/16 05:30 AM
IS: Perylene-d12	94.2	0	50-200	0		%REC	10	05/13/16 05:30 AM
IS: Phenanthrene-d10	101	0	50-200	0		%REC	10	05/13/16 05:30 AM
Surr: 2-Fluorobiphenyl	87.4	0	46-115	0		%REC	10	05/13/16 05:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-C
Project:	Laredo SGR	**Lab ID:**	1605071-18
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:20 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	78.3	0	58-133	0		%REC	10	05/13/16 05:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605071-19
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:00 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	15.7	0.113	0.338	0.169		mg/Kg-dry	5	05/16/16 04:58 PM
IS: Bismuth	91.3	0	30-120	0		%REC	5	05/16/16 04:58 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0925	0.0617	0.123	0.0925	U	mg/Kg-dry	10	05/14/16 12:35 AM
Acenaphthylene	0.0925	0.0617	0.123	0.0925	U	mg/Kg-dry	10	05/14/16 12:35 AM
Anthracene	0.148	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[a]anthracene	0.813	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[a]pyrene	0.907	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[b]fluoranthene	0.856	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[e]pyrene	0.677	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[g,h,i]perylene	0.603	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[j]fluoranthene	0.475	0.0617	0.123	0.0925	N	mg/Kg-dry	10	05/14/16 12:35 AM
Benzo[k]fluoranthene	0.464	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Chrysene	0.983	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Dibenz[a,h]anthracene	0.153	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Fluoranthene	1.53	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Fluorene	0.0925	0.0617	0.123	0.0925	U	mg/Kg-dry	10	05/14/16 12:35 AM
Indeno[1,2,3-cd]pyrene	0.525	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Phenanthrene	0.727	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
Pyrene	1.27	0.0617	0.123	0.0925		mg/Kg-dry	10	05/14/16 12:35 AM
IS: Acenaphthene-d10	76.4	0	50-200	0		%REC	10	05/14/16 12:35 AM
IS: Chrysene-d12	80.0	0	50-200	0		%REC	10	05/14/16 12:35 AM
IS: Naphthalene-d8	115	0	50-200	0		%REC	10	05/14/16 12:35 AM
IS: Perylene-d12	81.3	0	50-200	0		%REC	10	05/14/16 12:35 AM
IS: Phenanthrene-d10	79.8	0	50-200	0		%REC	10	05/14/16 12:35 AM
Surr: 2-Fluorobiphenyl	75.7	0	46-115	0		%REC	10	05/14/16 12:35 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605071-19
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:00 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	66.9	0	58-133	0		%REC	10	05/14/16 12:35 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	21.5	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605071-20
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:05 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	20.4	0.117	0.351	0.175		mg/Kg-dry	5	05/16/16 05:00 PM
IS: Bismuth	91.5	0	30-120	0		%REC	5	05/16/16 05:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.116	0.0616	0.123	0.0924	J	mg/Kg-dry	10	05/13/16 05:20 PM
Acenaphthylene	0.0924	0.0616	0.123	0.0924	U	mg/Kg-dry	10	05/13/16 05:20 PM
Anthracene	0.761	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[a]anthracene	3.39	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[a]pyrene	3.07	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[b]fluoranthene	2.98	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[e]pyrene	2.23	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[g,h,i]perylene	1.91	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[j]fluoranthene	1.65	0.0616	0.123	0.0924	N	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[k]fluoranthene	1.57	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Chrysene	3.70	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Dibenz[a,h]anthracene	0.474	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Fluoranthene	7.66	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Fluorene	0.0924	0.0616	0.123	0.0924	U	mg/Kg-dry	10	05/13/16 05:20 PM
Indeno[1,2,3-cd]pyrene	1.73	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Phenanthrene	3.92	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
Pyrene	6.02	0.0616	0.123	0.0924		mg/Kg-dry	10	05/13/16 05:20 PM
IS: Acenaphthene-d10	74.7	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Chrysene-d12	79.0	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Naphthalene-d8	113	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Perylene-d12	81.2	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Phenanthrene-d10	79.8	0	50-200	0		%REC	10	05/13/16 05:20 PM
Surr: 2-Fluorobiphenyl	78.1	0	46-115	0		%REC	10	05/13/16 05:20 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605071-20
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:05 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	66.5	0	58-133	0		%REC	10	05/13/16 05:20 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	19.3	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605071-21
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:10 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	33.5	0.108	0.324	0.162		mg/Kg-dry	5	05/16/16 05:02 PM
IS: Bismuth	93.9	0	30-120	0		%REC	5	05/16/16 05:02 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.136	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Acenaphthylene	0.0865	0.0577	0.115	0.0865	U	mg/Kg-dry	10	05/14/16 01:15 AM
Anthracene	0.161	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[a]anthracene	3.10	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[a]pyrene	4.17	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[b]fluoranthene	3.85	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[e]pyrene	3.14	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[g,h,i]perylene	2.97	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[j]fluoranthene	2.05	0.0577	0.115	0.0865	N	mg/Kg-dry	10	05/14/16 01:15 AM
Benzo[k]fluoranthene	1.97	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Chrysene	3.81	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Dibenz[a,h]anthracene	0.649	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Fluoranthene	4.13	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Fluorene	0.0865	0.0577	0.115	0.0865	U	mg/Kg-dry	10	05/14/16 01:15 AM
Indeno[1,2,3-cd]pyrene	2.45	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Phenanthrene	0.819	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
Pyrene	3.88	0.0577	0.115	0.0865		mg/Kg-dry	10	05/14/16 01:15 AM
IS: Acenaphthene-d10	77.0	0	50-200	0		%REC	10	05/14/16 01:15 AM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/14/16 01:15 AM
IS: Naphthalene-d8	114	0	50-200	0		%REC	10	05/14/16 01:15 AM
IS: Perylene-d12	84.6	0	50-200	0		%REC	10	05/14/16 01:15 AM
IS: Phenanthrene-d10	80.6	0	50-200	0		%REC	10	05/14/16 01:15 AM
Surr: 2-Fluorobiphenyl	73.4	0	46-115	0		%REC	10	05/14/16 01:15 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605071-21
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:10 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	65.5	0	58-133	0		%REC	10	05/14/16 01:15 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	19.4	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605071-22
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:15 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	16.6	0.116	0.347	0.174		mg/Kg-dry	5	05/16/16 05:18 PM
IS: Bismuth	89.9	0	30-120	0		%REC	5	05/16/16 05:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0945	0.0630	0.126	0.0945	U	mg/Kg-dry	10	05/14/16 01:54 AM
Acenaphthylene	0.0945	0.0630	0.126	0.0945	U	mg/Kg-dry	10	05/14/16 01:54 AM
Anthracene	0.0945	0.0630	0.126	0.0945	U	mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[a]anthracene	0.132	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[a]pyrene	0.167	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[b]fluoranthene	0.164	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[e]pyrene	0.133	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[g,h,i]perylene	0.132	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[j]fluoranthene	0.0835	0.0630	0.126	0.0945	JN	mg/Kg-dry	10	05/14/16 01:54 AM
Benzo[k]fluoranthene	0.0832	0.0630	0.126	0.0945	J	mg/Kg-dry	10	05/14/16 01:54 AM
Chrysene	0.162	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Dibenz[a,h]anthracene	0.0945	0.0630	0.126	0.0945	U	mg/Kg-dry	10	05/14/16 01:54 AM
Fluoranthene	0.236	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
Fluorene	0.0945	0.0630	0.126	0.0945	U	mg/Kg-dry	10	05/14/16 01:54 AM
Indeno[1,2,3-cd]pyrene	0.111	0.0630	0.126	0.0945	J	mg/Kg-dry	10	05/14/16 01:54 AM
Phenanthrene	0.0869	0.0630	0.126	0.0945	J	mg/Kg-dry	10	05/14/16 01:54 AM
Pyrene	0.201	0.0630	0.126	0.0945		mg/Kg-dry	10	05/14/16 01:54 AM
IS: Acenaphthene-d10	74.8	0	50-200	0		%REC	10	05/14/16 01:54 AM
IS: Chrysene-d12	78.8	0	50-200	0		%REC	10	05/14/16 01:54 AM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/14/16 01:54 AM
IS: Perylene-d12	81.5	0	50-200	0		%REC	10	05/14/16 01:54 AM
IS: Phenanthrene-d10	77.4	0	50-200	0		%REC	10	05/14/16 01:54 AM
Surr: 2-Fluorobiphenyl	70.0	0	46-115	0		%REC	10	05/14/16 01:54 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605071-22
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:15 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	61.5	0	58-133	0		%REC	10	05/14/16 01:54 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	24.2	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT5
Project:	Laredo SGR	**Lab ID:**	1605071-23
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:20 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	26.9	0.114	0.342	0.171		mg/Kg-dry	5	05/16/16 05:20 PM
IS: Bismuth	93.0	0	30-120	0		%REC	5	05/16/16 05:20 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/14/16 02:33 AM
Acenaphthylene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/14/16 02:33 AM
Anthracene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[a]anthracene	0.180	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[a]pyrene	0.240	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[b]fluoranthene	0.246	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[e]pyrene	0.201	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[g,h,i]perylene	0.198	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[j]fluoranthene	0.126	0.0575	0.115	0.0863	N	mg/Kg-dry	10	05/14/16 02:33 AM
Benzo[k]fluoranthene	0.122	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Chrysene	0.235	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Dibenz[a,h]anthracene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/14/16 02:33 AM
Fluoranthene	0.317	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Fluorene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/14/16 02:33 AM
Indeno[1,2,3-cd]pyrene	0.164	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
Phenanthrene	0.113	0.0575	0.115	0.0863	J	mg/Kg-dry	10	05/14/16 02:33 AM
Pyrene	0.275	0.0575	0.115	0.0863		mg/Kg-dry	10	05/14/16 02:33 AM
IS: Acenaphthene-d10	77.2	0	50-200	0		%REC	10	05/14/16 02:33 AM
IS: Chrysene-d12	80.7	0	50-200	0		%REC	10	05/14/16 02:33 AM
IS: Naphthalene-d8	113	0	50-200	0		%REC	10	05/14/16 02:33 AM
IS: Perylene-d12	83.5	0	50-200	0		%REC	10	05/14/16 02:33 AM
IS: Phenanthrene-d10	79.5	0	50-200	0		%REC	10	05/14/16 02:33 AM
Surr: 2-Fluorobiphenyl	71.7	0	46-115	0		%REC	10	05/14/16 02:33 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044-STRAT5
Project:	Laredo SGR	**Lab ID:**	1605071-23
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:20 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	62.2	0	58-133	0		%REC	10	05/14/16 02:33 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	19.6	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605071-24
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:35 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	13.6	0.100	0.301	0.150		mg/Kg-dry	5	05/16/16 05:22 PM
IS: Bismuth	94.2	0	30-120	0		%REC	5	05/16/16 05:22 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/13/16 04:06 PM
Acenaphthylene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/13/16 04:06 PM
Anthracene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[a]anthracene	0.0991	0.0575	0.115	0.0863	J	mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[a]pyrene	0.149	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[b]fluoranthene	0.153	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[e]pyrene	0.120	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[g,h,i]perylene	0.133	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[j]fluoranthene	0.0789	0.0575	0.115	0.0863	JN	mg/Kg-dry	10	05/13/16 04:06 PM
Benzo[k]fluoranthene	0.0811	0.0575	0.115	0.0863	J	mg/Kg-dry	10	05/13/16 04:06 PM
Chrysene	0.132	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Dibenz[a,h]anthracene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/13/16 04:06 PM
Fluoranthene	0.168	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Fluorene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/13/16 04:06 PM
Indeno[1,2,3-cd]pyrene	0.115	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
Phenanthrene	0.0863	0.0575	0.115	0.0863	U	mg/Kg-dry	10	05/13/16 04:06 PM
Pyrene	0.153	0.0575	0.115	0.0863		mg/Kg-dry	10	05/13/16 04:06 PM
IS: Acenaphthene-d10	97.1	0	50-200	0		%REC	10	05/13/16 04:06 PM
IS: Chrysene-d12	98.2	0	50-200	0		%REC	10	05/13/16 04:06 PM
IS: Naphthalene-d8	96.4	0	50-200	0		%REC	10	05/13/16 04:06 PM
IS: Perylene-d12	96.4	0	50-200	0		%REC	10	05/13/16 04:06 PM
IS: Phenanthrene-d10	85.5	0	50-200	0		%REC	10	05/13/16 04:06 PM
Surr: 2-Fluorobiphenyl	78.0	0	46-115	0		%REC	10	05/13/16 04:06 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605071-24
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:35 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	80.7	0	58-133	0		%REC	10	05/13/16 04:06 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	14.1	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605071-25
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:40 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	13.9	0.112	0.335	0.167		mg/Kg-dry	5	05/16/16 05:24 PM
IS: Bismuth	95.6	0	30-120	0		%REC	5	05/16/16 05:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0830	0.0553	0.111	0.0830	U	mg/Kg-dry	10	05/13/16 04:43 PM
Acenaphthylene	0.0830	0.0553	0.111	0.0830	U	mg/Kg-dry	10	05/13/16 04:43 PM
Anthracene	0.0830	0.0553	0.111	0.0830	U	mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[a]anthracene	0.243	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[a]pyrene	0.333	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[b]fluoranthene	0.320	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[e]pyrene	0.255	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[g,h,i]perylene	0.277	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[j]fluoranthene	0.173	0.0553	0.111	0.0830	N	mg/Kg-dry	10	05/13/16 04:43 PM
Benzo[k]fluoranthene	0.174	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Chrysene	0.312	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Dibenz[a,h]anthracene	0.0705	0.0553	0.111	0.0830	J	mg/Kg-dry	10	05/13/16 04:43 PM
Fluoranthene	0.427	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Fluorene	0.0830	0.0553	0.111	0.0830	U	mg/Kg-dry	10	05/13/16 04:43 PM
Indeno[1,2,3-cd]pyrene	0.228	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Phenanthrene	0.137	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
Pyrene	0.387	0.0553	0.111	0.0830		mg/Kg-dry	10	05/13/16 04:43 PM
IS: Acenaphthene-d10	95.7	0	50-200	0		%REC	10	05/13/16 04:43 PM
IS: Chrysene-d12	94.1	0	50-200	0		%REC	10	05/13/16 04:43 PM
IS: Naphthalene-d8	94.4	0	50-200	0		%REC	10	05/13/16 04:43 PM
IS: Perylene-d12	94.4	0	50-200	0		%REC	10	05/13/16 04:43 PM
IS: Phenanthrene-d10	86.6	0	50-200	0		%REC	10	05/13/16 04:43 PM
Surr: 2-Fluorobiphenyl	74.3	0	46-115	0		%REC	10	05/13/16 04:43 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605071-25
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:40 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.3	0	58-133	0		%REC	10	05/13/16 04:43 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	13.0	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605071-26
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:45 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.7	0.110	0.330	0.165		mg/Kg-dry	5	05/16/16 05:26 PM
IS: Bismuth	93.2	0	30-120	0		%REC	5	05/16/16 05:26 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Acenaphthylene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Anthracene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[a]anthracene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[a]pyrene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[b]fluoranthene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[e]pyrene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[g,h,i]perylene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[j]fluoranthene	0.0870	0.0580	0.116	0.0870	NU	mg/Kg-dry	10	05/13/16 05:20 PM
Benzo[k]fluoranthene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Chrysene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Dibenz[a,h]anthracene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Fluoranthene	0.0602	0.0580	0.116	0.0870	J	mg/Kg-dry	10	05/13/16 05:20 PM
Fluorene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Indeno[1,2,3-cd]pyrene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Phenanthrene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
Pyrene	0.0870	0.0580	0.116	0.0870	U	mg/Kg-dry	10	05/13/16 05:20 PM
IS: Acenaphthene-d10	98.9	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Chrysene-d12	97.6	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Naphthalene-d8	98.0	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Perylene-d12	98.8	0	50-200	0		%REC	10	05/13/16 05:20 PM
IS: Phenanthrene-d10	90.0	0	50-200	0		%REC	10	05/13/16 05:20 PM
Surr: 2-Fluorobiphenyl	71.3	0	46-115	0		%REC	10	05/13/16 05:20 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605071-26
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:45 AM
Lab Order:	1605071	**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	05/13/16 05:20 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	14.9	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605071-27
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:50 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	9.95	0.0946	0.284	0.142		mg/Kg-dry	5	05/16/16 05:28 PM
IS: Bismuth	92.6	0	30-120	0		%REC	5	05/16/16 05:28 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Acenaphthylene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Anthracene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[a]anthracene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[a]pyrene	0.0632	0.0561	0.112	0.0842	J	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[b]fluoranthene	0.0653	0.0561	0.112	0.0842	J	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[e]pyrene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[g,h,i]perylene	0.0569	0.0561	0.112	0.0842	J	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[j]fluoranthene	0.0842	0.0561	0.112	0.0842	NU	mg/Kg-dry	10	05/13/16 05:57 PM
Benzo[k]fluoranthene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Chrysene	0.0641	0.0561	0.112	0.0842	J	mg/Kg-dry	10	05/13/16 05:57 PM
Dibenz[a,h]anthracene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Fluoranthene	0.0864	0.0561	0.112	0.0842	J	mg/Kg-dry	10	05/13/16 05:57 PM
Fluorene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Indeno[1,2,3-cd]pyrene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Phenanthrene	0.0842	0.0561	0.112	0.0842	U	mg/Kg-dry	10	05/13/16 05:57 PM
Pyrene	0.0768	0.0561	0.112	0.0842	J	mg/Kg-dry	10	05/13/16 05:57 PM
IS: Acenaphthene-d10	90.9	0	50-200	0		%REC	10	05/13/16 05:57 PM
IS: Chrysene-d12	86.9	0	50-200	0		%REC	10	05/13/16 05:57 PM
IS: Naphthalene-d8	90.9	0	50-200	0		%REC	10	05/13/16 05:57 PM
IS: Perylene-d12	86.9	0	50-200	0		%REC	10	05/13/16 05:57 PM
IS: Phenanthrene-d10	81.4	0	50-200	0		%REC	10	05/13/16 05:57 PM
Surr: 2-Fluorobiphenyl	71.1	0	46-115	0		%REC	10	05/13/16 05:57 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU038-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605071-27
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:50 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.0	0	58-133	0		%REC	10	05/13/16 05:57 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	11.2	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB04(20160505)
Project:	Laredo SGR	**Lab ID:**	1605071-28
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:15 AM
Lab Order:	1605071	**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 01:40 PM
IS: Bismuth	100	0	30-120	0		%REC	1	05/20/16 01:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Acenaphthylene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Anthracene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Benzo[a]anthracene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Benzo[a]pyrene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Benzo[b]fluoranthene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Benzo[e]pyrene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Benzo[g,h,i]perylene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Benzo[j]fluoranthene	0.0000613	0.0000383	0.0000766	0.0000613	NU	mg/L	1	05/09/16 11:07 PM
Benzo[k]fluoranthene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Chrysene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Dibenz[a,h]anthracene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Fluoranthene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Fluorene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Indeno[1,2,3-cd]pyrene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Phenanthrene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
Pyrene	0.0000613	0.0000383	0.0000766	0.0000613	U	mg/L	1	05/09/16 11:07 PM
IS: Acenaphthene-d10	74.3	0	50-200	0		%REC	1	05/09/16 11:07 PM
IS: Chrysene-d12	82.2	0	50-200	0		%REC	1	05/09/16 11:07 PM
IS: Naphthalene-d8	128	0	50-200	0		%REC	1	05/09/16 11:07 PM
IS: Perylene-d12	90.0	0	50-200	0		%REC	1	05/09/16 11:07 PM
IS: Phenanthrene-d10	88.7	0	50-200	0		%REC	1	05/09/16 11:07 PM
Surr: 2-Fluorobiphenyl	64.1	0	53-106	0		%REC	1	05/09/16 11:07 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB04(20160505)
Project:	Laredo SGR	**Lab ID:**	1605071-28
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 11:15 AM
Lab Order:	1605071	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	57.4	0	58-132	0	S	%REC	1	05/09/16 11:07 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB05(20160505)
Project:	Laredo SGR	**Lab ID:**	1605071-29
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:45 PM
Lab Order:	1605071	**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 01:42 PM
IS: Bismuth	98.2	0	30-120	0		%REC	1	05/20/16 01:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Acenaphthylene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Anthracene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Benzo[a]anthracene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Benzo[a]pyrene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Benzo[b]fluoranthene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Benzo[e]pyrene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Benzo[g,h,i]perylene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Benzo[j]fluoranthene	0.0000615	0.0000384	0.0000768	0.0000615	NU	mg/L	1	05/09/16 11:47 PM
Benzo[k]fluoranthene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Chrysene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Dibenz[a,h]anthracene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Fluoranthene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Fluorene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Indeno[1,2,3-cd]pyrene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Phenanthrene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
Pyrene	0.0000615	0.0000384	0.0000768	0.0000615	U	mg/L	1	05/09/16 11:47 PM
IS: Acenaphthene-d10	66.8	0	50-200	0		%REC	1	05/09/16 11:47 PM
IS: Chrysene-d12	75.3	0	50-200	0		%REC	1	05/09/16 11:47 PM
IS: Naphthalene-d8	114	0	50-200	0		%REC	1	05/09/16 11:47 PM
IS: Perylene-d12	78.2	0	50-200	0		%REC	1	05/09/16 11:47 PM
IS: Phenanthrene-d10	78.3	0	50-200	0		%REC	1	05/09/16 11:47 PM
Surr: 2-Fluorobiphenyl	71.2	0	53-106	0		%REC	1	05/09/16 11:47 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB05(20160505)
Project:	Laredo SGR	**Lab ID:**	1605071-29
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:45 PM
Lab Order:	1605071	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	61.1	0	58-132	0		%REC	1	05/09/16 11:47 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP01(20160505)
Project:	Laredo SGR	**Lab ID:**	1605071-30
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:30 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	10.2	0.0722	0.217	0.108		mg/Kg-dry	5	05/16/16 05:30 PM
IS: Bismuth	91.2	0	30-120	0		%REC	5	05/16/16 05:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Acenaphthylene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Anthracene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[a]anthracene	0.0728	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[a]pyrene	0.0843	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[b]fluoranthene	0.0841	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[e]pyrene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[g,h,i]perylene	0.0707	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[j]fluoranthene	0.105	0.0703	0.141	0.105	NU	mg/Kg-dry	10	05/13/16 06:33 PM
Benzo[k]fluoranthene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Chrysene	0.0917	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
Dibenz[a,h]anthracene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Fluoranthene	0.157	0.0703	0.141	0.105		mg/Kg-dry	10	05/13/16 06:33 PM
Fluorene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Indeno[1,2,3-cd]pyrene	0.105	0.0703	0.141	0.105	U	mg/Kg-dry	10	05/13/16 06:33 PM
Phenanthrene	0.0709	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
Pyrene	0.134	0.0703	0.141	0.105	J	mg/Kg-dry	10	05/13/16 06:33 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/13/16 06:33 PM
IS: Chrysene-d12	95.0	0	50-200	0		%REC	10	05/13/16 06:33 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/13/16 06:33 PM
IS: Perylene-d12	95.9	0	50-200	0		%REC	10	05/13/16 06:33 PM
IS: Phenanthrene-d10	90.9	0	50-200	0		%REC	10	05/13/16 06:33 PM
Surr: 2-Fluorobiphenyl	68.9	0	46-115	0		%REC	10	05/13/16 06:33 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP01(20160505)
Project:	Laredo SGR	**Lab ID:**	1605071-30
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 10:30 AM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.6	0	58-133	0		%REC	10	05/13/16 06:33 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	31.5	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-03(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-31
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 12:15 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	10.6	0.113	0.338	0.169		mg/Kg-dry	5	05/16/16 05:32 PM
IS: Bismuth	92.6	0	30-120	0		%REC	5	05/16/16 05:32 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0809	0.0539	0.108	0.0809	U	mg/Kg-dry	10	05/11/16 09:48 PM
Acenaphthylene	0.0809	0.0539	0.108	0.0809	U	mg/Kg-dry	10	05/11/16 09:48 PM
Anthracene	0.0750	0.0539	0.108	0.0809	J	mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[a]anthracene	0.836	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[a]pyrene	1.10	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[b]fluoranthene	1.02	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[e]pyrene	0.835	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[g,h,i]perylene	0.793	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[j]fluoranthene	0.545	0.0539	0.108	0.0809	N	mg/Kg-dry	10	05/11/16 09:48 PM
Benzo[k]fluoranthene	0.526	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Chrysene	1.01	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Dibenz[a,h]anthracene	0.166	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Fluoranthene	1.28	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Fluorene	0.0809	0.0539	0.108	0.0809	U	mg/Kg-dry	10	05/11/16 09:48 PM
Indeno[1,2,3-cd]pyrene	0.650	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Phenanthrene	0.356	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
Pyrene	1.15	0.0539	0.108	0.0809		mg/Kg-dry	10	05/11/16 09:48 PM
IS: Acenaphthene-d10	71.4	0	50-200	0		%REC	10	05/11/16 09:48 PM
IS: Chrysene-d12	79.9	0	50-200	0		%REC	10	05/11/16 09:48 PM
IS: Naphthalene-d8	116	0	50-200	0		%REC	10	05/11/16 09:48 PM
IS: Perylene-d12	81.2	0	50-200	0		%REC	10	05/11/16 09:48 PM
IS: Phenanthrene-d10	79.2	0	50-200	0		%REC	10	05/11/16 09:48 PM
Surr: 2-Fluorobiphenyl	85.6	0	46-115	0		%REC	10	05/11/16 09:48 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-03(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-31
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 12:15 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	76.5	0	58-133	0		%REC	10	05/11/16 09:48 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	13.8	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-03(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605071-32
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 12:30 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	20.8	0.128	0.385	0.192		mg/Kg-dry	5	05/23/16 06:24 PM
IS: Bismuth	97.3	0	30-120	0		%REC	5	05/23/16 06:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.103	0.0687	0.137	0.103	U	mg/Kg-dry	10	05/19/16 02:22 AM
Acenaphthylene	0.103	0.0687	0.137	0.103	U	mg/Kg-dry	10	05/19/16 02:22 AM
Anthracene	0.103	0.0687	0.137	0.103	U	mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[a]anthracene	0.496	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[a]pyrene	0.618	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[b]fluoranthene	0.589	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[e]pyrene	0.467	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[g,h,i]perylene	0.412	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[j]fluoranthene	0.321	0.0687	0.137	0.103	N	mg/Kg-dry	10	05/19/16 02:22 AM
Benzo[k]fluoranthene	0.314	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Chrysene	0.604	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Dibenz[a,h]anthracene	0.0709	0.0687	0.137	0.103	J	mg/Kg-dry	10	05/19/16 02:22 AM
Fluoranthene	0.677	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Fluorene	0.103	0.0687	0.137	0.103	U	mg/Kg-dry	10	05/19/16 02:22 AM
Indeno[1,2,3-cd]pyrene	0.350	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Phenanthrene	0.212	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
Pyrene	0.614	0.0687	0.137	0.103		mg/Kg-dry	10	05/19/16 02:22 AM
IS: Acenaphthene-d10	99.7	0	50-200	0		%REC	10	05/19/16 02:22 AM
IS: Chrysene-d12	94.8	0	50-200	0		%REC	10	05/19/16 02:22 AM
IS: Naphthalene-d8	95.5	0	50-200	0		%REC	10	05/19/16 02:22 AM
IS: Perylene-d12	97.1	0	50-200	0		%REC	10	05/19/16 02:22 AM
IS: Phenanthrene-d10	90.1	0	50-200	0		%REC	10	05/19/16 02:22 AM
Surr: 2-Fluorobiphenyl	82.1	0	46-115	0		%REC	10	05/19/16 02:22 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-03(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605071-32
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 12:30 PM
Lab Order:	1605071	**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	05/19/16 02:22 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	29.7	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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-04(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-33
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 12:45 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	28.8	0.100	0.301	0.151		mg/Kg-dry	5	05/16/16 05:34 PM
IS: Bismuth	92.1	0	30-120	0		%REC	5	05/16/16 05:34 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0844	0.0562	0.112	0.0844	U	mg/Kg-dry	10	05/11/16 10:27 PM
Acenaphthylene	0.0844	0.0562	0.112	0.0844	U	mg/Kg-dry	10	05/11/16 10:27 PM
Anthracene	0.0698	0.0562	0.112	0.0844	J	mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[a]anthracene	0.667	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[a]pyrene	0.903	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[b]fluoranthene	0.863	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[e]pyrene	0.738	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[g,h,i]perylene	0.761	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[j]fluoranthene	0.469	0.0562	0.112	0.0844	N	mg/Kg-dry	10	05/11/16 10:27 PM
Benzo[k]fluoranthene	0.449	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Chrysene	0.876	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Dibenz[a,h]anthracene	0.161	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Fluoranthene	1.21	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Fluorene	0.0844	0.0562	0.112	0.0844	U	mg/Kg-dry	10	05/11/16 10:27 PM
Indeno[1,2,3-cd]pyrene	0.625	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Phenanthrene	0.395	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
Pyrene	1.04	0.0562	0.112	0.0844		mg/Kg-dry	10	05/11/16 10:27 PM
IS: Acenaphthene-d10	72.3	0	50-200	0		%REC	10	05/11/16 10:27 PM
IS: Chrysene-d12	80.1	0	50-200	0		%REC	10	05/11/16 10:27 PM
IS: Naphthalene-d8	113	0	50-200	0		%REC	10	05/11/16 10:27 PM
IS: Perylene-d12	82.1	0	50-200	0		%REC	10	05/11/16 10:27 PM
IS: Phenanthrene-d10	80.3	0	50-200	0		%REC	10	05/11/16 10:27 PM
Surr: 2-Fluorobiphenyl	87.1	0	46-115	0		%REC	10	05/11/16 10:27 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-04(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-33
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 12:45 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	74.2	0	58-133	0		%REC	10	05/11/16 10:27 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	14.9	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-05(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-34
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 01:50 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.3	0.106	0.319	0.159		mg/Kg-dry	5	05/16/16 05:36 PM
IS: Bismuth	89.3	0	30-120	0		%REC	5	05/16/16 05:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Acenaphthylene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Anthracene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[a]anthracene	0.0632	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[a]pyrene	0.0659	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[b]fluoranthene	0.0666	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[e]pyrene	0.0557	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[g,h,i]perylene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[j]fluoranthene	0.0810	0.0540	0.108	0.0810	NU	mg/Kg-dry	10	05/11/16 11:07 PM
Benzo[k]fluoranthene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Chrysene	0.0730	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/11/16 11:07 PM
Dibenz[a,h]anthracene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Fluoranthene	0.125	0.0540	0.108	0.0810		mg/Kg-dry	10	05/11/16 11:07 PM
Fluorene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Indeno[1,2,3-cd]pyrene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
Phenanthrene	0.0580	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/11/16 11:07 PM
Pyrene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/11/16 11:07 PM
IS: Acenaphthene-d10	75.1	0	50-200	0		%REC	10	05/11/16 11:07 PM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/11/16 11:07 PM
IS: Naphthalene-d8	119	0	50-200	0		%REC	10	05/11/16 11:07 PM
IS: Perylene-d12	85.6	0	50-200	0		%REC	10	05/11/16 11:07 PM
IS: Phenanthrene-d10	82.8	0	50-200	0		%REC	10	05/11/16 11:07 PM
Surr: 2-Fluorobiphenyl	85.8	0	46-115	0		%REC	10	05/11/16 11:07 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-05(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-34
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 01:50 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	74.4	0	58-133	0		%REC	10	05/11/16 11:07 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	8.67	0	0	0		WT%	1	05/11/16 09:30 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-06(0.0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-37
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:20 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.3	0.0944	0.283	0.142		mg/Kg-dry	5	05/16/16 05:59 PM
IS: Bismuth	88.8	0	30-120	0		%REC	5	05/16/16 05:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0791	0.0527	0.105	0.0791	U	mg/Kg-dry	10	05/11/16 11:47 PM
Acenaphthylene	0.0791	0.0527	0.105	0.0791	U	mg/Kg-dry	10	05/11/16 11:47 PM
Anthracene	0.184	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[a]anthracene	0.811	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[a]pyrene	0.782	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[b]fluoranthene	0.793	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[e]pyrene	0.635	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[g,h,i]perylene	0.596	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[j]fluoranthene	0.415	0.0527	0.105	0.0791	N	mg/Kg-dry	10	05/11/16 11:47 PM
Benzo[k]fluoranthene	0.400	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Chrysene	0.929	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Dibenz[a,h]anthracene	0.133	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Fluoranthene	1.93	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Fluorene	0.0791	0.0527	0.105	0.0791	U	mg/Kg-dry	10	05/11/16 11:47 PM
Indeno[1,2,3-cd]pyrene	0.497	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Phenanthrene	0.951	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
Pyrene	1.52	0.0527	0.105	0.0791		mg/Kg-dry	10	05/11/16 11:47 PM
IS: Acenaphthene-d10	78.4	0	50-200	0		%REC	10	05/11/16 11:47 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/11/16 11:47 PM
IS: Naphthalene-d8	120	0	50-200	0		%REC	10	05/11/16 11:47 PM
IS: Perylene-d12	84.4	0	50-200	0		%REC	10	05/11/16 11:47 PM
IS: Phenanthrene-d10	79.4	0	50-200	0		%REC	10	05/11/16 11:47 PM
Surr: 2-Fluorobiphenyl	89.0	0	46-115	0		%REC	10	05/11/16 11:47 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-06(0.0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605071-37
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:20 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	76.7	0	58-133	0		%REC	10	05/11/16 11:47 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	7.90	0	0	0		WT%	1	05/13/16 12:52 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-06(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605071-38
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:35 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.4	0.104	0.313	0.157		mg/Kg-dry	5	05/23/16 06:26 PM
IS: Bismuth	97.6	0	30-120	0		%REC	5	05/23/16 06:26 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Acenaphthylene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Anthracene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[a]anthracene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[a]pyrene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[b]fluoranthene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[e]pyrene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[g,h,i]perylene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[j]fluoranthene	0.0835	0.0557	0.111	0.0835	NU	mg/Kg-dry	10	05/19/16 01:45 AM
Benzo[k]fluoranthene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Chrysene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Dibenz[a,h]anthracene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Fluoranthene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Fluorene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Indeno[1,2,3-cd]pyrene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Phenanthrene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
Pyrene	0.0835	0.0557	0.111	0.0835	U	mg/Kg-dry	10	05/19/16 01:45 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/19/16 01:45 AM
IS: Chrysene-d12	94.3	0	50-200	0		%REC	10	05/19/16 01:45 AM
IS: Naphthalene-d8	94.5	0	50-200	0		%REC	10	05/19/16 01:45 AM
IS: Perylene-d12	96.5	0	50-200	0		%REC	10	05/19/16 01:45 AM
IS: Phenanthrene-d10	88.6	0	50-200	0		%REC	10	05/19/16 01:45 AM
Surr: 2-Fluorobiphenyl	68.2	0	46-115	0		%REC	10	05/19/16 01:45 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-06(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605071-38
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:35 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	81.5	0	58-133	0		%REC	10	05/19/16 01:45 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	16.7	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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605071-40
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 01:58 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	44.3	0.0980	0.294	0.147		mg/Kg-dry	5	05/16/16 06:01 PM
IS: Bismuth	93.3	0	30-120	0		%REC	5	05/16/16 06:01 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0996	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Acenaphthylene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/13/16 07:10 PM
Anthracene	0.572	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[a]anthracene	3.28	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[a]pyrene	3.90	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[b]fluoranthene	3.73	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[e]pyrene	2.75	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[g,h,i]perylene	2.87	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[j]fluoranthene	1.99	0.0485	0.0970	0.0727	N	mg/Kg-dry	10	05/13/16 07:10 PM
Benzo[k]fluoranthene	2.07	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Chrysene	3.97	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Dibenz[a,h]anthracene	0.673	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Fluoranthene	5.63	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Fluorene	0.0568	0.0485	0.0970	0.0727	J	mg/Kg-dry	10	05/13/16 07:10 PM
Indeno[1,2,3-cd]pyrene	2.50	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Phenanthrene	2.97	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
Pyrene	4.69	0.0485	0.0970	0.0727		mg/Kg-dry	10	05/13/16 07:10 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/13/16 07:10 PM
IS: Chrysene-d12	90.2	0	50-200	0		%REC	10	05/13/16 07:10 PM
IS: Naphthalene-d8	97.5	0	50-200	0		%REC	10	05/13/16 07:10 PM
IS: Perylene-d12	93.1	0	50-200	0		%REC	10	05/13/16 07:10 PM
IS: Phenanthrene-d10	91.8	0	50-200	0		%REC	10	05/13/16 07:10 PM
Surr: 2-Fluorobiphenyl	78.3	0	46-115	0		%REC	10	05/13/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605071-40
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 01:58 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.8	0	58-133	0		%REC	10	05/13/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605071-41
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:02 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.64	0.0901	0.270	0.135		mg/Kg-dry	5	05/16/16 06:03 PM
IS: Bismuth	92.7	0	30-120	0		%REC	5	05/16/16 06:03 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 07:47 PM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 07:47 PM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[a]anthracene	0.277	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[a]pyrene	0.405	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[b]fluoranthene	0.369	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[e]pyrene	0.287	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[g,h,i]perylene	0.321	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[j]fluoranthene	0.194	0.0498	0.0996	0.0747	N	mg/Kg-dry	10	05/13/16 07:47 PM
Benzo[k]fluoranthene	0.199	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Chrysene	0.351	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Dibenz[a,h]anthracene	0.0687	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/13/16 07:47 PM
Fluoranthene	0.426	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/13/16 07:47 PM
Indeno[1,2,3-cd]pyrene	0.260	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Phenanthrene	0.128	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
Pyrene	0.378	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/13/16 07:47 PM
IS: Acenaphthene-d10	94.0	0	50-200	0		%REC	10	05/13/16 07:47 PM
IS: Chrysene-d12	88.6	0	50-200	0		%REC	10	05/13/16 07:47 PM
IS: Naphthalene-d8	91.8	0	50-200	0		%REC	10	05/13/16 07:47 PM
IS: Perylene-d12	88.9	0	50-200	0		%REC	10	05/13/16 07:47 PM
IS: Phenanthrene-d10	85.2	0	50-200	0		%REC	10	05/13/16 07:47 PM
Surr: 2-Fluorobiphenyl	83.6	0	46-115	0		%REC	10	05/13/16 07:47 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605071-41
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:02 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	83.2	0	58-133	0		%REC	10	05/13/16 07:47 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605071-42
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:05 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.71	0.0952	0.286	0.143		mg/Kg-dry	5	05/16/16 06:05 PM
IS: Bismuth	91.6	0	30-120	0		%REC	5	05/16/16 06:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/13/16 08:24 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 08:24 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/13/16 08:24 PM
IS: Chrysene-d12	93.4	0	50-200	0		%REC	10	05/13/16 08:24 PM
IS: Naphthalene-d8	97.9	0	50-200	0		%REC	10	05/13/16 08:24 PM
IS: Perylene-d12	94.0	0	50-200	0		%REC	10	05/13/16 08:24 PM
IS: Phenanthrene-d10	92.1	0	50-200	0		%REC	10	05/13/16 08:24 PM
Surr: 2-Fluorobiphenyl	75.1	0	46-115	0		%REC	10	05/13/16 08:24 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605071-42
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:05 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	80.0	0	58-133	0		%REC	10	05/13/16 08:24 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605071-43
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:07 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.47	0.0952	0.286	0.143		mg/Kg-dry	5	05/16/16 06:07 PM
IS: Bismuth	94.0	0	30-120	0		%REC	5	05/16/16 06:07 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Acenaphthylene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Anthracene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[a]anthracene	0.0488	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[a]pyrene	0.0706	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[b]fluoranthene	0.0698	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[e]pyrene	0.0565	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[g,h,i]perylene	0.0635	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[j]fluoranthene	0.0729	0.0486	0.0972	0.0729	NU	mg/Kg-dry	10	05/13/16 09:00 PM
Benzo[k]fluoranthene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Chrysene	0.0678	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Dibenz[a,h]anthracene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Fluoranthene	0.0777	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Fluorene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Indeno[1,2,3-cd]pyrene	0.0549	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
Phenanthrene	0.0729	0.0486	0.0972	0.0729	U	mg/Kg-dry	10	05/13/16 09:00 PM
Pyrene	0.0745	0.0486	0.0972	0.0729	J	mg/Kg-dry	10	05/13/16 09:00 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/13/16 09:00 PM
IS: Chrysene-d12	89.9	0	50-200	0		%REC	10	05/13/16 09:00 PM
IS: Naphthalene-d8	98.2	0	50-200	0		%REC	10	05/13/16 09:00 PM
IS: Perylene-d12	92.8	0	50-200	0		%REC	10	05/13/16 09:00 PM
IS: Phenanthrene-d10	90.7	0	50-200	0		%REC	10	05/13/16 09:00 PM
Surr: 2-Fluorobiphenyl	79.1	0	46-115	0		%REC	10	05/13/16 09:00 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605071-43
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:07 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.0	0	58-133	0		%REC	10	05/13/16 09:00 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605071-44
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:10 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	3.80	0.0962	0.288	0.144		mg/Kg-dry	5	05/16/16 06:09 PM
IS: Bismuth	93.1	0	30-120	0		%REC	5	05/16/16 06:09 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/13/16 09:37 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/13/16 09:37 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/13/16 09:37 PM
IS: Chrysene-d12	92.4	0	50-200	0		%REC	10	05/13/16 09:37 PM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/13/16 09:37 PM
IS: Perylene-d12	94.3	0	50-200	0		%REC	10	05/13/16 09:37 PM
IS: Phenanthrene-d10	93.7	0	50-200	0		%REC	10	05/13/16 09:37 PM
Surr: 2-Fluorobiphenyl	72.8	0	46-115	0		%REC	10	05/13/16 09:37 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605071-44
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:10 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.7	0	58-133	0		%REC	10	05/13/16 09:37 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605071-45
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:13 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	51.4	0.0980	0.294	0.147		mg/Kg-dry	5	05/16/16 06:11 PM
IS: Bismuth	96.7	0	30-120	0		%REC	5	05/16/16 06:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.464	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/13/16 10:13 PM
Anthracene	2.58	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[a]anthracene	10.3	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[a]pyrene	10.6	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[b]fluoranthene	9.75	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[e]pyrene	7.04	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[g,h,i]perylene	6.90	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[j]fluoranthene	5.53	0.0499	0.0997	0.0748	N	mg/Kg-dry	10	05/13/16 10:13 PM
Benzo[k]fluoranthene	5.72	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Chrysene	11.8	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Dibenz[a,h]anthracene	1.78	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Fluoranthene	18.3	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Fluorene	0.435	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Indeno[1,2,3-cd]pyrene	6.24	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Phenanthrene	11.2	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
Pyrene	15.0	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/13/16 10:13 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/13/16 10:13 PM
IS: Chrysene-d12	88.0	0	50-200	0		%REC	10	05/13/16 10:13 PM
IS: Naphthalene-d8	96.5	0	50-200	0		%REC	10	05/13/16 10:13 PM
IS: Perylene-d12	91.9	0	50-200	0		%REC	10	05/13/16 10:13 PM
IS: Phenanthrene-d10	91.3	0	50-200	0		%REC	10	05/13/16 10:13 PM
Surr: 2-Fluorobiphenyl	77.2	0	46-115	0		%REC	10	05/13/16 10:13 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605071-45
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:13 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	80.3	0	58-133	0		%REC	10	05/13/16 10:13 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605071-46
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:15 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.89	0.0962	0.288	0.144		mg/Kg-dry	5	05/16/16 06:13 PM
IS: Bismuth	95.4	0	30-120	0		%REC	5	05/16/16 06:13 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 10:50 PM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 10:50 PM
Anthracene	0.121	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[a]anthracene	0.410	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[a]pyrene	0.365	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[b]fluoranthene	0.348	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[e]pyrene	0.255	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[g,h,i]perylene	0.264	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[j]fluoranthene	0.206	0.0498	0.0995	0.0746	N	mg/Kg-dry	10	05/13/16 10:50 PM
Benzo[k]fluoranthene	0.209	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Chrysene	0.472	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Dibenz[a,h]anthracene	0.0615	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/13/16 10:50 PM
Fluoranthene	0.924	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/13/16 10:50 PM
Indeno[1,2,3-cd]pyrene	0.221	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Phenanthrene	0.587	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
Pyrene	0.703	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/13/16 10:50 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/13/16 10:50 PM
IS: Chrysene-d12	87.4	0	50-200	0		%REC	10	05/13/16 10:50 PM
IS: Naphthalene-d8	95.8	0	50-200	0		%REC	10	05/13/16 10:50 PM
IS: Perylene-d12	89.7	0	50-200	0		%REC	10	05/13/16 10:50 PM
IS: Phenanthrene-d10	88.7	0	50-200	0		%REC	10	05/13/16 10:50 PM
Surr: 2-Fluorobiphenyl	82.1	0	46-115	0		%REC	10	05/13/16 10:50 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605071-46
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:15 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	80.3	0	58-133	0		%REC	10	05/13/16 10:50 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605071-47
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:18 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.08	0.0952	0.286	0.143		mg/Kg-dry	5	05/16/16 06:15 PM
IS: Bismuth	93.7	0	30-120	0		%REC	5	05/16/16 06:15 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[b]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/14/16 02:31 AM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/14/16 02:31 AM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/14/16 02:31 AM
IS: Chrysene-d12	85.7	0	50-200	0		%REC	10	05/14/16 02:31 AM
IS: Naphthalene-d8	95.9	0	50-200	0		%REC	10	05/14/16 02:31 AM
IS: Perylene-d12	89.5	0	50-200	0		%REC	10	05/14/16 02:31 AM
IS: Phenanthrene-d10	92.1	0	50-200	0		%REC	10	05/14/16 02:31 AM
Surr: 2-Fluorobiphenyl	79.4	0	46-115	0		%REC	10	05/14/16 02:31 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605071-47
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:18 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.4	0	58-133	0		%REC	10	05/14/16 02:31 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605071-48
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:22 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.52	0.0952	0.286	0.143		mg/Kg-dry	5	05/16/16 06:31 PM
IS: Bismuth	92.3	0	30-120	0		%REC	5	05/16/16 06:31 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/14/16 03:08 AM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/14/16 03:08 AM
IS: Acenaphthene-d10	99.0	0	50-200	0		%REC	10	05/14/16 03:08 AM
IS: Chrysene-d12	83.5	0	50-200	0		%REC	10	05/14/16 03:08 AM
IS: Naphthalene-d8	92.1	0	50-200	0		%REC	10	05/14/16 03:08 AM
IS: Perylene-d12	86.0	0	50-200	0		%REC	10	05/14/16 03:08 AM
IS: Phenanthrene-d10	91.4	0	50-200	0		%REC	10	05/14/16 03:08 AM
Surr: 2-Fluorobiphenyl	78.6	0	46-115	0		%REC	10	05/14/16 03:08 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605071-48
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:22 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.8	0	58-133	0		%REC	10	05/14/16 03:08 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605071-49
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:24 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	3.83	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 06:33 PM
IS: Bismuth	94.1	0	30-120	0		%REC	5	05/16/16 06:33 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Acenaphthylene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[a]anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[a]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[b]fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[e]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[g,h,i]perylene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[j]fluoranthene	0.0738	0.0492	0.0984	0.0738	NU	mg/Kg-dry	10	05/14/16 03:45 AM
Benzo[k]fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Chrysene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Dibenz[a,h]anthracene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Fluoranthene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Fluorene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Indeno[1,2,3-cd]pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Phenanthrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
Pyrene	0.0738	0.0492	0.0984	0.0738	U	mg/Kg-dry	10	05/14/16 03:45 AM
IS: Acenaphthene-d10	107	0	50-200	0		%REC	10	05/14/16 03:45 AM
IS: Chrysene-d12	93.0	0	50-200	0		%REC	10	05/14/16 03:45 AM
IS: Naphthalene-d8	99.4	0	50-200	0		%REC	10	05/14/16 03:45 AM
IS: Perylene-d12	95.3	0	50-200	0		%REC	10	05/14/16 03:45 AM
IS: Phenanthrene-d10	95.7	0	50-200	0		%REC	10	05/14/16 03:45 AM
Surr: 2-Fluorobiphenyl	74.7	0	46-115	0		%REC	10	05/14/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605071-49
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:24 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/14/16 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605071-50
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:25 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	52.8	0.0847	0.254	0.127		mg/Kg-dry	5	05/16/16 06:35 PM
IS: Bismuth	94.4	0	30-120	0		%REC	5	05/16/16 06:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.248	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 01:55 PM
Anthracene	1.21	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[a]anthracene	6.46	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[a]pyrene	7.12	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[b]fluoranthene	6.76	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[e]pyrene	5.20	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[g,h,i]perylene	4.91	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[j]fluoranthene	3.62	0.0495	0.0989	0.0742	N	mg/Kg-dry	10	05/15/16 01:55 PM
Benzo[k]fluoranthene	3.46	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Chrysene	6.95	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Dibenz[a,h]anthracene	1.12	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Fluoranthene	12.0	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Fluorene	0.200	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Indeno[1,2,3-cd]pyrene	3.96	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Phenanthrene	5.21	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
Pyrene	9.60	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/15/16 01:55 PM
IS: Acenaphthene-d10	67.3	0	50-200	0		%REC	10	05/15/16 01:55 PM
IS: Chrysene-d12	73.0	0	50-200	0		%REC	10	05/15/16 01:55 PM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/15/16 01:55 PM
IS: Perylene-d12	70.2	0	50-200	0		%REC	10	05/15/16 01:55 PM
IS: Phenanthrene-d10	73.5	0	50-200	0		%REC	10	05/15/16 01:55 PM
Surr: 2-Fluorobiphenyl	85.0	0	46-115	0		%REC	10	05/15/16 01:55 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605071-50
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:25 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	73.2	0	58-133	0		%REC	10	05/15/16 01:55 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605071-51
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:29 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.60	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 06:37 PM
IS: Bismuth	94.3	0	30-120	0		%REC	5	05/16/16 06:37 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/15/16 02:35 PM
Acenaphthylene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/15/16 02:35 PM
Anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[a]anthracene	0.389	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[a]pyrene	0.537	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[b]fluoranthene	0.491	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[e]pyrene	0.386	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[g,h,i]perylene	0.381	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[j]fluoranthene	0.260	0.0485	0.0971	0.0728	N	mg/Kg-dry	10	05/15/16 02:35 PM
Benzo[k]fluoranthene	0.246	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Chrysene	0.463	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Dibenz[a,h]anthracene	0.0809	0.0485	0.0971	0.0728	J	mg/Kg-dry	10	05/15/16 02:35 PM
Fluoranthene	0.637	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Fluorene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/15/16 02:35 PM
Indeno[1,2,3-cd]pyrene	0.299	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Phenanthrene	0.163	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
Pyrene	0.575	0.0485	0.0971	0.0728		mg/Kg-dry	10	05/15/16 02:35 PM
IS: Acenaphthene-d10	70.2	0	50-200	0		%REC	10	05/15/16 02:35 PM
IS: Chrysene-d12	78.3	0	50-200	0		%REC	10	05/15/16 02:35 PM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/15/16 02:35 PM
IS: Perylene-d12	75.8	0	50-200	0		%REC	10	05/15/16 02:35 PM
IS: Phenanthrene-d10	77.6	0	50-200	0		%REC	10	05/15/16 02:35 PM
Surr: 2-Fluorobiphenyl	78.6	0	46-115	0		%REC	10	05/15/16 02:35 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605071-51
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:29 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	68.9	0	58-133	0		%REC	10	05/15/16 02:35 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605071-52
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:31 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.40	0.0917	0.275	0.138		mg/Kg-dry	5	05/16/16 06:39 PM
IS: Bismuth	91.9	0	30-120	0		%REC	5	05/16/16 06:39 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/15/16 03:15 PM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/15/16 03:15 PM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[a]anthracene	0.113	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[a]pyrene	0.131	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[b]fluoranthene	0.129	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[e]pyrene	0.103	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[g,h,i]perylene	0.0971	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[j]fluoranthene	0.0694	0.0498	0.0995	0.0746	JN	mg/Kg-dry	10	05/15/16 03:15 PM
Benzo[k]fluoranthene	0.0648	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/15/16 03:15 PM
Chrysene	0.129	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/15/16 03:15 PM
Fluoranthene	0.201	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/15/16 03:15 PM
Indeno[1,2,3-cd]pyrene	0.0757	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/15/16 03:15 PM
Phenanthrene	0.0952	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/15/16 03:15 PM
Pyrene	0.169	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/15/16 03:15 PM
IS: Acenaphthene-d10	69.9	0	50-200	0		%REC	10	05/15/16 03:15 PM
IS: Chrysene-d12	79.5	0	50-200	0		%REC	10	05/15/16 03:15 PM
IS: Naphthalene-d8	111	0	50-200	0		%REC	10	05/15/16 03:15 PM
IS: Perylene-d12	77.1	0	50-200	0		%REC	10	05/15/16 03:15 PM
IS: Phenanthrene-d10	78.6	0	50-200	0		%REC	10	05/15/16 03:15 PM
Surr: 2-Fluorobiphenyl	78.4	0	46-115	0		%REC	10	05/15/16 03:15 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605071-52
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:31 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	69.1	0	58-133	0		%REC	10	05/15/16 03:15 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605071-53
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:34 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.18	0.0952	0.286	0.143		mg/Kg-dry	5	05/16/16 05:54 PM
IS: Bismuth	91.1	0	30-120	0		%REC	5	05/16/16 05:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/15/16 03:55 PM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Fluoranthene	0.0816	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/15/16 03:55 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/15/16 03:55 PM
Pyrene	0.0690	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/15/16 03:55 PM
IS: Acenaphthene-d10	72.6	0	50-200	0		%REC	10	05/15/16 03:55 PM
IS: Chrysene-d12	80.0	0	50-200	0		%REC	10	05/15/16 03:55 PM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/15/16 03:55 PM
IS: Perylene-d12	78.4	0	50-200	0		%REC	10	05/15/16 03:55 PM
IS: Phenanthrene-d10	78.5	0	50-200	0		%REC	10	05/15/16 03:55 PM
Surr: 2-Fluorobiphenyl	77.7	0	46-115	0		%REC	10	05/15/16 03:55 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605071-53
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:34 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	69.4	0	58-133	0		%REC	10	05/15/16 03:55 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605071-54
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:36 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	3.82	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 06:41 PM
IS: Bismuth	95.2	0	30-120	0		%REC	5	05/16/16 06:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[a]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/15/16 04:34 PM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Chrysene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
Pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 04:34 PM
IS: Acenaphthene-d10	68.9	0	50-200	0		%REC	10	05/15/16 04:34 PM
IS: Chrysene-d12	76.2	0	50-200	0		%REC	10	05/15/16 04:34 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/15/16 04:34 PM
IS: Perylene-d12	75.0	0	50-200	0		%REC	10	05/15/16 04:34 PM
IS: Phenanthrene-d10	75.7	0	50-200	0		%REC	10	05/15/16 04:34 PM
Surr: 2-Fluorobiphenyl	82.2	0	46-115	0		%REC	10	05/15/16 04:34 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: *26-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU040(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605071-54
Project No:	04285081.0000.00044	**Collection Date:**	05/05/16 02:36 PM
Lab Order:	1605071	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	73.9	0	58-133	0		%REC	10	05/15/16 04:34 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: *26-May-16*

CLIENT: Arcadis
Work Order: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160426B

Sample ID	**DCS1-74774**	Batch ID:	**74774**	TestNo:	**SW6020A**	Units:	**mg/Kg**
SampType:	**DCS**	Run ID:	**ICP-MS4_160426B**	Analysis Date:	**4/26/2016 12:28:00 PM**	Prep Date:	**4/25/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.263	0.300	0.2500	0	105	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: 1605071
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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160511C**

The QC data in batch 75056 applies to the following samples: 1605071-01A, 1605071-02A, 1605071-03A, 1605071-04A, 1605071-05A, 1605071-06A, 1605071-07A, 1605071-08A, 1605071-09A, 1605071-10A, 1605071-11A

Sample ID **MB-75056** Batch ID: **75056** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160511C** Analysis Date: **5/11/2016 6:08:00 PM** Prep Date: **5/10/2016**

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		99.7	30	120			

Sample ID **LCS-75056** Batch ID: **75056** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160511C** Analysis Date: **5/11/2016 6:10:00 PM** Prep Date: **5/10/2016**

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		96.8	30	120			

Sample ID **LCSD-75056** Batch ID: **75056** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160511C** Analysis Date: **5/11/2016 6:12:00 PM** Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.2	0.300	50.00	0	100	84	118	4.23	20	
IS: Bismuth	50.0		200.0		95.2	30	120	0	0	

Sample ID **1605071-09A SD** Batch ID: **75056** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160511C** Analysis Date: **5/11/2016 6:18:00 PM** Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	6.65	1.44	0	6.808				2.39	10	
IS: Bismuth	240		192.3		97.1	30	120	0	0	

Sample ID **1605071-09A PDS** Batch ID: **75056** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160511C** Analysis Date: **5/11/2016 6:37:00 PM** Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	54.4	0.288	48.08	6.808	99.0	80	120			
IS: Bismuth	48.1		961.5		89.4	30	120			

Sample ID **1605071-09A MS** Batch ID: **75056** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160511C** Analysis Date: **5/11/2016 6:39:00 PM** Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	53.8	0.288	48.08	6.808	97.7	84	118			
IS: Bismuth	48.1		192.3		90.7	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160511C**

Sample ID	**1605071-09A MSD**	Batch ID:	**75056**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 6:41:00 PM**	Prep Date:	**5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	53.7	0.288	48.08	6.808	97.6	84	118	0.116	20	
IS: Bismuth	48.1		192.3		89.4	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160511C**

Sample ID	**ICV2-160511**	Batch ID:	**R85761**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 5:55:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.101	0.00100	0.100	0	101	90	110			
IS: Bismuth	0.200		0.200		95.8	30	120			

Sample ID	**ILCVL2-160511**	Batch ID:	**R85761**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 6:00:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00102	0.00100	0.00100	0	102	80	120			
IS: Bismuth	0.200		0.200		97.1	30	120			

Sample ID	**CCV1-160511**	Batch ID:	**R85761**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 6:43:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.202	0.00100	0.200	0	101	90	110			
IS: Bismuth	0.200		0.200		93.6	30	120			

Sample ID	**LCVL1-160511**	Batch ID:	**R85761**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 6:47:00 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		96.5	30	120			

Sample ID	**CCV2-160511**	Batch ID:	**R85761**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 7:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	99.1	90	110			
IS: Bismuth	0.200		0.200		88.9	30	120			

Sample ID	**LCVL2-160511**	Batch ID:	**R85761**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160511C**	Analysis Date:	**5/11/2016 7:15:00 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		88.8	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160516B**

The QC data in batch 75099 applies to the following samples: 1605071-12A, 1605071-13A, 1605071-14A, 1605071-15A, 1605071-16A, 1605071-17A, 1605071-18A, 1605071-19A, 1605071-20A, 1605071-21A, 1605071-22A, 1605071-23A, 1605071-24A, 1605071-25A, 1605071-26A, 1605071-27A, 1605071-30A, 1605071-31A, 1605071-33A, 1605071-34A

Sample ID **MB-75099** Batch ID: **75099** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 4:33:00 PM** Prep Date: **5/11/2016**

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		99.2	30	120			

Sample ID **LCS-75099** Batch ID: **75099** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 4:36:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.2	0.300	50.00	0	100	84	118			
IS: Bismuth	50.0		200.0		93.8	30	120			

Sample ID **LCSD-75099** Batch ID: **75099** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 4:38:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.9	0.300	50.00	0	102	84	118	1.37	20	
IS: Bismuth	50.0		200.0		94.0	30	120	0	0	

Sample ID **1605071-17A SD** Batch ID: **75099** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 4:44:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	10.2	1.29	0	10.30				1.37	10	
IS: Bismuth	216		172.4		100	30	120	0	0	

Sample ID **1605071-17A PDS** Batch ID: **75099** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 5:04:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.9	0.259	43.10	10.30	96.6	80	120			
IS: Bismuth	43.1		862.1		94.8	30	120			

Sample ID **1605071-17A MS** Batch ID: **75099** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 5:06:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.5	0.252	42.02	10.30	98.0	84	118			
IS: Bismuth	42.0		168.1		94.7	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160516B**

Sample ID	**1605071-17A MSD**	Batch ID:	**75099**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 5:08:00 PM**	Prep Date:	**5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	57.1	0.278	46.30	10.30	101	84	118	10.3	20	
IS: Bismuth	46.3		185.2		94.9	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160516B**

The QC data in batch 75104 applies to the following samples: 1605071-37A, 1605071-40A, 1605071-41A, 1605071-42A, 1605071-43A, 1605071-44A, 1605071-45A, 1605071-46A, 1605071-47A, 1605071-48A, 1605071-49A, 1605071-50A, 1605071-51A, 1605071-52A, 1605071-53A, 1605071-54A

Sample ID **MB-75104** Batch ID: **75104** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 5:46:00 PM** Prep Date: **5/11/2016**

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		99.6	30	120			

Sample ID **LCS-75104** Batch ID: **75104** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 5:48:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.8	0.300	50.00	0	99.5	84	118			
IS: Bismuth	50.0		200.0		95.3	30	120			

Sample ID **LCSD-75104** Batch ID: **75104** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 5:50:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.0	0.300	50.00	0	100	84	118	0.449	20	
IS: Bismuth	50.0		200.0		95.7	30	120	0	0	

Sample ID **1605071-53A SD** Batch ID: **75104** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 5:56:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	4.10	1.43	0	4.177				1.74	10	
IS: Bismuth	238		190.5		94.4	30	120	0	0	

Sample ID **1605071-53A PDS** Batch ID: **75104** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 6:17:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.9	0.286	47.62	4.177	96.0	80	120			
IS: Bismuth	47.6		952.4		92.1	30	120			

Sample ID **1605071-53A MS** Batch ID: **75104** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160516B** Analysis Date: **5/16/2016 6:19:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.4	0.286	47.62	4.177	97.0	84	118			
IS: Bismuth	47.6		190.5		90.9	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160516B**

Sample ID	**1605071-53A MSD**	Batch ID:	**75104**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 6:21:00 PM**	Prep Date:	**5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.0	0.270	45.05	4.177	97.3	84	118	4.83	20	
IS: Bismuth	45.0		180.2		88.4	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160516B**

Sample ID	**ICV-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 12:45:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.101	0.00100	0.100	0	101	90	110			
IS: Bismuth	0.200		0.200		104	30	120			

Sample ID	**LCVL-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 1:04:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000965	0.00100	0.00100	0	96.5	80	120			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**CCV5-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 4:25:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.194	0.00100	0.200	0	97.1	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**LCVL5-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 4:29:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000940	0.00100	0.00100	0	94.0	80	120			
IS: Bismuth	0.200		0.200		98.8	30	120			

Sample ID	**CCV6-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 5:10:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.199	0.00100	0.200	0	99.7	90	110			
IS: Bismuth	0.200		0.200		94.7	30	120			

Sample ID	**LCVL6-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 5:14:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000940	0.00100	0.00100	0	94.0	80	120			
IS: Bismuth	0.200		0.200		92.5	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

Sample ID	**CCV7-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 5:38:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.195	0.00100	0.200	0	97.6	90	110			
IS: Bismuth	0.200		0.200		92.3	30	120			

Sample ID	**LCVL7-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 5:42:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000919	0.00100	0.00100	0	91.9	80	120			
IS: Bismuth	0.200		0.200		95.5	30	120			

Sample ID	**CCV8-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 6:22:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.194	0.00100	0.200	0	96.8	90	110			
IS: Bismuth	0.200		0.200		92.5	30	120			

Sample ID	**LCVL8-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 6:27:00 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		96.0	30	120			

Sample ID	**CCV9-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 6:51:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.194	0.00100	0.200	0	96.8	90	110			
IS: Bismuth	0.200		0.200		91.9	30	120			

Sample ID	**LCVL9-160516**	Batch ID:	**R85839**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 6:55:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000921	0.00100	0.00100	0	92.1	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160520C**

The QC data in batch 75180 applies to the following samples: 1605071-28A, 1605071-29A

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: 1605071
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: 1605071
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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160523F**

The QC data in batch 75236 applies to the following samples: 1605071-32A, 1605071-38A

Sample ID **MB-75236** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:12:00 PM** Prep Date: **5/19/2016**

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		99.9	30	120			

Sample ID **LCS-75236** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:14:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.2	0.300	50.00	0	96.5	84	118			
IS: Bismuth	50.0		200.0		94.2	30	120			

Sample ID **LCSD-75236** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:16:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	47.1	0.300	50.00	0	94.2	84	118	2.43	20	
IS: Bismuth	50.0		200.0		97.7	30	120	0	0	

Sample ID **1605098-17A SD** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:22:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	7.33	1.39	0	7.388				0.824	10	
IS: Bismuth	231		185.2		98.8	30	120	0	0	

Sample ID **1605098-17A PDS** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:42:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.1	0.278	46.30	7.388	92.3	80	120			
IS: Bismuth	46.3		925.9		91.6	30	120			

Sample ID **1605098-17A MS** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:44:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	47.6	0.268	44.64	7.388	90.0	84	118			
IS: Bismuth	44.6		178.6		91.8	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160523F**

Sample ID	**1605098-17A MSD**	Batch ID:	**75236**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MSD**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 6:46:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	44.1	0.259	43.10	7.388	85.2	84	118	7.55	20	
IS: Bismuth	43.1		172.4		91.6	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160523F**

Sample ID	**ICV-160523**	Batch ID:	**R85956**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 11:13:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0990	0.00100	0.100	0	99.0	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID	**LCVL-160523**	Batch ID:	**R85956**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 11:22:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000970	0.00100	0.00100	0	97.0	80	120			
IS: Bismuth	0.200		0.200		99.6	30	120			

Sample ID	**CCV8-160523**	Batch ID:	**R85956**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 6:04:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.189	0.00100	0.200	0	94.3	90	110			
IS: Bismuth	0.200		0.200		99.5	30	120			

Sample ID	**LCVL8-160523**	Batch ID:	**R85956**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 6:08:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000997	0.00100	0.00100	0	99.7	80	120			
IS: Bismuth	0.200		0.200		97.1	30	120			

Sample ID	**CCV9-160523**	Batch ID:	**R85956**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 6:48:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.188	0.00100	0.200	0	94.0	90	110			
IS: Bismuth	0.200		0.200		97.9	30	120			

Sample ID	**LCVL9-160523**	Batch ID:	**R85956**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 6:52:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000969	0.00100	0.00100	0	96.9	80	120			
IS: Bismuth	0.200		0.200		96.5	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: 1605071
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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160509B**

The QC data in batch 74985 applies to the following samples: 1605071-28B, 1605071-29B

Sample ID **LCS-74985** Batch ID: **74985** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS6_160509B** Analysis Date: **5/9/2016 5:06:00 PM** Prep Date: **5/6/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00312	0.0000500	0.00400	0	78.1	48	114			
Acenaphthylene	0.00338	0.0000500	0.00400	0	84.5	35	121			
Anthracene	0.00379	0.0000500	0.00400	0	94.7	53	119			
Benzo[a]anthracene	0.00443	0.0000500	0.00400	0	111	59	120			
Benzo[a]pyrene	0.00428	0.0000500	0.00400	0	107	53	120			
Benzo[b]fluoranthene	0.00437	0.0000500	0.00400	0	109	53	126			
Benzo[e]pyrene	0.00421	0.0000500	0.00400	0	105	40	140			
Benzo[g,h,i]perylene	0.00409	0.0000500	0.00400	0	102	44	128			
Benzo[j]fluoranthene	0.00420	0.0000500	0.00400	0	105	45	124			N
Benzo[k]fluoranthene	0.00439	0.0000500	0.00400	0	110	54	125			
Chrysene	0.00426	0.0000500	0.00400	0	107	57	120			
Dibenz[a,h]anthracene	0.00413	0.0000500	0.00400	0	103	44	131			
Fluoranthene	0.00437	0.0000500	0.00400	0	109	58	120			
Fluorene	0.00373	0.0000500	0.00400	0	93.3	50	118			
Indeno[1,2,3-cd]pyrene	0.00398	0.0000500	0.00400	0	99.6	48	130			
Phenanthrene	0.00373	0.0000500	0.00400	0	93.3	53	115			
Pyrene	0.00411	0.0000500	0.00400	0	103	53	121			
IS: Acenaphthene-d10	0.00800		0.00800		74.1	50	200			
IS: Chrysene-d12	0.00800		0.00800		90.4	50	200			
IS: Naphthalene-d8	0.00800		0.00800		122	50	200			
IS: Perylene-d12	0.00800		0.00800		88.7	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		90.5	50	200			
Surr: 2-Fluorobiphenyl	4.59		8.000		57.4	53	106			
Surr: 4-Terphenyl-d14	5.05		8.000		63.1	58	132			

Sample ID **DCS-74985** Batch ID: **74985** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **DCS** Run ID: **GCMS6_160509B** Analysis Date: **5/9/2016 7:07:00 PM** Prep Date: **5/6/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000380	0.0000500	0.0000400	0	95.0	20	170			
Acenaphthylene	0.0000400	0.0000500	0.0000400	0	100	20	170			
Anthracene	0.0000402	0.0000500	0.0000400	0	100	20	170			
Benzo[a]anthracene	0.0000413	0.0000500	0.0000400	0	103	20	170			
Benzo[a]pyrene	0.0000380	0.0000500	0.0000400	0	95.0	20	170			
Benzo[b]fluoranthene	0.0000400	0.0000500	0.0000400	0	100	20	170			
Benzo[e]pyrene	0.0000386	0.0000500	0.0000400	0	96.6	20	170			
Benzo[g,h,i]perylene	0.0000354	0.0000500	0.0000400	0	88.5	20	170			
Benzo[j]fluoranthene	0.0000389	0.0000500	0.0000400	0	97.2	20	170			N
Benzo[k]fluoranthene	0.0000393	0.0000500	0.0000400	0	98.3	20	170			
Chrysene	0.0000398	0.0000500	0.0000400	0	99.5	20	170			

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160509B**

Sample ID **DCS-74985**	Batch ID: **74985**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **DCS**	Run ID: **GCMS6_160509B**	Analysis Date: **5/9/2016 7:07:00 PM**	Prep Date: **5/6/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.0000333	0.0000500	0.0000400	0	83.2	20	170			
Fluoranthene	0.0000453	0.0000500	0.0000400	0	113	20	170			
Fluorene	0.0000429	0.0000500	0.0000400	0	107	20	170			
Indeno[1,2,3-cd]pyrene	0.0000336	0.0000500	0.0000400	0	84.1	20	170			
Phenanthrene	0.0000397	0.0000500	0.0000400	0	99.2	20	170			
Pyrene	0.0000403	0.0000500	0.0000400	0	101	20	170			

Sample ID **MB-74985**	Batch ID: **74985**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GCMS6_160509B**	Analysis Date: **5/9/2016 8:28:00 PM**	Prep Date: **5/6/2016**

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
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		76.5	50	200			
IS: Chrysene-d12	0.00800		0.00800		90.7	50	200			
IS: Naphthalene-d8	0.00800		0.00800		119	50	200			
IS: Perylene-d12	0.00800		0.00800		89.2	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		88.4	50	200			
Surr: 2-Fluorobiphenyl	5.34		8.000		66.8	53	106			
Surr: 4-Terphenyl-d14	5.38		8.000		67.3	58	132			

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160509B**

Sample ID **ICV-160509**	Batch ID: **R85694**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS6_160509B**	Analysis Date: **5/9/2016 4:26:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.95	0.0000500	2.00	0	97.3	80	120			
Acenaphthylene	2.07	0.0000500	2.00	0	103	80	120			
Anthracene	1.90	0.0000500	2.00	0	94.8	80	120			
Benzo[a]anthracene	1.98	0.0000500	2.00	0	98.9	80	120			
Benzo[a]pyrene	1.96	0.0000500	2.00	0	98.2	80	120			
Benzo[b]fluoranthene	2.01	0.0000500	2.00	0	101	80	120			
Benzo[e]pyrene	1.94	0.0000500	2.00	0	96.9	80	120			
Benzo[g,h,i]perylene	1.85	0.0000500	2.00	0	92.7	80	120			
Benzo[j]fluoranthene	1.97	0.0000500	2.00	0	98.4	80	120			N
Benzo[k]fluoranthene	1.98	0.0000500	2.00	0	99.1	80	120			
Chrysene	1.90	0.0000500	2.00	0	94.8	80	120			
Dibenz[a,h]anthracene	1.85	0.0000500	2.00	0	92.6	80	120			
Fluoranthene	1.99	0.0000500	2.00	0	99.3	80	120			
Fluorene	1.99	0.0000500	2.00	0	99.3	80	120			
Indeno[1,2,3-cd]pyrene	1.82	0.0000500	2.00	0	90.8	80	120			
Phenanthrene	1.88	0.0000500	2.00	0	94.2	80	120			
Pyrene	1.94	0.0000500	2.00	0	97.0	80	120			
IS: Acenaphthene-d10	4.00		4.00		94.2	50	200			
IS: Chrysene-d12	4.00		4.00		98.8	50	200			
IS: Naphthalene-d8	4.00		4.00		138	50	200			
IS: Perylene-d12	4.00		4.00		94.1	50	200			
IS: Phenanthrene-d10	4.00		4.00		96.3	50	200			
Surr: 2-Fluorobiphenyl	2020		2000		101	65	120			
Surr: 4-Terphenyl-d14	1880		2000		94.1	65	120			

Sample ID **CCV1-160509**	Batch ID: **R85694**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **CCV**	Run ID: **GCMS6_160509B**	Analysis Date: **5/10/2016 12:26:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.01	0.0000500	1.00	0	101	50	150			
Acenaphthylene	1.08	0.0000500	1.00	0	108	50	150			
Anthracene	1.03	0.0000500	1.00	0	103	50	150			
Benzo[a]anthracene	0.999	0.0000500	1.00	0	99.9	50	150			
Benzo[a]pyrene	0.980	0.0000500	1.00	0	98.0	50	150			
Benzo[b]fluoranthene	0.978	0.0000500	1.00	0	97.8	50	150			
Benzo[e]pyrene	0.966	0.0000500	1.00	0	96.6	50	150			
Benzo[g,h,i]perylene	0.921	0.0000500	1.00	0	92.1	50	150			
Benzo[j]fluoranthene	0.979	0.0000500	1.00	0	97.9	50	150			N
Benzo[k]fluoranthene	1.00	0.0000500	1.00	0	100	50	150			
Chrysene	0.957	0.0000500	1.00	0	95.7	50	150			
Dibenz[a,h]anthracene	0.916	0.0000500	1.00	0	91.6	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160509B**

Sample ID	**CCV1-160509**	Batch ID:	**R85694**	TestNo:	**SW8270D-LL**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**GCMS6_160509B**	Analysis Date:	**5/10/2016 12:26:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.03	0.0000500	1.00	0	103	50	150			
Fluorene	1.09	0.0000500	1.00	0	109	50	150			
Indeno[1,2,3-cd]pyrene	0.905	0.0000500	1.00	0	90.5	50	150			
Phenanthrene	0.982	0.0000500	1.00	0	98.2	50	150			
Pyrene	1.00	0.0000500	1.00	0	100	50	150			
IS: Acenaphthene-d10	4.00		4.00		76.2	50	200			
IS: Chrysene-d12	4.00		4.00		88.4	50	200			
IS: Naphthalene-d8	4.00		4.00		122	50	200			
IS: Perylene-d12	4.00		4.00		87.7	50	200			
IS: Phenanthrene-d10	4.00		4.00		87.6	50	200			
Surr: 2-Fluorobiphenyl	1060		1000		106	50	150			
Surr: 4-Terphenyl-d14	961		1000		96.1	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160511A

The QC data in batch 75057 applies to the following samples: 1605071-31A, 1605071-33A, 1605071-34A, 1605071-37A

Sample ID **LCS-75057** Batch ID: **75057** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160511A** Analysis Date: **5/11/2016 9:15:00 AM** Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.753	0.0100	1.000	0	75.3	44	111			
Acenaphthylene	0.793	0.0100	1.000	0	79.3	39	116			
Anthracene	0.836	0.0100	1.000	0	83.6	50	114			
Benzo[a]anthracene	0.809	0.0100	1.000	0	80.9	54	122			
Benzo[a]pyrene	0.763	0.0100	1.000	0	76.3	50	125			
Benzo[b]fluoranthene	0.784	0.0100	1.000	0	78.4	53	128			
Benzo[e]pyrene	0.803	0.0100	1.000	0	80.3	43	140			
Benzo[g,h,i]perylene	0.830	0.0100	1.000	0	83.0	49	127			
Benzo[j]fluoranthene	0.806	0.0100	1.000	0	80.6	45	125			N
Benzo[k]fluoranthene	0.805	0.0100	1.000	0	80.5	56	123			
Chrysene	0.787	0.0100	1.000	0	78.7	57	118			
Dibenz[a,h]anthracene	0.836	0.0100	1.000	0	83.6	50	129			
Fluoranthene	0.884	0.0100	1.000	0	88.4	55	119			
Fluorene	0.853	0.0100	1.000	0	85.3	47	114			
Indeno[1,2,3-cd]pyrene	0.819	0.0100	1.000	0	81.9	49	130			
Phenanthrene	0.787	0.0100	1.000	0	78.7	49	113			
Pyrene	0.857	0.0100	1.000	0	85.7	55	117			
IS: Acenaphthene-d10	4.00		4.000		65.9	50	200			
IS: Chrysene-d12	4.00		4.000		88.4	50	200			
IS: Naphthalene-d8	4.00		4.000		116	50	200			
IS: Perylene-d12	4.00		4.000		91.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		81.9	50	200			
Surr: 2-Fluorobiphenyl	0.786		1.000		78.6	46	115			
Surr: 4-Terphenyl-d14	0.768		1.000		76.8	58	133			

Sample ID **MB-75057** Batch ID: **75057** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160511A** Analysis Date: **5/11/2016 9:55:00 AM** Prep Date: **5/10/2016**

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
Chrysene	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160511A

Sample ID **MB-75057**	Batch ID: **75057**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160511A**	Analysis Date: **5/11/2016 9:55:00 AM**	Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		58.7	50	200			
IS: Chrysene-d12	4.00		4.000		78.1	50	200			
IS: Naphthalene-d8	4.00		4.000		108	50	200			
IS: Perylene-d12	4.00		4.000		84.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		70.1	50	200			
Surr: 2-Fluorobiphenyl	0.872		1.000		87.2	46	115			
Surr: 4-Terphenyl-d14	0.829		1.000		82.9	58	133			

Sample ID **1605047-34AMS**	Batch ID: **75057**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160511A**	Analysis Date: **5/11/2016 5:52:00 PM**	Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.955	0.115	1.151	0	83.0	44	111			
Acenaphthylene	0.961	0.115	1.151	0	83.5	39	116			
Anthracene	1.11	0.115	1.151	0.1304	84.7	50	114			
Benzo[a]anthracene	1.88	0.115	1.151	0.9582	79.9	54	122			
Benzo[a]pyrene	2.14	0.115	1.151	1.295	73.8	50	125			
Benzo[b]fluoranthene	2.06	0.115	1.151	1.193	75.5	53	128			
Benzo[e]pyrene	1.91	0.115	1.151	1.004	78.8	43	140			
Benzo[g,h,i]perylene	1.89	0.115	1.151	1.049	73.5	49	127			
Benzo[j]fluoranthene	1.57	0.115	1.151	0.6413	81.0	45	125			N
Benzo[k]fluoranthene	1.57	0.115	1.151	0.6203	82.6	56	123			
Chrysene	2.09	0.115	1.151	1.207	76.5	57	118			
Dibenz[a,h]anthracene	1.10	0.115	1.151	0.2200	76.2	50	129			
Fluoranthene	2.50	0.115	1.151	1.787	62.2	55	119			
Fluorene	1.03	0.115	1.151	0	89.8	47	114			
Indeno[1,2,3-cd]pyrene	1.68	0.115	1.151	0.8719	70.0	49	130			
Phenanthrene	1.48	0.115	1.151	0.6377	73.3	49	113			
Pyrene	2.29	0.115	1.151	1.529	66.4	55	117			
IS: Acenaphthene-d10	46.1		4.606		73.9	50	200			
IS: Chrysene-d12	46.1		4.606		82.6	50	200			
IS: Naphthalene-d8	46.1		4.606		120	50	200			
IS: Perylene-d12	46.1		4.606		84.6	50	200			
IS: Phenanthrene-d10	46.1		4.606		83.8	50	200			
Surr: 2-Fluorobiphenyl	0.972		1.151		84.4	46	115			

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160511A**

Sample ID **1605047-34AMS**	Batch ID: **75057**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160511A**	Analysis Date: **5/11/2016 5:52:00 PM**	Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.846		1.151		73.5	58	133			

Sample ID **1605047-34AMSD**	Batch ID: **75057**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160511A**	Analysis Date: **5/11/2016 6:32:00 PM**	Prep Date: **5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.23	0.113	1.129	0	109	44	111	25.1	20	R
Acenaphthylene	0.989	0.113	1.129	0	87.6	39	116	2.84	20	
Anthracene	1.49	0.113	1.129	0.1304	121	50	114	29.7	20	SR
Benzo[a]anthracene	6.67	0.113	1.129	0.9582	506	54	122	112	20	SR
Benzo[a]pyrene	7.06	0.113	1.129	1.295	511	50	125	107	20	SR
Benzo[b]fluoranthene	6.46	0.113	1.129	1.193	466	53	128	103	20	SR
Benzo[e]pyrene	5.30	0.113	1.129	1.004	381	43	140	94.0	20	SR
Benzo[g,h,i]perylene	4.62	0.113	1.129	1.049	316	49	127	83.7	20	SR
Benzo[j]fluoranthene	4.14	0.113	1.129	0.6413	310	45	125	89.8	20	SRN
Benzo[k]fluoranthene	4.03	0.113	1.129	0.6203	302	56	123	87.7	20	SR
Chrysene	7.58	0.113	1.129	1.207	565	57	118	114	20	SR
Dibenz[a,h]anthracene	1.86	0.113	1.129	0.2200	146	50	129	51.8	20	SR
Fluoranthene	9.80	0.113	1.129	1.787	710	55	119	119	20	SR
Fluorene	1.15	0.113	1.129	0	102	47	114	10.4	20	
Indeno[1,2,3-cd]pyrene	4.18	0.113	1.129	0.8719	293	49	130	85.5	20	SR
Phenanthrene	3.34	0.113	1.129	0.6377	240	49	113	77.2	20	SR
Pyrene	8.78	0.113	1.129	1.529	643	55	117	117	20	SR
IS: Acenaphthene-d10	45.1		4.514		69.8	50	200	0	0	
IS: Chrysene-d12	45.1		4.514		82.0	50	200	0	0	
IS: Naphthalene-d8	45.1		4.514		115	50	200	0	0	
IS: Perylene-d12	45.1		4.514		84.6	50	200	0	0	
IS: Phenanthrene-d10	45.1		4.514		81.3	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.993		1.129		88.0	46	115	0	0	
Surr: 4-Terphenyl-d14	0.893		1.129		79.1	58	133	0	0	

Sample ID **SBLK-160511**	Batch ID: **75057**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160511A**	Analysis Date: **5/11/2016 8:28:00 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

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160511A**

Sample ID	**SBLK-160511**	Batch ID:	**75057**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS6_160511A**	Analysis Date:	**5/11/2016 8:28:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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							
Surr: 2-Fluorobiphenyl	0.000640		0							
Surr: 4-Terphenyl-d14	0.000820		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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160511A**

Sample ID **ICV-160511** Batch ID: **R85767** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160511A** Analysis Date: **5/11/2016 8:35:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.98	0.0100	2.000	0	99.0	80	120			
Acenaphthylene	2.07	0.0100	2.000	0	104	80	120			
Anthracene	1.91	0.0100	2.000	0	95.6	80	120			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.3	80	120			
Benzo[a]pyrene	1.90	0.0100	2.000	0	95.1	80	120			
Benzo[b]fluoranthene	1.90	0.0100	2.000	0	94.9	80	120			
Benzo[e]pyrene	1.86	0.0100	2.000	0	93.0	80	120			
Benzo[g,h,i]perylene	2.00	0.0100	2.000	0	99.9	80	120			
Benzo[j]fluoranthene	1.90	0.0100	2.000	0	95.1	80	120			N
Benzo[k]fluoranthene	1.87	0.0100	2.000	0	93.5	80	120			
Chrysene	1.87	0.0100	2.000	0	93.4	80	120			
Dibenz[a,h]anthracene	2.00	0.0100	2.000	0	100	80	120			
Fluoranthene	1.96	0.0100	2.000	0	98.2	80	120			
Fluorene	2.02	0.0100	2.000	0	101	80	120			
Indeno[1,2,3-cd]pyrene	1.97	0.0100	2.000	0	98.5	80	120			
Phenanthrene	1.89	0.0100	2.000	0	94.7	80	120			
Pyrene	1.92	0.0100	2.000	0	96.2	80	120			
IS: Acenaphthene-d10	4.00		4.000		87.8	50	200			
IS: Chrysene-d12	4.00		4.000		91.2	50	200			
IS: Naphthalene-d8	4.00		4.000		109	50	200			
IS: Perylene-d12	4.00		4.000		92.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		85.9	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		100	65	120			
Surr: 4-Terphenyl-d14	1.86		2.000		93.1	65	120			

Sample ID **ICV2-160511** Batch ID: **R85767** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160511A** Analysis Date: **5/11/2016 7:48:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.96	0.0100	2.000	0	98.2	80	120			
Acenaphthylene	2.08	0.0100	2.000	0	104	80	120			
Anthracene	1.89	0.0100	2.000	0	94.6	80	120			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.5	80	120			
Benzo[a]pyrene	1.92	0.0100	2.000	0	95.9	80	120			
Benzo[b]fluoranthene	1.88	0.0100	2.000	0	93.9	80	120			
Benzo[e]pyrene	1.87	0.0100	2.000	0	93.3	80	120			
Benzo[g,h,i]perylene	1.91	0.0100	2.000	0	95.6	80	120			
Benzo[j]fluoranthene	1.90	0.0100	2.000	0	95.0	80	120			N
Benzo[k]fluoranthene	1.89	0.0100	2.000	0	94.5	80	120			
Chrysene	1.88	0.0100	2.000	0	93.9	80	120			
Dibenz[a,h]anthracene	1.95	0.0100	2.000	0	97.4	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160511A

Sample ID **ICV2-160511**	Batch ID: **R85767**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160511A**	Analysis Date: **5/11/2016 7:48:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.93	0.0100	2.000	0	96.3	80	120			
Fluorene	2.11	0.0100	2.000	0	106	80	120			
Indeno[1,2,3-cd]pyrene	1.91	0.0100	2.000	0	95.6	80	120			
Phenanthrene	1.90	0.0100	2.000	0	95.0	80	120			
Pyrene	1.87	0.0100	2.000	0	93.4	80	120			
IS: Acenaphthene-d10	4.00		4.000		80.1	50	200			
IS: Chrysene-d12	4.00		4.000		89.2	50	200			
IS: Naphthalene-d8	4.00		4.000		128	50	200			
IS: Perylene-d12	4.00		4.000		91.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		89.8	50	200			
Surr: 2-Fluorobiphenyl	2.00		2.000		100	65	120			
Surr: 4-Terphenyl-d14	1.81		2.000		90.7	65	120			

Sample ID **CCV-160511**	Batch ID: **R85767**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS6_160511A**	Analysis Date: **5/12/2016 12:27:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.00	0.0100	1.000	0	100	50	150			
Acenaphthylene	1.07	0.0100	1.000	0	107	50	150			
Anthracene	1.01	0.0100	1.000	0	101	50	150			
Benzo[a]anthracene	0.992	0.0100	1.000	0	99.2	50	150			
Benzo[a]pyrene	0.963	0.0100	1.000	0	96.3	50	150			
Benzo[b]fluoranthene	0.970	0.0100	1.000	0	97.0	50	150			
Benzo[e]pyrene	0.946	0.0100	1.000	0	94.6	50	150			
Benzo[g,h,i]perylene	0.975	0.0100	1.000	0	97.5	50	150			
Benzo[j]fluoranthene	0.969	0.0100	1.000	0	96.9	50	150			N
Benzo[k]fluoranthene	0.985	0.0100	1.000	0	98.5	50	150			
Chrysene	0.955	0.0100	1.000	0	95.5	50	150			
Dibenz[a,h]anthracene	0.985	0.0100	1.000	0	98.5	50	150			
Fluoranthene	1.06	0.0100	1.000	0	106	50	150			
Fluorene	1.01	0.0100	1.000	0	101	50	150			
Indeno[1,2,3-cd]pyrene	0.971	0.0100	1.000	0	97.1	50	150			
Phenanthrene	0.977	0.0100	1.000	0	97.7	50	150			
Pyrene	1.04	0.0100	1.000	0	104	50	150			
IS: Acenaphthene-d10	4.00		4.000		79.4	50	200			
IS: Chrysene-d12	4.00		4.000		86.4	50	200			
IS: Naphthalene-d8	4.00		4.000		121	50	200			
IS: Perylene-d12	4.00		4.000		86.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.1	50	200			
Surr: 2-Fluorobiphenyl	1.07		1.000		107	50	150			
Surr: 4-Terphenyl-d14	1.01		1.000		101	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160513A

The QC data in batch 75100 applies to the following samples: 1605071-01A, 1605071-02A, 1605071-03A, 1605071-04A, 1605071-05A, 1605071-06A, 1605071-07A, 1605071-08A, 1605071-09A, 1605071-10A, 1605071-11A, 1605071-12A, 1605071-13A, 1605071-14A, 1605071-15A, 1605071-19A, 1605071-20A, 1605071-21A, 1605071-22A, 1605071-23A

Sample ID **LCS-75100** Batch ID: **75100** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160513A** Analysis Date: **5/13/2016 9:23:00 AM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.731	0.0100	1.000	0	73.1	44	111			
Acenaphthylene	0.760	0.0100	1.000	0	76.0	39	116			
Anthracene	0.784	0.0100	1.000	0	78.4	50	114			
Benzo[a]anthracene	0.747	0.0100	1.000	0	74.7	54	122			
Benzo[a]pyrene	0.710	0.0100	1.000	0	71.0	50	125			
Benzo[b]fluoranthene	0.727	0.0100	1.000	0	72.7	53	128			
Benzo[e]pyrene	0.731	0.0100	1.000	0	73.1	43	140			
Benzo[g,h,i]perylene	0.753	0.0100	1.000	0	75.3	49	127			
Benzo[j]fluoranthene	0.729	0.0100	1.000	0	72.9	45	125			N
Benzo[k]fluoranthene	0.726	0.0100	1.000	0	72.6	56	123			
Chrysene	0.727	0.0100	1.000	0	72.7	57	118			
Dibenz[a,h]anthracene	0.758	0.0100	1.000	0	75.8	50	129			
Fluoranthene	0.769	0.0100	1.000	0	76.9	55	119			
Fluorene	0.849	0.0100	1.000	0	84.9	47	114			
Indeno[1,2,3-cd]pyrene	0.740	0.0100	1.000	0	74.0	49	130			
Phenanthrene	0.735	0.0100	1.000	0	73.5	49	113			
Pyrene	0.737	0.0100	1.000	0	73.7	55	117			
IS: Acenaphthene-d10	4.00		4.000		66.8	50	200			
IS: Chrysene-d12	4.00		4.000		82.4	50	200			
IS: Naphthalene-d8	4.00		4.000		104	50	200			
IS: Perylene-d12	4.00		4.000		86.8	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.4	50	200			
Surr: 2-Fluorobiphenyl	0.715		1.000		71.5	46	115			
Surr: 4-Terphenyl-d14	0.660		1.000		66.0	58	133			

Sample ID **MB-75100** Batch ID: **75100** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160513A** Analysis Date: **5/13/2016 10:03:00 AM** Prep Date: **5/11/2016**

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160513A**

Sample ID	**MB-75100**	Batch ID:	**75100**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MBLK**	Run ID:	**GCMS6_160513A**	Analysis Date:	**5/13/2016 10:03:00 AM**	Prep Date:	**5/11/2016**

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		60.7	50	200			
IS: Chrysene-d12	4.00		4.000		75.2	50	200			
IS: Naphthalene-d8	4.00		4.000		104	50	200			
IS: Perylene-d12	4.00		4.000		82.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		70.7	50	200			
Surr: 2-Fluorobiphenyl	0.790		1.000		79.0	46	115			
Surr: 4-Terphenyl-d14	0.714		1.000		71.4	58	133			

Sample ID	**1605071-20AMS**	Batch ID:	**75100**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**GCMS6_160513A**	Analysis Date:	**5/13/2016 6:00:00 PM**	Prep Date:	**5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.804	0.120	1.201	0.1163	57.3	44	111			
Acenaphthylene	0.815	0.120	1.201	0	67.8	39	116			
Anthracene	0.989	0.120	1.201	0.7611	18.9	50	114			S
Benzo[a]anthracene	1.53	0.120	1.201	3.390	-155	54	122			S
Benzo[a]pyrene	1.61	0.120	1.201	3.072	-122	50	125			S
Benzo[b]fluoranthene	1.59	0.120	1.201	2.977	-115	53	128			S
Benzo[e]pyrene	1.48	0.120	1.201	2.232	-62.3	43	140			S
Benzo[g,h,i]perylene	1.45	0.120	1.201	1.905	-38.2	49	127			S
Benzo[j]fluoranthene	1.28	0.120	1.201	1.646	-30.3	45	125			SN
Benzo[k]fluoranthene	1.27	0.120	1.201	1.569	-25.1	56	123			S
Chrysene	1.64	0.120	1.201	3.698	-172	57	118			S
Dibenz[a,h]anthracene	0.969	0.120	1.201	0.4745	41.2	50	129			S
Fluoranthene	1.97	0.120	1.201	7.663	-474	55	119			S
Fluorene	0.871	0.120	1.201	0	72.6	47	114			
Indeno[1,2,3-cd]pyrene	1.31	0.120	1.201	1.726	-34.5	49	130			S
Phenanthrene	1.27	0.120	1.201	3.920	-220	49	113			S
Pyrene	1.81	0.120	1.201	6.023	-351	55	117			S
IS: Acenaphthene-d10	48.0		4.804		77.0	50	200			
IS: Chrysene-d12	48.0		4.804		82.0	50	200			
IS: Naphthalene-d8	48.0		4.804		119	50	200			
IS: Perylene-d12	48.0		4.804		85.3	50	200			
IS: Phenanthrene-d10	48.0		4.804		80.2	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160513A

Sample ID **1605071-20AMS**	Batch ID: **75100**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160513A**	Analysis Date: **5/13/2016 6:00:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.788		1.201		65.6	46	115			
Surr: 4-Terphenyl-d14	0.771		1.201		64.2	58	133			

Sample ID **1605071-20AMSD**	Batch ID: **75100**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160513A**	Analysis Date: **5/13/2016 6:40:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.878	0.123	1.233	0.1163	61.8	44	111	8.82	20	
Acenaphthylene	0.891	0.123	1.233	0	72.2	39	116	8.94	20	
Anthracene	1.04	0.123	1.233	0.7611	22.6	50	114	5.03	20	S
Benzo[a]anthracene	1.32	0.123	1.233	3.390	-168	54	122	14.7	20	S
Benzo[a]pyrene	1.43	0.123	1.233	3.072	-133	50	125	12.2	20	S
Benzo[b]fluoranthene	1.41	0.123	1.233	2.977	-127	53	128	11.8	20	S
Benzo[e]pyrene	1.36	0.123	1.233	2.232	-70.5	43	140	8.55	20	S
Benzo[g,h,i]perylene	1.34	0.123	1.233	1.905	-46.0	49	127	7.86	20	S
Benzo[j]fluoranthene	1.21	0.123	1.233	1.646	-35.7	45	125	6.11	20	SN
Benzo[k]fluoranthene	1.19	0.123	1.233	1.569	-30.5	56	123	6.10	20	S
Chrysene	1.40	0.123	1.233	3.698	-186	57	118	15.5	20	S
Dibenz[a,h]anthracene	0.987	0.123	1.233	0.4745	41.5	50	129	1.80	20	S
Fluoranthene	1.60	0.123	1.233	7.663	-491	55	119	20.6	20	SR
Fluorene	0.960	0.123	1.233	0	77.9	47	114	9.69	20	
Indeno[1,2,3-cd]pyrene	1.23	0.123	1.233	1.726	-40.1	49	130	6.29	20	S
Phenanthrene	1.20	0.123	1.233	3.920	-221	49	113	6.22	20	S
Pyrene	1.50	0.123	1.233	6.023	-367	55	117	18.4	20	S
IS: Acenaphthene-d10	49.3		4.933		76.3	50	200	0	0	
IS: Chrysene-d12	49.3		4.933		81.8	50	200	0	0	
IS: Naphthalene-d8	49.3		4.933		121	50	200	0	0	
IS: Perylene-d12	49.3		4.933		84.3	50	200	0	0	
IS: Phenanthrene-d10	49.3		4.933		79.7	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.870		1.233		70.5	46	115	0	0	
Surr: 4-Terphenyl-d14	0.837		1.233		67.9	58	133	0	0	

Sample ID **SBLK-160513**	Batch ID: **75100**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160513A**	Analysis Date: **5/13/2016 8:36:00 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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160513A**

Sample ID	**SBLK-160513**	Batch ID:	**75100**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS6_160513A**	Analysis Date:	**5/13/2016 8:36:00 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							
Surr: 2-Fluorobiphenyl	0.00134		0							
Surr: 4-Terphenyl-d14	0.00117		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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160513A**

Sample ID **ICV-160513** Batch ID: **R85823** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160513A** Analysis Date: **5/13/2016 8:43:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.97	0.0100	2.000	0	98.6	80	120			
Acenaphthylene	2.10	0.0100	2.000	0	105	80	120			
Anthracene	1.88	0.0100	2.000	0	93.9	80	120			
Benzo[a]anthracene	1.96	0.0100	2.000	0	97.8	80	120			
Benzo[a]pyrene	1.90	0.0100	2.000	0	95.1	80	120			
Benzo[b]fluoranthene	1.91	0.0100	2.000	0	95.5	80	120			
Benzo[e]pyrene	1.87	0.0100	2.000	0	93.4	80	120			
Benzo[g,h,i]perylene	1.98	0.0100	2.000	0	98.8	80	120			
Benzo[j]fluoranthene	1.91	0.0100	2.000	0	95.3	80	120			N
Benzo[k]fluoranthene	1.87	0.0100	2.000	0	93.3	80	120			
Chrysene	1.87	0.0100	2.000	0	93.6	80	120			
Dibenz[a,h]anthracene	1.99	0.0100	2.000	0	99.3	80	120			
Fluoranthene	1.99	0.0100	2.000	0	99.3	80	120			
Fluorene	1.96	0.0100	2.000	0	98.2	80	120			
Indeno[1,2,3-cd]pyrene	1.95	0.0100	2.000	0	97.6	80	120			
Phenanthrene	1.90	0.0100	2.000	0	95.2	80	120			
Pyrene	1.93	0.0100	2.000	0	96.5	80	120			
IS: Acenaphthene-d10	4.00		4.000		86.2	50	200			
IS: Chrysene-d12	4.00		4.000		88.5	50	200			
IS: Naphthalene-d8	4.00		4.000		123	50	200			
IS: Perylene-d12	4.00		4.000		89.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		86.6	50	200			
Surr: 2-Fluorobiphenyl	2.07		2.000		103	65	120			
Surr: 4-Terphenyl-d14	1.88		2.000		94.2	65	120			

Sample ID **ICV2-160513** Batch ID: **R85823** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160513A** Analysis Date: **5/13/2016 7:56:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.98	0.0100	2.000	0	99.1	80	120			
Acenaphthylene	2.11	0.0100	2.000	0	105	80	120			
Anthracene	1.90	0.0100	2.000	0	95.1	80	120			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.6	80	120			
Benzo[a]pyrene	1.91	0.0100	2.000	0	95.6	80	120			
Benzo[b]fluoranthene	1.92	0.0100	2.000	0	96.0	80	120			
Benzo[e]pyrene	1.88	0.0100	2.000	0	93.8	80	120			
Benzo[g,h,i]perylene	1.92	0.0100	2.000	0	96.2	80	120			
Benzo[j]fluoranthene	1.91	0.0100	2.000	0	95.5	80	120			N
Benzo[k]fluoranthene	1.91	0.0100	2.000	0	95.6	80	120			
Chrysene	1.86	0.0100	2.000	0	93.0	80	120			
Dibenz[a,h]anthracene	1.93	0.0100	2.000	0	96.7	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160513A

Sample ID **ICV2-160513**	Batch ID: **R85823**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160513A**	Analysis Date: **5/13/2016 7:56:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.90	0.0100	2.000	0	94.9	80	120			
Fluorene	2.18	0.0100	2.000	0	109	80	120			
Indeno[1,2,3-cd]pyrene	1.89	0.0100	2.000	0	94.7	80	120			
Phenanthrene	1.91	0.0100	2.000	0	95.5	80	120			
Pyrene	1.82	0.0100	2.000	0	91.2	80	120			
IS: Acenaphthene-d10	4.00		4.000		78.8	50	200			
IS: Chrysene-d12	4.00		4.000		86.0	50	200			
IS: Naphthalene-d8	4.00		4.000		124	50	200			
IS: Perylene-d12	4.00		4.000		87.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		88.5	50	200			
Surr: 2-Fluorobiphenyl	1.97		2.000		98.7	65	120			
Surr: 4-Terphenyl-d14	1.79		2.000		89.3	65	120			

Sample ID **CCV-160513**	Batch ID: **R85823**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS6_160513A**	Analysis Date: **5/14/2016 3:13:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.04	0.0100	1.000	0	104	50	150			
Acenaphthylene	1.10	0.0100	1.000	0	110	50	150			
Anthracene	1.00	0.0100	1.000	0	100	50	150			
Benzo[a]anthracene	0.997	0.0100	1.000	0	99.7	50	150			
Benzo[a]pyrene	0.969	0.0100	1.000	0	96.9	50	150			
Benzo[b]fluoranthene	0.966	0.0100	1.000	0	96.6	50	150			
Benzo[e]pyrene	0.951	0.0100	1.000	0	95.1	50	150			
Benzo[g,h,i]perylene	0.954	0.0100	1.000	0	95.4	50	150			
Benzo[j]fluoranthene	0.966	0.0100	1.000	0	96.6	50	150			N
Benzo[k]fluoranthene	0.976	0.0100	1.000	0	97.6	50	150			
Chrysene	0.953	0.0100	1.000	0	95.3	50	150			
Dibenz[a,h]anthracene	0.964	0.0100	1.000	0	96.4	50	150			
Fluoranthene	0.991	0.0100	1.000	0	99.1	50	150			
Fluorene	1.10	0.0100	1.000	0	110	50	150			
Indeno[1,2,3-cd]pyrene	0.948	0.0100	1.000	0	94.8	50	150			
Phenanthrene	0.985	0.0100	1.000	0	98.5	50	150			
Pyrene	0.960	0.0100	1.000	0	96.0	50	150			
IS: Acenaphthene-d10	4.00		4.000		78.1	50	200			
IS: Chrysene-d12	4.00		4.000		83.0	50	200			
IS: Naphthalene-d8	4.00		4.000		123	50	200			
IS: Perylene-d12	4.00		4.000		85.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		82.1	50	200			
Surr: 2-Fluorobiphenyl	1.02		1.000		102	50	150			
Surr: 4-Terphenyl-d14	0.923		1.000		92.3	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160515A

The QC data in batch 75113 applies to the following samples: 1605071-50A, 1605071-51A, 1605071-52A, 1605071-53A, 1605071-54A

Sample ID **LCS-75113** Batch ID: **75113** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160515A** Analysis Date: **5/15/2016 12:35:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.839	0.0100	1.000	0	83.9	44	111			
Acenaphthylene	0.897	0.0100	1.000	0	89.7	39	116			
Anthracene	0.891	0.0100	1.000	0	89.1	50	114			
Benzo[a]anthracene	0.859	0.0100	1.000	0	85.9	54	122			
Benzo[a]pyrene	0.809	0.0100	1.000	0	80.9	50	125			
Benzo[b]fluoranthene	0.865	0.0100	1.000	0	86.5	53	128			
Benzo[e]pyrene	0.858	0.0100	1.000	0	85.8	43	140			
Benzo[g,h,i]perylene	0.880	0.0100	1.000	0	88.0	49	127			
Benzo[j]fluoranthene	0.873	0.0100	1.000	0	87.3	45	125			N
Benzo[k]fluoranthene	0.865	0.0100	1.000	0	86.5	56	123			
Chrysene	0.806	0.0100	1.000	0	80.6	57	118			
Dibenz[a,h]anthracene	0.841	0.0100	1.000	0	84.1	50	129			
Fluoranthene	0.944	0.0100	1.000	0	94.4	55	119			
Fluorene	0.853	0.0100	1.000	0	85.3	47	114			
Indeno[1,2,3-cd]pyrene	0.822	0.0100	1.000	0	82.2	49	130			
Phenanthrene	0.842	0.0100	1.000	0	84.2	49	113			
Pyrene	0.912	0.0100	1.000	0	91.2	55	117			
IS: Acenaphthene-d10	4.00		4.000		56.0	50	200			
IS: Chrysene-d12	4.00		4.000		64.1	50	200			
IS: Naphthalene-d8	4.00		4.000		105	50	200			
IS: Perylene-d12	4.00		4.000		63.2	50	200			
IS: Phenanthrene-d10	4.00		4.000		56.3	50	200			
Surr: 2-Fluorobiphenyl	0.921		1.000		92.1	46	115			
Surr: 4-Terphenyl-d14	0.817		1.000		81.7	58	133			

Sample ID **MB-75113** Batch ID: **75113** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160515A** Analysis Date: **5/15/2016 1:15:00 PM** Prep Date: **5/11/2016**

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
Chrysene	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160515A**

Sample ID **MB-75113**	Batch ID: **75113**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160515A**	Analysis Date: **5/15/2016 1:15:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		58.5	50	200			
IS: Chrysene-d12	4.00		4.000		70.8	50	200			
IS: Naphthalene-d8	4.00		4.000		104	50	200			
IS: Perylene-d12	4.00		4.000		67.2	50	200			
IS: Phenanthrene-d10	4.00		4.000		62.9	50	200			
Surr: 2-Fluorobiphenyl	0.875		1.000		87.5	46	115			
Surr: 4-Terphenyl-d14	0.820		1.000		82.0	58	133			

Sample ID **1605071-53AMS**	Batch ID: **75113**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160515A**	Analysis Date: **5/15/2016 9:12:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.814	0.0992	0.9921	0	82.0	44	111			
Acenaphthylene	0.845	0.0992	0.9921	0	85.2	39	116			
Anthracene	0.885	0.0992	0.9921	0	89.3	50	114			
Benzo[a]anthracene	0.859	0.0992	0.9921	0	86.5	54	122			
Benzo[a]pyrene	0.811	0.0992	0.9921	0	81.7	50	125			
Benzo[b]fluoranthene	0.853	0.0992	0.9921	0	86.0	53	128			
Benzo[e]pyrene	0.843	0.0992	0.9921	0	85.0	43	140			
Benzo[g,h,i]perylene	0.798	0.0992	0.9921	0	80.5	49	127			
Benzo[j]fluoranthene	0.838	0.0992	0.9921	0	84.5	45	125			N
Benzo[k]fluoranthene	0.829	0.0992	0.9921	0	83.6	56	123			
Chrysene	0.842	0.0992	0.9921	0	84.9	57	118			
Dibenz[a,h]anthracene	0.736	0.0992	0.9921	0	74.2	50	129			
Fluoranthene	0.949	0.0992	0.9921	0.08164	87.5	55	119			
Fluorene	0.871	0.0992	0.9921	0	87.8	47	114			
Indeno[1,2,3-cd]pyrene	0.745	0.0992	0.9921	0	75.1	49	130			
Phenanthrene	0.892	0.0992	0.9921	0	89.9	49	113			
Pyrene	0.917	0.0992	0.9921	0.06896	85.5	55	117			
IS: Acenaphthene-d10	39.7		3.968		69.6	50	200			
IS: Chrysene-d12	39.7		3.968		75.5	50	200			
IS: Naphthalene-d8	39.7		3.968		111	50	200			
IS: Perylene-d12	39.7		3.968		76.2	50	200			
IS: Phenanthrene-d10	39.7		3.968		74.8	50	200			
Surr: 2-Fluorobiphenyl	0.858		0.9921		86.5	46	115			

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160515A

Sample ID **1605071-53AMS**	Batch ID: **75113**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160515A**	Analysis Date: **5/15/2016 9:12:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.743		0.9921		74.9	58	133			

Sample ID **1605071-53AMSD**	Batch ID: **75113**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160515A**	Analysis Date: **5/15/2016 9:52:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.783	0.0998	0.9980	0	78.5	44	111	3.83	20	
Acenaphthylene	0.815	0.0998	0.9980	0	81.6	39	116	3.64	20	
Anthracene	0.839	0.0998	0.9980	0	84.0	50	114	5.43	20	
Benzo[a]anthracene	0.791	0.0998	0.9980	0	79.2	54	122	8.24	20	
Benzo[a]pyrene	0.759	0.0998	0.9980	0	76.1	50	125	6.55	20	
Benzo[b]fluoranthene	0.773	0.0998	0.9980	0	77.5	53	128	9.80	20	
Benzo[e]pyrene	0.788	0.0998	0.9980	0	78.9	43	140	6.80	20	
Benzo[g,h,i]perylene	0.756	0.0998	0.9980	0	75.8	49	127	5.39	20	
Benzo[j]fluoranthene	0.792	0.0998	0.9980	0	79.4	45	125	5.64	20	N
Benzo[k]fluoranthene	0.785	0.0998	0.9980	0	78.7	56	123	5.46	20	
Chrysene	0.775	0.0998	0.9980	0	77.7	57	118	8.32	20	
Dibenz[a,h]anthracene	0.715	0.0998	0.9980	0	71.6	50	129	2.94	20	
Fluoranthene	0.847	0.0998	0.9980	0.08164	76.7	55	119	11.4	20	
Fluorene	0.837	0.0998	0.9980	0	83.9	47	114	3.92	20	
Indeno[1,2,3-cd]pyrene	0.701	0.0998	0.9980	0	70.3	49	130	6.02	20	
Phenanthrene	0.827	0.0998	0.9980	0	82.9	49	113	7.56	20	
Pyrene	0.832	0.0998	0.9980	0.06896	76.5	55	117	9.71	20	
IS: Acenaphthene-d10	39.9		3.992		72.1	50	200	0	0	
IS: Chrysene-d12	39.9		3.992		78.1	50	200	0	0	
IS: Naphthalene-d8	39.9		3.992		118	50	200	0	0	
IS: Perylene-d12	39.9		3.992		79.6	50	200	0	0	
IS: Phenanthrene-d10	39.9		3.992		77.1	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.824		0.9980		82.6	46	115	0	0	
Surr: 4-Terphenyl-d14	0.712		0.9980		71.4	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160515A**

Sample ID **ICV-160515** Batch ID: **R85829** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160515A** Analysis Date: **5/15/2016 11:55:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.98	0.0100	2.000	0	99.2	80	120			
Acenaphthylene	2.13	0.0100	2.000	0	106	80	120			
Anthracene	1.90	0.0100	2.000	0	95.1	80	120			
Benzo[a]anthracene	1.99	0.0100	2.000	0	99.3	80	120			
Benzo[a]pyrene	1.91	0.0100	2.000	0	95.3	80	120			
Benzo[b]fluoranthene	2.04	0.0100	2.000	0	102	80	120			
Benzo[e]pyrene	1.91	0.0100	2.000	0	95.3	80	120			
Benzo[g,h,i]perylene	1.96	0.0100	2.000	0	98.2	80	120			
Benzo[j]fluoranthene	1.99	0.0100	2.000	0	99.5	80	120			N
Benzo[k]fluoranthene	1.99	0.0100	2.000	0	99.7	80	120			
Chrysene	1.83	0.0100	2.000	0	91.6	80	120			
Dibenz[a,h]anthracene	1.93	0.0100	2.000	0	96.3	80	120			
Fluoranthene	2.02	0.0100	2.000	0	101	80	120			
Fluorene	2.08	0.0100	2.000	0	104	80	120			
Indeno[1,2,3-cd]pyrene	1.88	0.0100	2.000	0	94.1	80	120			
Phenanthrene	1.93	0.0100	2.000	0	96.3	80	120			
Pyrene	1.93	0.0100	2.000	0	96.5	80	120			
IS: Acenaphthene-d10	4.00		4.000		80.9	50	200			
IS: Chrysene-d12	4.00		4.000		88.0	50	200			
IS: Naphthalene-d8	4.00		4.000		135	50	200			
IS: Perylene-d12	4.00		4.000		81.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		89.8	50	200			
Surr: 2-Fluorobiphenyl	2.06		2.000		103	65	120			
Surr: 4-Terphenyl-d14	1.89		2.000		94.3	65	120			

Sample ID **ICV2-160515** Batch ID: **R85829** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS6_160515A** Analysis Date: **5/15/2016 11:08:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.76	0.0100	2.000	0	88.0	80	120			
Acenaphthylene	1.88	0.0100	2.000	0	93.9	80	120			
Anthracene	1.84	0.0100	2.000	0	92.2	80	120			
Benzo[a]anthracene	1.81	0.0100	2.000	0	90.6	80	120			
Benzo[a]pyrene	1.75	0.0100	2.000	0	87.3	80	120			
Benzo[b]fluoranthene	1.76	0.0100	2.000	0	88.2	80	120			
Benzo[e]pyrene	1.82	0.0100	2.000	0	90.9	80	120			
Benzo[g,h,i]perylene	1.67	0.0100	2.000	0	83.5	80	120			
Benzo[j]fluoranthene	1.83	0.0100	2.000	0	91.5	80	120			N
Benzo[k]fluoranthene	1.75	0.0100	2.000	0	87.6	80	120			
Chrysene	1.72	0.0100	2.000	0	85.8	80	120			
Dibenz[a,h]anthracene	1.64	0.0100	2.000	0	82.0	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS6_160515A**

Sample ID	**ICV2-160515**	Batch ID:	**R85829**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**ICV**	Run ID:	**GCMS6_160515A**	Analysis Date:	**5/15/2016 11:08:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.78	0.0100	2.000	0	89.1	80	120			
Fluorene	1.86	0.0100	2.000	0	92.8	80	120			
Indeno[1,2,3-cd]pyrene	1.59	0.0100	2.000	0	79.3	80	120			S
Phenanthrene	1.70	0.0100	2.000	0	85.2	80	120			
Pyrene	1.72	0.0100	2.000	0	85.8	80	120			
IS: Acenaphthene-d10	4.00		4.000		68.5	50	200			
IS: Chrysene-d12	4.00		4.000		72.0	50	200			
IS: Naphthalene-d8	4.00		4.000		105	50	200			
IS: Perylene-d12	4.00		4.000		71.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.9	50	200			
Surr: 2-Fluorobiphenyl	1.95		2.000		97.4	65	120			
Surr: 4-Terphenyl-d14	1.71		2.000		85.7	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: 1605071
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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160510C**

The QC data in batch 74985 applies to the following samples: 1605071-28B, 1605071-29B

Sample ID	**DCS-74985**	Batch ID:	**74985**	TestNo:	**SW8270D-LL**	Units:	**mg/L**
SampType:	**DCS**	Run ID:	**GCMS8_160510C**	Analysis Date:	**5/11/2016 3:53:00 AM**	Prep Date:	**5/6/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000412	0.0000500	0.0000400	0	103	20	170			
Acenaphthylene	0.0000418	0.0000500	0.0000400	0	104	20	170			
Anthracene	0.0000413	0.0000500	0.0000400	0	103	20	170			
Benzo[a]anthracene	0.0000424	0.0000500	0.0000400	0	106	20	170			
Benzo[a]pyrene	0.0000400	0.0000500	0.0000400	0	100	20	170			
Benzo[b]fluoranthene	0.0000413	0.0000500	0.0000400	0	103	20	170			
Benzo[e]pyrene	0.0000400	0.0000500	0.0000400	0	100	20	170			
Benzo[g,h,i]perylene	0.0000396	0.0000500	0.0000400	0	99.0	20	170			
Benzo[j]fluoranthene	0.0000402	0.0000500	0.0000400	0	101	20	170			N
Benzo[k]fluoranthene	0.0000416	0.0000500	0.0000400	0	104	20	170			
Chrysene	0.0000435	0.0000500	0.0000400	0	109	20	170			
Dibenz[a,h]anthracene	0.0000415	0.0000500	0.0000400	0	104	20	170			
Fluoranthene	0.0000497	0.0000500	0.0000400	0	124	20	170			
Fluorene	0.0000437	0.0000500	0.0000400	0	109	20	170			
Indeno[1,2,3-cd]pyrene	0.0000399	0.0000500	0.0000400	0	99.7	20	170			
Phenanthrene	0.0000488	0.0000500	0.0000400	0	122	20	170			
Pyrene	0.0000466	0.0000500	0.0000400	0	116	20	170			

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160512A**

The QC data in batch 75021 applies to the following samples: 1605071-16A, 1605071-17A, 1605071-18A

Sample ID **LCS-75021** Batch ID: **75021** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160512A** Analysis Date: **5/12/2016 2:09:00 PM** Prep Date: **5/9/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.824	0.0100	1.000	0	82.4	44	111			
Acenaphthylene	0.837	0.0100	1.000	0	83.7	39	116			
Anthracene	0.800	0.0100	1.000	0	80.0	50	114			
Benzo[a]anthracene	0.864	0.0100	1.000	0	86.4	54	122			
Benzo[a]pyrene	0.824	0.0100	1.000	0	82.4	50	125			
Benzo[b]fluoranthene	0.854	0.0100	1.000	0	85.4	53	128			
Benzo[e]pyrene	0.839	0.0100	1.000	0	83.9	43	140			
Benzo[g,h,i]perylene	0.858	0.0100	1.000	0	85.8	49	127			
Benzo[j]fluoranthene	0.905	0.0100	1.000	0	90.5	45	125			N
Benzo[k]fluoranthene	0.952	0.0100	1.000	0	95.2	56	123			
Chrysene	0.874	0.0100	1.000	0	87.4	57	118			
Dibenz[a,h]anthracene	0.865	0.0100	1.000	0	86.5	50	129			
Fluoranthene	0.921	0.0100	1.000	0	92.1	55	119			
Fluorene	0.766	0.0100	1.000	0	76.6	47	114			
Indeno[1,2,3-cd]pyrene	0.870	0.0100	1.000	0	87.0	49	130			
Phenanthrene	0.852	0.0100	1.000	0	85.2	49	113			
Pyrene	0.926	0.0100	1.000	0	92.6	55	117			
IS: Acenaphthene-d10	4.00		4.000		92.8	50	200			
IS: Chrysene-d12	4.00		4.000		98.1	50	200			
IS: Naphthalene-d8	4.00		4.000		91.4	50	200			
IS: Perylene-d12	4.00		4.000		99.8	50	200			
IS: Phenanthrene-d10	4.00		4.000		81.9	50	200			
Surr: 2-Fluorobiphenyl	0.826		1.000		82.6	46	115			
Surr: 4-Terphenyl-d14	0.750		1.000		75.0	58	133			

Sample ID **MB-75021** Batch ID: **75021** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160512A** Analysis Date: **5/12/2016 2:45:00 PM** Prep Date: **5/9/2016**

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
Chrysene	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160512A

Sample ID **MB-75021**	Batch ID: **75021**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160512A**	Analysis Date: **5/12/2016 2:45:00 PM**	Prep Date: **5/9/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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		99.7	50	200			
IS: Chrysene-d12	4.00		4.000		107	50	200			
IS: Naphthalene-d8	4.00		4.000		96.3	50	200			
IS: Perylene-d12	4.00		4.000		108	50	200			
IS: Phenanthrene-d10	4.00		4.000		85.4	50	200			
Surr: 2-Fluorobiphenyl	0.781		1.000		78.1	46	115			
Surr: 4-Terphenyl-d14	0.710		1.000		71.0	58	133			

Sample ID **1605047-24AMS**	Batch ID: **75021**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160512A**	Analysis Date: **5/13/2016**	Prep Date: **5/9/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.785	0.0998	0.9980	0	78.7	44	111			
Acenaphthylene	0.784	0.0998	0.9980	0	78.6	39	116			
Anthracene	0.779	0.0998	0.9980	0	78.1	50	114			
Benzo[a]anthracene	0.768	0.0998	0.9980	0	76.9	54	122			
Benzo[a]pyrene	0.683	0.0998	0.9980	0	68.5	50	125			
Benzo[b]fluoranthene	0.716	0.0998	0.9980	0	71.8	53	128			
Benzo[e]pyrene	0.748	0.0998	0.9980	0	75.0	43	140			
Benzo[g,h,i]perylene	0.761	0.0998	0.9980	0	76.2	49	127			
Benzo[j]fluoranthene	0.750	0.0998	0.9980	0	75.1	45	125			N
Benzo[k]fluoranthene	0.733	0.0998	0.9980	0	73.4	56	123			
Chrysene	0.810	0.0998	0.9980	0	81.2	57	118			
Dibenz[a,h]anthracene	0.716	0.0998	0.9980	0	71.8	50	129			
Fluoranthene	0.813	0.0998	0.9980	0	81.5	55	119			
Fluorene	0.795	0.0998	0.9980	0	79.7	47	114			
Indeno[1,2,3-cd]pyrene	0.741	0.0998	0.9980	0	74.2	49	130			
Phenanthrene	0.850	0.0998	0.9980	0	85.2	49	113			
Pyrene	0.797	0.0998	0.9980	0	79.9	55	117			
IS: Acenaphthene-d10	39.9		3.992		107	50	200			
IS: Chrysene-d12	39.9		3.992		92.3	50	200			
IS: Naphthalene-d8	39.9		3.992		96.2	50	200			
IS: Perylene-d12	39.9		3.992		93.8	50	200			
IS: Phenanthrene-d10	39.9		3.992		95.5	50	200			
Surr: 2-Fluorobiphenyl	0.793		0.9980		79.4	46	115			

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160512A**

Sample ID **1605047-24AMS**	Batch ID: **75021**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160512A**	Analysis Date: **5/13/2016**	Prep Date: **5/9/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.739		0.9980		74.0	58	133			

Sample ID **1605047-24AMSD**	Batch ID: **75021**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160512A**	Analysis Date: **5/13/2016 12:36:00 AM**	Prep Date: **5/9/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.779	0.0997	0.9970	0	78.1	44	111	0.840	20	
Acenaphthylene	0.781	0.0997	0.9970	0	78.3	39	116	0.444	20	
Anthracene	0.768	0.0997	0.9970	0	77.0	50	114	1.52	20	
Benzo[a]anthracene	0.750	0.0997	0.9970	0	75.2	54	122	2.33	20	
Benzo[a]pyrene	0.669	0.0997	0.9970	0	67.1	50	125	2.11	20	
Benzo[b]fluoranthene	0.694	0.0997	0.9970	0	69.6	53	128	3.15	20	
Benzo[e]pyrene	0.732	0.0997	0.9970	0	73.4	43	140	2.20	20	
Benzo[g,h,i]perylene	0.744	0.0997	0.9970	0	74.6	49	127	2.22	20	
Benzo[j]fluoranthene	0.746	0.0997	0.9970	0	74.9	45	125	0.406	20	N
Benzo[k]fluoranthene	0.719	0.0997	0.9970	0	72.1	56	123	1.87	20	
Chrysene	0.794	0.0997	0.9970	0	79.6	57	118	2.10	20	
Dibenz[a,h]anthracene	0.695	0.0997	0.9970	0	69.7	50	129	3.05	20	
Fluoranthene	0.791	0.0997	0.9970	0	79.4	55	119	2.74	20	
Fluorene	0.789	0.0997	0.9970	0	79.1	47	114	0.818	20	
Indeno[1,2,3-cd]pyrene	0.730	0.0997	0.9970	0	73.2	49	130	1.52	20	
Phenanthrene	0.846	0.0997	0.9970	0	84.8	49	113	0.547	20	
Pyrene	0.781	0.0997	0.9970	0	78.4	55	117	2.00	20	
IS: Acenaphthene-d10	39.9		3.988		114	50	200	0	0	
IS: Chrysene-d12	39.9		3.988		96.8	50	200	0	0	
IS: Naphthalene-d8	39.9		3.988		99.2	50	200	0	0	
IS: Perylene-d12	39.9		3.988		98.6	50	200	0	0	
IS: Phenanthrene-d10	39.9		3.988		101	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.810		0.9970		81.2	46	115	0	0	
Surr: 4-Terphenyl-d14	0.728		0.9970		73.0	58	133	0	0	

Sample ID **SB-160512**	Batch ID: **75021**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160512A**	Analysis Date: **5/13/2016 3:03:00 AM**	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

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160512A**

Sample ID	**SB-160512**	Batch ID:	**75021**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS8_160512A**	Analysis Date:	**5/13/2016 3:03:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160512A**

Sample ID **ICV-160512** Batch ID: **R85793** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160512A** Analysis Date: **5/12/2016 12:53:00 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	2.03	0.0100	2.000	0	102	80	120			
Anthracene	1.86	0.0100	2.000	0	93.2	80	120			
Benzo[a]anthracene	1.97	0.0100	2.000	0	98.7	80	120			
Benzo[a]pyrene	2.00	0.0100	2.000	0	99.8	80	120			
Benzo[b]fluoranthene	2.01	0.0100	2.000	0	100	80	120			
Benzo[e]pyrene	1.97	0.0100	2.000	0	98.5	80	120			
Benzo[g,h,i]perylene	2.00	0.0100	2.000	0	99.8	80	120			
Benzo[j]fluoranthene	2.11	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.15	0.0100	2.000	0	107	80	120			
Chrysene	1.97	0.0100	2.000	0	98.7	80	120			
Dibenz[a,h]anthracene	2.06	0.0100	2.000	0	103	80	120			
Fluoranthene	1.81	0.0100	2.000	0	90.4	80	120			
Fluorene	2.03	0.0100	2.000	0	102	80	120			
Indeno[1,2,3-cd]pyrene	2.04	0.0100	2.000	0	102	80	120			
Phenanthrene	1.95	0.0100	2.000	0	97.5	80	120			
Pyrene	1.81	0.0100	2.000	0	90.3	80	120			
IS: Acenaphthene-d10	4.00		4.000		99.6	50	200			
IS: Chrysene-d12	4.00		4.000		94.1	50	200			
IS: Naphthalene-d8	4.00		4.000		94.6	50	200			
IS: Perylene-d12	4.00		4.000		95.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		98.1	50	200			
Surr: 2-Fluorobiphenyl	2.20		2.000		110	65	120			
Surr: 4-Terphenyl-d14	1.93		2.000		96.3	65	120			

Sample ID **ICV2-160512** Batch ID: **R85793** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160512A** Analysis Date: **5/13/2016 1:50:00 AM** 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	2.04	0.0100	2.000	0	102	80	120			
Anthracene	1.85	0.0100	2.000	0	92.4	80	120			
Benzo[a]anthracene	1.96	0.0100	2.000	0	97.9	80	120			
Benzo[a]pyrene	1.99	0.0100	2.000	0	99.7	80	120			
Benzo[b]fluoranthene	1.96	0.0100	2.000	0	97.9	80	120			
Benzo[e]pyrene	1.97	0.0100	2.000	0	98.4	80	120			
Benzo[g,h,i]perylene	2.03	0.0100	2.000	0	102	80	120			
Benzo[j]fluoranthene	2.12	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.21	0.0100	2.000	0	110	80	120			
Chrysene	1.97	0.0100	2.000	0	98.3	80	120			
Dibenz[a,h]anthracene	2.07	0.0100	2.000	0	104	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160512A

Sample ID **ICV2-160512**	Batch ID: **R85793**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160512A**	Analysis Date: **5/13/2016 1:50:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.76	0.0100	2.000	0	87.8	80	120			
Fluorene	2.05	0.0100	2.000	0	102	80	120			
Indeno[1,2,3-cd]pyrene	2.06	0.0100	2.000	0	103	80	120			
Phenanthrene	1.95	0.0100	2.000	0	97.6	80	120			
Pyrene	1.74	0.0100	2.000	0	87.0	80	120			
IS: Acenaphthene-d10	4.00		4.000		96.5	50	200			
IS: Chrysene-d12	4.00		4.000		87.3	50	200			
IS: Naphthalene-d8	4.00		4.000		89.2	50	200			
IS: Perylene-d12	4.00		4.000		88.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.0	50	200			
Surr: 2-Fluorobiphenyl	2.22		2.000		111	65	120			
Surr: 4-Terphenyl-d14	1.93		2.000		96.7	65	120			

Sample ID **CCV1-150512**	Batch ID: **R85793**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160512A**	Analysis Date: **5/13/2016 7:21:00 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	0.962	0.0100	1.000	0	96.2	50	150			
Benzo[a]anthracene	0.990	0.0100	1.000	0	99.0	50	150			
Benzo[a]pyrene	0.988	0.0100	1.000	0	98.8	50	150			
Benzo[b]fluoranthene	0.976	0.0100	1.000	0	97.6	50	150			
Benzo[e]pyrene	0.976	0.0100	1.000	0	97.6	50	150			
Benzo[g,h,i]perylene	1.03	0.0100	1.000	0	103	50	150			
Benzo[j]fluoranthene	1.04	0.0100	1.000	0	104	50	150			N
Benzo[k]fluoranthene	1.09	0.0100	1.000	0	109	50	150			
Chrysene	0.984	0.0100	1.000	0	98.4	50	150			
Dibenz[a,h]anthracene	1.06	0.0100	1.000	0	106	50	150			
Fluoranthene	0.874	0.0100	1.000	0	87.4	50	150			
Fluorene	1.05	0.0100	1.000	0	105	50	150			
Indeno[1,2,3-cd]pyrene	1.05	0.0100	1.000	0	105	50	150			
Phenanthrene	0.998	0.0100	1.000	0	99.8	50	150			
Pyrene	0.856	0.0100	1.000	0	85.6	50	150			
IS: Acenaphthene-d10	4.00		4.000		107	50	200			
IS: Chrysene-d12	4.00		4.000		87.5	50	200			
IS: Naphthalene-d8	4.00		4.000		90.9	50	200			
IS: Perylene-d12	4.00		4.000		90.5	50	200			
IS: Phenanthrene-d10	4.00		4.000		100	50	200			
Surr: 2-Fluorobiphenyl	1.18		1.000		118	50	150			
Surr: 4-Terphenyl-d14	1.00		1.000		100	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160513A**

The QC data in batch 75101 applies to the following samples: 1605071-24A, 1605071-25A, 1605071-26A, 1605071-27A, 1605071-30A, 1605071-32A, 1605071-38A, 1605071-40A, 1605071-41A, 1605071-42A, 1605071-43A, 1605071-44A, 1605071-45A, 1605071-46A, 1605071-47A, 1605071-48A, 1605071-49A

Sample ID **LCS-75101** Batch ID: **75101** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160513A** Analysis Date: **5/13/2016 2:52:00 PM** Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.731	0.0100	1.000	0	73.1	44	111			
Acenaphthylene	0.751	0.0100	1.000	0	75.1	39	116			
Anthracene	0.708	0.0100	1.000	0	70.8	50	114			
Benzo[a]anthracene	0.801	0.0100	1.000	0	80.1	54	122			
Benzo[a]pyrene	0.782	0.0100	1.000	0	78.2	50	125			
Benzo[b]fluoranthene	0.823	0.0100	1.000	0	82.3	53	128			
Benzo[e]pyrene	0.773	0.0100	1.000	0	77.3	43	140			
Benzo[g,h,i]perylene	0.826	0.0100	1.000	0	82.6	49	127			
Benzo[j]fluoranthene	0.848	0.0100	1.000	0	84.8	45	125			N
Benzo[k]fluoranthene	0.935	0.0100	1.000	0	93.5	56	123			
Chrysene	0.811	0.0100	1.000	0	81.1	57	118			
Dibenz[a,h]anthracene	0.873	0.0100	1.000	0	87.3	50	129			
Fluoranthene	0.861	0.0100	1.000	0	86.1	55	119			
Fluorene	0.632	0.0100	1.000	0	63.2	47	114			
Indeno[1,2,3-cd]pyrene	0.850	0.0100	1.000	0	85.0	49	130			
Phenanthrene	0.770	0.0100	1.000	0	77.0	49	113			
Pyrene	0.867	0.0100	1.000	0	86.7	55	117			
IS: Acenaphthene-d10	4.00		4.000		102	50	200			
IS: Chrysene-d12	4.00		4.000		100	50	200			
IS: Naphthalene-d8	4.00		4.000		104	50	200			
IS: Perylene-d12	4.00		4.000		108	50	200			
IS: Phenanthrene-d10	4.00		4.000		77.5	50	200			
Surr: 2-Fluorobiphenyl	0.697		1.000		69.7	46	115			
Surr: 4-Terphenyl-d14	0.668		1.000		66.8	58	133			

Sample ID **MB-75101** Batch ID: **75101** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160513A** Analysis Date: **5/13/2016 3:29:00 PM** Prep Date: **5/11/2016**

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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160513A**

Sample ID **MB-75101**	Batch ID: **75101**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160513A**	Analysis Date: **5/13/2016 3:29:00 PM**	Prep Date: **5/11/2016**

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		104	50	200			
IS: Chrysene-d12	4.00		4.000		105	50	200			
IS: Naphthalene-d8	4.00		4.000		106	50	200			
IS: Perylene-d12	4.00		4.000		108	50	200			
IS: Phenanthrene-d10	4.00		4.000		78.1	50	200			
Surr: 2-Fluorobiphenyl	0.631		1.000		63.1	46	115			
Surr: 4-Terphenyl-d14	0.631		1.000		63.1	58	133			

Sample ID **1605071-25AMS**	Batch ID: **75101**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160513A**	Analysis Date: **5/13/2016 11:27:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.871	0.115	1.149	0	75.8	44	111			
Acenaphthylene	0.875	0.115	1.149	0	76.2	39	116			
Anthracene	0.912	0.115	1.149	0	79.4	50	114			
Benzo[a]anthracene	1.13	0.115	1.149	0.2430	77.2	54	122			
Benzo[a]pyrene	1.19	0.115	1.149	0.3325	74.3	50	125			
Benzo[b]fluoranthene	1.17	0.115	1.149	0.3197	74.3	53	128			
Benzo[e]pyrene	1.09	0.115	1.149	0.2549	72.3	43	140			
Benzo[g,h,i]perylene	1.21	0.115	1.149	0.2768	81.6	49	127			
Benzo[j]fluoranthene	1.08	0.115	1.149	0.1726	79.3	45	125			N
Benzo[k]fluoranthene	1.13	0.115	1.149	0.1737	83.1	56	123			
Chrysene	1.20	0.115	1.149	0.3119	76.9	57	118			
Dibenz[a,h]anthracene	1.02	0.115	1.149	0.07046	82.4	50	129			
Fluoranthene	1.33	0.115	1.149	0.4267	78.4	55	119			
Fluorene	0.852	0.115	1.149	0	74.2	47	114			
Indeno[1,2,3-cd]pyrene	1.17	0.115	1.149	0.2283	82.3	49	130			
Phenanthrene	1.14	0.115	1.149	0.1373	86.9	49	113			
Pyrene	1.24	0.115	1.149	0.3871	74.4	55	117			
IS: Acenaphthene-d10	46.0		4.597		99.2	50	200			
IS: Chrysene-d12	46.0		4.597		86.7	50	200			
IS: Naphthalene-d8	46.0		4.597		94.6	50	200			
IS: Perylene-d12	46.0		4.597		88.6	50	200			
IS: Phenanthrene-d10	46.0		4.597		92.6	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160513A**

Sample ID **1605071-25AMS**	Batch ID: **75101**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160513A**	Analysis Date: **5/13/2016 11:27:00 PM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.807		1.149		70.2	46	115			
Surr: 4-Terphenyl-d14	0.857		1.149		74.6	58	133			

Sample ID **1605071-25AMSD**	Batch ID: **75101**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 12:03:00 AM**	Prep Date: **5/11/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.834	0.114	1.144	0	72.9	44	111	4.35	20	
Acenaphthylene	0.823	0.114	1.144	0	72.0	39	116	6.11	20	
Anthracene	0.889	0.114	1.144	0	77.7	50	114	2.57	20	
Benzo[a]anthracene	1.44	0.114	1.144	0.2430	105	54	122	24.3	20	R
Benzo[a]pyrene	1.63	0.114	1.144	0.3325	113	50	125	31.3	20	R
Benzo[b]fluoranthene	1.60	0.114	1.144	0.3197	112	53	128	30.7	20	R
Benzo[e]pyrene	1.40	0.114	1.144	0.2549	100	43	140	25.2	20	R
Benzo[g,h,i]perylene	1.52	0.114	1.144	0.2768	109	49	127	22.6	20	R
Benzo[j]fluoranthene	1.28	0.114	1.144	0.1726	96.8	45	125	16.5	20	N
Benzo[k]fluoranthene	1.35	0.114	1.144	0.1737	103	56	123	17.7	20	
Chrysene	1.62	0.114	1.144	0.3119	115	57	118	30.3	20	R
Dibenz[a,h]anthracene	1.09	0.114	1.144	0.07046	89.1	50	129	6.76	20	
Fluoranthene	1.76	0.114	1.144	0.4267	117	55	119	28.2	20	R
Fluorene	0.822	0.114	1.144	0	71.9	47	114	3.59	20	
Indeno[1,2,3-cd]pyrene	1.46	0.114	1.144	0.2283	108	49	130	21.9	20	R
Phenanthrene	1.22	0.114	1.144	0.1373	94.5	49	113	7.01	20	
Pyrene	1.64	0.114	1.144	0.3871	109	55	117	27.3	20	R
IS: Acenaphthene-d10	45.7		4.574		102	50	200	0	0	
IS: Chrysene-d12	45.7		4.574		86.6	50	200	0	0	
IS: Naphthalene-d8	45.7		4.574		96.0	50	200	0	0	
IS: Perylene-d12	45.7		4.574		88.8	50	200	0	0	
IS: Phenanthrene-d10	45.7		4.574		93.9	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.788		1.144		68.9	46	115	0	0	
Surr: 4-Terphenyl-d14	0.816		1.144		71.3	58	133	0	0	

Sample ID **SBLK-160513**	Batch ID: **75101**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 1:54:00 AM**	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160513A**

Sample ID	**SBLK-160513**	Batch ID:	**75101**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS8_160513A**	Analysis Date:	**5/14/2016 1:54:00 AM**	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160513A**

Sample ID **ICV-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/13/2016 2:14:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.94	0.0100	2.000	0	96.9	80	120			
Acenaphthylene	2.00	0.0100	2.000	0	99.9	80	120			
Anthracene	1.80	0.0100	2.000	0	90.1	80	120			
Benzo[a]anthracene	1.94	0.0100	2.000	0	97.0	80	120			
Benzo[a]pyrene	2.01	0.0100	2.000	0	101	80	120			
Benzo[b]fluoranthene	2.03	0.0100	2.000	0	101	80	120			
Benzo[e]pyrene	1.94	0.0100	2.000	0	96.8	80	120			
Benzo[g,h,i]perylene	2.02	0.0100	2.000	0	101	80	120			
Benzo[j]fluoranthene	2.15	0.0100	2.000	0	107	80	120			N
Benzo[k]fluoranthene	2.30	0.0100	2.000	0	115	80	120			
Chrysene	1.94	0.0100	2.000	0	97.1	80	120			
Dibenz[a,h]anthracene	2.14	0.0100	2.000	0	107	80	120			
Fluoranthene	2.04	0.0100	2.000	0	102	80	120			
Fluorene	1.72	0.0100	2.000	0	85.8	80	120			
Indeno[1,2,3-cd]pyrene	2.07	0.0100	2.000	0	103	80	120			
Phenanthrene	1.88	0.0100	2.000	0	93.8	80	120			
Pyrene	2.07	0.0100	2.000	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.000		87.5	50	200			
IS: Chrysene-d12	4.00		4.000		94.4	50	200			
IS: Naphthalene-d8	4.00		4.000		94.0	50	200			
IS: Perylene-d12	4.00		4.000		95.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		78.6	50	200			
Surr: 2-Fluorobiphenyl	1.94		2.000		97.1	65	120			
Surr: 4-Terphenyl-d14	1.92		2.000		96.2	65	120			

Sample ID **ICV2-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 1:17:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.99	0.0100	2.000	0	99.6	80	120			
Acenaphthylene	2.02	0.0100	2.000	0	101	80	120			
Anthracene	1.82	0.0100	2.000	0	91.1	80	120			
Benzo[a]anthracene	1.94	0.0100	2.000	0	96.8	80	120			
Benzo[a]pyrene	1.99	0.0100	2.000	0	99.5	80	120			
Benzo[b]fluoranthene	1.99	0.0100	2.000	0	99.5	80	120			
Benzo[e]pyrene	1.93	0.0100	2.000	0	96.3	80	120			
Benzo[g,h,i]perylene	2.11	0.0100	2.000	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.24	0.0100	2.000	0	112	80	120			
Chrysene	1.96	0.0100	2.000	0	97.9	80	120			
Dibenz[a,h]anthracene	2.19	0.0100	2.000	0	110	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **ICV2-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 1:17:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.75	0.0100	2.000	0	87.7	80	120			
Fluorene	1.90	0.0100	2.000	0	94.8	80	120			
Indeno[1,2,3-cd]pyrene	2.14	0.0100	2.000	0	107	80	120			
Phenanthrene	1.92	0.0100	2.000	0	95.9	80	120			
Pyrene	1.74	0.0100	2.000	0	86.9	80	120			
IS: Acenaphthene-d10	4.00		4.000		93.4	50	200			
IS: Chrysene-d12	4.00		4.000		83.2	50	200			
IS: Naphthalene-d8	4.00		4.000		92.3	50	200			
IS: Perylene-d12	4.00		4.000		86.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		89.4	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		101	65	120			
Surr: 4-Terphenyl-d14	2.00		2.000		100	65	120			

Sample ID **ICV3-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 12:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0100	2.000	0	100	50	150			
Acenaphthylene	2.02	0.0100	2.000	0	101	50	150			
Anthracene	1.80	0.0100	2.000	0	90.0	50	150			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.5	50	150			
Benzo[a]pyrene	2.00	0.0100	2.000	0	100	50	150			
Benzo[b]fluoranthene	2.00	0.0100	2.000	0	99.9	50	150			
Benzo[e]pyrene	1.95	0.0100	2.000	0	97.4	50	150			
Benzo[g,h,i]perylene	2.17	0.0100	2.000	0	108	50	150			
Benzo[j]fluoranthene	2.11	0.0100	2.000	0	106	50	150			N
Benzo[k]fluoranthene	2.23	0.0100	2.000	0	112	50	150			
Chrysene	1.97	0.0100	2.000	0	98.3	50	150			
Dibenz[a,h]anthracene	2.24	0.0100	2.000	0	112	50	150			
Fluoranthene	1.61	0.0100	2.000	0	80.4	50	150			
Fluorene	1.95	0.0100	2.000	0	97.3	50	150			
Indeno[1,2,3-cd]pyrene	2.20	0.0100	2.000	0	110	50	150			
Phenanthrene	1.93	0.0100	2.000	0	96.4	50	150			
Pyrene	1.57	0.0100	2.000	0	78.4	50	150			
IS: Acenaphthene-d10	4.00		4.000		105	50	200			
IS: Chrysene-d12	4.00		4.000		81.0	50	200			
IS: Naphthalene-d8	4.00		4.000		92.8	50	200			
IS: Perylene-d12	4.00		4.000		85.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.7	50	200			
Surr: 2-Fluorobiphenyl	2.12		2.000		106	50	150			
Surr: 4-Terphenyl-d14	2.00		2.000		100	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518D

The QC data in batch 75101 applies to the following samples: 1605071-24A, 1605071-25A, 1605071-26A, 1605071-27A, 1605071-30A, 1605071-32A, 1605071-38A, 1605071-40A, 1605071-41A, 1605071-42A, 1605071-43A, 1605071-44A, 1605071-45A, 1605071-46A, 1605071-47A, 1605071-48A, 1605071-49A

Sample ID	**SBLK-160518**	Batch ID:	**75101**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**SBLK**	Run ID:	**GCMS8_160518D**	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	0.00750	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518D**

Sample ID **ICV2-160518** Batch ID: **R85877** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **ICV** Run ID: **GCMS8_160518D** 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	0.0100	2.000	0	100	80	120			
Acenaphthylene	1.99	0.0100	2.000	0	99.7	80	120			
Anthracene	1.86	0.0100	2.000	0	93.0	80	120			
Benzo[a]anthracene	2.11	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.13	0.0100	2.000	0	107	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	106	80	120			
Benzo[g,h,i]perylene	2.14	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.19	0.0100	2.000	0	109	80	120			
Chrysene	2.10	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.13	0.0100	2.000	0	107	80	120			
Fluoranthene	2.07	0.0100	2.000	0	104	80	120			
Fluorene	2.01	0.0100	2.000	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.11	0.0100	2.000	0	105	80	120			
Phenanthrene	1.86	0.0100	2.000	0	93.1	80	120			
Pyrene	2.07	0.0100	2.000	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.000		96.3	50	200			
IS: Chrysene-d12	4.00		4.000		93.5	50	200			
IS: Naphthalene-d8	4.00		4.000		94.6	50	200			
IS: Perylene-d12	4.00		4.000		93.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		93.3	50	200			
Surr: 2-Fluorobiphenyl	1.92		2.000		96.2	65	120			
Surr: 4-Terphenyl-d14	2.03		2.000		102	65	120			

Sample ID **CCV-160520** Batch ID: **R85877** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **CCV** Run ID: **GCMS8_160518D** 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	0.0100	1.000	0	98.9	50	150			
Acenaphthylene	0.998	0.0100	1.000	0	99.8	50	150			
Anthracene	0.938	0.0100	1.000	0	93.8	50	150			
Benzo[a]anthracene	1.00	0.0100	1.000	0	100	50	150			
Benzo[a]pyrene	1.01	0.0100	1.000	0	101	50	150			
Benzo[b]fluoranthene	1.01	0.0100	1.000	0	101	50	150			
Benzo[e]pyrene	1.01	0.0100	1.000	0	101	50	150			
Benzo[g,h,i]perylene	1.02	0.0100	1.000	0	102	50	150			
Benzo[j]fluoranthene	1.01	0.0100	1.000	0	101	50	150			N
Benzo[k]fluoranthene	1.04	0.0100	1.000	0	104	50	150			
Chrysene	1.00	0.0100	1.000	0	100	50	150			
Dibenz[a,h]anthracene	1.02	0.0100	1.000	0	102	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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **GCMS8_160518D**

Sample ID	**CCV-160520**	Batch ID:	**R85877**	TestNo:	**SW8270D-LL**	Units:	**mg/Kg-dry**
SampType:	**CCV**	Run ID:	**GCMS8_160518D**	Analysis Date:	**5/19/2016 2:59:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	0.983	0.0100	1.000	0	98.3	50	150			
Fluorene	0.978	0.0100	1.000	0	97.8	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0100	1.000	0	102	50	150			
Phenanthrene	0.940	0.0100	1.000	0	94.0	50	150			
Pyrene	0.984	0.0100	1.000	0	98.4	50	150			
IS: Acenaphthene-d10	4.00		4.000		105	50	200			
IS: Chrysene-d12	4.00		4.000		94.9	50	200			
IS: Naphthalene-d8	4.00		4.000		100	50	200			
IS: Perylene-d12	4.00		4.000		96.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.2	50	200			
Surr: 2-Fluorobiphenyl	1.00		1.000		100	50	150			
Surr: 4-Terphenyl-d14	0.999		1.000		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: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160510A

The QC data in batch 75073 applies to the following samples: 1605071-31A, 1605071-33A, 1605071-34A

Sample ID	**1605071-34A-DUP**	Batch ID:	**75073**	TestNo:	**D2216**	Units:	**WT%**
SampType:	**DUP**	Run ID:	**PMOIST_160510A**	Analysis Date:	**5/11/2016 9:30:00 AM**	Prep Date:	**5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	8.62	0	0	8.674				0.571	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

CLIENT: Arcadis
Work Order: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160510B

The QC data in batch 75081 applies to the following samples: 1605071-19A, 1605071-20A, 1605071-21A, 1605071-22A, 1605071-23A, 1605071-24A, 1605071-25A, 1605071-26A, 1605071-27A, 1605071-30A

Sample ID	**1605090-05C-DUP**	Batch ID:	**75081**	TestNo:	**D2216**	Units:	**WT%**
SampType:	**DUP**	Run ID:	**PMOIST_160510B**	Analysis Date:	**5/11/2016 9:30:00 AM**	Prep Date:	**5/10/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	8.00	0	0	7.333				8.70	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

CLIENT: Arcadis
Work Order: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160512A

The QC data in batch 75130 applies to the following samples: 1605071-37A

Sample ID	**1605098-40A DUP**	Batch ID:	**75130**	TestNo:	**D2216**	Units:	**WT%**
SampType:	**DUP**	Run ID:	**PMOIST_160512A**	Analysis Date:	**5/13/2016 12:52:20 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	7.41	0	0	7.772				4.80	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

CLIENT: Arcadis
Work Order: 1605071
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160519A

The QC data in batch 75243 applies to the following samples: 1605071-32A, 1605071-38A

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: *26-May-16*

CLIENT: Arcadis
Work Order: 1605071
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
1605071

GCMS6_160509B
For

DHL Work Order
1605071

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS6_160509B**
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 1. Are all sample hold times met?	7 days (Aq) - extraction	X			x
	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:

Analyst: Karyn Lane Date: 5/10/2016 11:40

Second-Level Review: Janice Whitt Date: 5/11/2016

REVIEWED BY
By Janice Whitt at 4:08:26 PM, 5/11/2016

DHL Analytical, Inc.

Run ID: **GCMS6_160509B** **Run No.:** 85694

Analytical Run Date: 5/9/2016 **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-160509	1	PAH_LL_WDOD1	TUNE	R85694	5/9/2016 3:49:00 PM		
ICV-160509	1	PAH_LL_WDOD1	ICV	R85694	5/9/2016 4:26:00 PM		
LCS-74985	1	PAH_LL_WDOD1	LCS	74985	5/9/2016 5:06:00 PM		Equipment rinses - no LCSD or MS/MSD required.
LQV1-74985	1	PAH_LL_WDOD1	LQV1	74985	5/9/2016 6:27:00 PM		WATER DCS SUFFICIENT FOR ALL TEST CODES.
DCS-74985	1	PAH_LL_WDOD1	DCS	74985	5/9/2016 7:07:00 PM		
MB-74985	1	PAH_LL_WDOD1	MBLK	74985	5/9/2016 8:28:00 PM		
1605047-31B	1	PAH_LL_WDOD1	SAMP	74985	5/9/2016 9:08:00 PM		Surrogate 4-Terphenyl-d14 low.
1605047-32B	1	PAH_LL_WDOD1	SAMP	74985	5/9/2016 9:48:00 PM		
1605047-38B	1	PAH_LL_WDOD1	SAMP	74985	5/9/2016 10:27:00 PM		
1605071-28B	1	PAH_LL_WDOD1	SAMP	74985	5/9/2016 11:07:00 PM		Surrogate 4-Terphenyl-d14 low.
1605071-29B	1	PAH_LL_WDOD1	SAMP	74985	5/9/2016 11:47:00 PM		
CCV1-160509	1	PAH_LL_WDOD1	CCV	R85694	5/10/2016 12:26:00 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

Sequence Name: C:\HPCHEM\1\SEQUENCE\160509.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160509\
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	16050901	PP160421	SBLK
2	Sample	2	16050902	DFTPPPAH	DFTPP-160509
3	Sample	3	16050903	PP160421	ICV-160509
4	Sample	4	16050904	PP160421	LCS-74984
5	Sample	5	16050905	PP160421	LCSD-74984
6	Sample	6	16050906	PP160421	LCS3-74984
7	Sample	7	16050907	PP160421	LCS4-74984
8	Sample	8	16050908	PP160421	MB74984
9	Sample	9	16050909	PP160421	MB-74984
10	Sample	10	16050910	PP160421	1605054-01A
11	Sample	11	16050911	PP160421	LQV-74985
12	Sample	1	16050912	DFTPPPAH	DFTPP-160509
13	Sample	2	16050913	PP160421	ICV-160509
14	Sample	3	16050914	PP160421	LCS-74985
15	Sample	4	16050915	PP160421	LCSD-74985
16	Sample	5	16050916	PP160421	LQV-74985
17	Sample	6	16050917	PP160421	DCS-74985
18	Sample	7	16050918	PP160421	SBLK
19	Sample	8	16050919	PP160421	MB-74985
20	Sample	9	16050920	PP160421	1605047-31B
21	Sample	10	16050921	PP160421	1605047-32B
22	Sample	11	16050922	PP160421	1605047-38B
23	Sample	12	16050923	PP160421	1605071-28B
24	Sample	13	16050924	PP160421	1605071-29B
25	Sample	14	16050925	PP160421	CCV1-160509
26	Sample	15	16050926	PP160421	SBLK
27	Sample	16	16050927	PP160421	1605054-01A

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 2:10:35 PM**
Digestion:
Prep End Date: 5/6/16 4:01 PM

Prep Batch **74985** Prep Code: **3510_PAHDOD** Technician: **ADMIN**

Prep Factor Units: mL/mL

Equipment List
Turbo-Vap #1,2
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup	
1605047-31B	Aqueous	6	500	1	0.002	1 of 1	541.0- 213.3	327.7
1605047-32B	Aqueous	6	500	1	0.002	1 of 1	533.3-213.4	319.9
1605047-38B	Aqueous	6	500	1	0.002	1 of 1	533.2- 212.9	320.3
1605071-28B	Equip Blank	6	500	1	0.002	1 of 1	539.7- 213.2	326.5
1605071-29B	Equip Blank	6	500	1	0.002	1 of 1	539.3- 213.9	325.4
LCS-74985	Aqueous	6	500	1	0.002	of		
MB-74985	Aqueous	6	500	1	0.002	of		

DCS
LQV
LCSD

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
10213	Whatman 41 Filter	1	filter	03/20/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160317	200 PPM PAH Spike Mix	LCS	0.01	05/09/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.1	07/15/2016

REVIEWED BY
By Janice Whitt at 3:57:15 PM, 5/11/2016

5/6/16

RL 5/6/16

5/6/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 2:10:35 PM**
Digestion:
Prep End Date: **5/6/2016 4:01:00 PM**

Prep Batch **74985** Prep Code: **3510_PAHDOD** Technician: **Alex Robbins**

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
1605047-31B	Aqueous	6	327.7	1	0.003	1 of 1	
1605047-32B	Aqueous	6	319.9	1	0.003	1 of 1	
1605047-38B	Aqueous	6	320.3	1	0.003	1 of 1	
1605071-28B	Equip Blank	6	326.5	1	0.003	1 of 1	
1605071-29B	Equip Blank	6	325.4	1	0.003	1 of 1	
DCS-74985	Aqueous	6	500	1	0.002	of	
Spiked with 10 uL of PAHPREP160429-1							
LCS-74985	Aqueous	6	500	1	0.002	of	
LQV1-74985	Aqueous	6	500	1	0.002	of	
Spiked with 20 uL of PAHPREP160429-1							
MB-74985	Aqueous	6	500	1	0.002	of	

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
10213	Whatman 41 Filter	1	filter	03/20/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160317	200 PPM PAH Spike Mix	LCS/LCSD	0.01	05/09/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.1	07/15/2016

REVIEWED BY
By Janice Whitt at 3:57:16 PM, 5/11/2016

Data File : C:\HPCHEM\1\DATA\160509\16050912.D Vial: 1
Acq On : 9 May 2016 3:49 pm Operator:
Sample : DFTPP-160509 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 1591, 1592, 1593; Background Corrected with Scan 1585

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	31.3	32842	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.6	38346	PASS
70	69	0.00	2	1.0	371	PASS
127	198	10	80	48.7	51093	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	104808	PASS
199	198	5	9	6.8	7106	PASS
275	198	10	60	28.2	29528	PASS
365	198	1	200	3.6	3809	PASS
441	442	0.01	24	14.9	20255	PASS
442	198	50	400	129.4	135632	PASS
443	442	15	24	19.8	26888	PASS

REVIEWED BY
By Janice Whitt at 3:57:43 PM, 5/11/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160509\16050913.D Vial: 2
Acq On : 9 May 2016 4:26 pm Operator:
Sample : ICV-160509 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:42 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.89	136	1603641	4000.00 ug/kg	138
5) Acenaphthene-d10	13.30	164	1083951	4000.00 ug/kg	94
11) Phenanthrene-d10	15.39	188	1967760	4000.00 ug/kg	96
17) Chrysene-d12	21.15	240	2243303	4000.00 ug/kg	99
20) Perylene-d12	26.31	264	1938881	4000.00 ug/kg	94

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.22	172	637419	2015.89 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 50.40%		
16) 4-Terphenyl-d14	17.89	244	957728	1881.24 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 47.03%		

Target Compounds					Qvalue
2) Naphthalene	10.91	128	759171	1892.58 ug/kg	99
3) 2-Methyl naphthalene	11.72	142	579126	1634.43 ug/kg	99
4) 1-Methyl naphthalene	11.93	142	524506	1616.27 ug/kg	99
6) Dibenzofuran	13.50	168	781335	1923.27 ug/kg	99
8) Acenaphthylene	13.18	152	964907	2067.01 ug/kg	100
9) Acenaphthene	13.35	154	563790	1945.81 ug/kg	98
10) Fluorene	13.99	166	699123	1986.80 ug/kg	100
12) Phenanthrene	15.42	178	974822	1883.76 ug/kg	100
13) Anthracene	15.46	178	929116	1896.90 ug/kg	100
14) Fluoranthene	17.39	202	1063984	1986.85 ug/kg	99
15) Pyrene	17.98	202	1078937	1939.55 ug/kg	100
18) Benzo[a]anthracene	20.97	228	1039047	1977.06 ug/kg	100
19) Chrysene	21.23	228	963232	1896.92 ug/kg	99
21) Benzo[b]fluoranthene	24.56	252	1028680	2012.98 ug/kg	100
22) Benzo[k]fluoranthene	24.64	252	950134	1981.98 ug/kg	99
23) Benzo(j)fluoranthene	24.74	252	840438	1968.09 ug/kg	100
24) Benzo[e]pyrene	25.80	252	886593	1937.28 ug/kg	99
25) Benzo[a]pyrene	25.98	252	918052	1963.06 ug/kg	100
26) Dibenz[a,h]anthracene	29.56	278	789149	1852.84 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.56	276	922200	1815.00 ug/kg	97
28) Benzo[g,h,i]perylene	30.64	276	734566	1854.01 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050913.D Vial: 2
Acq On : 9 May 2016 4:26 pm Operator:
Sample : ICV-160509 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:42 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\160509\16050913.D          Vial: 2
Acq On    :  9 May 2016   4:26 pm                   Operator:
Sample    : ICV-160509                              Inst    : GC/MS #6
Misc      : ICV                                     Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May  9 16:58 2016             Quant Results File: temp.res

Method       : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title        : PAH Calibration
Last Update  : Fri Apr 22 11:43:43 2016
Response via : Multiple Level Calibration
```

TIC: 16050913.D

(21) Benzo[b]fluoranthene (CP)

24.56min 2012.98ug/kg

response 1028680

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.05
125.00	11.00	11.29
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160509\16050914.D Vial: 3
Acq On : 9 May 2016 5:06 pm Operator:
Sample : LCS-74985 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.89	136	1409447	4000.00	ug/kg	122
5) Acenaphthene-d10	13.30	164	853478	4000.00	ug/kg	74
11) Phenanthrene-d10	15.38	188	1848722	4000.00	ug/kg	91
17) Chrysene-d12	21.14	240	2054517	4000.00	ug/kg	90
20) Perylene-d12	26.31	264	1827934	4000.00	ug/kg	89

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.22	172	571170	2294.16	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 57.35%			
16) 4-Terphenyl-d14	17.89	244	1207428	2524.43	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 63.11%			

Target Compounds						Qvalue
2) Naphthalene	10.91	128	475616	1349.05	ug/kg	100
3) 2-Methyl naphthalene	11.72	142	332060	1066.28	ug/kg	100
4) 1-Methyl naphthalene	11.93	142	307234	1077.19	ug/kg	99
6) Dibenzofuran	13.50	168	525660	1643.33	ug/kg	100
8) Acenaphthylene	13.18	152	621498	1690.88	ug/kg	99
9) Acenaphthene	13.35	154	356405	1562.23	ug/kg	100
10) Fluorene	13.99	166	516914	1865.68	ug/kg	99
12) Phenanthrene	15.42	178	906855	1865.25	ug/kg	99
13) Anthracene	15.46	178	871646	1894.15	ug/kg	100
14) Fluoranthene	17.38	202	1099350	2185.08	ug/kg	100
15) Pyrene	17.97	202	1074326	2055.61	ug/kg	100
18) Benzo[a]anthracene	20.97	228	1066190	2215.12	ug/kg	99
19) Chrysene	21.23	228	990627	2130.13	ug/kg	100
21) Benzo[b]fluoranthene	24.56	252	1052775	2185.18	ug/kg	100
22) Benzo[k]fluoranthene	24.64	252	991403	2193.59	ug/kg	99
23) Benzo(j)fluoranthene	24.74	252	845921	2101.16	ug/kg	100
24) Benzo[e]pyrene	25.79	252	908728	2106.16	ug/kg	100
25) Benzo[a]pyrene	25.98	252	943840	2140.70	ug/kg	99
26) Dibenz[a,h]anthracene	29.56	278	828239	2062.65	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.56	276	954034	1991.62	ug/kg	97
28) Benzo[g,h,i]perylene	30.64	276	764262	2046.04	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050914.D Vial: 3
Acq On : 9 May 2016 5:06 pm Operator:
Sample : LCS-74985 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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\160509\16050916.D Vial: 5
Acq On : 9 May 2016 6:27 pm Operator:
Sample : LQV-74985 Inst : GC/MS #6
Misc : LQV1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1442730	4000.00 ug/kg	124
5) Acenaphthene-d10	13.29	164	856779	4000.00 ug/kg	74
11) Phenanthrene-d10	15.38	188	1731661	4000.00 ug/kg	85
17) Chrysene-d12	21.13	240	1988639	4000.00 ug/kg	88
20) Perylene-d12	26.30	264	1761545	4000.00 ug/kg	86

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	768832	3076.20 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	76.90%	
16) 4-Terphenyl-d14	17.89	244	1263461	2820.16 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	70.50%	

Target Compounds					Qvalue
2) Naphthalene	10.91	128	15924	44.13 ug/kg	100
3) 2-Methyl naphthalene	11.73	142	9587	30.07 ug/kg	99
4) 1-Methyl naphthalene	11.94	142	8539	29.25 ug/kg	98
6) Dibenzofuran	13.50	168	12712	39.59 ug/kg	97
8) Acenaphthylene	13.18	152	16236	44.00 ug/kg	98
9) Acenaphthene	13.35	154	8690	37.94 ug/kg	96
10) Fluorene	13.99	166	11784	42.37 ug/kg	98
12) Phenanthrene	15.42	178	17211	37.79 ug/kg	99
13) Anthracene	15.46	178	17184	39.87 ug/kg	100
14) Fluoranthene	17.38	202	20488	43.48 ug/kg	99
15) Pyrene	17.97	202	19556	39.95 ug/kg	98
18) Benzo[a]anthracene	20.96	228	19020	40.83 ug/kg	99
19) Chrysene	21.21	228	17610	39.12 ug/kg	95
21) Benzo[b]fluoranthene	24.53	252	19075	41.08 ug/kg	98
22) Benzo[k]fluoranthene	24.61	252	17673	40.58 ug/kg	100
23) Benzo(j)fluoranthene	24.71	252	14894	38.39 ug/kg	99
24) Benzo[e]pyrene	25.77	252	16374	39.38 ug/kg	98
25) Benzo[a]pyrene	25.95	252	16843	39.64 ug/kg	98
26) Dibenz[a,h]anthracene	29.52	278	14597	37.72 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.52	276	17056	36.95 ug/kg	95
28) Benzo[g,h,i]perylene	30.59	276	14205	39.46 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050916.D Vial: 5
Acq On : 9 May 2016 6:27 pm Operator:
Sample : LQV-74985 Inst : GC/MS #6
Misc : LQV1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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\160509\16050917.D Vial: 6
Acq On : 9 May 2016 7:07 pm Operator:
Sample : DCS-74985 Inst : GC/MS #6
Misc : DCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1400874	4000.00	ug/kg	121
5) Acenaphthene-d10	13.29	164	828512	4000.00	ug/kg	72
11) Phenanthrene-d10	15.38	188	1682727	4000.00	ug/kg	82
17) Chrysene-d12	21.14	240	1912708	4000.00	ug/kg	84
20) Perylene-d12	26.30	264	1705347	4000.00	ug/kg	83

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	747292	3092.02	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 77.30%			
16) 4-Terphenyl-d14	17.89	244	1221139	2804.95	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 70.12%			

Target Compounds						Qvalue
2) Naphthalene	10.91	128	9744	27.81	ug/kg	98
3) 2-Methyl naphthalene	11.72	142	5080	16.41	ug/kg	99
4) 1-Methyl naphthalene	11.93	142	4514	15.92	ug/kg	97
6) Dibenzofuran	13.50	168	6462	20.81	ug/kg	96
8) Acenaphthylene	13.18	152	7133	19.99	ug/kg	98
9) Acenaphthene	13.35	154	4206	18.99	ug/kg	98
10) Fluorene	13.99	166	5775	21.47	ug/kg	99
12) Phenanthrene	15.42	178	8775	19.83	ug/kg	98
13) Anthracene	15.46	178	8411	20.08	ug/kg	100
14) Fluoranthene	17.38	202	10377	22.66	ug/kg	98
15) Pyrene	17.97	202	9578	20.13	ug/kg	99
18) Benzo[a]anthracene	20.96	228	9244	20.63	ug/kg	100
19) Chrysene	21.22	228	8616	19.90	ug/kg	100
21) Benzo[b]fluoranthene	24.54	252	8988	20.00	ug/kg	100
22) Benzo[k]fluoranthene	24.62	252	8289	19.66	ug/kg	97
23) Benzo(j)fluoranthene	24.72	252	7298	19.43	ug/kg	96
24) Benzo[e]pyrene	25.78	252	7772	19.31	ug/kg	97
25) Benzo[a]pyrene	25.96	252	7816	19.00	ug/kg	97
26) Dibenz[a,h]anthracene	29.53	278	6229	16.63	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.54	276	7516	16.82	ug/kg	92
28) Benzo[g,h,i]perylene	30.62	276	6168	17.70	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050917.D Vial: 6
Acq On : 9 May 2016 7:07 pm Operator:
Sample : DCS-74985 Inst : GC/MS #6
Misc : DCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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\160509\16050919.D Vial: 8
Acq On : 9 May 2016 8:28 pm Operator:
Sample : MB-74985 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1383430	4000.00	ug/kg	119
5) Acenaphthene-d10	13.29	164	880409	4000.00	ug/kg	76
11) Phenanthrene-d10	15.38	188	1805828	4000.00	ug/kg	88
17) Chrysene-d12	21.13	240	2060767	4000.00	ug/kg	91
20) Perylene-d12	26.30	264	1838293	4000.00	ug/kg	89

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	685744	2670.11	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 66.75%			
16) 4-Terphenyl-d14	17.89	244	1256880	2690.24	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 67.26%			

Target Compounds

						Qvalue
2) Naphthalene	10.91	128	2958	8.55	ug/kg	92
23) Benzo(j)fluoranthene	24.71	252	178	0.44	ug/kg#	59

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050919.D Vial: 8
Acq On : 9 May 2016 8:28 pm Operator:
Sample : MB-74985 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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\160509\16050923.D Vial: 12
Acq On : 9 May 2016 11:07 pm Operator:
Sample : 1605071-28B Inst : GC/MS #6
Misc : SAMP Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:44 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1485790	4000.00	ug/kg	128
5) Acenaphthene-d10	13.29	164	855516	4000.00	ug/kg	74
11) Phenanthrene-d10	15.38	188	1812472	4000.00	ug/kg	89
17) Chrysene-d12	21.13	240	1867245	4000.00	ug/kg	82
20) Perylene-d12	26.30	264	1852866	4000.00	ug/kg	90

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	639848	2563.89	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 64.10%			
16) 4-Terphenyl-d14	17.89	244	1075757	2294.12	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 57.35%			

Target Compounds

						Qvalue
2) Naphthalene	10.90	128	4449	11.97	ug/kg	96
23) Benzo(j)fluoranthene	24.74	252	124	0.30	ug/kg#	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050923.D Vial: 12
Acq On : 9 May 2016 11:07 pm Operator:
Sample : 1605071-28B Inst : GC/MS #6
Misc : SAMP Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:44 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

#2
Naphthalene
Concen: 11.97 ug/kg
RT: 10.90 min Scan# 140
Delta R.T. -0.01 min
Lab File: 16050923.D
Acq: 9 May 2016 11:07 pm

Tgt Ion:128 Resp: 4449

Ion	Ratio	Lower	Upper
128	100		
129	13.7	0.0	41.1
127	13.2	0.0	42.4

#23
Benzo(j)fluoranthene
Concen: 0.30 ug/kg
RT: 24.74 min Scan# 2204
Delta R.T. -0.01 min
Lab File: 16050923.D
Acq: 9 May 2016 11:07 pm

Tgt Ion:252 Resp: 124

Ion	Ratio	Lower	Upper
252	100		
253	143.8	2.1	42.1#
125	100.0	0.0	34.4#

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160509\16050924.D Vial: 13
Acq On : 9 May 2016 11:47 pm Operator:
Sample : 1605071-29B Inst : GC/MS #6
Misc : SAMP Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:44 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1321764	4000.00	ug/kg	114
5) Acenaphthene-d10	13.29	164	768595	4000.00	ug/kg	67
11) Phenanthrene-d10	15.38	188	1600024	4000.00	ug/kg	78
17) Chrysene-d12	21.13	240	1709856	4000.00	ug/kg	75
20) Perylene-d12	26.29	264	1610085	4000.00	ug/kg	78

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.23	172	638813	2849.23	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 71.23%			
16) 4-Terphenyl-d14	17.89	244	1011578	2443.69	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 61.09%			

Target Compounds						Qvalue
2) Naphthalene	10.91	128	4775	14.44	ug/kg	97
23) Benzo(j)fluoranthene	24.71	252	104	0.29	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050924.D Vial: 13
Acq On : 9 May 2016 11:47 pm Operator:
Sample : 1605071-29B Inst : GC/MS #6
Misc : SAMP Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:44 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

#2
Naphthalene
Concen: 14.44 ug/kg
RT: 10.91 min Scan# 140
Delta R.T. -0.01 min
Lab File: 16050924.D
Acq: 9 May 2016 11:47 pm

Tgt Ion:128 Resp: 4775

Ion	Ratio	Lower	Upper
128	100		
129	12.2	0.0	41.1
127	13.4	0.0	42.4

#23
Benzo(j)fluoranthene
Concen: 0.29 ug/kg
RT: 24.71 min Scan# 2200
Delta R.T. -0.03 min
Lab File: 16050924.D
Acq: 9 May 2016 11:47 pm

Tgt Ion:252 Resp: 104

Ion	Ratio	Lower	Upper
252	100		
253	20.0	2.1	42.1
125	22.2	0.0	34.4

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160509\16050925.D Vial: 14
Acq On : 10 May 2016 12:26 am Operator:
Sample : CCV1-160509 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1409311	4000.00 ug/kg	122
5) Acenaphthene-d10	13.29	164	877027	4000.00 ug/kg	76
11) Phenanthrene-d10	15.38	188	1788887	4000.00 ug/kg	88
17) Chrysene-d12	21.13	240	2007330	4000.00 ug/kg	88
20) Perylene-d12	26.29	264	1806762	4000.00 ug/kg	88

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.22	172	270634	1057.84 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 26.45%#		
16) 4-Terphenyl-d14	17.88	244	444666	960.78 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 24.02%#		

Target Compounds					Qvalue
2) Naphthalene	10.90	128	355724	1009.09 ug/kg	99
3) 2-Methyl naphthalene	11.71	142	253439	813.89 ug/kg	95
4) 1-Methyl naphthalene	11.92	142	226740	795.05 ug/kg	96
6) Dibenzofuran	13.50	168	340822	1036.88 ug/kg	100
8) Acenaphthylene	13.17	152	406351	1075.86 ug/kg	100
9) Acenaphthene	13.34	154	235672	1005.28 ug/kg	97
10) Fluorene	13.98	166	311002	1092.35 ug/kg	99
12) Phenanthrene	15.41	178	461784	981.58 ug/kg	100
13) Anthracene	15.46	178	457911	1028.36 ug/kg	99
14) Fluoranthene	17.37	202	499854	1026.75 ug/kg	99
15) Pyrene	17.96	202	505727	1000.02 ug/kg	99
18) Benzo[a]anthracene	20.96	228	469893	999.20 ug/kg	100
19) Chrysene	21.21	228	434895	957.13 ug/kg	100
21) Benzo[b]fluoranthene	24.53	252	465773	978.10 ug/kg	99
22) Benzo[k]fluoranthene	24.61	252	448116	1003.12 ug/kg	100
23) Benzo(j)fluoranthene	24.72	252	389753	979.44 ug/kg	100
24) Benzo[e]pyrene	25.78	252	411815	965.65 ug/kg	99
25) Benzo[a]pyrene	25.96	252	426956	979.72 ug/kg	99
26) Dibenz[a,h]anthracene	29.53	278	363445	915.73 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.53	276	428694	905.42 ug/kg	97
28) Benzo[g,h,i]perylene	30.61	276	340026	920.97 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160509\16050925.D Vial: 14
Acq On : 10 May 2016 12:26 am Operator:
Sample : CCV1-160509 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 8:43 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

GCMS6_160511A
For

DHL Work Order
1605071

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_160511A
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	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: 5/12/2016

Second-Level Review: Janice Whitt Date: 5/13/2016

REVIEWED BY
By Janice Whitt at 10:09:07 AM, 5/13/2016

DHL Analytical, Inc.

Run ID: GCMS6_160511A **Run No.:** 85767

Analytical Run Date: 5/11/2016 **InstrumentID:** GCMS6

Analyst: Don Winston **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-160511	1	PAH_LL_SDOD1	TUNE	R85767	5/11/2016 7:59:00 AM		
ICV-160511	1	PAH_LL_SDOD1	ICV	R85767	5/11/2016 8:35:00 AM		
LCS-75057	1	PAH_LL_SDOD1	LCS	75057	5/11/2016 9:15:00 AM		
MB-75057	1	PAH_LL_SDOD1	MBLK	75057	5/11/2016 9:55:00 AM		
1605047-26A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 10:35:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605047-27A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 11:15:00 AM		
1605047-28A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 11:55:00 AM		
1605047-29A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 12:35:00 PM		
1605047-30A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 1:14:00 PM		
1605047-33A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 1:54:00 PM		Low recovery for surrogate 4-Terphenyl-d14.
1605047-34A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 2:34:00 PM		
1605047-35A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 3:13:00 PM		
1605047-36A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 3:53:00 PM		
1605047-37A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 4:33:00 PM		
1605047-39A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 5:12:00 PM		
1605047-34AMS	10	PAH_LL_SDOD1	MS	75057	5/11/2016 5:52:00 PM		
1605047-34AMSD	10	PAH_LL_SDOD1	MSD	75057	5/11/2016 6:32:00 PM		High recovery for most analytes and %RPD with MS is outside limits due to matrix.
DFTPP2-160511	1	PAH_LL_SDOD1	TUNE	R85767	5/11/2016 7:11:00 PM		
ICV2-160511	1	PAH_LL_SDOD1	ICV	R85767	5/11/2016 7:48:00 PM		
SBLK-160511	1	PAH_LL_SDOD1	SBLK	75057	5/11/2016 8:28:00 PM		
1605047-42A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 9:08:00 PM		
1605071-31A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 9:48:00 PM		
1605071-33A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 10:27:00 PM		
1605071-34A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 11:07:00 PM		
1605071-37A	10	PAH_LL_SDOD1	SAMP	75057	5/11/2016 11:47:00 PM		
CCV-160511	1	PAH_LL_SDOD1	CCV	R85767	5/12/2016 12:27:00 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

Sequence Name: C:\HPCHEM\1\SEQUENCE\160511.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160511\
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	16051101	DFTPPPAH	DFTPP-160511
2	Sample	2	16051102	PP160421	ICV-160511
3	Sample	3	16051103	PP160421	LCS-75057
4	Sample	4	16051104	PP160421	MB-75057
5	Sample	5	16051105	PP160421	1605047-26A
6	Sample	6	16051106	PP160421	1605047-27A
7	Sample	7	16051107	PP160421	1605047-28A
8	Sample	8	16051108	PP160421	1605047-29A
9	Sample	9	16051109	PP160421	1605047-30A
10	Sample	10	16051110	PP160421	1605047-33A
11	Sample	11	16051111	PP160421	1605047-34A
12	Sample	12	16051112	PP160421	1605047-35A
13	Sample	13	16051113	PP160421	1605047-36A
14	Sample	14	16051114	PP160421	1605047-37A
15	Sample	15	16051115	PP160421	1605047-39A
16	Sample	16	16051116	PP160421	1605047-34AMS
17	Sample	17	16051117	PP160421	1605047-34AMSD
18	Sample	18	16051118	DFTPPPAH	DFTPP2-160511
19	Sample	19	16051119	PP160421	ICV2-160511
20	Sample	20	16051120	PP160421	SBLK-160511
21	Sample	21	16051121	PP160421	1605047-42A
22	Sample	22	16051122	PP160421	1605071-31A
23	Sample	23	16051123	PP160421	1605071-33A
24	Sample	24	16051124	PP160421	1605071-34A
25	Sample	25	16051125	PP160421	1605071-37A
26	Sample	26	16051126	PP160421	CCV-160511

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 9:17:34 AM**
Digestion:
Prep End Date: 5/10/16 2:36 PM

T-V #1,2,3
Balance #25
Sonicators #1,2,3,4

Prep Batch **75057** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner** Prep Factor Units: **mL/g**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-26A	Soil		10.08	10	0.992	1 of 1	
1605047-27A	Soil		10.05	10	0.995	1 of 1	
1605047-28A	Soil		10.01	10	1.000	1 of 1	
1605047-29A	Soil		10.04	10	1.000	1 of 1	
1605047-30A	Soil		10.12	10	1.000	1 of 1	
1605047-33A	Soil		10.08	10	1.000	1 of 1	
1605047-34A	Soil		10.32	10	1.000	1 of 1	
1605047-35A	Soil		10.06	10	1.000	1 of 1	
1605047-36A	Soil		10.15	10	1.000	1 of 1	
1605047-37A	Soil		10.04	10	1.000	1 of 1	
1605047-39A	Soil		10.20	10	1.000	1 of 1	
1605047-40A	Soil		10.42	10	1.000	1 of 1	
	Extract and hold for PAH						
1605047-41A	Soil		10.17	10	1.000	1 of 1	
	Extract and hold for PAH						
1605047-42A	Soil		10.14	10	1.000	1 of 1	
1605047-43A	Soil		10.03	10	1.000	1 of 1	
	Extract and hold for PAH						
1605047-44A	Soil		10.24	10	1.000	1 of 1	
	Extract and hold for PAH						
1605071-31A	Soil		10.76	10	1.000	1 of 1	
1605071-33A	Soil		10.45	10	1.000	1 of 1	
1605071-34A	Soil		10.14	10	1.000	1 of 1	
1605071-37A	Soil		10.30	10	1.000	1 of 1	
LCS-75057	Soil		10	10	1.000	of	
MB-75057	Soil		10	10	1.000	of	

1605047-34A MS 10.41
MSD 10.62

#9927 sodium sulfate
#10169 MeCl2
#10214 Whatman filter
#10343 1:1 MeCl2:Acetone

REVIEWED BY
By Janice Whitt at 9:29:38 AM, 5/13/2016

5/10/16 / AR 5/10/16

(0.05) PAHPREP160509 200ppm PAH mix LCS/MS/D
(0.25) SVPREP160415-1 40ppm surr. 3 ALL

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/5/2016 2:00:00 PM**
Digestion: **Start: 5/5/2016 5:00:00 PM / Stop: 5/7/2016 9:00:00 AM**
Prep End Date: **5/7/2016 3:30:00 PM**

Prep Batch **74972** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-01A	Soil		0	0	#Num!	1 of 1	
1605047-02A	Soil		0	0	#Num!	1 of 1	
1605047-03A	Soil		0	0	#Num!	of 3	
Extra sample was subsampled for MS/MSD							
1605047-04A	Soil		0	0	#Num!	1 of 1	
1605047-05A	Soil		0	0	#Num!	1 of 1	
1605047-06A	Soil		0	0	#Num!	1 of 1	
1605047-07A	Soil		0	0	#Num!	1 of 1	
1605047-08A	Soil		0	0	#Num!	1 of 1	
1605047-09A	Soil		0	0	#Num!	1 of 1	
1605047-10A	Soil		0	0	#Num!	1 of 1	
1605047-11A	Soil		0	0	#Num!	1 of 1	
1605047-12A	Soil		0	0	#Num!	1 of 1	
1605047-13A	Soil		0	0	#Num!	1 of 1	
1605047-14A	Soil		0	0	#Num!	1 of 1	
1605047-15A	Soil		0	0	#Num!	1 of 1	
1605047-16A	Soil		0	0	#Num!	1 of 1	
1605047-17A	Soil		0	0	#Num!	1 of 1	
1605047-18A	Soil		0	0	#Num!	1 of 1	
1605047-19A	Soil		0	0	#Num!	1 of 1	
1605047-20A	Soil		0	0	#Num!	1 of 1	
1605047-21A	Soil		0	0	#Num!	1 of 1	
1605047-22A	Soil		0	0	#Num!	1 of 1	
1605047-23A	Soil		0	0	#Num!	1 of 1	
1605047-24A	Soil		0	0	#Num!	of 3	
Extra sample was subsamples for MS/MSD							
1605047-25A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:28:16 AM, 5/13/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/5/2016 2:00:00 PM**
Digestion: **Start: 5/5/2016 5:00:00 PM / Stop: 5/7/2016 9:00:00 AM**
Prep End Date: **5/7/2016 3:30:00 PM**

Prep Batch **74972** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-26A	Soil		0	0	#Num!	1 of 1	
1605047-27A	Soil		0	0	#Num!	1 of 1	
1605047-28A	Soil		0	0	#Num!	1 of 1	
1605047-29A	Soil		0	0	#Num!	1 of 1	
1605047-30A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:28:19 AM, 5/13/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 9:17:34 AM**
Digestion:
Prep End Date: **5/10/2016 2:36:00 PM**

Prep Batch **75057** 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
1605047-26A	Soil		10.08	10	0.992	1 of 1	
1605047-27A	Soil		10.05	10	0.995	1 of 1	
1605047-28A	Soil		10.01	10	0.999	1 of 1	
1605047-29A	Soil		10.04	10	0.996	1 of 1	
1605047-30A	Soil		10.12	10	0.988	1 of 1	
1605047-33A	Soil		10.08	10	0.992	1 of 1	
1605047-34A	Soil		10.32	10	0.969	1 of 1	
1605047-34AMS	Soil		10.41	10	0.961	of	
1605047-34AMSD	Soil		10.62	10	0.942	of	
1605047-35A	Soil		10.06	10	0.994	1 of 1	
1605047-36A	Soil		10.15	10	0.985	1 of 1	
1605047-37A	Soil		10.04	10	0.996	1 of 1	
1605047-39A	Soil		10.2	10	0.980	1 of 1	
1605047-40A	Soil		10.42	10	0.960	1 of 1	
	Extract and hold for PAH						
1605047-41A	Soil		10.17	10	0.983	1 of 1	
	Extract and hold for PAH						
1605047-42A	Soil		10.14	10	0.986	1 of 1	
1605047-43A	Soil		10.03	10	0.997	1 of 1	
	Extract and hold for PAH						
1605047-44A	Soil		10.24	10	0.977	1 of 1	
	Extract and hold for PAH						
1605071-31A	Soil		10.76	10	0.929	1 of 1	
1605071-33A	Soil		10.45	10	0.957	1 of 1	
1605071-34A	Soil		10.14	10	0.986	1 of 1	
1605071-37A	Soil		10.3	10	0.971	1 of 1	
LCS-75057	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.25	07/15/2016

REVIEWED BY
By Janice Whitt at 9:29:42 AM, 5/13/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 9:17:34 AM**
Digestion:
Prep End Date: **5/10/2016 2:36:00 PM**

Prep Batch **75057** 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
MB-75057	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.25	07/15/2016

REVIEWED BY
By Janice Whitt at 9:29:48 AM, 5/13/2016

Data File : C:\HPCHEM\1\DATA\160511\16051101.D Vial: 1
Acq On : 11 May 2016 7:59 am Operator:
Sample : DFTPP-160511 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 1590, 1591, 1592; Background Corrected with Scan 1584

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	32.9	32311	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	38.2	37451	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	49.4	48451	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	98141	PASS
199	198	5	9	6.8	6633	PASS
275	198	10	60	27.8	27240	PASS
365	198	1	200	3.6	3578	PASS
441	442	0.01	24	14.4	17438	PASS
442	198	50	400	123.2	120875	PASS
443	442	15	24	19.1	23124	PASS

REVIEWED BY
By Janice Whitt at 9:29:53 AM, 5/13/2016

DFTPP

Data File : C:\HPCHEM\1\DATA\160511\16051118.D Vial: 18
Acq On : 11 May 2016 7:11 pm Operator:
Sample : DFTPP2-160511 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 1588, 1589, 1590; Background Corrected with Scan 1582

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	33.2	30871	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	38.6	35907	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	49.3	45795	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	92907	PASS
199	198	5	9	6.7	6179	PASS
275	198	10	60	27.1	25176	PASS
365	198	1	200	3.6	3372	PASS
441	442	0.01	24	14.9	16074	PASS
442	198	50	400	116.1	107853	PASS
443	442	15	24	19.8	21401	PASS

REVIEWED BY
By Janice Whitt at 9:29:56 AM, 5/13/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051102.D Vial: 2
Acq On : 11 May 2016 8:35 am Operator:
Sample : ICV-160511 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:55 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1259762	4000.00 ug/kg	109
5) Acenaphthene-d10	13.28	164	1011159	4000.00 ug/kg	88
11) Phenanthrene-d10	15.37	188	1753957	4000.00 ug/kg	86
17) Chrysene-d12	21.12	240	2071365	4000.00 ug/kg	91
20) Perylene-d12	26.27	264	1914268	4000.00 ug/kg	93

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.22	172	592204	2007.72 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	50.19%	
16) 4-Terphenyl-d14	17.87	244	844695	1861.47 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.54%	

Target Compounds					Qvalue
2) Naphthalene	10.90	128	604613	1918.72 ug/kg	99
3) 2-Methyl naphthalene	11.71	142	505267	1815.24 ug/kg	94
4) 1-Methyl naphthalene	11.92	142	457575	1794.92 ug/kg	96
6) Dibenzofuran	13.49	168	740781	1954.71 ug/kg	99
8) Acenaphthylene	13.16	152	901557	2070.33 ug/kg	99
9) Acenaphthene	13.33	154	535115	1979.79 ug/kg	97
10) Fluorene	13.98	166	662420	2018.02 ug/kg	96
12) Phenanthrene	15.41	178	873581	1893.89 ug/kg	100
13) Anthracene	15.45	178	834864	1912.24 ug/kg	100
14) Fluoranthene	17.36	202	937464	1963.99 ug/kg	99
15) Pyrene	17.96	202	954113	1924.23 ug/kg	100
18) Benzo[a]anthracene	20.94	228	944372	1946.07 ug/kg	100
19) Chrysene	21.21	228	875574	1867.42 ug/kg	99
21) Benzo[b]fluoranthene	24.52	252	957717	1898.22 ug/kg	99
22) Benzo[k]fluoranthene	24.61	252	885076	1870.01 ug/kg	100
23) Benzo(j)fluoranthene	24.71	252	801718	1901.55 ug/kg	99
24) Benzo[e]pyrene	25.77	252	840067	1859.22 ug/kg	100
25) Benzo[a]pyrene	25.94	252	877748	1901.01 ug/kg	99
26) Dibenz[a,h]anthracene	29.53	278	841194	2000.43 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.53	276	987843	1969.19 ug/kg	100
28) Benzo[g,h,i]perylene	30.60	276	781385	1997.54 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051102.D Vial: 2
Acq On : 11 May 2016 8:35 am Operator:
Sample : ICV-160511 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:55 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\160511\16051102.D Vial: 2
Acq On : 11 May 2016 8:35 am Operator:
Sample : ICV-160511 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 11 9:08 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Multiple Level Calibration

TIC: 16051102.D

(21) Benzo[b]fluoranthene (CP)

24.52min 1898.22ug/kg

response 957717

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.03
125.00	11.00	11.79
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051103.D Vial: 3
Acq On : 11 May 2016 9:15 am Operator:
Sample : LCS-75057 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:55 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1348817	4000.00 ug/kg	116
5) Acenaphthene-d10	13.28	164	758990	4000.00 ug/kg	66
11) Phenanthrene-d10	15.37	188	1672637	4000.00 ug/kg	82
17) Chrysene-d12	21.11	240	2007979	4000.00 ug/kg	88
20) Perylene-d12	26.27	264	1879906	4000.00 ug/kg	91

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.22	172	173951	785.67 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.64%#		
16) 4-Terphenyl-d14	17.87	244	332159	767.57 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.19%#		

Target Compounds					Qvalue
2) Naphthalene	10.90	128	237654	704.39 ug/kg	100
3) 2-Methyl naphthalene	11.71	142	163096	547.26 ug/kg	97
4) 1-Methyl naphthalene	11.92	142	145689	533.76 ug/kg	97
6) Dibenzofuran	13.48	168	238157	837.22 ug/kg	100
8) Acenaphthylene	13.16	152	259143	792.81 ug/kg	99
9) Acenaphthene	13.33	154	152845	753.37 ug/kg	99
10) Fluorene	13.98	166	210178	853.03 ug/kg	100
12) Phenanthrene	15.40	178	345997	786.58 ug/kg	99
13) Anthracene	15.44	178	348142	836.18 ug/kg	99
14) Fluoranthene	17.35	202	402166	883.50 ug/kg	99
15) Pyrene	17.95	202	405350	857.25 ug/kg	99
18) Benzo[a]anthracene	20.94	228	380427	808.70 ug/kg	100
19) Chrysene	21.19	228	357789	787.18 ug/kg	100
21) Benzo[b]fluoranthene	24.51	252	388493	784.08 ug/kg	99
22) Benzo[k]fluoranthene	24.59	252	374077	804.80 ug/kg	100
23) Benzo(j)fluoranthene	24.69	252	333566	805.63 ug/kg	98
24) Benzo[e]pyrene	25.75	252	356324	803.02 ug/kg	99
25) Benzo[a]pyrene	25.93	252	345790	762.60 ug/kg	99
26) Dibenz[a,h]anthracene	29.51	278	345359	836.30 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.51	276	403593	819.24 ug/kg	97
28) Benzo[g,h,i]perylene	30.58	276	318843	829.99 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051103.D Vial: 3
Acq On : 11 May 2016 9:15 am Operator:
Sample : LCS-75057 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:55 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\160511\16051104.D Vial: 4
Acq On : 11 May 2016 9:55 am Operator:
Sample : MB-75057 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:55 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1253049	4000.00	ug/kg	108
5) Acenaphthene-d10	13.28	164	675807	4000.00	ug/kg	59
11) Phenanthrene-d10	15.37	188	1432187	4000.00	ug/kg	70
17) Chrysene-d12	21.11	240	1774398	4000.00	ug/kg	78
20) Perylene-d12	26.27	264	1732816	4000.00	ug/kg	84

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.22	172	171969	872.33	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 21.81%#			
16) 4-Terphenyl-d14	17.87	244	307142	828.92	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.72%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.69	252	286	0.75	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051104.D Vial: 4
Acq On : 11 May 2016 9:55 am Operator:
Sample : MB-75057 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:55 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\160511\16051116.D Vial: 16
Acq On : 11 May 2016 5:52 pm Operator:
Sample : 1605047-34AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1392907	4000.00 ug/kg	120
5) Acenaphthene-d10	13.28	164	851118	4000.00 ug/kg	74
11) Phenanthrene-d10	15.37	188	1711030	4000.00 ug/kg	84
17) Chrysene-d12	21.11	240	1876532	4000.00 ug/kg	83
20) Perylene-d12	26.27	264	1742867	4000.00 ug/kg	85

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	20961	84.43 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.11%#	
16) 4-Terphenyl-d14	17.87	244	32525	73.47 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.84%#	

Target Compounds					Qvalue
2) Naphthalene	10.90	128	27300	78.35 ug/kg	99
3) 2-Methyl naphthalene	11.71	142	18821	61.15 ug/kg	97
4) 1-Methyl naphthalene	11.92	142	17119	60.73 ug/kg	97
6) Dibenzofuran	13.49	168	29109	91.25 ug/kg	100
8) Acenaphthylene	13.17	152	30599	83.48 ug/kg	99
9) Acenaphthene	13.33	154	18876	82.97 ug/kg	99
10) Fluorene	13.98	166	24800	89.76 ug/kg	100
12) Phenanthrene	15.40	178	57916	128.71 ug/kg	99
13) Anthracene	15.44	178	40882	95.99 ug/kg	99
14) Fluoranthene	17.36	202	101248	217.44 ug/kg	99
15) Pyrene	17.95	202	96358	199.21 ug/kg	99
18) Benzo[a]anthracene	20.93	228	71726	163.15 ug/kg	99
19) Chrysene	21.19	228	77017	181.32 ug/kg	99
21) Benzo[b]fluoranthene	24.51	252	82292	179.15 ug/kg	100
22) Benzo[k]fluoranthene	24.58	252	58795	136.44 ug/kg	99
23) Benzo(j)fluoranthene	24.69	252	52482	136.72 ug/kg	98
24) Benzo[e]pyrene	25.74	252	68285	165.99 ug/kg	100
25) Benzo[a]pyrene	25.92	252	78299	186.26 ug/kg	99
26) Dibenz[a,h]anthracene	29.50	278	36474	95.27 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.51	276	66579	145.77 ug/kg	93
28) Benzo[g,h,i]perylene	30.58	276	58599	164.54 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051116.D Vial: 16
Acq On : 11 May 2016 5:52 pm Operator:
Sample : 1605047-34AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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\160511\16051117.D Vial: 17
Acq On : 11 May 2016 6:32 pm Operator:
Sample : 1605047-34AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1337888	4000.00 ug/kg	115
5) Acenaphthene-d10	13.28	164	803434	4000.00 ug/kg	70
11) Phenanthrene-d10	15.37	188	1660832	4000.00 ug/kg	81
17) Chrysene-d12	21.11	240	1863251	4000.00 ug/kg	82
20) Perylene-d12	26.27	264	1742760	4000.00 ug/kg	85

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	20617	87.97 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.20%#	
16) 4-Terphenyl-d14	17.87	244	34001	79.13 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.98%#	

Target Compounds					Qvalue
2) Naphthalene	10.90	128	33365	99.70 ug/kg	100
3) 2-Methyl naphthalene	11.71	142	19811	67.02 ug/kg	98
4) 1-Methyl naphthalene	11.92	142	17842	65.90 ug/kg	99
6) Dibenzofuran	13.49	168	30173	100.20 ug/kg	99
8) Acenaphthylene	13.17	152	30317	87.62 ug/kg	98
9) Acenaphthene	13.33	154	23388	108.90 ug/kg	98
10) Fluorene	13.98	166	26496	101.59 ug/kg	99
12) Phenanthrene	15.40	178	129396	296.26 ug/kg	99
13) Anthracene	15.44	178	54614	132.11 ug/kg	99
14) Fluoranthene	17.36	202	392358	868.08 ug/kg	100
15) Pyrene	17.95	202	365308	778.06 ug/kg	99
18) Benzo[a]anthracene	20.94	228	257962	590.96 ug/kg	100
19) Chrysene	21.19	228	283352	671.83 ug/kg	100
21) Benzo[b]fluoranthene	24.51	252	262771	572.07 ug/kg	100
22) Benzo[k]fluoranthene	24.58	252	153717	356.74 ug/kg	98
23) Benzo(j)fluoranthene	24.69	252	140829	366.90 ug/kg	95
24) Benzo[e]pyrene	25.74	252	193279	469.86 ug/kg	99
25) Benzo[a]pyrene	25.93	252	263044	625.76 ug/kg	99
26) Dibenz[a,h]anthracene	29.50	278	63244	165.20 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.51	276	169247	370.58 ug/kg	92
28) Benzo[g,h,i]perylene	30.58	276	145747	409.26 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051117.D Vial: 17
Acq On : 11 May 2016 6:32 pm Operator:
Sample : 1605047-34AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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\160511\16051119.D Vial: 19
Acq On : 11 May 2016 7:48 pm Operator:
Sample : ICV2-160511 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1489420	4000.00	ug/kg	128
5) Acenaphthene-d10	13.28	164	922232	4000.00	ug/kg	80
11) Phenanthrene-d10	15.37	188	1833454	4000.00	ug/kg	90
17) Chrysene-d12	21.11	240	2025528	4000.00	ug/kg	89
20) Perylene-d12	26.27	264	1886399	4000.00	ug/kg	92

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.22	172	538577	2001.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 50.05%			
16) 4-Terphenyl-d14	17.87	244	860120	1813.27	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 45.33%			

Target Compounds						Qvalue
2) Naphthalene	10.89	128	719961	1932.47	ug/kg	99
3) 2-Methyl naphthalene	11.71	142	507176	1541.14	ug/kg	97
4) 1-Methyl naphthalene	11.92	142	455413	1510.98	ug/kg	98
6) Dibenzofuran	13.49	168	686251	1985.43	ug/kg	99
8) Acenaphthylene	13.16	152	824266	2075.36	ug/kg	100
9) Acenaphthene	13.33	154	484366	1964.83	ug/kg	98
10) Fluorene	13.98	166	632897	2113.99	ug/kg	100
12) Phenanthrene	15.41	178	915890	1899.52	ug/kg	100
13) Anthracene	15.45	178	863092	1891.18	ug/kg	100
14) Fluoranthene	17.36	202	961351	1926.70	ug/kg	100
15) Pyrene	17.95	202	968646	1868.84	ug/kg	100
18) Benzo[a]anthracene	20.94	228	924903	1949.09	ug/kg	100
19) Chrysene	21.20	228	861084	1878.08	ug/kg	100
21) Benzo[b]fluoranthene	24.52	252	933783	1878.12	ug/kg	99
22) Benzo[k]fluoranthene	24.61	252	881447	1889.85	ug/kg	100
23) Benzo(j)fluoranthene	24.70	252	789190	1899.49	ug/kg	99
24) Benzo[e]pyrene	25.76	252	831012	1866.35	ug/kg	100
25) Benzo[a]pyrene	25.94	252	872875	1918.39	ug/kg	100
26) Dibenz[a,h]anthracene	29.53	278	807480	1948.62	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.53	276	945144	1911.91	ug/kg	98
28) Benzo[g,h,i]perylene	30.60	276	737087	1912.13	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051119.D Vial: 19
Acq On : 11 May 2016 7:48 pm Operator:
Sample : ICV2-160511 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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\160511\16051119.D Vial: 19
Acq On : 11 May 2016 7:48 pm Operator:
Sample : ICV2-160511 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 11 20:20 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Multiple Level Calibration

TIC: 16051119.D

(21) Benzo[b]fluoranthene (CP)

24.52min 1878.12ug/kg

response 933783

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.19
125.00	11.00	11.65
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051120.D Vial: 20
Acq On : 11 May 2016 8:28 pm Operator:
Sample : SBLK-160511 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.87	136	1334383	4000.00 ug/kg	115
5) Acenaphthene-d10	13.28	164	901660	4000.00 ug/kg	78
11) Phenanthrene-d10	15.37	188	1641396	4000.00 ug/kg	80
17) Chrysene-d12	21.11	240	1855634	4000.00 ug/kg	82
20) Perylene-d12	26.27	264	1755900	4000.00 ug/kg	85

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.22	172	169	0.64 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.02%#	
16) 4-Terphenyl-d14	17.86	244	348	0.82 ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.02%#	

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.68	252	96	0.25 ug/kg#	68

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051120.D Vial: 20
Acq On : 11 May 2016 8:28 pm Operator:
Sample : SBLK-160511 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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\160511\16051122.D Vial: 22
Acq On : 11 May 2016 9:48 pm Operator:
Sample : 1605071-31A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:59 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1348898	4000.00	ug/kg	116
5) Acenaphthene-d10	13.28	164	822353	4000.00	ug/kg	71
11) Phenanthrene-d10	15.36	188	1617900	4000.00	ug/kg	79
17) Chrysene-d12	21.11	240	1815860	4000.00	ug/kg	80
20) Perylene-d12	26.26	264	1672291	4000.00	ug/kg	81

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.21	172	20540	85.62	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.14%#			
16) 4-Terphenyl-d14	17.86	244	32038	76.54	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.91%#			

Target Compounds						Qvalue
12) Phenanthrene	15.40	178	14028	32.97	ug/kg	100
13) Anthracene	15.44	178	2800	6.95	ug/kg	97
14) Fluoranthene	17.35	202	52316	118.82	ug/kg	98
15) Pyrene	17.94	202	48910	106.94	ug/kg	99
18) Benzo[a]anthracene	20.93	228	32978	77.52	ug/kg	99
19) Chrysene	21.18	228	38649	94.03	ug/kg	100
21) Benzo[b]fluoranthene	24.50	252	41648	94.49	ug/kg	98
22) Benzo[k]fluoranthene	24.58	252	20156	48.75	ug/kg	98
23) Benzo(j)fluoranthene	24.68	252	18601	50.50	ug/kg	89
24) Benzo[e]pyrene	25.74	252	30564	77.43	ug/kg	99
25) Benzo[a]pyrene	25.91	252	41226	102.21	ug/kg	100
26) Dibenz[a,h]anthracene	29.49	278	5647	15.37	ug/kg	95
27) Indeno[1,2,3-cd]pyrene	29.50	276	26420	60.29	ug/kg	89
28) Benzo[g,h,i]perylene	30.57	276	25115	73.49	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051122.D Vial: 22
Acq On : 11 May 2016 9:48 pm Operator:
Sample : 1605071-31A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:59 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

#12
Phenanthrene
Concen: 32.97 ug/kg
RT: 15.40 min Scan# 708
Delta R.T. -0.02 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:178 Resp: 14028

Ion	Ratio	Lower	Upper
178	100		
179	15.8	0.0	45.9
176	18.3	0.0	48.5

#13
Anthracene
Concen: 6.95 ug/kg
RT: 15.44 min Scan# 716
Delta R.T. -0.02 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:178 Resp: 2800

Ion	Ratio	Lower	Upper
178	100		
179	13.9	0.0	45.9
176	17.4	0.0	48.2

#14
Fluoranthene
Concen: 118.82 ug/kg
RT: 17.35 min Scan# 1097
Delta R.T. -0.03 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:202 Resp: 52316

Ion	Ratio	Lower	Upper
202	100		
101	12.3	0.0	43.0
203	16.9	0.0	47.9

#15
Pyrene
Concen: 106.94 ug/kg
RT: 17.94 min Scan# 1215
Delta R.T. -0.03 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:202 Resp: 48910

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.6	0.0	48.0

#18
Benzo[a]anthracene
Concen: 77.52 ug/kg
RT: 20.93 min Scan# 1665
Delta R.T. -0.05 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:228 Resp: 32978

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.0	50.1
226	25.6	0.0	55.2

#19
Chrysene
Concen: 94.03 ug/kg
RT: 21.18 min Scan# 1701
Delta R.T. -0.05 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:228 Resp: 38649

Ion	Ratio	Lower	Upper
228	100		
226	28.3	0.0	58.1
229	19.9	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 94.49 ug/kg
RT: 24.50 min Scan# 2170
Delta R.T. -0.06 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:252 Resp: 41648

Ion	Ratio	Lower	Upper
252	100		
253	21.4	0.0	52.2
125	10.4	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 48.75 ug/kg
RT: 24.58 min Scan# 2181
Delta R.T. -0.06 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:252 Resp: 20156

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.1	42.1
125	11.0	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 50.50 ug/kg
RT: 24.68 min Scan# 2195
Delta R.T. -0.07 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:252 Resp: 18601

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: 77.43 ug/kg
RT: 25.74 min Scan# 2345
Delta R.T. -0.06 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:252 Resp: 30564

Ion	Ratio	Lower	Upper
252	100		
253	22.9	2.2	42.2
125	16.6	0.0	36.1

#25
Benzo[a]pyrene
Concen: 102.21 ug/kg
RT: 25.91 min Scan# 2370
Delta R.T. -0.07 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:252 Resp: 41226

Ion	Ratio	Lower	Upper
252	100		
253	21.8	1.9	41.9
125	11.9	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 15.37 ug/kg
RT: 29.49 min Scan# 2876
Delta R.T. -0.07 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:278 Resp: 5647

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.6	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 60.29 ug/kg
RT: 29.50 min Scan# 2877
Delta R.T. -0.06 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:276 Resp: 26420

Ion	Ratio	Lower	Upper
276	100		
138	17.1	6.7	46.7
277	24.2	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 73.49 ug/kg
RT: 30.57 min Scan# 3028
Delta R.T. -0.08 min
Lab File: 16051122.D
Acq: 11 May 2016 9:48 pm

Tgt Ion:276 Resp: 25115

Ion	Ratio	Lower	Upper
276	100		
138	19.4	0.0	39.1
277	24.2	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051123.D Vial: 23
Acq On : 11 May 2016 10:27 pm Operator:
Sample : 1605071-33A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:59 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1307630	4000.00 ug/kg	113
5) Acenaphthene-d10	13.27	164	832426	4000.00 ug/kg	72
11) Phenanthrene-d10	15.36	188	1639564	4000.00 ug/kg	80
17) Chrysene-d12	21.10	240	1820490	4000.00 ug/kg	80
20) Perylene-d12	26.26	264	1690212	4000.00 ug/kg	82

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	21142	87.07 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.18%#		
16) 4-Terphenyl-d14	17.86	244	31479	74.21 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.86%#		

Target Compounds					Qvalue
12) Phenanthrene	15.40	178	15159	35.16 ug/kg	99
13) Anthracene	15.44	178	2533	6.21 ug/kg	98
14) Fluoranthene	17.35	202	47945	107.45 ug/kg	99
15) Pyrene	17.94	202	42768	92.27 ug/kg	99
18) Benzo[a]anthracene	20.92	228	25302	59.33 ug/kg	100
19) Chrysene	21.18	228	32110	77.92 ug/kg	100
21) Benzo[b]fluoranthene	24.49	252	34182	76.73 ug/kg	99
22) Benzo[k]fluoranthene	24.58	252	16684	39.92 ug/kg	98
23) Benzo(j)fluoranthene	24.68	252	15517	41.68 ug/kg	92
24) Benzo[e]pyrene	25.74	252	26183	65.63 ug/kg	100
25) Benzo[a]pyrene	25.91	252	32715	80.25 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	5309	14.30 ug/kg	92
27) Indeno[1,2,3-cd]pyrene	29.49	276	24630	55.61 ug/kg	90
28) Benzo[g,h,i]perylene	30.57	276	23372	67.67 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051123.D Vial: 23
Acq On : 11 May 2016 10:27 pm Operator:
Sample : 1605071-33A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:59 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

#12
Phenanthrene
Concen: 35.16 ug/kg
RT: 15.40 min Scan# 708
Delta R.T. -0.03 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:178 Resp: 15159

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	18.4	0.0	48.5

#13
Anthracene
Concen: 6.21 ug/kg
RT: 15.44 min Scan# 716
Delta R.T. -0.03 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:178 Resp: 2533

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	45.9
176	17.6	0.0	48.2

#14
Fluoranthene
Concen: 107.45 ug/kg
RT: 17.35 min Scan# 1097
Delta R.T. -0.03 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:202 Resp: 47945

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	43.0
203	17.4	0.0	47.9

#15
Pyrene
Concen: 92.27 ug/kg
RT: 17.94 min Scan# 1215
Delta R.T. -0.04 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:202 Resp: 42768

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: 59.33 ug/kg
RT: 20.92 min Scan# 1664
Delta R.T. -0.06 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:228 Resp: 25302

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.4	0.0	55.2

#19
Chrysene
Concen: 77.92 ug/kg
RT: 21.18 min Scan# 1701
Delta R.T. -0.05 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:228 Resp: 32110

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: 76.73 ug/kg
RT: 24.49 min Scan# 2169
Delta R.T. -0.06 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:252 Resp: 34182

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	11.7	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 39.92 ug/kg
RT: 24.58 min Scan# 2181
Delta R.T. -0.06 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:252 Resp: 16684

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: 41.68 ug/kg
RT: 24.68 min Scan# 2195
Delta R.T. -0.07 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:252 Resp: 15517

Ion	Ratio	Lower	Upper
252	100		
253	28.4	2.1	42.1
125	14.4	0.0	34.4

#24
Benzo[e]pyrene
Concen: 65.63 ug/kg
RT: 25.74 min Scan# 2345
Delta R.T. -0.06 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:252 Resp: 26183

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	16.0	0.0	36.1

#25
Benzo[a]pyrene
Concen: 80.25 ug/kg
RT: 25.91 min Scan# 2370
Delta R.T. -0.07 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:252 Resp: 32715

Ion	Ratio	Lower	Upper
252	100		
253	22.7	1.9	41.9
125	12.0	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 14.30 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.08 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:278 Resp: 5309

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	20.3	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 55.61 ug/kg
RT: 29.49 min Scan# 2876
Delta R.T. -0.07 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:276 Resp: 24630

Ion	Ratio	Lower	Upper
276	100		
138	18.7	6.7	46.7
277	23.8	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 67.67 ug/kg
RT: 30.57 min Scan# 3028
Delta R.T. -0.08 min
Lab File: 16051123.D
Acq: 11 May 2016 10:27 pm

Tgt Ion:276 Resp: 23372

Ion	Ratio	Lower	Upper
276	100		
138	18.4	0.0	39.1
277	23.3	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051124.D Vial: 24
Acq On : 11 May 2016 11:07 pm Operator:
Sample : 1605071-34A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 9:00 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1384973	4000.00 ug/kg	119
5) Acenaphthene-d10	13.27	164	864298	4000.00 ug/kg	75
11) Phenanthrene-d10	15.36	188	1690378	4000.00 ug/kg	83
17) Chrysene-d12	21.10	240	1875653	4000.00 ug/kg	83
20) Perylene-d12	26.26	264	1762390	4000.00 ug/kg	86

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	21643	85.84 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.15%#		
16) 4-Terphenyl-d14	17.86	244	32542	74.41 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.86%#		

Target Compounds					Qvalue
12) Phenanthrene	15.40	178	2386	5.37 ug/kg	99
14) Fluoranthene	17.35	202	5323	11.57 ug/kg	99
18) Benzo[a]anthracene	20.92	228	2569	5.85 ug/kg	98
19) Chrysene	21.18	228	2870	6.76 ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	2864	6.17 ug/kg	94
23) Benzo(j)fluoranthene	24.68	252	1271	3.27 ug/kg	90
24) Benzo[e]pyrene	25.73	252	2148	5.16 ug/kg	92
25) Benzo[a]pyrene	25.91	252	2595	6.10 ug/kg	98
28) Benzo[g,h,i]perylene	30.57	276	1802	5.00 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051124.D Vial: 24
Acq On : 11 May 2016 11:07 pm Operator:
Sample : 1605071-34A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 9:00 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

#12
Phenanthrene
Concen: 5.37 ug/kg
RT: 15.40 min Scan# 708
Delta R.T. -0.02 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:178 Resp: 2386

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	18.5	0.0	48.5

#14
Fluoranthene
Concen: 11.57 ug/kg
RT: 17.35 min Scan# 1097
Delta R.T. -0.03 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:202 Resp: 5323

Ion	Ratio	Lower	Upper
202	100		
101	12.2	0.0	43.0
203	17.6	0.0	47.9

#18
Benzo[a]anthracene
Concen: 5.85 ug/kg
RT: 20.92 min Scan# 1664
Delta R.T. -0.06 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:228 Resp: 2569

Ion	Ratio	Lower	Upper
228	100		
229	20.5	0.0	50.1
226	23.4	0.0	55.2

#19
Chrysene
Concen: 6.76 ug/kg
RT: 21.18 min Scan# 1701
Delta R.T. -0.05 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:228 Resp: 2870

Ion	Ratio	Lower	Upper
228	100		
226	27.8	0.0	58.1
229	19.2	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 6.17 ug/kg
RT: 24.49 min Scan# 2169
Delta R.T. -0.06 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:252 Resp: 2864

Ion	Ratio	Lower	Upper
252	100		
253	19.6	0.0	52.2
125	13.3	0.0	41.0

#23
Benzo(j)fluoranthene
Concen: 3.27 ug/kg
RT: 24.68 min Scan# 2195
Delta R.T. -0.07 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:252 Resp: 1271

Ion	Ratio	Lower	Upper
252	100		
253	15.8	2.1	42.1
125	12.5	0.0	34.4

#24
Benzo[e]pyrene
Concen: 5.16 ug/kg
RT: 25.73 min Scan# 2344
Delta R.T. -0.07 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:252 Resp: 2148

Ion	Ratio	Lower	Upper
252	100		
253	26.8	2.2	42.2
125	18.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 6.10 ug/kg
RT: 25.91 min Scan# 2370
Delta R.T. -0.07 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:252 Resp: 2595

Ion	Ratio	Lower	Upper
252	100		
253	22.0	1.9	41.9
125	14.1	0.0	31.7

#28
Benzo[g,h,i]perylene
Concen: 5.00 ug/kg
RT: 30.57 min Scan# 3028
Delta R.T. -0.08 min
Lab File: 16051124.D
Acq: 11 May 2016 11:07 pm

Tgt Ion:276 Resp: 1802

Ion	Ratio	Lower	Upper
276	100		
138	18.3	0.0	39.1
277	25.0	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051125.D Vial: 25
Acq On : 11 May 2016 11:47 pm Operator:
Sample : 1605071-37A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 9:00 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1391048	4000.00 ug/kg	120
5) Acenaphthene-d10	13.28	164	902053	4000.00 ug/kg	78
11) Phenanthrene-d10	15.36	188	1620779	4000.00 ug/kg	79
17) Chrysene-d12	21.10	240	1893902	4000.00 ug/kg	83
20) Perylene-d12	26.26	264	1737544	4000.00 ug/kg	84

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	23430	89.04 ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#		
16) 4-Terphenyl-d14	17.86	244	32150	76.67 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.92%#		

Target Compounds					Qvalue
12) Phenanthrene	15.40	178	38468	90.25 ug/kg	99
13) Anthracene	15.44	178	7034	17.44 ug/kg	99
14) Fluoranthene	17.35	202	80938	183.50 ug/kg	99
15) Pyrene	17.94	202	66191	144.46 ug/kg	99
18) Benzo[a]anthracene	20.92	228	34137	76.94 ug/kg	100
19) Chrysene	21.18	228	37788	88.15 ug/kg	100
21) Benzo[b]fluoranthene	24.49	252	34463	75.25 ug/kg	99
22) Benzo[k]fluoranthene	24.57	252	16299	37.94 ug/kg	99
23) Benzo(j)fluoranthene	24.68	252	15069	39.38 ug/kg	92
24) Benzo[e]pyrene	25.74	252	24709	60.25 ug/kg	99
25) Benzo[a]pyrene	25.91	252	31097	74.20 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	4827	12.65 ug/kg	93
27) Indeno[1,2,3-cd]pyrene	29.50	276	21447	47.10 ug/kg	89
28) Benzo[g,h,i]perylene	30.57	276	20077	56.55 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051125.D Vial: 25
Acq On : 11 May 2016 11:47 pm Operator:
Sample : 1605071-37A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 12 9:00 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

#12
Phenanthrene
Concen: 90.25 ug/kg
RT: 15.40 min Scan# 708
Delta R.T. -0.03 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:178 Resp: 38468

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.9
176	18.3	0.0	48.5

#13
Anthracene
Concen: 17.44 ug/kg
RT: 15.44 min Scan# 716
Delta R.T. -0.03 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:178 Resp: 7034

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	18.1	0.0	48.2

#14
Fluoranthene
Concen: 183.50 ug/kg
RT: 17.35 min Scan# 1097
Delta R.T. -0.03 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:202 Resp: 80938

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	43.0
203	17.3	0.0	47.9

#15
Pyrene
Concen: 144.46 ug/kg
RT: 17.94 min Scan# 1215
Delta R.T. -0.04 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:202 Resp: 66191

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	17.6	0.0	48.0

#18
Benzo[a]anthracene
Concen: 76.94 ug/kg
RT: 20.92 min Scan# 1664
Delta R.T. -0.06 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:228 Resp: 34137

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.3	0.0	55.2

#19
Chrysene
Concen: 88.15 ug/kg
RT: 21.18 min Scan# 1700
Delta R.T. -0.06 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:228 Resp: 37788

Ion	Ratio	Lower	Upper
228	100		
226	28.0	0.0	58.1
229	20.1	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 75.25 ug/kg
RT: 24.49 min Scan# 2169
Delta R.T. -0.06 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:252 Resp: 34463

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	11.5	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 37.94 ug/kg
RT: 24.57 min Scan# 2180
Delta R.T. -0.07 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:252 Resp: 16299

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.1	42.1
125	11.1	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 39.38 ug/kg
RT: 24.68 min Scan# 2195
Delta R.T. -0.07 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:252 Resp: 15069

Ion	Ratio	Lower	Upper
252	100		
253	28.1	2.1	42.1
125	15.1	0.0	34.4

#24
Benzo[e]pyrene
Concen: 60.25 ug/kg
RT: 25.74 min Scan# 2345
Delta R.T. -0.06 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:252 Resp: 24709

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.2	42.2
125	16.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 74.20 ug/kg
RT: 25.91 min Scan# 2370
Delta R.T. -0.07 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:252 Resp: 31097

Ion	Ratio	Lower	Upper
252	100		
253	22.3	1.9	41.9
125	12.3	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 12.65 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.08 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:278 Resp: 4827

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.0	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 47.10 ug/kg
RT: 29.50 min Scan# 2877
Delta R.T. -0.06 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:276 Resp: 21447

Ion	Ratio	Lower	Upper
276	100		
138	18.1	6.7	46.7
277	23.6	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 56.55 ug/kg
RT: 30.57 min Scan# 3028
Delta R.T. -0.08 min
Lab File: 16051125.D
Acq: 11 May 2016 11:47 pm

Tgt Ion:276 Resp: 20077

Ion	Ratio	Lower	Upper
276	100		
138	20.0	0.0	39.1
277	24.6	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160511\16051126.D Vial: 26
Acq On : 12 May 2016 12:27 am Operator:
Sample : CCV-160511 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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 : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1401023	4000.00 ug/kg	121
5) Acenaphthene-d10	13.28	164	914429	4000.00 ug/kg	79
11) Phenanthrene-d10	15.36	188	1635459	4000.00 ug/kg	80
17) Chrysene-d12	21.11	240	1962496	4000.00 ug/kg	86
20) Perylene-d12	26.26	264	1777033	4000.00 ug/kg	86

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	285058	1068.65 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	26.72%#	
16) 4-Terphenyl-d14	17.86	244	426501	1007.99 ug/kg	-0.04
Spiked Amount 4000.000	Range 40 - 140		Recovery =	25.20%#	

Target Compounds					Qvalue
2) Naphthalene	10.89	128	355034	1013.09 ug/kg	99
3) 2-Methyl naphthalene	11.70	142	265177	856.63 ug/kg	95
4) 1-Methyl naphthalene	11.91	142	241079	850.33 ug/kg	96
6) Dibenzofuran	13.49	168	338447	987.54 ug/kg	100
8) Acenaphthylene	13.16	152	419412	1065.02 ug/kg	99
9) Acenaphthene	13.32	154	244784	1001.44 ug/kg	97
10) Fluorene	13.97	166	300259	1011.48 ug/kg	99
12) Phenanthrene	15.40	178	420411	977.48 ug/kg	99
13) Anthracene	15.44	178	410127	1007.45 ug/kg	99
14) Fluoranthene	17.35	202	471294	1058.90 ug/kg	99
15) Pyrene	17.94	202	478896	1035.81 ug/kg	99
18) Benzo[a]anthracene	20.93	228	456157	992.15 ug/kg	100
19) Chrysene	21.18	228	424404	955.38 ug/kg	100
21) Benzo[b]fluoranthene	24.50	252	454468	970.33 ug/kg	99
22) Benzo[k]fluoranthene	24.58	252	432742	984.92 ug/kg	100
23) Benzo(j)fluoranthene	24.68	252	379333	969.20 ug/kg	99
24) Benzo[e]pyrene	25.74	252	396714	945.80 ug/kg	99
25) Benzo[a]pyrene	25.92	252	412675	962.79 ug/kg	99
26) Dibenz[a,h]anthracene	29.50	278	384689	985.47 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.51	276	452112	970.85 ug/kg	97
28) Benzo[g,h,i]perylene	30.57	276	353987	974.82 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160511\16051126.D Vial: 26
Acq On : 12 May 2016 12:27 am Operator:
Sample : CCV-160511 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 12 8:56 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

GCMS6_160513A
For

DHL Work Order
1605071

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS6_160513A**
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: QA APPROVED By John DuPont at 11:37:20 AM, 5/23/2016 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
x RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
x MS x MSD out of control (See LIMS)	x 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)	x Accept data
___ Other (describe below)		
		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data:

See run log. MS and MSD have low recoveries and one analyte has RPD out of limits. Parent sample has high levels of target analytes present. Assumed matrix effect - no corrective action performed.

Analyst: Karyn Lane Don Winston Date: 5/16/2016 16:36

Second-Level Review: Janice Whitt Date: 5/23/2016

REVIEWED BY By Janice Whitt at 11:16:54 AM, 5/23/2016

DHL Analytical, Inc.

Run ID: **GCMS6_160513A** **Run No.:** 85823

Analytical Run Date: 5/13/2016 **InstrumentID:** GCMS6

Analyst: Don Winston **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-160513	1	PAH_LL_SDOD1	TUNE	R85823	5/13/2016 8:06:00 AM		
ICV-160513	1	PAH_LL_SDOD1	ICV	R85823	5/13/2016 8:43:00 AM		
LCS-75100	1	PAH_LL_SDOD1	LCS	75100	5/13/2016 9:23:00 AM		
MB-75100	1	PAH_LL_SDOD1	MBLK	75100	5/13/2016 10:03:00 AM		
1605071-01A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 10:43:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605071-02A	50	PAH_LL_SDOD1	SAMP	75100	5/13/2016 11:23:00 AM		Bigger dilution performed due to extract color.
1605071-03A	50	PAH_LL_SDOD1	SAMP	75100	5/13/2016 12:02:00 PM		Bigger dilution performed due to extract color.
1605071-04A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 12:42:00 PM		
1605071-05A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 1:22:00 PM		
1605071-06A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 2:01:00 PM		
1605071-07A	100	PAH_LL_SDOD1	SAMP	75100	5/13/2016 2:41:00 PM		Bigger dilution performed due to extract color.
1605071-08A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 3:21:00 PM		
1605071-09A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 4:01:00 PM		
1605071-10A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 4:40:00 PM		
1605071-20A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 5:20:00 PM		
1605071-20AMS	10	PAH_LL_SDOD1	MS	75100	5/13/2016 6:00:00 PM		14 analytes low.
1605071-20AMSD	10	PAH_LL_SDOD1	MSD	75100	5/13/2016 6:40:00 PM		14 analytes low. RPD out for fluoranthene. Sample has high concentration of target analytes - matrix effect.
DFTPP2-160513	1	PAH_LL_SDOD1	TUNE	R85823	5/13/2016 7:20:00 PM		
ICV2-160513	1	PAH_LL_SDOD1	ICV	R85823	5/13/2016 7:56:00 PM		
SBLK-160513	1	PAH_LL_SDOD1	SBLK	75100	5/13/2016 8:36:00 PM		
1605071-11A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 9:16:00 PM		
1605071-12A	50	PAH_LL_SDOD1	SAMP	75100	5/13/2016 9:56:00 PM		Bigger dilution performed due to extract color.
1605071-13A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 10:36:00 PM		
1605071-14A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 11:16:00 PM		
1605071-15A	10	PAH_LL_SDOD1	SAMP	75100	5/13/2016 11:56:00 PM		
1605071-19A	10	PAH_LL_SDOD1	SAMP	75100	5/14/2016 12:35:00 AM		
1605071-21A	10	PAH_LL_SDOD1	SAMP	75100	5/14/2016 1:15:00 AM		
1605071-22A	10	PAH_LL_SDOD1	SAMP	75100	5/14/2016 1:54:00 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

DHL Analytical, Inc.

Run ID: **GCMS6_160513A** **Run No.:** 85823

1605071-23A	10	PAH_LL_SDOD1	SAMP	75100	5/14/2016 2:33:00 AM		
CCV-160513	1	PAH_LL_SDOD1	CCV	R85823	5/14/2016 3:13:00 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

Sequence Name: C:\HPCHEM\1\SEQUENCE\160513.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160513\
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	16051301	DFTPPPAH	DFTPP-160513
2	Sample	2	16051302	PP160421	ICV-160513
3	Sample	3	16051303	PP160421	LCS-75100
4	Sample	4	16051304	PP160421	MB-75100
5	Sample	5	16051305	PP160421	1605071-01A
6	Sample	6	16051306	PP160421	1605071-02A
7	Sample	7	16051307	PP160421	1605071-03A
8	Sample	8	16051308	PP160421	1605071-04A
9	Sample	9	16051309	PP160421	1605071-05A
10	Sample	10	16051310	PP160421	1605071-06A
11	Sample	11	16051311	PP160421	1605071-07A
12	Sample	12	16051312	PP160421	1605071-08A
13	Sample	13	16051313	PP160421	1605071-09A
14	Sample	14	16051314	PP160421	1605071-10A
15	Sample	15	16051315	PP160421	1605071-20A
16	Sample	16	16051316	PP160421	1605071-20AMS
17	Sample	17	16051317	PP160421	1605071-20AMSD
18	Sample	18	16051318	DFTPPPAH	DFTPP2-160513
19	Sample	19	16051319	PP160421	ICV2-160513
20	Sample	20	16051320	PP160421	SBLK-160513
21	Sample	21	16051321	PP160421	1605071-11A
22	Sample	22	16051322	PP160421	1605071-12A
23	Sample	23	16051323	PP160421	1605071-13A
24	Sample	24	16051324	PP160421	1605071-14A
25	Sample	25	16051325	PP160421	1605071-15A
26	Sample	26	16051326	PP160421	1605071-19A
27	Sample	27	16051327	PP160421	1605071-21A
28	Sample	28	16051328	PP160421	1605071-22A
29	Sample	29	16051329	PP160421	1605071-23A
30	Sample	30	16051330	PP160421	CCV-160513

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:41:48 AM**
Digestion:
Prep End Date: **5/11/2016 12:31:00 PM**

Prep Batch **75100** 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
1605071-01A	Soil		10.04	10	0.996	1 of 1	
1605071-02A	Soil		10.16	10	0.984	1 of 1	
	Slow to filter						
1605071-03A	Soil		10.57	10	0.946	1 of 1	
	Slow to filter						
1605071-04A	Soil		10.08	10	0.992	1 of 1	
	Slow to filter						
1605071-05A	Soil		10.1	10	0.990	1 of 1	
1605071-06A	Soil		10.2	10	0.980	1 of 1	
1605071-07A	Soil		9.92	10	1.008	1 of 1	
1605071-08A	Soil		10.05	10	0.995	1 of 1	
1605071-09A	Soil		10.05	10	0.995	1 of 1	
1605071-10A	Soil		10.45	10	0.957	1 of 1	
1605071-11A	Soil		10.1	10	0.990	1 of 1	
	Slow to filter						
1605071-12A	Soil		10.06	10	0.994	1 of 1	
	Slow to filter						
1605071-13A	Soil		10.81	10	0.925	1 of 1	
1605071-14A	Soil		10.28	10	0.973	1 of 1	
1605071-15A	Soil		10.65	10	0.939	1 of 1	
1605071-19A	Soil		10.33	10	0.968	1 of 1	
	Clay like sample						
1605071-20A	Soil		10.06	10	0.994	1 of 1	
	Slow to filter						
1605071-20AMS	Soil		10.32	10	0.969	of	
	Slow to filter						

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 10:01:24 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:41:48 AM**
Digestion:
Prep End Date: **5/11/2016 12:31:00 PM**

Prep Batch **75100** 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
1605071-20AMSD	Soil		10.05	10	0.995	of	
Slow to filter							
1605071-21A	Soil		10.75	10	0.930	1 of 1	
1605071-22A	Soil		10.47	10	0.955	1 of 1	
1605071-23A	Soil		10.81	10	0.925	1 of 1	
LCS-75100	Soil		10	10	1.000	of	
MB-75100	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 10:01:27 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:41:48 AM**
Digestion:
Prep End Date: 5/11/16 12:31 PM

Prep Batch **75100** 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	
1605071-01A	Soil		10.04	10	1.000	1 of 1		
1605071-02A	Soil		10.16	10	1.000	1 of 1		Slow to filter
1605071-03A	Soil		10.57	10	1.000	1 of 1		"
1605071-04A	Soil		10.08	10	1.000	1 of 1		"
1605071-05A	Soil		10.10	10	1.000	1 of 1		
1605071-06A	Soil		10.20	10	1.000	1 of 1		
1605071-07A	Soil		5/11/16 10.92	10	1.000	1 of 1		
1605071-08A	Soil		10.05	10	1.000	1 of 1		
1605071-09A	Soil		10.05	10	1.000	1 of 1		
1605071-10A	Soil		10.45	10	1.000	1 of 1		
1605071-11A	Soil		10.10	10	1.000	1 of 1		Slow to filter
1605071-12A	Soil		10.06	10	1.000	1 of 1		"
1605071-13A	Soil		10.81	10	1.000	1 of 1		
1605071-14A	Soil		10.28	10	1.000	1 of 1		
1605071-15A	Soil		10.65	10	1.000	1 of 1		
1605071-19A	Soil		10.33	10	1.000	1 of 1	Clay-like sample	
1605071-20A	Soil		10.06	10	1.000	1 of 1		Slow to filter
1605071-20AMS	Soil		10.32	10	1.000	of		Slow to filter
1605071-20AMSD	Soil		10.05	10	1.000	of		"
1605071-21A	Soil		10.75	10	1.000	1 of 1		
1605071-22A	Soil		10.47	10	1.000	1 of 1		
1605071-23A	Soil		10.81	10	1.000	1 of 1		
LCS-75100	Soil		10	10	1.000	of		
MB-75100	Soil		10	10	1.000	of		

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 10:01:22 AM, 5/23/2016

5/11/16 5/11/16 5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-04A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-05A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-09A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-10A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-14A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-15A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED BY
By Janice Whitt at 10:00:24 AM, 5/23/2016

Data File : C:\HPCHEM\1\DATA\160513\16051301.D Vial: 1
Acq On : 13 May 2016 8:06 am Operator:
Sample : DFTPP-160513 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 1587, 1588, 1589; Background Corrected with Scan 1581

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	31.7	29905	PASS
68	69	0.00	2	0.7	236	PASS
69	198	0.00	100	37.0	34872	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.5	45725	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	94211	PASS
199	198	5	9	6.8	6371	PASS
275	198	10	60	28.0	26405	PASS
365	198	1	200	3.8	3569	PASS
441	442	0.01	24	14.4	17806	PASS
442	198	50	400	131.5	123920	PASS
443	442	15	24	19.1	23706	PASS

REVIEWED BY
By Janice Whitt at 10:00:26 AM, 5/23/2016

Data File : C:\HPCHEM\1\DATA\160513\16051318.D Vial: 18
Acq On : 13 May 2016 7:20 pm Operator:
Sample : DFTPP2-160513 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 1587, 1588, 1589; Background Corrected with Scan 1581

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	32.3	29354	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	37.4	34053	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	49.4	44899	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	90963	PASS
199	198	5	9	6.8	6227	PASS
275	198	10	60	27.9	25336	PASS
365	198	1	200	3.7	3374	PASS
441	442	0.01	24	14.5	17466	PASS
442	198	50	400	132.5	120515	PASS
443	442	15	24	19.2	23087	PASS

REVIEWED BY
By Janice Whitt at 10:00:28 AM, 5/23/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051302.D Vial: 2
Acq On : 13 May 2016 8:43 am Operator:
Sample : ICV-160513 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1429068	4000.00 ug/kg	123
5) Acenaphthene-d10	13.27	164	992779	4000.00 ug/kg	86
11) Phenanthrene-d10	15.36	188	1768854	4000.00 ug/kg	87
17) Chrysene-d12	21.09	240	2010838	4000.00 ug/kg	89
20) Perylene-d12	26.25	264	1841703	4000.00 ug/kg	89

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	598571	2066.88 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 51.67%		
16) 4-Terphenyl-d14	17.85	244	861855	1883.29 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 47.08%		

Target Compounds					Qvalue
2) Naphthalene	10.88	128	698606	1954.34 ug/kg	100
3) 2-Methyl naphthalene	11.70	142	549093	1738.98 ug/kg	99
4) 1-Methyl naphthalene	11.91	142	498104	1722.42 ug/kg	100
6) Dibenzofuran	13.47	168	718107	1929.96 ug/kg	99
8) Acenaphthylene	13.15	152	896949	2097.88 ug/kg	100
9) Acenaphthene	13.32	154	523568	1972.94 ug/kg	100
10) Fluorene	13.96	166	632988	1964.05 ug/kg	99
12) Phenanthrene	15.39	178	885754	1904.11 ug/kg	100
13) Anthracene	15.43	178	826655	1877.49 ug/kg	100
14) Fluoranthene	17.35	202	956293	1986.56 ug/kg	99
15) Pyrene	17.94	202	964680	1929.16 ug/kg	100
18) Benzo[a]anthracene	20.92	228	921555	1956.22 ug/kg	100
19) Chrysene	21.18	228	852291	1872.48 ug/kg	99
21) Benzo[b]fluoranthene	24.50	252	927220	1910.18 ug/kg	100
22) Benzo[k]fluoranthene	24.58	252	849795	1866.21 ug/kg	100
23) Benzo(j)fluoranthene	24.68	252	773279	1906.37 ug/kg	100
24) Benzo[e]pyrene	25.74	252	812322	1868.65 ug/kg	99
25) Benzo[a]pyrene	25.91	252	845025	1902.25 ug/kg	99
26) Dibenz[a,h]anthracene	29.50	278	803691	1986.55 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.50	276	942552	1952.94 ug/kg	99
28) Benzo[g,h,i]perylene	30.57	276	743327	1975.12 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051302.D Vial: 2
Acq On : 13 May 2016 8:43 am Operator:
Sample : ICV-160513 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160513\16051302.D Vial: 2
Acq On : 13 May 2016 8:43 am Operator:
Sample : ICV-160513 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 9:17 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Multiple Level Calibration

TIC: 16051302.D

(21) Benzo[b]fluoranthene (CP)

24.50min 1910.18ug/kg

response 927220

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.05
125.00	11.00	11.08
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051303.D Vial: 3
Acq On : 13 May 2016 9:23 am Operator:
Sample : LCS-75100 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1206498	4000.00	ug/kg	104
5) Acenaphthene-d10	13.27	164	768610	4000.00	ug/kg	67
11) Phenanthrene-d10	15.35	188	1642318	4000.00	ug/kg	80
17) Chrysene-d12	21.09	240	1871606	4000.00	ug/kg	82
20) Perylene-d12	26.24	264	1788243	4000.00	ug/kg	87

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	160388	715.35	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.88%#			
16) 4-Terphenyl-d14	17.85	244	280251	659.57	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 16.49%#			

Target Compounds						Qvalue
2) Naphthalene	10.88	128	203802	675.31	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	142739	535.45	ug/kg	95
4) 1-Methyl naphthalene	11.90	142	129543	530.59	ug/kg	96
6) Dibenzofuran	13.48	168	240167	833.72	ug/kg	100
8) Acenaphthylene	13.15	152	251683	760.35	ug/kg	100
9) Acenaphthene	13.31	154	150269	731.40	ug/kg	99
10) Fluorene	13.96	166	211858	849.08	ug/kg	99
12) Phenanthrene	15.39	178	317512	735.15	ug/kg	100
13) Anthracene	15.43	178	320652	784.37	ug/kg	99
14) Fluoranthene	17.34	202	343641	768.87	ug/kg	98
15) Pyrene	17.93	202	342275	737.22	ug/kg	99
18) Benzo[a]anthracene	20.91	228	327646	747.25	ug/kg	99
19) Chrysene	21.16	228	307862	726.69	ug/kg	100
21) Benzo[b]fluoranthene	24.48	252	342732	727.18	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	321033	726.09	ug/kg	100
23) Benzo(j)fluoranthene	24.66	252	286956	728.58	ug/kg	99
24) Benzo[e]pyrene	25.72	252	308389	730.62	ug/kg	99
25) Benzo[a]pyrene	25.90	252	306293	710.11	ug/kg	100
26) Dibenz[a,h]anthracene	29.48	278	297880	758.31	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.48	276	346980	740.42	ug/kg	98
28) Benzo[g,h,i]perylene	30.55	276	275303	753.39	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051303.D Vial: 3
Acq On : 13 May 2016 9:23 am Operator:
Sample : LCS-75100 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051304.D Vial: 4
Acq On : 13 May 2016 10:03 am Operator:
Sample : MB-75100 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:48 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1202004	4000.00	ug/kg	104
5) Acenaphthene-d10	13.26	164	699247	4000.00	ug/kg	61
11) Phenanthrene-d10	15.35	188	1443547	4000.00	ug/kg	71
17) Chrysene-d12	21.08	240	1708762	4000.00	ug/kg	75
20) Perylene-d12	26.24	264	1689672	4000.00	ug/kg	82

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	161132	789.96	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.75%#			
16) 4-Terphenyl-d14	17.85	244	266548	713.70	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.84%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.65	252	263	0.71	ug/kg	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051304.D Vial: 4
Acq On : 13 May 2016 10:03 am Operator:
Sample : MB-75100 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:48 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051305.D Vial: 5
Acq On : 13 May 2016 10:43 am Operator:
Sample : 1605071-01A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1424747	4000.00 ug/kg	123
5) Acenaphthene-d10	13.26	164	899346	4000.00 ug/kg	78
11) Phenanthrene-d10	15.35	188	1714789	4000.00 ug/kg	84
17) Chrysene-d12	21.08	240	1939579	4000.00 ug/kg	85
20) Perylene-d12	26.24	264	1810842	4000.00 ug/kg	88

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.20	172	20382	77.69 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.94%#		
16) 4-Terphenyl-d14	17.85	244	30143	67.94 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.70%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	7367	16.34 ug/kg	99
14) Fluoranthene	17.34	202	18567	39.79 ug/kg	99
15) Pyrene	17.93	202	16603	34.25 ug/kg	99
18) Benzo[a]anthracene	20.91	228	10227	22.51 ug/kg	99
19) Chrysene	21.16	228	11650	26.54 ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	12538	26.27 ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	6157	13.75 ug/kg	96
23) Benzo(j)fluoranthene	24.65	252	5459	13.69 ug/kg	90
24) Benzo[e]pyrene	25.72	252	9135	21.37 ug/kg	99
25) Benzo[a]pyrene	25.88	252	12115	27.74 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.47	276	8483	17.88 ug/kg	91
28) Benzo[g,h,i]perylene	30.54	276	8162	22.06 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051305.D Vial: 5
Acq On : 13 May 2016 10:43 am Operator:
Sample : 1605071-01A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 16.34 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:178 Resp: 7367

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	45.9
176	17.9	0.0	48.5

#14
Fluoranthene
Concen: 39.79 ug/kg
RT: 17.34 min Scan# 1094
Delta R.T. -0.01 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:202 Resp: 18567

Ion	Ratio	Lower	Upper
202	100		
101	13.1	0.0	43.0
203	17.6	0.0	47.9

#15
Pyrene
Concen: 34.25 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:202 Resp: 16603

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	17.2	0.0	48.0

#18
Benzo[a]anthracene
Concen: 22.51 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:228 Resp: 10227

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.0	50.1
226	24.9	0.0	55.2

#19
Chrysene
Concen: 26.54 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:228 Resp: 11650

Ion	Ratio	Lower	Upper
228	100		
226	28.9	0.0	58.1
229	19.5	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 26.27 ug/kg
RT: 24.47 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:252 Resp: 12538

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	11.4	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 13.75 ug/kg
RT: 24.56 min Scan# 2178
Delta R.T. -0.02 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:252 Resp: 6157

Ion	Ratio	Lower	Upper
252	100		
253	20.2	2.1	42.1
125	9.8	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 13.69 ug/kg
RT: 24.65 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:252 Resp: 5459

Ion	Ratio	Lower	Upper
252	100		
253	28.6	2.1	42.1
125	16.3	0.0	34.4

#24
Benzo[e]pyrene
Concen: 21.37 ug/kg
RT: 25.72 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:252 Resp: 9135

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	15.5	0.0	36.1

#25
Benzo[a]pyrene
Concen: 27.74 ug/kg
RT: 25.88 min Scan# 2366
Delta R.T. -0.03 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:252 Resp: 12115

Ion	Ratio	Lower	Upper
252	100		
253	22.3	1.9	41.9
125	12.8	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 17.88 ug/kg
RT: 29.47 min Scan# 2873
Delta R.T. -0.03 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:276 Resp: 8483

Ion	Ratio	Lower	Upper
276	100		
138	19.0	6.7	46.7
277	24.6	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 22.06 ug/kg
RT: 30.54 min Scan# 3025
Delta R.T. -0.03 min
Lab File: 16051305.D
Acq: 13 May 2016 10:43 am

Tgt Ion:276 Resp: 8162

Ion	Ratio	Lower	Upper
276	100		
138	18.6	0.0	39.1
277	24.5	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051306.D Vial: 6
Acq On : 13 May 2016 11:23 am Operator:
Sample : 1605071-02A Inst : GC/MS #6
Misc : SAMP Multiplr: 50.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1387391	4000.00 ug/kg	120
5) Acenaphthene-d10	13.27	164	870600	4000.00 ug/kg	76
11) Phenanthrene-d10	15.35	188	1622433	4000.00 ug/kg	79
17) Chrysene-d12	21.08	240	1840480	4000.00 ug/kg	81
20) Perylene-d12	26.24	264	1677754	4000.00 ug/kg	81

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.20	172	4525	17.82 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.45%#		
16) 4-Terphenyl-d14	17.84	244	6480	15.44 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.39%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	6845	16.04 ug/kg	99
14) Fluoranthene	17.34	202	15083	34.16 ug/kg	98
15) Pyrene	17.93	202	12742	27.78 ug/kg	99
18) Benzo[a]anthracene	20.91	228	7284	16.89 ug/kg	99
19) Chrysene	21.16	228	7741	18.58 ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	7185	16.25 ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	3629	8.75 ug/kg	94
23) Benzo(j)fluoranthene	24.66	252	3232	8.75 ug/kg	96
24) Benzo[e]pyrene	25.72	252	4915	12.41 ug/kg	94
25) Benzo[a]pyrene	25.89	252	7024	17.36 ug/kg	95
27) Indeno[1,2,3-cd]pyrene	29.47	276	4278	9.73 ug/kg	92
28) Benzo[g,h,i]perylene	30.54	276	3962	11.56 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051306.D Vial: 6
Acq On : 13 May 2016 11:23 am Operator:
Sample : 1605071-02A Inst : GC/MS #6
Misc : SAMP Multiplr: 50.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 16.04 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:178 Resp: 6845

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	18.5	0.0	48.5

#14
Fluoranthene
Concen: 34.16 ug/kg
RT: 17.34 min Scan# 1094
Delta R.T. -0.01 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:202 Resp: 15083

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	43.0
203	17.1	0.0	47.9

#15
Pyrene
Concen: 27.78 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:202 Resp: 12742

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: 16.89 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:228 Resp: 7284

Ion	Ratio	Lower	Upper
228	100		
229	20.1	0.0	50.1
226	24.4	0.0	55.2

#19
Chrysene
Concen: 18.58 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:228 Resp: 7741

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.1
229	19.4	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 16.25 ug/kg
RT: 24.47 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:252 Resp: 7185

Ion	Ratio	Lower	Upper
252	100		
253	21.3	0.0	52.2
125	10.9	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 8.75 ug/kg
RT: 24.55 min Scan# 2177
Delta R.T. -0.03 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:252 Resp: 3629

Ion	Ratio	Lower	Upper
252	100		
253	18.5	2.1	42.1
125	12.6	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 8.75 ug/kg
RT: 24.66 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:252 Resp: 3232

Ion	Ratio	Lower	Upper
252	100		
253	24.4	2.1	42.1
125	15.4	0.0	34.4

#24
Benzo[e]pyrene
Concen: 12.41 ug/kg
RT: 25.72 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:252 Resp: 4915

Ion	Ratio	Lower	Upper
252	100		
253	25.4	2.2	42.2
125	14.0	0.0	36.1

#25
Benzo[a]pyrene
Concen: 17.36 ug/kg
RT: 25.89 min Scan# 2367
Delta R.T. -0.02 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:252 Resp: 7024

Ion	Ratio	Lower	Upper
252	100		
253	25.5	1.9	41.9
125	11.7	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 9.73 ug/kg
RT: 29.47 min Scan# 2873
Delta R.T. -0.03 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:276 Resp: 4278

Ion	Ratio	Lower	Upper
276	100		
138	20.6	6.7	46.7
277	23.7	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 11.56 ug/kg
RT: 30.54 min Scan# 3025
Delta R.T. -0.03 min
Lab File: 16051306.D
Acq: 13 May 2016 11:23 am

Tgt Ion:276 Resp: 3962

Ion	Ratio	Lower	Upper
276	100		
138	18.9	0.0	39.1
277	25.1	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051307.D Vial: 7
Acq On : 13 May 2016 12:02 pm Operator:
Sample : 1605071-03A Inst : GC/MS #6
Misc : SAMP Multiplr: 50.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1345763	4000.00 ug/kg	116
5) Acenaphthene-d10	13.26	164	886858	4000.00 ug/kg	77
11) Phenanthrene-d10	15.36	188	1634392	4000.00 ug/kg	80
17) Chrysene-d12	21.08	240	1814921	4000.00 ug/kg	80
20) Perylene-d12	26.24	264	1645220	4000.00 ug/kg	80

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	4277	16.53 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.41%#		
16) 4-Terphenyl-d14	17.85	244	5963	14.10 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.35%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	2366	5.50 ug/kg	96
14) Fluoranthene	17.34	202	6640	14.93 ug/kg	99
15) Pyrene	17.93	202	6010	13.01 ug/kg	99
18) Benzo[a]anthracene	20.91	228	4407	10.36 ug/kg	99
19) Chrysene	21.16	228	4979	12.12 ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	5581	12.87 ug/kg	100
22) Benzo[k]fluoranthene	24.56	252	2693	6.62 ug/kg	97
23) Benzo(j)fluoranthene	24.65	252	2418	6.67 ug/kg	91
24) Benzo[e]pyrene	25.71	252	3946	10.16 ug/kg	92
25) Benzo[a]pyrene	25.89	252	5350	13.48 ug/kg	94
27) Indeno[1,2,3-cd]pyrene	29.48	276	3434	7.96 ug/kg	91
28) Benzo[g,h,i]perylene	30.54	276	3320	9.88 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051307.D Vial: 7
Acq On : 13 May 2016 12:02 pm Operator:
Sample : 1605071-03A Inst : GC/MS #6
Misc : SAMP Multiplr: 50.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 5.50 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.01 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:178 Resp: 2366

Ion	Ratio	Lower	Upper
178	100		
179	14.3	0.0	45.9
176	16.3	0.0	48.5

#14
Fluoranthene
Concen: 14.93 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.01 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:202 Resp: 6640

Ion	Ratio	Lower	Upper
202	100		
101	12.4	0.0	43.0
203	17.5	0.0	47.9

#15
Pyrene
Concen: 13.01 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:202 Resp: 6010

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.2	0.0	48.0

#18
Benzo[a]anthracene
Concen: 10.36 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:228 Resp: 4407

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	24.3	0.0	55.2

#19
Chrysene
Concen: 12.12 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:228 Resp: 4979

Ion	Ratio	Lower	Upper
228	100		
226	27.3	0.0	58.1
229	20.6	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 12.87 ug/kg
RT: 24.47 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:252 Resp: 5581

Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	52.2
125	11.3	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 6.62 ug/kg
RT: 24.56 min Scan# 2178
Delta R.T. -0.02 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:252 Resp: 2693

Ion	Ratio	Lower	Upper
252	100		
253	24.2	2.1	42.1
125	11.9	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 6.67 ug/kg
RT: 24.65 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:252 Resp: 2418

Ion	Ratio	Lower	Upper
252	100		
253	28.2	2.1	42.1
125	15.3	0.0	34.4

#24
Benzo[e]pyrene
Concen: 10.16 ug/kg
RT: 25.71 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:252 Resp: 3946

Ion	Ratio	Lower	Upper
252	100		
253	27.5	2.2	42.2
125	14.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 13.48 ug/kg
RT: 25.89 min Scan# 2367
Delta R.T. -0.02 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:252 Resp: 5350

Ion	Ratio	Lower	Upper
252	100		
253	25.4	1.9	41.9
125	13.2	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 7.96 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:276 Resp: 3434

Ion	Ratio	Lower	Upper
276	100		
138	18.4	6.7	46.7
277	24.7	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 9.88 ug/kg
RT: 30.54 min Scan# 3025
Delta R.T. -0.03 min
Lab File: 16051307.D
Acq: 13 May 2016 12:02 pm

Tgt Ion:276 Resp: 3320

Ion	Ratio	Lower	Upper
276	100		
138	21.4	0.0	39.1
277	24.9	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051308.D Vial: 8
Acq On : 13 May 2016 12:42 pm Operator:
Sample : 1605071-04A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1339091	4000.00	ug/kg	116
5) Acenaphthene-d10	13.26	164	884799	4000.00	ug/kg	77
11) Phenanthrene-d10	15.36	188	1746225	4000.00	ug/kg	86
17) Chrysene-d12	21.09	240	1911649	4000.00	ug/kg	84
20) Perylene-d12	26.24	264	1700186	4000.00	ug/kg	83

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	20561	79.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.99%#			
16) 4-Terphenyl-d14	17.85	244	31322	69.33	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.73%#			

Target Compounds						Qvalue
12) Phenanthrene	15.39	178	3891	8.47	ug/kg	99
14) Fluoranthene	17.33	202	8392	17.66	ug/kg	99
15) Pyrene	17.93	202	7621	15.44	ug/kg	100
18) Benzo[a]anthracene	20.91	228	4324	9.65	ug/kg	98
19) Chrysene	21.16	228	5102	11.79	ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	4563	10.18	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	2353	5.60	ug/kg	96
23) Benzo(j)fluoranthene	24.66	252	2065	5.51	ug/kg	89
24) Benzo[e]pyrene	25.72	252	3206	7.99	ug/kg	98
25) Benzo[a]pyrene	25.89	252	4415	10.77	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.48	276	2903	6.52	ug/kg	91
28) Benzo[g,h,i]perylene	30.55	276	2895	8.33	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051308.D Vial: 8
Acq On : 13 May 2016 12:42 pm Operator:
Sample : 1605071-04A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:51 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 8.47 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.01 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:178 Resp: 3891

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	45.9
176	18.7	0.0	48.5

#14
Fluoranthene
Concen: 17.66 ug/kg
RT: 17.33 min Scan# 1094
Delta R.T. -0.01 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:202 Resp: 8392

Ion	Ratio	Lower	Upper
202	100		
101	13.2	0.0	43.0
203	17.1	0.0	47.9

#15
Pyrene
Concen: 15.44 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:202 Resp: 7621

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	17.7	0.0	48.0

#18
Benzo[a]anthracene
Concen: 9.65 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:228 Resp: 4324

Ion	Ratio	Lower	Upper
228	100		
229	19.2	0.0	50.1
226	26.4	0.0	55.2

#19
Chrysene
Concen: 11.79 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:228 Resp: 5102

Ion	Ratio	Lower	Upper
228	100		
226	27.0	0.0	58.1
229	20.1	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 10.18 ug/kg
RT: 24.47 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:252 Resp: 4563

Ion	Ratio	Lower	Upper
252	100		
253	22.5	0.0	52.2
125	11.9	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 5.60 ug/kg
RT: 24.56 min Scan# 2178
Delta R.T. -0.02 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:252 Resp: 2353

Ion	Ratio	Lower	Upper
252	100		
253	20.8	2.1	42.1
125	9.1	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 5.51 ug/kg
RT: 24.66 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:252 Resp: 2065

Ion	Ratio	Lower	Upper
252	100		
253	30.9	2.1	42.1
125	14.6	0.0	34.4

#24
Benzo[e]pyrene
Concen: 7.99 ug/kg
RT: 25.72 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:252 Resp: 3206

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.2	42.2
125	15.2	0.0	36.1

#25
Benzo[a]pyrene
Concen: 10.77 ug/kg
RT: 25.89 min Scan# 2367
Delta R.T. -0.02 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:252 Resp: 4415

Ion	Ratio	Lower	Upper
252	100		
253	22.1	1.9	41.9
125	11.5	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 6.52 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:276 Resp: 2903

Ion	Ratio	Lower	Upper
276	100		
138	18.0	6.7	46.7
277	26.1	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 8.33 ug/kg
RT: 30.55 min Scan# 3025
Delta R.T. -0.03 min
Lab File: 16051308.D
Acq: 13 May 2016 12:42 pm

Tgt Ion:276 Resp: 2895

Ion	Ratio	Lower	Upper
276	100		
138	18.2	0.0	39.1
277	25.5	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051309.D Vial: 9
Acq On : 13 May 2016 1:22 pm Operator:
Sample : 1605071-05A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1409908	4000.00 ug/kg	122
5) Acenaphthene-d10	13.26	164	913341	4000.00 ug/kg	79
11) Phenanthrene-d10	15.36	188	1739607	4000.00 ug/kg	85
17) Chrysene-d12	21.08	240	1916925	4000.00 ug/kg	84
20) Perylene-d12	26.24	264	1796346	4000.00 ug/kg	87

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	20709	77.73 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.94%#		
16) 4-Terphenyl-d14	17.85	244	30823	68.49 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.71%#		

Target Compounds					Qvalue
9) Acenaphthene	13.26	154	2801	~~11.47 ug/kg#~~	9
23) Benzo(j)fluoranthene	24.66	252	154	0.39 ug/kg#	41

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051309.D Vial: 9
Acq On : 13 May 2016 1:22 pm Operator:
Sample : 1605071-05A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#9
Acenaphthene
Concen: 11.47 ug/kg
RT: 13.26 min Scan# 399
Delta R.T. -0.05 min
Lab File: 16051309.D
Acq: 13 May 2016 1:22 pm

Tgt Ion:154 Resp: 2801

Ion	Ratio	Lower	Upper
154	100		
152	0.8	18.9	78.9#
153	1.8	75.2	135.2#

#23
Benzo(j)fluoranthene
Concen: 0.39 ug/kg
RT: 24.66 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051309.D
Acq: 13 May 2016 1:22 pm

Tgt Ion:252 Resp: 154

Ion	Ratio	Lower	Upper
252	100		
253	67.2	2.1	42.1#
125	12.1	0.0	34.4

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051310.D Vial: 10
Acq On : 13 May 2016 2:01 pm Operator:
Sample : 1605071-06A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1368936	4000.00	ug/kg	118
5) Acenaphthene-d10	13.27	164	865094	4000.00	ug/kg	75
11) Phenanthrene-d10	15.36	188	1665992	4000.00	ug/kg	82
17) Chrysene-d12	21.08	240	1837053	4000.00	ug/kg	81
20) Perylene-d12	26.24	264	1710424	4000.00	ug/kg	83

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	21062	83.46	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.09%#			
16) 4-Terphenyl-d14	17.85	244	31064	72.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.80%#			

Target Compounds						Qvalue
12) Phenanthrene	15.39	178	14424	32.92	ug/kg	99
13) Anthracene	15.43	178	2786	6.72	ug/kg	99
14) Fluoranthene	17.34	202	31495	69.47	ug/kg	99
15) Pyrene	17.93	202	26707	56.71	ug/kg	98
18) Benzo[a]anthracene	20.91	228	14790	34.37	ug/kg	99
19) Chrysene	21.16	228	16522	39.73	ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	16205	35.95	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	7849	18.56	ug/kg	96
23) Benzo(j)fluoranthene	24.65	252	7201	19.12	ug/kg	90
24) Benzo[e]pyrene	25.72	252	11499	28.48	ug/kg	99
25) Benzo[a]pyrene	25.89	252	15267	37.01	ug/kg	99
26) Dibenz[a,h]anthracene	29.47	278	2347	6.25	ug/kg	94
27) Indeno[1,2,3-cd]pyrene	29.48	276	10001	22.31	ug/kg	91
28) Benzo[g,h,i]perylene	30.54	276	9344	26.73	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051310.D Vial: 10
Acq On : 13 May 2016 2:01 pm Operator:
Sample : 1605071-06A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 32.92 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.01 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:178 Resp: 14424

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	18.6	0.0	48.5

#13
Anthracene
Concen: 6.72 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. -0.00 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:178 Resp: 2786

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	45.9
176	18.1	0.0	48.2

#14
Fluoranthene
Concen: 69.47 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.01 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:202 Resp: 31495

Ion	Ratio	Lower	Upper
202	100		
101	12.7	0.0	43.0
203	17.4	0.0	47.9

#15
Pyrene
Concen: 56.71 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.01 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:202 Resp: 26707

Ion	Ratio	Lower	Upper
202	100		
200	19.3	0.0	50.0
203	17.3	0.0	48.0

#18
Benzo[a]anthracene
Concen: 34.37 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:228 Resp: 14790

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	24.9	0.0	55.2

#19
Chrysene
Concen: 39.73 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:228 Resp: 16522

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: 35.95 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:252 Resp: 16205

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: 18.56 ug/kg
RT: 24.56 min Scan# 2178
Delta R.T. -0.02 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:252 Resp: 7849

Ion	Ratio	Lower	Upper
252	100		
253	19.5	2.1	42.1
125	11.1	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 19.12 ug/kg
RT: 24.65 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:252 Resp: 7201

Ion	Ratio	Lower	Upper
252	100		
253	28.4	2.1	42.1
125	16.2	0.0	34.4

#24
Benzo[e]pyrene
Concen: 28.48 ug/kg
RT: 25.72 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:252 Resp: 11499

Ion	Ratio	Lower	Upper
252	100		
253	22.8	2.2	42.2
125	16.3	0.0	36.1

#25
Benzo[a]pyrene
Concen: 37.01 ug/kg
RT: 25.89 min Scan# 2367
Delta R.T. -0.02 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:252 Resp: 15267

Ion	Ratio	Lower	Upper
252	100		
253	22.4	1.9	41.9
125	12.6	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 6.25 ug/kg
RT: 29.47 min Scan# 2873
Delta R.T. -0.03 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:278 Resp: 2347

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.3	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 22.31 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:276 Resp: 10001

Ion	Ratio	Lower	Upper
276	100		
138	18.4	6.7	46.7
277	24.5	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 26.73 ug/kg
RT: 30.54 min Scan# 3025
Delta R.T. -0.03 min
Lab File: 16051310.D
Acq: 13 May 2016 2:01 pm

Tgt Ion:276 Resp: 9344

Ion	Ratio	Lower	Upper
276	100		
138	19.4	0.0	39.1
277	22.9	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051311.D Vial: 11
Acq On : 13 May 2016 2:41 pm Operator:
Sample : 1605071-07A Inst : GC/MS #6
Misc : SAMP Multiplr: 100.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1369688	4000.00 ug/kg	118
5) Acenaphthene-d10	13.27	164	910031	4000.00 ug/kg	79
11) Phenanthrene-d10	15.36	188	1669977	4000.00 ug/kg	82
17) Chrysene-d12	21.09	240	1852219	4000.00 ug/kg	82
20) Perylene-d12	26.25	264	1710885	4000.00 ug/kg	83

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.21	172	2215	8.34 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.21%#		
16) 4-Terphenyl-d14	17.85	244	3226	7.47 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.19%#		

Target Compounds

					Qvalue
14) Fluoranthene	17.34	202	5183	11.40 ug/kg	99
15) Pyrene	17.93	202	4940	10.46 ug/kg	98
18) Benzo[a]anthracene	20.91	228	3838	8.84 ug/kg	99
19) Chrysene	21.17	228	4397	10.49 ug/kg	98
21) Benzo[b]fluoranthene	24.48	252	5125	11.37 ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	2622	6.20 ug/kg	96
23) Benzo(j)fluoranthene	24.66	252	2298	6.10 ug/kg	90
24) Benzo[e]pyrene	25.72	252	3772	9.34 ug/kg	99
25) Benzo[a]pyrene	25.89	252	5510	13.35 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.48	276	3787	8.45 ug/kg	93
28) Benzo[g,h,i]perylene	30.55	276	3525	10.08 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051311.D Vial: 11
Acq On : 13 May 2016 2:41 pm Operator:
Sample : 1605071-07A Inst : GC/MS #6
Misc : SAMP Multiplr: 100.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#14
Fluoranthene
Concen: 11.40 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:202 Resp: 5183

Ion	Ratio	Lower	Upper
202	100		
101	12.2	0.0	43.0
203	17.8	0.0	47.9

#15
Pyrene
Concen: 10.46 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.00 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:202 Resp: 4940

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	16.8	0.0	48.0

#18
Benzo[a]anthracene
Concen: 8.84 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:228 Resp: 3838

Ion	Ratio	Lower	Upper
228	100		
229	19.1	0.0	50.1
226	25.5	0.0	55.2

#19
Chrysene
Concen: 10.49 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:228 Resp: 4397

Ion	Ratio	Lower	Upper
228	100		
226	27.3	0.0	58.1
229	18.9	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 11.37 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:252 Resp: 5125

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	52.2
125	11.1	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 6.20 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:252 Resp: 2622

Ion	Ratio	Lower	Upper
252	100		
253	20.4	2.1	42.1
125	9.4	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 6.10 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:252 Resp: 2298

Ion	Ratio	Lower	Upper
252	100		
253	29.0	2.1	42.1
125	15.9	0.0	34.4

#24
Benzo[e]pyrene
Concen: 9.34 ug/kg
RT: 25.72 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:252 Resp: 3772

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.2	42.2
125	15.4	0.0	36.1

#25
Benzo[a]pyrene
Concen: 13.35 ug/kg
RT: 25.89 min Scan# 2367
Delta R.T. -0.02 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:252 Resp: 5510

Ion	Ratio	Lower	Upper
252	100		
253	24.1	1.9	41.9
125	12.9	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 8.45 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:276 Resp: 3787

Ion	Ratio	Lower	Upper
276	100		
138	19.5	6.7	46.7
277	26.2	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 10.08 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051311.D
Acq: 13 May 2016 2:41 pm

Tgt Ion:276 Resp: 3525

Ion	Ratio	Lower	Upper
276	100		
138	17.6	0.0	39.1
277	24.0	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051312.D Vial: 12
Acq On : 13 May 2016 3:21 pm Operator:
Sample : 1605071-08A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1437347	4000.00 ug/kg	124
5) Acenaphthene-d10	13.27	164	863776	4000.00 ug/kg	75
11) Phenanthrene-d10	15.36	188	1569903	4000.00 ug/kg	77
17) Chrysene-d12	21.08	240	1808871	4000.00 ug/kg	80
20) Perylene-d12	26.24	264	1633017	4000.00 ug/kg	79

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	22166	87.97 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.20%#		
16) 4-Terphenyl-d14	17.85	244	30892	76.06 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.90%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	3057	7.40 ug/kg	100
14) Fluoranthene	17.34	202	11677	27.33 ug/kg	98
15) Pyrene	17.93	202	12274	27.66 ug/kg	98
18) Benzo[a]anthracene	20.91	228	9345	22.05 ug/kg	99
19) Chrysene	21.16	228	12547	30.64 ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	16381	38.06 ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	7266	18.00 ug/kg	99
23) Benzo(j)fluoranthene	24.65	252	6362	17.69 ug/kg	90
24) Benzo[e]pyrene	25.71	252	12168	31.57 ug/kg	99
25) Benzo[a]pyrene	25.88	252	15783	40.07 ug/kg	98
26) Dibenz[a,h]anthracene	29.46	278	2734	7.62 ug/kg	91
27) Indeno[1,2,3-cd]pyrene	29.46	276	11507	26.89 ug/kg	89
28) Benzo[g,h,i]perylene	30.53	276	11845	35.50 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051312.D Vial: 12
Acq On : 13 May 2016 3:21 pm Operator:
Sample : 1605071-08A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:52 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 7.40 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:178 Resp: 3057

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	45.9
176	18.7	0.0	48.5

#14
Fluoranthene
Concen: 27.33 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:202 Resp: 11677

Ion	Ratio	Lower	Upper
202	100		
101	11.5	0.0	43.0
203	18.1	0.0	47.9

#15
Pyrene
Concen: 27.66 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:202 Resp: 12274

Ion	Ratio	Lower	Upper
202	100		
200	21.1	0.0	50.0
203	17.7	0.0	48.0

#18
Benzo[a]anthracene
Concen: 22.05 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:228 Resp: 9345

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	26.0	0.0	55.2

#19
Chrysene
Concen: 30.64 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:228 Resp: 12547

Ion	Ratio	Lower	Upper
228	100		
226	28.9	0.0	58.1
229	19.8	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 38.06 ug/kg
RT: 24.47 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:252 Resp: 16381

Ion	Ratio	Lower	Upper
252	100		
253	22.5	0.0	52.2
125	10.8	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 18.00 ug/kg
RT: 24.55 min Scan# 2177
Delta R.T. -0.03 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:252 Resp: 7266

Ion	Ratio	Lower	Upper
252	100		
253	21.5	2.1	42.1
125	11.3	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 17.69 ug/kg
RT: 24.65 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:252 Resp: 6362

Ion	Ratio	Lower	Upper
252	100		
253	29.3	2.1	42.1
125	15.3	0.0	34.4

#24
Benzo[e]pyrene
Concen: 31.57 ug/kg
RT: 25.71 min Scan# 2341
Delta R.T. -0.03 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:252 Resp: 12168

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.2	42.2
125	15.9	0.0	36.1

#25
Benzo[a]pyrene
Concen: 40.07 ug/kg
RT: 25.88 min Scan# 2366
Delta R.T. -0.03 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:252 Resp: 15783

Ion	Ratio	Lower	Upper
252	100		
253	23.2	1.9	41.9
125	11.8	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 7.62 ug/kg
RT: 29.46 min Scan# 2871
Delta R.T. -0.04 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:278 Resp: 2734

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	19.9	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 26.89 ug/kg
RT: 29.46 min Scan# 2872
Delta R.T. -0.04 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:276 Resp: 11507

Ion	Ratio	Lower	Upper
276	100		
138	17.8	6.7	46.7
277	23.9	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 35.50 ug/kg
RT: 30.53 min Scan# 3023
Delta R.T. -0.04 min
Lab File: 16051312.D
Acq: 13 May 2016 3:21 pm

Tgt Ion:276 Resp: 11845

Ion	Ratio	Lower	Upper
276	100		
138	20.7	0.0	39.1
277	23.9	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051313.D Vial: 13
Acq On : 13 May 2016 4:01 pm Operator:
Sample : 1605071-09A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1361951	4000.00	ug/kg	117
5) Acenaphthene-d10	13.28	164	861184	4000.00	ug/kg	75
11) Phenanthrene-d10	15.36	188	1575202	4000.00	ug/kg	77
17) Chrysene-d12	21.09	240	1763398	4000.00	ug/kg	78
20) Perylene-d12	26.25	264	1633437	4000.00	ug/kg	79

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	21829	86.89	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.17%#			
16) 4-Terphenyl-d14	17.85	244	29600	72.63	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.82%#			

Target Compounds						Qvalue
9) Acenaphthene	13.27	154	2627	~~11.41~~	~~ug/kg#~~	9
14) Fluoranthene	17.34	202	3002	7.00	ug/kg	99
15) Pyrene	17.93	202	2461	5.53	ug/kg	99
23) Benzo(j)fluoranthene	24.66	252	574	1.60	ug/kg#	63

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051313.D Vial: 13
Acq On : 13 May 2016 4:01 pm Operator:
Sample : 1605071-09A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#9
Acenaphthene
Concen: 11.41 ug/kg
RT: 13.27 min Scan# 399
Delta R.T. -0.05 min
Lab File: 16051313.D
Acq: 13 May 2016 4:01 pm

Tgt Ion:154 Resp: 2627

Ion	Ratio	Lower	Upper
154	100		
152	0.9	18.9	78.9#
153	1.4	75.2	135.2#

#14
Fluoranthene
Concen: 7.00 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051313.D
Acq: 13 May 2016 4:01 pm

Tgt Ion:202 Resp: 3002

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	43.0
203	17.4	0.0	47.9

#15
Pyrene
Concen: 5.53 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.00 min
Lab File: 16051313.D
Acq: 13 May 2016 4:01 pm

Tgt Ion:202 Resp: 2461

Ion	Ratio	Lower	Upper
202	100		
200	20.7	0.0	50.0
203	17.5	0.0	48.0

#23
Benzo(j)fluoranthene
Concen: 1.60 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051313.D
Acq: 13 May 2016 4:01 pm

Tgt Ion:252 Resp: 574

Ion	Ratio	Lower	Upper
252	100		
253	49.1	2.1	42.1#
125	17.3	0.0	34.4

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051314.D Vial: 14
Acq On : 13 May 2016 4:40 pm Operator:
Sample : 1605071-10A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1392328	4000.00 ug/kg	120
5) Acenaphthene-d10	13.27	164	892800	4000.00 ug/kg	78
11) Phenanthrene-d10	15.36	188	1614510	4000.00 ug/kg	79
17) Chrysene-d12	21.09	240	1832649	4000.00 ug/kg	81
20) Perylene-d12	26.25	264	1712636	4000.00 ug/kg	83

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	21522	82.64 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.07%#		
16) 4-Terphenyl-d14	17.85	244	29357	70.28 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.76%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	3599	8.48 ug/kg	99
14) Fluoranthene	17.34	202	7008	15.95 ug/kg	99
15) Pyrene	17.94	202	5900	12.93 ug/kg	99
18) Benzo[a]anthracene	20.91	228	3050	7.10 ug/kg	99
19) Chrysene	21.17	228	3254	7.84 ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	3183	7.05 ug/kg	99
23) Benzo(j)fluoranthene	24.66	252	1352	3.58 ug/kg	84
24) Benzo[e]pyrene	25.72	252	2233	5.52 ug/kg	97
25) Benzo[a]pyrene	25.90	252	3231	7.82 ug/kg	99
28) Benzo[g,h,i]perylene	30.56	276	1850	5.29 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051314.D Vial: 14
Acq On : 13 May 2016 4:40 pm Operator:
Sample : 1605071-10A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 8.48 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. -0.00 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:178 Resp: 3599

Ion	Ratio	Lower	Upper
178	100		
179	16.0	0.0	45.9
176	17.8	0.0	48.5

#14
Fluoranthene
Concen: 15.95 ug/kg
RT: 17.34 min Scan# 1096
Delta R.T. -0.00 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:202 Resp: 7008

Ion	Ratio	Lower	Upper
202	100		
101	12.5	0.0	43.0
203	17.4	0.0	47.9

#15
Pyrene
Concen: 12.93 ug/kg
RT: 17.94 min Scan# 1214
Delta R.T. -0.00 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:202 Resp: 5900

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.2	0.0	48.0

#18
Benzo[a]anthracene
Concen: 7.10 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:228 Resp: 3050

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	25.0	0.0	55.2

#19
Chrysene
Concen: 7.84 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:228 Resp: 3254

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.1
229	18.6	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 7.05 ug/kg
RT: 24.49 min Scan# 2168
Delta R.T. -0.01 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:252 Resp: 3183

Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	52.2
125	11.5	0.0	41.0

#23
Benzo(j)fluoranthene
Concen: 3.58 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:252 Resp: 1352

Ion	Ratio	Lower	Upper
252	100		
253	33.6	2.1	42.1
125	16.1	0.0	34.4

#24
Benzo[e]pyrene
Concen: 5.52 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:252 Resp: 2233

Ion	Ratio	Lower	Upper
252	100		
253	23.5	2.2	42.2
125	17.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 7.82 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:252 Resp: 3231

Ion	Ratio	Lower	Upper
252	100		
253	21.7	1.9	41.9
125	11.9	0.0	31.7

#28
Benzo[g,h,i]perylene
Concen: 5.29 ug/kg
RT: 30.56 min Scan# 3027
Delta R.T. -0.01 min
Lab File: 16051314.D
Acq: 13 May 2016 4:40 pm

Tgt Ion:276 Resp: 1850

Ion	Ratio	Lower	Upper
276	100		
138	17.9	0.0	39.1
277	25.1	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051315.D Vial: 15
Acq On : 13 May 2016 5:20 pm Operator:
Sample : 1605071-20A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1311154	4000.00	ug/kg	113
5) Acenaphthene-d10	13.27	164	859646	4000.00	ug/kg	75
11) Phenanthrene-d10	15.36	188	1629873	4000.00	ug/kg	80
17) Chrysene-d12	21.09	240	1795416	4000.00	ug/kg	79
20) Perylene-d12	26.25	264	1671547	4000.00	ug/kg	81

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.21	172	19584	78.10	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.95%#			
16) 4-Terphenyl-d14	17.85	244	28025	66.46	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.66%#			

Target Compounds						Qvalue
2) Naphthalene	10.89	128	1798	5.48	ug/kg	98
6) Dibenzofuran	13.48	168	2432	7.55	ug/kg	98
9) Acenaphthene	13.32	154	2170	9.44	ug/kg	99
12) Phenanthrene	15.39	178	136356	318.12	ug/kg	99
13) Anthracene	15.44	178	25059	61.77	ug/kg	98
14) Fluoranthene	17.34	202	275865	621.94	ug/kg	99
15) Pyrene	17.94	202	225236	488.83	ug/kg	99
18) Benzo[a]anthracene	20.92	228	115722	275.12	ug/kg	99
19) Chrysene	21.17	228	121984	300.15	ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	106450	241.62	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	52616	127.31	ug/kg	98
23) Benzo(j)fluoranthene	24.67	252	49196	133.63	ug/kg	91
24) Benzo[e]pyrene	25.72	252	71460	181.12	ug/kg	99
25) Benzo[a]pyrene	25.90	252	100533	249.35	ug/kg	98
26) Dibenz[a,h]anthracene	29.48	278	14142	38.51	ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.48	276	61357	140.07	ug/kg	91
28) Benzo[g,h,i]perylene	30.56	276	52826	154.65	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051315.D Vial: 15
Acq On : 13 May 2016 5:20 pm Operator:
Sample : 1605071-20A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#2
Naphthalene
Concen: 5.48 ug/kg
RT: 10.89 min Scan# 138
Delta R.T. 0.00 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:128 Resp: 1798

Ion	Ratio	Lower	Upper
128	100		
129	12.3	0.0	41.1
127	12.7	0.0	42.4

#6
Dibenzofuran
Concen: 7.55 ug/kg
RT: 13.48 min Scan# 423
Delta R.T. 0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:168 Resp: 2432

Ion	Ratio	Lower	Upper
168	100		
139	34.7	27.0	40.4

#9
Acenaphthene
Concen: 9.44 ug/kg
RT: 13.32 min Scan# 405
Delta R.T. 0.00 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:154 Resp: 2170

Ion	Ratio	Lower	Upper
154	100		
152	47.3	18.9	78.9
153	104.5	75.2	135.2

#12
Phenanthrene
Concen: 318.12 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. -0.00 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:178 Resp: 136356

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	45.9
176	18.3	0.0	48.5

#13
Anthracene
Concen: 61.77 ug/kg
RT: 15.44 min Scan# 716
Delta R.T. 0.00 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:178 Resp: 25059

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	17.3	0.0	48.2

#14
Fluoranthene
Concen: 621.94 ug/kg
RT: 17.34 min Scan# 1096
Delta R.T. -0.00 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:202 Resp: 275865

Ion	Ratio	Lower	Upper
202	100		
101	12.8	0.0	43.0
203	17.3	0.0	47.9

#15
Pyrene
Concen: 488.83 ug/kg
RT: 17.94 min Scan# 1214
Delta R.T. -0.00 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:202 Resp: 225236

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	17.5	0.0	48.0

#18
Benzo[a]anthracene
Concen: 275.12 ug/kg
RT: 20.92 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:228 Resp: 115722

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.6	0.0	55.2

#19
Chrysene
Concen: 300.15 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:228 Resp: 121984

Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	58.1
229	19.4	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 241.62 ug/kg
RT: 24.49 min Scan# 2168
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:252 Resp: 106450

Ion	Ratio	Lower	Upper
252	100		
253	21.7	0.0	52.2
125	11.1	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 127.31 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:252 Resp: 52616

Ion	Ratio	Lower	Upper
252	100		
253	20.7	2.1	42.1
125	11.5	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 133.63 ug/kg
RT: 24.67 min Scan# 2194
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:252 Resp: 49196

Ion	Ratio	Lower	Upper
252	100		
253	27.8	2.1	42.1
125	16.0	0.0	34.4

#24
Benzo[e]pyrene
Concen: 181.12 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:252 Resp: 71460

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	16.6	0.0	36.1

#25
Benzo[a]pyrene
Concen: 249.35 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:252 Resp: 100533

Ion	Ratio	Lower	Upper
252	100		
253	22.3	1.9	41.9
125	12.9	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 38.51 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:278 Resp: 14142

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: 140.07 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:276 Resp: 61357

Ion	Ratio	Lower	Upper
276	100		
138	18.5	6.7	46.7
277	24.6	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 154.65 ug/kg
RT: 30.56 min Scan# 3027
Delta R.T. -0.01 min
Lab File: 16051315.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:276 Resp: 52826

Ion	Ratio	Lower	Upper
276	100		
138	18.6	0.0	39.1
277	23.6	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051316.D Vial: 16
Acq On : 13 May 2016 6:00 pm Operator:
Sample : 1605071-20AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1377401	4000.00 ug/kg	119
5) Acenaphthene-d10	13.27	164	886122	4000.00 ug/kg	77
11) Phenanthrene-d10	15.36	188	1638960	4000.00 ug/kg	80
17) Chrysene-d12	21.10	240	1861564	4000.00 ug/kg	82
20) Perylene-d12	26.25	264	1756713	4000.00 ug/kg	85

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	16948	65.57 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.64%#	
16) 4-Terphenyl-d14	17.86	244	27222	64.20 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.61%#	

Target Compounds					Qvalue
2) Naphthalene	10.88	128	21322	61.89 ug/kg	98
3) 2-Methyl naphthalene	11.70	142	15106	49.64 ug/kg	99
4) 1-Methyl naphthalene	11.91	142	13723	49.23 ug/kg	92
6) Dibenzofuran	13.48	168	24059	72.44 ug/kg	99
8) Acenaphthylene	13.15	152	25881	67.82 ug/kg	99
9) Acenaphthene	13.32	154	15855	66.94 ug/kg	97
10) Fluorene	13.97	166	20874	72.56 ug/kg	98
12) Phenanthrene	15.39	178	45666	105.95 ug/kg	99
13) Anthracene	15.44	178	33580	82.31 ug/kg	99
14) Fluoranthene	17.35	202	73167	164.04 ug/kg	99
15) Pyrene	17.94	202	69658	150.34 ug/kg	99
18) Benzo[a]anthracene	20.92	228	55459	127.16 ug/kg	99
19) Chrysene	21.18	228	57393	136.20 ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	61359	132.52 ug/kg	99
22) Benzo[k]fluoranthene	24.57	252	45817	105.49 ug/kg	98
23) Benzo(j)fluoranthene	24.67	252	41316	106.78 ug/kg	97
24) Benzo[e]pyrene	25.73	252	51232	123.55 ug/kg	100
25) Benzo[a]pyrene	25.91	252	56863	134.20 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	31129	80.67 ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.48	276	50276	109.21 ug/kg	94
28) Benzo[g,h,i]perylene	30.56	276	43254	120.49 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051316.D Vial: 16
Acq On : 13 May 2016 6:00 pm Operator:
Sample : 1605071-20AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051317.D Vial: 17
Acq On : 13 May 2016 6:40 pm Operator:
Sample : 1605071-20AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1401718	4000.00 ug/kg	121
5) Acenaphthene-d10	13.28	164	878639	4000.00 ug/kg	76
11) Phenanthrene-d10	15.36	188	1627387	4000.00 ug/kg	80
17) Chrysene-d12	21.10	240	1858299	4000.00 ug/kg	82
20) Perylene-d12	26.25	264	1736666	4000.00 ug/kg	84

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	18079	70.54 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#	
16) 4-Terphenyl-d14	17.85	244	28577	67.87 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.70%#	

Target Compounds					Qvalue
2) Naphthalene	10.89	128	22826	65.10 ug/kg	100
3) 2-Methyl naphthalene	11.70	142	16360	52.82 ug/kg	95
4) 1-Methyl naphthalene	11.91	142	14905	52.55 ug/kg	98
6) Dibenzofuran	13.48	168	25713	78.08 ug/kg	99
8) Acenaphthylene	13.16	152	27333	72.23 ug/kg	99
9) Acenaphthene	13.32	154	16722	71.20 ug/kg	99
10) Fluorene	13.97	166	22208	77.86 ug/kg	100
12) Phenanthrene	15.39	178	41494	96.95 ug/kg	99
13) Anthracene	15.44	178	34143	84.29 ug/kg	98
14) Fluoranthene	17.35	202	57547	129.94 ug/kg	99
15) Pyrene	17.94	202	56023	121.77 ug/kg	99
18) Benzo[a]anthracene	20.91	228	46549	106.92 ug/kg	99
19) Chrysene	21.18	228	47765	113.55 ug/kg	100
21) Benzo[b]fluoranthene	24.49	252	52475	114.64 ug/kg	99
22) Benzo[k]fluoranthene	24.57	252	41501	96.65 ug/kg	99
23) Benzo(j)fluoranthene	24.67	252	37415	97.82 ug/kg	97
24) Benzo[e]pyrene	25.73	252	45275	110.45 ug/kg	99
25) Benzo[a]pyrene	25.91	252	48446	115.65 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	30517	79.99 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.48	276	45450	99.87 ug/kg	95
28) Benzo[g,h,i]perylene	30.56	276	38491	108.46 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051317.D Vial: 17
Acq On : 13 May 2016 6:40 pm Operator:
Sample : 1605071-20AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051319.D Vial: 19
Acq On : 13 May 2016 7:56 pm Operator:
Sample : ICV2-160513 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1438141	4000.00	ug/kg	124
5) Acenaphthene-d10	13.28	164	907259	4000.00	ug/kg	79
11) Phenanthrene-d10	15.36	188	1808259	4000.00	ug/kg	89
17) Chrysene-d12	21.10	240	1953495	4000.00	ug/kg	86
20) Perylene-d12	26.26	264	1791323	4000.00	ug/kg	87

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.21	172	522226	1973.23	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 49.33%			
16) 4-Terphenyl-d14	17.86	244	835348	1785.59	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 44.64%			

Target Compounds						Qvalue
2) Naphthalene	10.89	128	701264	1949.40	ug/kg	99
3) 2-Methyl naphthalene	11.70	142	484977	1526.23	ug/kg	96
4) 1-Methyl naphthalene	11.91	142	435086	1495.01	ug/kg	97
6) Dibenzofuran	13.49	168	699775	2057.97	ug/kg	98
8) Acenaphthylene	13.16	152	822499	2105.09	ug/kg	100
9) Acenaphthene	13.32	154	480621	1981.82	ug/kg	98
10) Fluorene	13.97	166	642833	2182.62	ug/kg	100
12) Phenanthrene	15.40	178	908142	1909.70	ug/kg	100
13) Anthracene	15.44	178	856424	1902.72	ug/kg	100
14) Fluoranthene	17.35	202	934357	1898.70	ug/kg	99
15) Pyrene	17.94	202	932756	1824.67	ug/kg	100
18) Benzo[a]anthracene	20.93	228	893000	1951.25	ug/kg	100
19) Chrysene	21.18	228	822898	1860.97	ug/kg	100
21) Benzo[b]fluoranthene	24.51	252	906341	1919.68	ug/kg	100
22) Benzo[k]fluoranthene	24.59	252	846532	1911.33	ug/kg	100
23) Benzo(j)fluoranthene	24.69	252	753491	1909.83	ug/kg	99
24) Benzo[e]pyrene	25.74	252	793285	1876.18	ug/kg	100
25) Benzo[a]pyrene	25.92	252	825720	1911.07	ug/kg	99
26) Dibenz[a,h]anthracene	29.50	278	760762	1933.32	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.51	276	889242	1894.30	ug/kg	97
28) Benzo[g,h,i]perylene	30.58	276	704485	1924.56	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051319.D Vial: 19
Acq On : 13 May 2016 7:56 pm Operator:
Sample : ICV2-160513 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160513\16051319.D Vial: 19
Acq On : 13 May 2016 7:56 pm Operator:
Sample : ICV2-160513 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 20:29 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Multiple Level Calibration

TIC: 16051319.D

(21) Benzo[b]fluoranthene (CP)

24.51min 1919.68ug/kg

response 906341

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.08
125.00	11.00	11.27
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051320.D Vial: 20
Acq On : 13 May 2016 8:36 pm Operator:
Sample : SBLK-160513 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1319634	4000.00 ug/kg	114
5) Acenaphthene-d10	13.27	164	888869	4000.00 ug/kg	77
11) Phenanthrene-d10	15.36	188	1548316	4000.00 ug/kg	76
17) Chrysene-d12	21.09	240	1833198	4000.00 ug/kg	81
20) Perylene-d12	26.25	264	1721840	4000.00 ug/kg	84

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	347	1.34 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.03%#		
16) 4-Terphenyl-d14	17.86	244	468	1.17 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.03%#		

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.67	252	236	0.62 ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051320.D Vial: 20
Acq On : 13 May 2016 8:36 pm Operator:
Sample : SBLK-160513 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051321.D Vial: 21
Acq On : 13 May 2016 9:16 pm Operator:
Sample : 1605071-11A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1327843	4000.00 ug/kg	115
5) Acenaphthene-d10	13.27	164	854133	4000.00 ug/kg	74
11) Phenanthrene-d10	15.36	188	1602521	4000.00 ug/kg	78
17) Chrysene-d12	21.09	240	1781565	4000.00 ug/kg	78
20) Perylene-d12	26.25	264	1675825	4000.00 ug/kg	81

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	20909	83.92 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.10%#	
16) 4-Terphenyl-d14	17.85	244	29347	70.78 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.77%#	

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	14908	35.37 ug/kg	98
13) Anthracene	15.43	178	2841	7.12 ug/kg	99
14) Fluoranthene	17.34	202	29195	66.94 ug/kg	98
15) Pyrene	17.93	202	24550	54.19 ug/kg	100
18) Benzo[a]anthracene	20.92	228	14721	35.27 ug/kg	99
19) Chrysene	21.17	228	16789	41.63 ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	16228	36.74 ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	7952	19.19 ug/kg	97
23) Benzo(j)fluoranthene	24.66	252	7381	20.00 ug/kg	90
24) Benzo[e]pyrene	25.72	252	11516	29.11 ug/kg	99
25) Benzo[a]pyrene	25.90	252	15468	38.27 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	2723	7.40 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.48	276	10273	23.39 ug/kg	90
28) Benzo[g,h,i]perylene	30.55	276	9679	28.26 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051321.D Vial: 21
Acq On : 13 May 2016 9:16 pm Operator:
Sample : 1605071-11A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:53 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 35.37 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. -0.00 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:178 Resp: 14908

Ion	Ratio	Lower	Upper
178	100		
179	14.6	0.0	45.9
176	18.2	0.0	48.5

#13
Anthracene
Concen: 7.12 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. -0.00 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:178 Resp: 2841

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	17.7	0.0	48.2

#14
Fluoranthene
Concen: 66.94 ug/kg
RT: 17.34 min Scan# 1096
Delta R.T. -0.00 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:202 Resp: 29195

Ion	Ratio	Lower	Upper
202	100		
101	12.4	0.0	43.0
203	17.2	0.0	47.9

#15
Pyrene
Concen: 54.19 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:202 Resp: 24550

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	18.0	0.0	48.0

#18
Benzo[a]anthracene
Concen: 35.27 ug/kg
RT: 20.92 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:228 Resp: 14721

Ion	Ratio	Lower	Upper
228	100		
229	20.2	0.0	50.1
226	25.6	0.0	55.2

#19
Chrysene
Concen: 41.63 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:228 Resp: 16789

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: 36.74 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:252 Resp: 16228

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	52.2
125	12.2	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 19.19 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:252 Resp: 7952

Ion	Ratio	Lower	Upper
252	100		
253	20.4	2.1	42.1
125	10.2	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 20.00 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:252 Resp: 7381

Ion	Ratio	Lower	Upper
252	100		
253	28.8	2.1	42.1
125	16.2	0.0	34.4

#24
Benzo[e]pyrene
Concen: 29.11 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:252 Resp: 11516

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.2	42.2
125	15.6	0.0	36.1

#25
Benzo[a]pyrene
Concen: 38.27 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:252 Resp: 15468

Ion	Ratio	Lower	Upper
252	100		
253	22.5	1.9	41.9
125	11.6	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 7.40 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:278 Resp: 2723

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: 23.39 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:276 Resp: 10273

Ion	Ratio	Lower	Upper
276	100		
138	18.6	6.7	46.7
277	23.6	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 28.26 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051321.D
Acq: 13 May 2016 9:16 pm

Tgt Ion:276 Resp: 9679

Ion	Ratio	Lower	Upper
276	100		
138	18.7	0.0	39.1
277	25.2	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051322.D Vial: 22
Acq On : 13 May 2016 9:56 pm Operator:
Sample : 1605071-12A Inst : GC/MS #6
Misc : SAMP Multiplr: 50.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1439017	4000.00 ug/kg	124
5) Acenaphthene-d10	13.27	164	902847	4000.00 ug/kg	78
11) Phenanthrene-d10	15.36	188	1626021	4000.00 ug/kg	80
17) Chrysene-d12	21.09	240	1899018	4000.00 ug/kg	84
20) Perylene-d12	26.25	264	1725580	4000.00 ug/kg	84

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	4255	16.16 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.40%#		
16) 4-Terphenyl-d14	17.85	244	6056	14.40 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.36%#		

Target Compounds					Qvalue
9) Acenaphthene	13.32	154	1209	5.01 ug/kg	98
10) Fluorene	13.97	166	1810	6.18 ug/kg	97
12) Phenanthrene	15.39	178	50575	118.27 ug/kg	99
13) Anthracene	15.43	178	12032	29.73 ug/kg	99
14) Fluoranthene	17.34	202	86509	195.50 ug/kg	98
15) Pyrene	17.94	202	68652	149.35 ug/kg	99
18) Benzo[a]anthracene	20.92	228	40635	91.34 ug/kg	99
19) Chrysene	21.17	228	42794	99.55 ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	38251	84.10 ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	18456	43.26 ug/kg	98
23) Benzo(j)fluoranthene	24.66	252	17276	45.46 ug/kg	91
24) Benzo[e]pyrene	25.72	252	25722	63.15 ug/kg	100
25) Benzo[a]pyrene	25.90	252	37480	90.05 ug/kg	98
26) Dibenz[a,h]anthracene	29.48	278	5603	14.78 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.48	276	22331	49.38 ug/kg	91
28) Benzo[g,h,i]perylene	30.55	276	19843	56.27 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051322.D Vial: 22
Acq On : 13 May 2016 9:56 pm Operator:
Sample : 1605071-12A Inst : GC/MS #6
Misc : SAMP Multiplr: 50.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#9
Acenaphthene
Concen: 5.01 ug/kg
RT: 13.32 min Scan# 405
Delta R.T. 0.00 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:154 Resp: 1209

Ion	Ratio	Lower	Upper
154	100		
152	44.9	18.9	78.9
153	104.6	75.2	135.2

#10
Fluorene
Concen: 6.18 ug/kg
RT: 13.97 min Scan# 476
Delta R.T. 0.00 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:166 Resp: 1810

Ion	Ratio	Lower	Upper
166	100		
165	94.4	61.8	121.8
167	14.7	0.0	43.6

#12
Phenanthrene
Concen: 118.27 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. -0.00 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:178 Resp: 50575

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	18.1	0.0	48.5

#13
Anthracene
Concen: 29.73 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. -0.00 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:178 Resp: 12032

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	17.6	0.0	48.2

#14
Fluoranthene
Concen: 195.50 ug/kg
RT: 17.34 min Scan# 1096
Delta R.T. -0.00 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:202 Resp: 86509

Ion	Ratio	Lower	Upper
202	100		
101	12.2	0.0	43.0
203	17.4	0.0	47.9

#15
Pyrene
Concen: 149.35 ug/kg
RT: 17.94 min Scan# 1214
Delta R.T. -0.00 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:202 Resp: 68652

Ion	Ratio	Lower	Upper
202	100		
200	19.4	0.0	50.0
203	17.5	0.0	48.0

#18
Benzo[a]anthracene
Concen: 91.34 ug/kg
RT: 20.92 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:228 Resp: 40635

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.0	50.1
226	25.7	0.0	55.2

#19
Chrysene
Concen: 99.55 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:228 Resp: 42794

Ion	Ratio	Lower	Upper
228	100		
226	27.9	0.0	58.1
229	19.7	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 84.10 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:252 Resp: 38251

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	11.7	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 43.26 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:252 Resp: 18456

Ion	Ratio	Lower	Upper
252	100		
253	20.7	2.1	42.1
125	11.3	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 45.46 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:252 Resp: 17276

Ion	Ratio	Lower	Upper
252	100		
253	27.9	2.1	42.1
125	16.5	0.0	34.4

#24
Benzo[e]pyrene
Concen: 63.15 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:252 Resp: 25722

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	15.9	0.0	36.1

#25
Benzo[a]pyrene
Concen: 90.05 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:252 Resp: 37480

Ion	Ratio	Lower	Upper
252	100		
253	22.5	1.9	41.9
125	12.5	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 14.78 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:278 Resp: 5603

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.3	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 49.38 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:276 Resp: 22331

Ion	Ratio	Lower	Upper
276	100		
138	19.9	6.7	46.7
277	23.3	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 56.27 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051322.D
Acq: 13 May 2016 9:56 pm

Tgt Ion:276 Resp: 19843

Ion	Ratio	Lower	Upper
276	100		
138	19.7	0.0	39.1
277	24.4	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051323.D Vial: 23
Acq On : 13 May 2016 10:36 pm Operator:
Sample : 1605071-13A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1321893	4000.00 ug/kg	114
5) Acenaphthene-d10	13.27	164	865367	4000.00 ug/kg	75
11) Phenanthrene-d10	15.36	188	1627611	4000.00 ug/kg	80
17) Chrysene-d12	21.09	240	1803926	4000.00 ug/kg	79
20) Perylene-d12	26.25	264	1633379	4000.00 ug/kg	79

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.21	172	20277	80.33 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.01%#		
16) 4-Terphenyl-d14	17.85	244	29104	69.12 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.73%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	4672	10.92 ug/kg	98
14) Fluoranthene	17.34	202	10731	24.23 ug/kg	98
15) Pyrene	17.93	202	9200	19.99 ug/kg	99
18) Benzo[a]anthracene	20.91	228	5348	12.65 ug/kg	99
19) Chrysene	21.17	228	5855	14.34 ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	5908	13.72 ug/kg	97
22) Benzo[k]fluoranthene	24.56	252	2871	7.11 ug/kg	94
23) Benzo(j)fluoranthene	24.66	252	2576	7.16 ug/kg	91
24) Benzo[e]pyrene	25.72	252	4169	10.81 ug/kg	98
25) Benzo[a]pyrene	25.90	252	5604	14.22 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.48	276	3814	8.91 ug/kg	90
28) Benzo[g,h,i]perylene	30.55	276	3641	10.91 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051323.D Vial: 23
Acq On : 13 May 2016 10:36 pm Operator:
Sample : 1605071-13A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 10.92 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. 0.00 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:178 Resp: 4672

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	17.6	0.0	48.5

#14
Fluoranthene
Concen: 24.23 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:202 Resp: 10731

Ion	Ratio	Lower	Upper
202	100		
101	13.7	0.0	43.0
203	17.2	0.0	47.9

#15
Pyrene
Concen: 19.99 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:202 Resp: 9200

Ion	Ratio	Lower	Upper
202	100		
200	20.2	0.0	50.0
203	17.5	0.0	48.0

#18
Benzo[a]anthracene
Concen: 12.65 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:228 Resp: 5348

Ion	Ratio	Lower	Upper
228	100		
229	20.7	0.0	50.1
226	25.7	0.0	55.2

#19
Chrysene
Concen: 14.34 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:228 Resp: 5855

Ion	Ratio	Lower	Upper
228	100		
226	27.5	0.0	58.1
229	20.4	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 13.72 ug/kg
RT: 24.49 min Scan# 2168
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:252 Resp: 5908

Ion	Ratio	Lower	Upper
252	100		
253	20.8	0.0	52.2
125	10.3	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 7.11 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:252 Resp: 2871

Ion	Ratio	Lower	Upper
252	100		
253	25.4	2.1	42.1
125	9.6	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 7.16 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:252 Resp: 2576

Ion	Ratio	Lower	Upper
252	100		
253	28.9	2.1	42.1
125	14.7	0.0	34.4

#24
Benzo[e]pyrene
Concen: 10.81 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:252 Resp: 4169

Ion	Ratio	Lower	Upper
252	100		
253	23.2	2.2	42.2
125	15.0	0.0	36.1

#25
Benzo[a]pyrene
Concen: 14.22 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:252 Resp: 5604

Ion	Ratio	Lower	Upper
252	100		
253	21.6	1.9	41.9
125	12.2	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 8.91 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:276 Resp: 3814

Ion	Ratio	Lower	Upper
276	100		
138	19.2	6.7	46.7
277	23.3	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 10.91 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051323.D
Acq: 13 May 2016 10:36 pm

Tgt Ion:276 Resp: 3641

Ion	Ratio	Lower	Upper
276	100		
138	19.1	0.0	39.1
277	23.0	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051324.D Vial: 24
Acq On : 13 May 2016 11:16 pm Operator:
Sample : 1605071-14A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1323874	4000.00	ug/kg	114
5) Acenaphthene-d10	13.27	164	866152	4000.00	ug/kg	75
11) Phenanthrene-d10	15.36	188	1642462	4000.00	ug/kg	80
17) Chrysene-d12	21.09	240	1832109	4000.00	ug/kg	81
20) Perylene-d12	26.25	264	1687804	4000.00	ug/kg	82

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	20009	79.19	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.98%#			
16) 4-Terphenyl-d14	17.85	244	28813	67.81	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.70%#			

Target Compounds

						Qvalue
2) Naphthalene	10.89	128	2452	7.40	ug/kg	98
9) Acenaphthene	13.32	154	4941	21.34	ug/kg	98
10) Fluorene	13.97	166	2554	9.08	ug/kg	97
12) Phenanthrene	15.39	178	69973	162.00	ug/kg	99
13) Anthracene	15.43	178	13061	31.95	ug/kg	100
14) Fluoranthene	17.34	202	181979	407.13	ug/kg	99
15) Pyrene	17.93	202	199779	430.26	ug/kg	99
18) Benzo[a]anthracene	20.91	228	108448	252.66	ug/kg	99
19) Chrysene	21.17	228	139867	337.26	ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	93850	210.97	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	57664	138.18	ug/kg	98
23) Benzo(j)fluoranthene	24.67	252	56644	152.38	ug/kg	93
24) Benzo[e]pyrene	25.72	252	69989	175.68	ug/kg	99
25) Benzo[a]pyrene	25.90	252	122527	300.97	ug/kg	99
26) Dibenz[a,h]anthracene	29.47	278	16760	45.20	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.48	276	64432	145.67	ug/kg	90
28) Benzo[g,h,i]perylene	30.55	276	57203	165.86	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051324.D Vial: 24
Acq On : 13 May 2016 11:16 pm Operator:
Sample : 1605071-14A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#2
Naphthalene
Concen: 7.40 ug/kg
RT: 10.89 min Scan# 138
Delta R.T. 0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:128 Resp: 2452

Ion	Ratio	Lower	Upper
128	100		
129	11.0	0.0	41.1
127	11.3	0.0	42.4

#9
Acenaphthene
Concen: 21.34 ug/kg
RT: 13.32 min Scan# 405
Delta R.T. 0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:154 Resp: 4941

Ion	Ratio	Lower	Upper
154	100		
152	46.5	18.9	78.9
153	104.5	75.2	135.2

#10
Fluorene
Concen: 9.08 ug/kg
RT: 13.97 min Scan# 476
Delta R.T. 0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:166 Resp: 2554

Ion	Ratio	Lower	Upper
166	100		
165	93.4	61.8	121.8
167	18.7	0.0	43.6

#12
Phenanthrene
Concen: 162.00 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. 0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:178 Resp: 69973

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	17.9	0.0	48.5

#13
Anthracene
Concen: 31.95 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. 0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:178 Resp: 13061

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	45.9
176	18.2	0.0	48.2

#14
Fluoranthene
Concen: 407.13 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:202 Resp: 181979

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	43.0
203	17.5	0.0	47.9

#15
Pyrene
Concen: 430.26 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.00 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:202 Resp: 199779

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.4	0.0	48.0

#18
Benzo[a]anthracene
Concen: 252.66 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:228 Resp: 108448

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	25.9	0.0	55.2

#19
Chrysene
Concen: 337.26 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:228 Resp: 139867

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.1
229	19.5	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 210.97 ug/kg
RT: 24.49 min Scan# 2168
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:252 Resp: 93850

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: 138.18 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:252 Resp: 57664

Ion	Ratio	Lower	Upper
252	100		
253	20.6	2.1	42.1
125	11.2	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 152.38 ug/kg
RT: 24.67 min Scan# 2194
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:252 Resp: 56644

Ion	Ratio	Lower	Upper
252	100		
253	27.3	2.1	42.1
125	13.7	0.0	34.4

#24
Benzo[e]pyrene
Concen: 175.68 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:252 Resp: 69989

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.2	42.2
125	15.6	0.0	36.1

#25
Benzo[a]pyrene
Concen: 300.97 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:252 Resp: 122527

Ion	Ratio	Lower	Upper
252	100		
253	22.2	1.9	41.9
125	11.8	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 45.20 ug/kg
RT: 29.47 min Scan# 2873
Delta R.T. -0.03 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:278 Resp: 16760

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: 145.67 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:276 Resp: 64432

Ion	Ratio	Lower	Upper
276	100		
138	18.1	6.7	46.7
277	24.1	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 165.86 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051324.D
Acq: 13 May 2016 11:16 pm

Tgt Ion:276 Resp: 57203

Ion	Ratio	Lower	Upper
276	100		
138	19.3	0.0	39.1
277	24.1	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051325.D Vial: 25
Acq On : 13 May 2016 11:56 pm Operator:
Sample : 1605071-15A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1368146	4000.00	ug/kg	118
5) Acenaphthene-d10	13.27	164	880098	4000.00	ug/kg	76
11) Phenanthrene-d10	15.36	188	1610486	4000.00	ug/kg	79
17) Chrysene-d12	21.09	240	1806963	4000.00	ug/kg	80
20) Perylene-d12	26.25	264	1674287	4000.00	ug/kg	81

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.21	172	20254	78.89	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.97%#			
16) 4-Terphenyl-d14	17.85	244	28018	67.24	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.68%#			

Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2685	11.41	ug/kg#	8
23) Benzo(j)fluoranthene	24.67	252	222	0.60	ug/kg	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051325.D Vial: 25
Acq On : 13 May 2016 11:56 pm Operator:
Sample : 1605071-15A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:54 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#9
Acenaphthene
Concen: 11.41 ug/kg
RT: 13.26 min Scan# 399
Delta R.T. -0.05 min
Lab File: 16051325.D
Acq: 13 May 2016 11:56 pm

Tgt Ion:154 Resp: 2685

Ion	Ratio	Lower	Upper
154	100		
152	0.4	18.9	78.9#
153	0.9	75.2	135.2#

#23
Benzo(j)fluoranthene
Concen: 0.60 ug/kg
RT: 24.67 min Scan# 2194
Delta R.T. -0.01 min
Lab File: 16051325.D
Acq: 13 May 2016 11:56 pm

Tgt Ion:252 Resp: 222

Ion	Ratio	Lower	Upper
252	100		
253	26.0	2.1	42.1
125	21.9	0.0	34.4

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051326.D Vial: 26
Acq On : 14 May 2016 12:35 am Operator:
Sample : 1605071-19A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1333282	4000.00 ug/kg	115
5) Acenaphthene-d10	13.27	164	879947	4000.00 ug/kg	76
11) Phenanthrene-d10	15.36	188	1628919	4000.00 ug/kg	80
17) Chrysene-d12	21.09	240	1818001	4000.00 ug/kg	80
20) Perylene-d12	26.25	264	1674871	4000.00 ug/kg	81

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.20	172	19436	75.72 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.89%#	
16) 4-Terphenyl-d14	17.85	244	28179	66.87 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.67%#	

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	25263	58.97 ug/kg	99
13) Anthracene	15.43	178	4862	11.99 ug/kg	99
14) Fluoranthene	17.34	202	55112	124.32 ug/kg	98
15) Pyrene	17.93	202	47366	102.86 ug/kg	99
18) Benzo[a]anthracene	20.91	228	28060	65.88 ug/kg	99
19) Chrysene	21.17	228	32807	79.72 ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	30631	69.39 ug/kg	100
22) Benzo[k]fluoranthene	24.56	252	15573	37.61 ug/kg	98
23) Benzo(j)fluoranthene	24.66	252	14212	38.53 ug/kg	92
24) Benzo[e]pyrene	25.72	252	21694	54.88 ug/kg	99
25) Benzo[a]pyrene	25.90	252	29721	73.57 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	4571	12.42 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.48	276	18668	42.53 ug/kg	90
28) Benzo[g,h,i]perylene	30.55	276	16723	48.86 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051326.D Vial: 26
Acq On : 14 May 2016 12:35 am Operator:
Sample : 1605071-19A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 58.97 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. -0.00 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:178 Resp: 25263

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	45.9
176	18.2	0.0	48.5

#13
Anthracene
Concen: 11.99 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. -0.00 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:178 Resp: 4862

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	18.5	0.0	48.2

#14
Fluoranthene
Concen: 124.32 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:202 Resp: 55112

Ion	Ratio	Lower	Upper
202	100		
101	13.9	0.0	43.0
203	17.3	0.0	47.9

#15
Pyrene
Concen: 102.86 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:202 Resp: 47366

Ion	Ratio	Lower	Upper
202	100		
200	20.0	0.0	50.0
203	17.2	0.0	48.0

#18
Benzo[a]anthracene
Concen: 65.88 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:228 Resp: 28060

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.0	50.1
226	25.3	0.0	55.2

#19
Chrysene
Concen: 79.72 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:228 Resp: 32807

Ion	Ratio	Lower	Upper
228	100		
226	27.8	0.0	58.1
229	19.2	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 69.39 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:252 Resp: 30631

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	52.2
125	11.4	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 37.61 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:252 Resp: 15573

Ion	Ratio	Lower	Upper
252	100		
253	20.7	2.1	42.1
125	11.0	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 38.53 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:252 Resp: 14212

Ion	Ratio	Lower	Upper
252	100		
253	27.5	2.1	42.1
125	15.7	0.0	34.4

#24
Benzo[e]pyrene
Concen: 54.88 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:252 Resp: 21694

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.2	42.2
125	15.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 73.57 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:252 Resp: 29721

Ion	Ratio	Lower	Upper
252	100		
253	22.0	1.9	41.9
125	12.1	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 12.42 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:278 Resp: 4571

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: 42.53 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:276 Resp: 18668

Ion	Ratio	Lower	Upper
276	100		
138	17.6	6.7	46.7
277	24.3	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 48.86 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051326.D
Acq: 14 May 2016 12:35 am

Tgt Ion:276 Resp: 16723

Ion	Ratio	Lower	Upper
276	100		
138	18.7	0.0	39.1
277	24.0	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051327.D Vial: 27
Acq On : 14 May 2016 1:15 am Operator:
Sample : 1605071-21A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1320565	4000.00 ug/kg	114
5) Acenaphthene-d10	13.27	164	886029	4000.00 ug/kg	77
11) Phenanthrene-d10	15.36	188	1645187	4000.00 ug/kg	81
17) Chrysene-d12	21.09	240	1876443	4000.00 ug/kg	83
20) Perylene-d12	26.25	264	1741933	4000.00 ug/kg	85

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.20	172	18975	73.42 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.84%#		
16) 4-Terphenyl-d14	17.85	244	27862	65.46 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.64%#		

Target Compounds					Qvalue
2) Naphthalene	10.89	128	5615	17.00 ug/kg	99
9) Acenaphthene	13.32	154	2797	11.81 ug/kg	98
12) Phenanthrene	15.39	178	30694	70.94 ug/kg	99
13) Anthracene	15.43	178	5695	13.91 ug/kg	98
14) Fluoranthene	17.34	202	160218	357.85 ug/kg	99
15) Pyrene	17.93	202	156200	335.85 ug/kg	99
18) Benzo[a]anthracene	20.92	228	117997	268.42 ug/kg	99
19) Chrysene	21.17	228	140143	329.95 ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	153263	333.82 ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	73658	171.02 ug/kg	99
23) Benzo(j)fluoranthene	24.66	252	68227	177.83 ug/kg	91
24) Benzo[e]pyrene	25.72	252	112052	272.53 ug/kg	100
25) Benzo[a]pyrene	25.90	252	151854	361.42 ug/kg	99
26) Dibenz[a,h]anthracene	29.47	278	21514	56.22 ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.48	276	97100	212.71 ug/kg	92
28) Benzo[g,h,i]perylene	30.55	276	91559	257.22 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051327.D Vial: 27
Acq On : 14 May 2016 1:15 am Operator:
Sample : 1605071-21A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#2
Naphthalene
Concen: 17.00 ug/kg
RT: 10.89 min Scan# 138
Delta R.T. 0.00 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:128 Resp: 5615

Ion	Ratio	Lower	Upper
128	100		
129	10.3	0.0	41.1
127	12.4	0.0	42.4

#9
Acenaphthene
Concen: 11.81 ug/kg
RT: 13.32 min Scan# 405
Delta R.T. 0.00 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:154 Resp: 2797

Ion	Ratio	Lower	Upper
154	100		
152	46.9	18.9	78.9
153	104.2	75.2	135.2

#12
Phenanthrene
Concen: 70.94 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. 0.00 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:178 Resp: 30694

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	17.8	0.0	48.5

#13
Anthracene
Concen: 13.91 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. 0.00 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:178 Resp: 5695

Ion	Ratio	Lower	Upper
178	100		
179	14.6	0.0	45.9
176	17.3	0.0	48.2

#14
Fluoranthene
Concen: 357.85 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:202 Resp: 160218

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	43.0
203	17.5	0.0	47.9

#15
Pyrene
Concen: 335.85 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:202 Resp: 156200

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	17.6	0.0	48.0

#18
Benzo[a]anthracene
Concen: 268.42 ug/kg
RT: 20.92 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:228 Resp: 117997

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.0	50.1
226	25.0	0.0	55.2

#19
Chrysene
Concen: 329.95 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:228 Resp: 140143

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: 333.82 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:252 Resp: 153263

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	11.6	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 171.02 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:252 Resp: 73658

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.1	42.1
125	11.1	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 177.83 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:252 Resp: 68227

Ion	Ratio	Lower	Upper
252	100		
253	28.7	2.1	42.1
125	15.4	0.0	34.4

#24
Benzo[e]pyrene
Concen: 272.53 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:252 Resp: 112052

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	16.5	0.0	36.1

#25
Benzo[a]pyrene
Concen: 361.42 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:252 Resp: 151854

Ion	Ratio	Lower	Upper
252	100		
253	22.2	1.9	41.9
125	12.2	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 56.22 ug/kg
RT: 29.47 min Scan# 2873
Delta R.T. -0.03 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:278 Resp: 21514

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: 212.71 ug/kg
RT: 29.48 min Scan# 2874
Delta R.T. -0.02 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:276 Resp: 97100

Ion	Ratio	Lower	Upper
276	100		
138	19.6	6.7	46.7
277	24.3	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 257.22 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051327.D
Acq: 14 May 2016 1:15 am

Tgt Ion:276 Resp: 91559

Ion	Ratio	Lower	Upper
276	100		
138	19.0	0.0	39.1
277	24.1	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051328.D Vial: 28
Acq On : 14 May 2016 1:54 am Operator:
Sample : 1605071-22A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1297312	4000.00 ug/kg	112
5) Acenaphthene-d10	13.27	164	861005	4000.00 ug/kg	75
11) Phenanthrene-d10	15.36	188	1581667	4000.00 ug/kg	77
17) Chrysene-d12	21.09	240	1790894	4000.00 ug/kg	79
20) Perylene-d12	26.25	264	1678082	4000.00 ug/kg	81

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.21	172	17572	69.96 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.75%#	
16) 4-Terphenyl-d14	17.85	244	25184	61.54 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.54%#	

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	2869	6.90 ug/kg	99
14) Fluoranthene	17.34	202	8073	18.76 ug/kg	99
15) Pyrene	17.93	202	7127	15.94 ug/kg	97
18) Benzo[a]anthracene	20.91	228	4392	10.47 ug/kg	98
19) Chrysene	21.17	228	5200	12.83 ug/kg	98
21) Benzo[b]fluoranthene	24.48	252	5756	13.01 ug/kg	98
22) Benzo[k]fluoranthene	24.56	252	2738	6.60 ug/kg	94
23) Benzo(j)fluoranthene	24.66	252	2450	6.63 ug/kg	88
24) Benzo[e]pyrene	25.72	252	4190	10.58 ug/kg	98
25) Benzo[a]pyrene	25.90	252	5380	13.29 ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.48	276	3882	8.83 ug/kg	89
28) Benzo[g,h,i]perylene	30.55	276	3581	10.44 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051328.D Vial: 28
Acq On : 14 May 2016 1:54 am Operator:
Sample : 1605071-22A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 6.90 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:178 Resp: 2869

Ion	Ratio	Lower	Upper
178	100		
179	16.3	0.0	45.9
176	18.7	0.0	48.5

#14
Fluoranthene
Concen: 18.76 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:202 Resp: 8073

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	43.0
203	17.2	0.0	47.9

#15
Pyrene
Concen: 15.94 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.00 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:202 Resp: 7127

Ion	Ratio	Lower	Upper
202	100		
200	18.4	0.0	50.0
203	16.9	0.0	48.0

#18
Benzo[a]anthracene
Concen: 10.47 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:228 Resp: 4392

Ion	Ratio	Lower	Upper
228	100		
229	18.9	0.0	50.1
226	24.9	0.0	55.2

#19
Chrysene
Concen: 12.83 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:228 Resp: 5200

Ion	Ratio	Lower	Upper
228	100		
226	26.7	0.0	58.1
229	19.1	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 13.01 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:252 Resp: 5756

Ion	Ratio	Lower	Upper
252	100		
253	21.0	0.0	52.2
125	11.5	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 6.60 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:252 Resp: 2738

Ion	Ratio	Lower	Upper
252	100		
253	19.4	2.1	42.1
125	9.3	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 6.63 ug/kg
RT: 24.66 min Scan# 2193
Delta R.T. -0.02 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:252 Resp: 2450

Ion	Ratio	Lower	Upper
252	100		
253	31.5	2.1	42.1
125	14.8	0.0	34.4

#24
Benzo[e]pyrene
Concen: 10.58 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:252 Resp: 4190

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.2	42.2
125	17.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 13.29 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:252 Resp: 5380

Ion	Ratio	Lower	Upper
252	100		
253	23.7	1.9	41.9
125	13.1	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 8.83 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:276 Resp: 3882

Ion	Ratio	Lower	Upper
276	100		
138	19.7	6.7	46.7
277	21.3	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 10.44 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051328.D
Acq: 14 May 2016 1:54 am

Tgt Ion:276 Resp: 3581

Ion	Ratio	Lower	Upper
276	100		
138	19.0	0.0	39.1
277	24.4	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051329.D Vial: 29
Acq On : 14 May 2016 2:33 am Operator:
Sample : 1605071-23A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1311261	4000.00 ug/kg	113
5) Acenaphthene-d10	13.27	164	888276	4000.00 ug/kg	77
11) Phenanthrene-d10	15.36	188	1624212	4000.00 ug/kg	80
17) Chrysene-d12	21.09	240	1833303	4000.00 ug/kg	81
20) Perylene-d12	26.25	264	1719530	4000.00 ug/kg	83

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.21	172	18573	71.68 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.79%#		
16) 4-Terphenyl-d14	17.85	244	26143	62.21 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.56%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	4209	9.85 ug/kg	100
14) Fluoranthene	17.34	202	12182	27.56 ug/kg	98
15) Pyrene	17.93	202	10969	23.89 ug/kg	99
18) Benzo[a]anthracene	20.91	228	6710	15.62 ug/kg	99
19) Chrysene	21.17	228	8472	20.42 ug/kg	98
21) Benzo[b]fluoranthene	24.48	252	9696	21.39 ug/kg	100
22) Benzo[k]fluoranthene	24.56	252	4493	10.57 ug/kg	94
23) Benzo(j)fluoranthene	24.67	252	4148	10.95 ug/kg	95
24) Benzo[e]pyrene	25.72	252	7105	17.51 ug/kg	99
25) Benzo[a]pyrene	25.90	252	8673	20.91 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.48	276	6443	14.30 ug/kg	92
28) Benzo[g,h,i]perylene	30.55	276	6043	17.20 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051329.D Vial: 29
Acq On : 14 May 2016 2:33 am Operator:
Sample : 1605071-23A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:55 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 9.85 ug/kg
RT: 15.39 min Scan# 707
Delta R.T. 0.00 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:178 Resp: 4209

Ion	Ratio	Lower	Upper
178	100		
179	15.9	0.0	45.9
176	18.2	0.0	48.5

#14
Fluoranthene
Concen: 27.56 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:202 Resp: 12182

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	43.0
203	17.1	0.0	47.9

#15
Pyrene
Concen: 23.89 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.00 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:202 Resp: 10969

Ion	Ratio	Lower	Upper
202	100		
200	20.2	0.0	50.0
203	17.3	0.0	48.0

#18
Benzo[a]anthracene
Concen: 15.62 ug/kg
RT: 20.91 min Scan# 1663
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:228 Resp: 6710

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	25.7	0.0	55.2

#19
Chrysene
Concen: 20.42 ug/kg
RT: 21.17 min Scan# 1699
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:228 Resp: 8472

Ion	Ratio	Lower	Upper
228	100		
226	29.5	0.0	58.1
229	19.7	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 21.39 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:252 Resp: 9696

Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	52.2
125	10.6	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 10.57 ug/kg
RT: 24.56 min Scan# 2179
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:252 Resp: 4493

Ion	Ratio	Lower	Upper
252	100		
253	18.7	2.1	42.1
125	10.2	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 10.95 ug/kg
RT: 24.67 min Scan# 2194
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:252 Resp: 4148

Ion	Ratio	Lower	Upper
252	100		
253	25.4	2.1	42.1
125	15.0	0.0	34.4

#24
Benzo[e]pyrene
Concen: 17.51 ug/kg
RT: 25.72 min Scan# 2343
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:252 Resp: 7105

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.2	42.2
125	16.2	0.0	36.1

#25
Benzo[a]pyrene
Concen: 20.91 ug/kg
RT: 25.90 min Scan# 2368
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:252 Resp: 8673

Ion	Ratio	Lower	Upper
252	100		
253	22.2	1.9	41.9
125	12.5	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 14.30 ug/kg
RT: 29.48 min Scan# 2875
Delta R.T. -0.01 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:276 Resp: 6443

Ion	Ratio	Lower	Upper
276	100		
138	20.2	6.7	46.7
277	23.9	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 17.20 ug/kg
RT: 30.55 min Scan# 3026
Delta R.T. -0.02 min
Lab File: 16051329.D
Acq: 14 May 2016 2:33 am

Tgt Ion:276 Resp: 6043

Ion	Ratio	Lower	Upper
276	100		
138	17.5	0.0	39.1
277	23.1	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160513\16051330.D Vial: 30
Acq On : 14 May 2016 3:13 am Operator:
Sample : CCV-160513 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1422553	4000.00 ug/kg	123
5) Acenaphthene-d10	13.27	164	899379	4000.00 ug/kg	78
11) Phenanthrene-d10	15.36	188	1676696	4000.00 ug/kg	82
17) Chrysene-d12	21.09	240	1884380	4000.00 ug/kg	83
20) Perylene-d12	26.25	264	1756079	4000.00 ug/kg	85

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.21	172	267913	1021.18 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.53%#		
16) 4-Terphenyl-d14	17.85	244	400477	923.20 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 23.08%#		

Target Compounds					Qvalue
2) Naphthalene	10.88	128	363952	1022.82 ug/kg	99
3) 2-Methyl naphthalene	11.70	142	251175	799.12 ug/kg	94
4) 1-Methyl naphthalene	11.91	142	226878	788.12 ug/kg	96
6) Dibenzofuran	13.48	168	356116	1056.48 ug/kg	99
8) Acenaphthylene	13.15	152	424681	1096.44 ug/kg	99
9) Acenaphthene	13.32	154	249674	1038.54 ug/kg	98
10) Fluorene	13.96	166	321980	1102.80 ug/kg	98
12) Phenanthrene	15.39	178	434414	985.19 ug/kg	99
13) Anthracene	15.44	178	419138	1004.27 ug/kg	99
14) Fluoranthene	17.34	202	452158	990.92 ug/kg	99
15) Pyrene	17.94	202	455070	960.07 ug/kg	99
18) Benzo[a]anthracene	20.92	228	439954	996.58 ug/kg	99
19) Chrysene	21.18	228	406632	953.32 ug/kg	99
21) Benzo[b]fluoranthene	24.49	252	447022	965.82 ug/kg	99
22) Benzo[k]fluoranthene	24.57	252	423748	975.95 ug/kg	100
23) Benzo(j)fluoranthene	24.68	252	373521	965.74 ug/kg	100
24) Benzo[e]pyrene	25.73	252	394058	950.68 ug/kg	99
25) Benzo[a]pyrene	25.91	252	410388	968.88 ug/kg	99
26) Dibenz[a,h]anthracene	29.49	278	371972	964.26 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.49	276	436066	947.57 ug/kg	97
28) Benzo[g,h,i]perylene	30.57	276	342486	954.40 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160513\16051330.D Vial: 30
Acq On : 14 May 2016 3:13 am Operator:
Sample : CCV-160513 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 8:49 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

GCMS6_160515A
For

DHL Work Order
1605071

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS6_160515A**
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) - $R^2 \geq 0.990$	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 1. Are all sample hold times met?	7 days (Aq) - extraction			X	x
	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 Don Winston Date: 5/17/2016 10:16

Second-Level Review: Janice Whitt Date: 5/23/2016

REVIEWED BY
By Janice Whitt at 11:45:49 AM, 5/23/2016

DHL Analytical, Inc.

Run ID: GCMS6_160515A **Run No.:** 85829

Analytical Run Date: 5/15/2016 **InstrumentID:** GCMS6

Analyst: Don Winston **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-160515	1	PAH_LL_SDOD1	TUNE	R85829	5/15/2016 11:18:00 AM		
ICV-160515	1	PAH_LL_SDOD1	ICV	R85829	5/15/2016 11:55:00 AM		
LCS-75113	1	PAH_LL_SDOD1	LCS	75113	5/15/2016 12:35:00 PM		
MB-75113	1	PAH_LL_SDOD1	MBLK	75113	5/15/2016 1:15:00 PM		
1605071-50A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 1:55:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605071-51A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 2:35:00 PM		
1605071-52A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 3:15:00 PM		
1605071-53A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 3:55:00 PM		
1605071-54A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 4:34:00 PM		
1605074-01A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 5:13:00 PM		
1605074-02A	20	PAH_LL_SDOD1	SAMP	75113	5/15/2016 5:53:00 PM		
1605074-03A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 6:32:00 PM		
1605074-04A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 7:12:00 PM		
1605074-05A	10	PAH_LL_SDOD1	SAMP	75113	5/15/2016 7:52:00 PM		
1605074-06A	100	PAH_LL_SDOD1	SAMP	75113	5/15/2016 8:33:00 PM		
1605071-53AMS	10	PAH_LL_SDOD1	MS	75113	5/15/2016 9:12:00 PM		
1605071-53AMSD	10	PAH_LL_SDOD1	MSD	75113	5/15/2016 9:52:00 PM		
DFTPP2-160515	1	PAH_LL_SDOD1	TUNE	R85829	5/15/2016 10:31:00 PM		
ICV2-160515	1	PAH_LL_SDOD1	ICV	R85829	5/15/2016 11:08:00 PM		Indeno(1,2,3-cd)pyrene low. DNR this analyte from the remainder of run - see rerun on GCMS8_160516A.
SB-160515	1	PAH_LL_SDOD1	SBLK	75113	5/16/2016 12:27:00 AM		
1605074-07A	20	PAH_LL_SDOD1	SAMP	75113	5/16/2016 1:07:00 AM		Used bigger dilution due to extract color.
1605074-08A	10	PAH_LL_SDOD1	SAMP	75113	5/16/2016 1:47:00 AM		
1605074-09A	10	PAH_LL_SDOD1	SAMP	75113	5/16/2016 2:27:00 AM		
1605074-10A	50	PAH_LL_SDOD1	SAMP	75113	5/16/2016 3:08:00 AM		Used bigger dilution due to extract color.
1605074-11A	20	PAH_LL_SDOD1	SAMP	75113	5/16/2016 3:48:00 AM		Used bigger dilution due to extract color.
1605074-12A	10	PAH_LL_SDOD1	SAMP	75113	5/16/2016 4:28:00 AM		
1605074-14A	10	PAH_LL_SDOD1	SAMP	75113	5/16/2016 5:07:00 AM		
1605074-15A	10	PAH_LL_SDOD1	SAMP	75113	5/16/2016 5:46:00 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

DHL Analytical, Inc.

Run ID: **GCMS6_160515A** **Run No.:** 85829

1605074-16A	10	PAH_LL_SDOD1	SAMP	75113	5/16/2016 6:26:00 AM		
CCV1-160515	1	PAH_LL_SDOD1	CCV	R85829	5/16/2016 7:06:00 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

Sequence Name: C:\HPCHEM\1\SEQUENCE\160515.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160515\
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	16051501	DFTPPPAH	DFTPP-160515
2	Sample	2	16051502	PP160421	ICV-160515
3	Sample	3	16051503	PP160421	LCS-75113
4	Sample	4	16051504	PP160421	MB-75113
5	Sample	5	16051505	PP160421	1605071-50A
6	Sample	6	16051506	PP160421	1605071-51A
7	Sample	7	16051507	PP160421	1605071-52A
8	Sample	8	16051508	PP160421	1605071-53A
9	Sample	9	16051509	PP160421	1605071-54A
10	Sample	10	16051510	PP160421	1605074-01A
11	Sample	11	16051511	PP160421	1605074-02A
12	Sample	12	16051512	PP160421	1605074-03A
13	Sample	13	16051513	PP160421	1605074-04A
14	Sample	14	16051514	PP160421	1605074-05A
15	Sample	15	16051515	PP160421	1605074-06A
16	Sample	16	16051516	PP160421	1605071-53AMS
17	Sample	17	16051517	PP160421	1605071-53AMSD
18	Sample	18	16051518	DFTPPPAH	DFTPP2-160515
19	Sample	19	16051519	PP160421	ICV2-160515
20	Sample	20	16051520	PP160421	SBLK
21	Sample	21	16051521	PP160421	SB-160515
22	Sample	22	16051522	PP160421	1605074-07A
23	Sample	23	16051523	PP160421	1605074-08A
24	Sample	24	16051524	PP160421	1605074-09A
25	Sample	25	16051525	PP160421	1605074-10A
26	Sample	26	16051526	PP160421	1605074-11A
27	Sample	27	16051527	PP160421	1605074-12A
28	Sample	28	16051528	PP160421	1605074-14A
29	Sample	29	16051529	PP160421	1605074-15A
30	Sample	30	16051530	PP160421	1605074-16A
31	Sample	31	16051531	PP160421	CCV1-160515

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 1:33:32 PM**
Digestion:
Prep End Date: **5/11/2016 4:20:00 PM**

Prep Batch **75113** 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
1605071-50A	Soil		10.11	10	0.989	1	of	1	
1605071-51A	Soil		10.3	10	0.971	1	of	1	
1605071-52A	Soil		10.05	10	0.995	1	of	1	
1605071-53A	Soil		10.02	10	0.998	3	of	3	
1605071-53AMS	Soil		10.08	10	0.992	31	of		
1605071-53AMSD	Soil		10.02	10	0.998	2	of		
1605071-54A	Soil		10.04	10	0.996	1	of	1	
1605074-01A	Soil		10.07	10	0.993	1	of	1	
1605074-02A	Soil		10	10	1.000	1	of	1	
1605074-03A	Soil		10.01	10	0.999	1	of	1	
1605074-04A	Soil		10.35	10	0.966	1	of	1	
1605074-05A	Soil		10.07	10	0.993	1	of	1	
1605074-06A	Soil		10.15	10	0.985	1	of	1	
1605074-07A	Soil		10.05	10	0.995	1	of	1	
1605074-08A	Soil		10.3	10	0.971	1	of	1	
1605074-09A	Soil		10.05	10	0.995	1	of	1	
1605074-10A	Soil		10.01	10	0.999	1	of	1	
1605074-11A	Soil		10.04	10	0.996	1	of	1	
1605074-12A	Soil		10.85	10	0.922	1	of	1	
1605074-14A	Soil		10.11	10	0.989	1	of	1	
1605074-15A	Soil		10.02	10	0.998	1	of	1	
1605074-16A	Soil		10.06	10	0.994	1	of	1	
LCS-75113	Soil		10	10	1.000		of		
MB-75113	Soil		10	10	1.000		of		

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 11:21:40 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 1:33:32 PM**
Digestion:
Prep End Date: 5/11/16 4:20PM

Prep Batch **75113** 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
1605071-50A	Soil		10	10 .11	1.000	1 of 1	
1605071-51A	Soil		10	10 .30	1.000	1 of 1	
1605071-52A	Soil		10	10 .05	1.000	1 of 1	
1605071-53A	Soil		10	10 .02	1.000	3 of 3	
1605071-53AMS	Soil		10	AL 5/11/16 ~~10 .04~~	1.000	3.1 of .08	
1605071-53AMSD	Soil		10	~~10 .65~~	1.000	~~.012~~ of .02	
1605071-54A	Soil		10	10 .04	1.000	1 of 1	
1605074-01A	Soil		10	10 .07	1.000	1 of 1	
1605074-02A	Soil		10	10 .00	1.000	1 of 1	
1605074-03A	Soil		10	10 .01	1.000	1 of 1	
1605074-04A	Soil		10	10 .35	1.000	1 of 1	
1605074-05A	Soil		10	10 .07	1.000	1 of 1	
1605074-06A	Soil		10	10 .15	1.000	1 of 1	
1605074-07A	Soil		10	10 .05	1.000	1 of 1	
1605074-08A	Soil		10	10 .30	1.000	1 of 1	
1605074-09A	Soil		10	10 .05	1.000	1 of 1	
1605074-10A	Soil		10	10 .01	1.000	1 of 1	
1605074-11A	Soil		10	10 .04	1.000	1 of 1	
1605074-12A	Soil		10	10 .55	1.000	1 of 1	
1605074-14A	Soil		10	10 .11	1.000	1 of 1	
1605074-15A	Soil		10	10 .02	1.000	1 of 1	
1605074-16A	Soil		10	10 .06	1.000	1 of 1	
LCS-75113	Soil		10	10	1.000	of	
MB-75113	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 11:21:38 AM, 5/23/2016

5/11/16 AK 5/11/16 5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-04A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-05A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-09A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-10A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-14A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-15A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED BY
By Janice Whitt at 11:21:45 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-42A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-43A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-44A	Soil		0	0	#Num!	1 of 1	
1605071-45A	Soil		0	0	#Num!	1 of 1	
1605071-46A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-47A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-48A	Soil		0	0	#Num!	1 of 1	
1605071-49A	Soil		0	0	#Num!	1 of 1	
1605071-50A	Soil		0	0	#Num!	1 of 1	
1605071-51A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-52A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-53A	Soil		0	0	#Num!	of 3	
Extra sample was subsampled for MS/MSD							
1605071-54A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 11:21:48 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 9:45:00 AM**
Digestion: **Start: 5/9/2016 11:00:00 AM / Stop: 5/10/2016 10:00:00 AM**
Prep End Date: **5/10/2016 7:00:00 PM**

Prep Batch **75016** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605074-01A	Soil		0	0	#Num!	1	of	1	
1605074-02A	Soil		0	0	#Num!	1	of	1	
1605074-03A	Soil		0	0	#Num!	1	of	1	
Sieved only no subdampling - hard clay									
1605074-04A	Soil		0	0	#Num!	1	of	1	
Sieved only no subdampling - hard clay									
1605074-05A	Soil		0	0	#Num!	1	of	1	
1605074-06A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605074-07A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605074-08A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605074-09A	Soil		0	0	#Num!	1	of	1	
1605074-10A	Soil		0	0	#Num!	1	of	1	
1605074-11A	Soil		0	0	#Num!	1	of	1	
Sieved only no sub sampling - hard clay									
1605074-12A	Soil		0	0	#Num!	1	of	1	
Sieved only no sub sampling - hard clay									
1605074-13A	Soil		0	0	#Num!		of	3	
Extra subsampled for MS/MSD									
1605074-14A	Soil		0	0	#Num!	1	of	1	
1605074-15A	Soil		0	0	#Num!	1	of	1	
1605074-16A	Soil		0	0	#Num!	1	of	1	
1605074-17A	Soil		0	0	#Num!	1	of	1	
1605074-18A	Soil		0	0	#Num!	1	of	1	
1605074-19A	Soil		0	0	#Num!	1	of	1	

REVIEWED BY
By Janice Whitt at 11:22:20 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 9:45:00 AM**
Digestion: **Start: 5/9/2016 11:00:00 AM / Stop: 5/10/2016 10:00:00 AM**
Prep End Date: **5/10/2016 7:00:00 PM**

Prep Batch **75016** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-20A	Soil		0	0	#Num!	1 of 1	
1605074-21A	Soil		0	0	#Num!	1 of 1	
1605074-22A	Soil		0	0	#Num!	1 of 1	
1605074-23A	Soil		0	0	#Num!	1 of 1	
1605074-24A	Soil		0	0	#Num!	1 of 1	
1605074-25A	Soil		0	0	#Num!	1 of 1	
1605074-26A	Soil		0	0	#Num!	of 3	
	Extra subsampled for MS/MSD						
1605074-27A	Soil		0	0	#Num!	1 of 1	
1605074-36A	Soil		0	0	#Num!	1 of 1	
1605074-37A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-38A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-39A	Soil		0	0	#Num!	1 of 1	
1605074-40A	Soil		0	0	#Num!	1 of 1	
1605074-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-42A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-43A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-44A	Soil		0	0	#Num!	of 3	
	Extra subsampled for MS/MSD						
1605074-45A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED BY
By Janice Whitt at 11:22:22 AM, 5/23/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 9:45:00 AM**
Digestion: **Start: 5/9/2016 11:00:00 AM / Stop: 5/10/2016 10:00:00 AM**
Prep End Date: **5/10/2016 7:00:00 PM**

Prep Batch **75016** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-46A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-47A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 11:22:23 AM, 5/23/2016

DFTPP

Data File : C:\HPCHEM\1\DATA\160515\16051501.D Vial: 1
Acq On : 15 May 2016 11:18 am Operator:
Sample : DFTPP-160515 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 1587, 1588, 1589; Background Corrected with Scan 1581

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	30.9	32573	PASS
68	69	0.00	2	1.2	453	PASS
69	198	0.00	100	37.1	39056	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.4	50923	PASS
197	198	0.00	2	0.2	201	PASS
198	198	100	100	100.0	105280	PASS
199	198	5	9	6.8	7176	PASS
275	198	10	60	28.2	29683	PASS
365	198	1	200	3.8	3978	PASS
441	442	0.01	24	14.9	20502	PASS
442	198	50	400	130.8	137747	PASS
443	442	15	24	19.2	26483	PASS

REVIEWED BY
By Janice Whitt at 11:22:27 AM, 5/23/2016

Data File : C:\HPCHEM\1\DATA\160515\16051518.D Vial: 18
Acq On : 15 May 2016 10:31 pm Operator:
Sample : DFTPP2-160515 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 1587, 1588, 1589; Background Corrected with Scan 1580

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	30.9	34869	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.0	40536	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.5	54611	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	112707	PASS
199	198	5	9	6.8	7702	PASS
275	198	10	60	28.2	31835	PASS
365	198	1	200	3.9	4390	PASS
441	442	0.01	24	14.8	23299	PASS
442	198	50	400	139.3	156976	PASS
443	442	15	24	19.1	30024	PASS

REVIEWED BY
By Janice Whitt at 11:22:29 AM, 5/23/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051502.D Vial: 2
Acq On : 15 May 2016 11:55 am Operator:
Sample : ICV-160515 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1559906	4000.00	ug/kg	135
5) Acenaphthene-d10	13.27	164	931601	4000.00	ug/kg	81
11) Phenanthrene-d10	15.36	188	1834180	4000.00	ug/kg	90
17) Chrysene-d12	21.09	240	1997976	4000.00	ug/kg	88
20) Perylene-d12	26.24	264	1670078	4000.00	ug/kg	81

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	560852	2063.81	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 51.60%			
16) 4-Terphenyl-d14	17.85	244	894691	1885.41	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 47.14%			

Target Compounds						Qvalue
2) Naphthalene	10.89	128	769429	1971.93	ug/kg	100
3) 2-Methyl naphthalene	11.70	142	548577	1591.63	ug/kg	99
4) 1-Methyl naphthalene	11.91	142	490713	1554.53	ug/kg	99
6) Dibenzofuran	13.47	168	695741	1992.65	ug/kg	99
8) Acenaphthylene	13.15	152	852664	2125.27	ug/kg	100
9) Acenaphthene	13.32	154	493978	1983.67	ug/kg	99
10) Fluorene	13.97	166	628973	2079.76	ug/kg	100
12) Phenanthrene	15.39	178	929106	1926.17	ug/kg	100
13) Anthracene	15.43	178	868136	1901.48	ug/kg	100
14) Fluoranthene	17.35	202	1008328	2020.05	ug/kg	99
15) Pyrene	17.94	202	1000789	1930.09	ug/kg	99
18) Benzo[a]anthracene	20.91	228	929197	1985.14	ug/kg	99
19) Chrysene	21.18	228	828111	1831.07	ug/kg	100
21) Benzo[b]fluoranthene	24.49	252	899453	2043.40	ug/kg	99
22) Benzo[k]fluoranthene	24.58	252	823642	1994.65	ug/kg	99
23) Benzo(j)fluoranthene	24.68	252	732140	1990.43	ug/kg	100
24) Benzo[e]pyrene	25.73	252	751152	1905.50	ug/kg	98
25) Benzo[a]pyrene	25.91	252	767968	1906.44	ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	706306	1925.24	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.49	276	823765	1882.21	ug/kg	95
28) Benzo[g,h,i]perylene	30.56	276	669956	1963.10	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051502.D Vial: 2
Acq On : 15 May 2016 11:55 am Operator:
Sample : ICV-160515 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160515\16051502.D Vial: 2
Acq On : 15 May 2016 11:55 am Operator:
Sample : ICV-160515 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 12:27 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Multiple Level Calibration

TIC: 16051502.D

(21) Benzo[b]fluoranthene (CP)

24.49min 2043.40ug/kg

response 899453

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.09
125.00	11.00	10.56
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051503.D Vial: 3
Acq On : 15 May 2016 12:35 pm Operator:
Sample : LCS-75113 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1214488	4000.00 ug/kg	105
5) Acenaphthene-d10	13.26	164	645100	4000.00 ug/kg	56
11) Phenanthrene-d10	15.35	188	1150135	4000.00 ug/kg	56
17) Chrysene-d12	21.08	240	1456725	4000.00 ug/kg	64
20) Perylene-d12	26.23	264	1301251	4000.00 ug/kg	63

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.20	172	173362	921.25 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 23.03%#		
16) 4-Terphenyl-d14	17.85	244	243247	817.47 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.44%#		

Target Compounds					Qvalue
2) Naphthalene	10.89	128	240731	792.43 ug/kg	100
3) 2-Methyl naphthalene	11.70	142	167430	623.94 ug/kg	99
4) 1-Methyl naphthalene	11.90	142	150397	611.95 ug/kg	91
6) Dibenzofuran	13.47	168	213677	883.78 ug/kg	99
8) Acenaphthylene	13.16	152	249294	897.33 ug/kg	98
9) Acenaphthene	13.32	154	144697	839.12 ug/kg	97
10) Fluorene	13.97	166	178607	852.87 ug/kg	99
12) Phenanthrene	15.39	178	254739	842.21 ug/kg	99
13) Anthracene	15.43	178	254990	890.68 ug/kg	99
14) Fluoranthene	17.34	202	295477	944.01 ug/kg	99
15) Pyrene	17.93	202	296434	911.71 ug/kg	99
18) Benzo[a]anthracene	20.91	228	293202	859.14 ug/kg	99
19) Chrysene	21.16	228	265779	806.03 ug/kg	100
21) Benzo[b]fluoranthene	24.47	252	296785	865.35 ug/kg	100
22) Benzo[k]fluoranthene	24.56	252	278236	864.80 ug/kg	99
23) Benzo(j)fluoranthene	24.66	252	250094	872.63 ug/kg	100
24) Benzo[e]pyrene	25.72	252	263644	858.37 ug/kg	98
25) Benzo[a]pyrene	25.89	252	253795	808.61 ug/kg	99
26) Dibenz[a,h]anthracene	29.46	278	240483	841.30 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.47	276	280181	821.64 ug/kg	93
28) Benzo[g,h,i]perylene	30.54	276	234060	880.24 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051503.D Vial: 3
Acq On : 15 May 2016 12:35 pm Operator:
Sample : LCS-75113 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051504.D Vial: 4
Acq On : 15 May 2016 1:15 pm Operator:
Sample : MB-75113 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1201488	4000.00 ug/kg	104
5) Acenaphthene-d10	13.27	164	673165	4000.00 ug/kg	58
11) Phenanthrene-d10	15.35	188	1284017	4000.00 ug/kg	63
17) Chrysene-d12	21.08	240	1608727	4000.00 ug/kg	71
20) Perylene-d12	26.23	264	1384091	4000.00 ug/kg	67

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	171746	874.61 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 21.87%#		
16) 4-Terphenyl-d14	17.85	244	272299	819.69 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.49%#		

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.65	252	309	1.01 ug/kg	86

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051504.D Vial: 4
Acq On : 15 May 2016 1:15 pm Operator:
Sample : MB-75113 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051505.D Vial: 5
Acq On : 15 May 2016 1:55 pm Operator:
Sample : 1605071-50A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:36 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1266700	4000.00	ug/kg	109
5) Acenaphthene-d10	13.27	164	774221	4000.00	ug/kg	67
11) Phenanthrene-d10	15.36	188	1501025	4000.00	ug/kg	73
17) Chrysene-d12	21.08	240	1658259	4000.00	ug/kg	73
20) Perylene-d12	26.24	264	1446185	4000.00	ug/kg	70

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	19206	85.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.13%#			
16) 4-Terphenyl-d14	17.85	244	28433	73.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.83%#			

Target Compounds						Qvalue
2) Naphthalene	10.89	128	4451	14.05	ug/kg	99
6) Dibenzofuran	13.48	168	3355	11.56	ug/kg	97
9) Acenaphthene	13.32	154	5181	25.03	ug/kg	95
10) Fluorene	13.97	166	5072	20.18	ug/kg	99
12) Phenanthrene	15.39	178	207748	526.28	ug/kg	99
13) Anthracene	15.43	178	45696	122.30	ug/kg	99
14) Fluoranthene	17.34	202	496101	1214.47	ug/kg	99
15) Pyrene	17.93	202	411716	970.26	ug/kg	99
18) Benzo[a]anthracene	20.91	228	253782	653.25	ug/kg	99
19) Chrysene	21.16	228	263631	702.34	ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	260665	683.86	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	124962	349.48	ug/kg	98
23) Benzo(j)fluoranthene	24.65	252	116564	365.96	ug/kg	92
24) Benzo[e]pyrene	25.72	252	179393	525.53	ug/kg	98
25) Benzo[a]pyrene	25.89	252	250948	719.41	ug/kg	98
26) Dibenz[a,h]anthracene	29.46	278	36021	113.39	ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.47	276	151616	400.06	ug/kg	89
28) Benzo[g,h,i]perylene	30.54	276	146612	496.11	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051505.D Vial: 5
Acq On : 15 May 2016 1:55 pm Operator:
Sample : 1605071-50A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:36 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#2
Naphthalene
Concen: 14.05 ug/kg
RT: 10.89 min Scan# 138
Delta R.T. 0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:128 Resp: 4451

Ion	Ratio	Lower	Upper
128	100		
129	11.7	0.0	41.1
127	12.8	0.0	42.4

#6
Dibenzofuran
Concen: 11.56 ug/kg
RT: 13.48 min Scan# 422
Delta R.T. 0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:168 Resp: 3355

Ion	Ratio	Lower	Upper
168	100		
139	35.4	27.0	40.4

#9
Acenaphthene
Concen: 25.03 ug/kg
RT: 13.32 min Scan# 405
Delta R.T. 0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:154 Resp: 5181

Ion	Ratio	Lower	Upper
154	100		
152	45.3	18.9	78.9
153	100.9	75.2	135.2

#10
Fluorene
Concen: 20.18 ug/kg
RT: 13.97 min Scan# 476
Delta R.T. 0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:166 Resp: 5072

Ion	Ratio	Lower	Upper
166	100		
165	92.3	61.8	121.8
167	14.4	0.0	43.6

#12
Phenanthrene
Concen: 526.28 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:178 Resp: 207748

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	18.7	0.0	48.5

#13
Anthracene
Concen: 122.30 ug/kg
RT: 15.43 min Scan# 715
Delta R.T. 0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:178 Resp: 45696

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	45.9
176	17.4	0.0	48.2

#14
Fluoranthene
Concen: 1214.47 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:202 Resp: 496101

Ion	Ratio	Lower	Upper
202	100		
101	13.0	0.0	43.0
203	17.4	0.0	47.9

#15
Pyrene
Concen: 970.26 ug/kg
RT: 17.93 min Scan# 1213
Delta R.T. -0.00 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:202 Resp: 411716

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	17.6	0.0	48.0

#18
Benzo[a]anthracene
Concen: 653.25 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:228 Resp: 253782

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.0	50.1
226	25.7	0.0	55.2

#19
Chrysene
Concen: 702.34 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:228 Resp: 263631

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.1
229	20.0	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 683.86 ug/kg
RT: 24.48 min Scan# 2167
Delta R.T. -0.02 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:252 Resp: 260665

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	52.2
125	10.3	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 349.48 ug/kg
RT: 24.56 min Scan# 2178
Delta R.T. -0.02 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:252 Resp: 124962

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.1	42.1
125	10.3	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 365.96 ug/kg
RT: 24.65 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:252 Resp: 116564

Ion	Ratio	Lower	Upper
252	100		
253	28.5	2.1	42.1
125	14.3	0.0	34.4

#24
Benzo[e]pyrene
Concen: 525.53 ug/kg
RT: 25.72 min Scan# 2342
Delta R.T. -0.02 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:252 Resp: 179393

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	14.7	0.0	36.1

#25
Benzo[a]pyrene
Concen: 719.41 ug/kg
RT: 25.89 min Scan# 2367
Delta R.T. -0.02 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:252 Resp: 250948

Ion	Ratio	Lower	Upper
252	100		
253	22.6	1.9	41.9
125	10.8	0.0	31.7

#26
Dibenz[a,h]anthracene
Concen: 113.39 ug/kg
RT: 29.46 min Scan# 2871
Delta R.T. -0.04 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:278 Resp: 36021

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: 400.06 ug/kg
RT: 29.47 min Scan# 2873
Delta R.T. -0.03 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:276 Resp: 151616

Ion	Ratio	Lower	Upper
276	100		
138	16.9	6.7	46.7
277	24.5	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 496.11 ug/kg
RT: 30.54 min Scan# 3024
Delta R.T. -0.03 min
Lab File: 16051505.D
Acq: 15 May 2016 1:55 pm

Tgt Ion:276 Resp: 146612

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\160515\16051506.D Vial: 6
Acq On : 15 May 2016 2:35 pm Operator:
Sample : 1605071-51A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:36 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1262684	4000.00 ug/kg	109
5) Acenaphthene-d10	13.27	164	808114	4000.00 ug/kg	70
11) Phenanthrene-d10	15.36	188	1584727	4000.00 ug/kg	78
17) Chrysene-d12	21.08	240	1779183	4000.00 ug/kg	78
20) Perylene-d12	26.23	264	1560696	4000.00 ug/kg	76

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	18522	78.57 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.96%#		
16) 4-Terphenyl-d14	17.85	244	28234	68.86 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.72%#		

Target Compounds					Qvalue
12) Phenanthrene	15.39	178	6988	16.77 ug/kg	98
14) Fluoranthene	17.34	202	28292	65.60 ug/kg	99
15) Pyrene	17.93	202	26537	59.23 ug/kg	99
18) Benzo[a]anthracene	20.91	228	16710	40.09 ug/kg	99
19) Chrysene	21.16	228	19190	47.65 ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	20821	50.62 ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	9768	25.31 ug/kg	98
23) Benzo(j)fluoranthene	24.66	252	9223	26.83 ug/kg	90
24) Benzo[e]pyrene	25.71	252	14656	39.78 ug/kg	99
25) Benzo[a]pyrene	25.89	252	20810	55.28 ug/kg	98
26) Dibenz[a,h]anthracene	29.46	278	2857	8.33 ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.46	276	12603	30.81 ug/kg	90
28) Benzo[g,h,i]perylene	30.53	276	12520	39.26 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051506.D Vial: 6
Acq On : 15 May 2016 2:35 pm Operator:
Sample : 1605071-51A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:36 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 16.77 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:178 Resp: 6988

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.9
176	19.2	0.0	48.5

#14
Fluoranthene
Concen: 65.60 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:202 Resp: 28292

Ion	Ratio	Lower	Upper
202	100		
101	12.1	0.0	43.0
203	17.6	0.0	47.9

#15
Pyrene
Concen: 59.23 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:202 Resp: 26537

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.6	0.0	48.0

#18
Benzo[a]anthracene
Concen: 40.09 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:228 Resp: 16710

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.5	0.0	55.2

#19
Chrysene
Concen: 47.65 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:228 Resp: 19190

Ion	Ratio	Lower	Upper
228	100		
226	29.2	0.0	58.1
229	19.8	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 50.62 ug/kg
RT: 24.47 min Scan# 2166
Delta R.T. -0.03 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:252 Resp: 20821

Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	52.2
125	10.2	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 25.31 ug/kg
RT: 24.55 min Scan# 2177
Delta R.T. -0.03 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:252 Resp: 9768

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.1	42.1
125	10.9	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 26.83 ug/kg
RT: 24.66 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:252 Resp: 9223

Ion	Ratio	Lower	Upper
252	100		
253	28.4	2.1	42.1
125	16.8	0.0	34.4

#24
Benzo[e]pyrene
Concen: 39.78 ug/kg
RT: 25.71 min Scan# 2341
Delta R.T. -0.03 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:252 Resp: 14656

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.2	42.2
125	16.8	0.0	36.1

#25
Benzo[a]pyrene
Concen: 55.28 ug/kg
RT: 25.89 min Scan# 2366
Delta R.T. -0.03 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:252 Resp: 20810

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: 8.33 ug/kg
RT: 29.46 min Scan# 2871
Delta R.T. -0.04 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:278 Resp: 2857

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	23.3	4.2	44.2

#27
Indeno[1,2,3-cd]pyrene
Concen: 30.81 ug/kg
RT: 29.46 min Scan# 2872
Delta R.T. -0.03 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:276 Resp: 12603

Ion	Ratio	Lower	Upper
276	100		
138	17.0	6.7	46.7
277	25.2	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 39.26 ug/kg
RT: 30.53 min Scan# 3023
Delta R.T. -0.04 min
Lab File: 16051506.D
Acq: 15 May 2016 2:35 pm

Tgt Ion:276 Resp: 12520

Ion	Ratio	Lower	Upper
276	100		
138	17.0	0.0	39.1
277	23.7	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051507.D Vial: 7
Acq On : 15 May 2016 3:15 pm Operator:
Sample : 1605071-52A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:37 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1291329	4000.00	ug/kg	111
5) Acenaphthene-d10	13.27	164	804354	4000.00	ug/kg	70
11) Phenanthrene-d10	15.36	188	1604448	4000.00	ug/kg	79
17) Chrysene-d12	21.08	240	1805206	4000.00	ug/kg	79
20) Perylene-d12	26.23	264	1588374	4000.00	ug/kg	77

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	18395	78.40	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.96%#			
16) 4-Terphenyl-d14	17.85	244	28672	69.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.73%#			

Target Compounds						Qvalue
12) Phenanthrene	15.39	178	4039	9.57	ug/kg	99
14) Fluoranthene	17.34	202	8826	20.21	ug/kg	99
15) Pyrene	17.93	202	7699	16.97	ug/kg	99
18) Benzo[a]anthracene	20.91	228	4811	11.38	ug/kg	99
19) Chrysene	21.16	228	5293	12.95	ug/kg	99
21) Benzo[b]fluoranthene	24.46	252	5409	12.92	ug/kg	98
22) Benzo[k]fluoranthene	24.55	252	2556	6.51	ug/kg	96
23) Benzo(j)fluoranthene	24.65	252	2440	6.97	ug/kg	95
24) Benzo[e]pyrene	25.71	252	3885	10.36	ug/kg	97
25) Benzo[a]pyrene	25.88	252	5050	13.18	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.46	276	3167	7.61	ug/kg	87
28) Benzo[g,h,i]perylene	30.53	276	3169	9.76	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051507.D Vial: 7
Acq On : 15 May 2016 3:15 pm Operator:
Sample : 1605071-52A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:37 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 9.57 ug/kg
RT: 15.39 min Scan# 706
Delta R.T. -0.00 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:178 Resp: 4039

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	45.9
176	18.7	0.0	48.5

#14
Fluoranthene
Concen: 20.21 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:202 Resp: 8826

Ion	Ratio	Lower	Upper
202	100		
101	12.0	0.0	43.0
203	18.0	0.0	47.9

#15
Pyrene
Concen: 16.97 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:202 Resp: 7699

Ion	Ratio	Lower	Upper
202	100		
200	19.8	0.0	50.0
203	17.1	0.0	48.0

#18
Benzo[a]anthracene
Concen: 11.38 ug/kg
RT: 20.91 min Scan# 1662
Delta R.T. -0.01 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:228 Resp: 4811

Ion	Ratio	Lower	Upper
228	100		
229	20.1	0.0	50.1
226	25.8	0.0	55.2

#19
Chrysene
Concen: 12.95 ug/kg
RT: 21.16 min Scan# 1698
Delta R.T. -0.01 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:228 Resp: 5293

Ion	Ratio	Lower	Upper
228	100		
226	27.5	0.0	58.1
229	20.3	0.0	50.1

#21
Benzo[b]fluoranthene
Concen: 12.92 ug/kg
RT: 24.46 min Scan# 2165
Delta R.T. -0.04 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:252 Resp: 5409

Ion	Ratio	Lower	Upper
252	100		
253	22.9	0.0	52.2
125	11.8	0.0	41.0

#22
Benzo[k]fluoranthene
Concen: 6.51 ug/kg
RT: 24.55 min Scan# 2177
Delta R.T. -0.03 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:252 Resp: 2556

Ion	Ratio	Lower	Upper
252	100		
253	24.4	2.1	42.1
125	9.9	0.0	31.3

#23
Benzo(j)fluoranthene
Concen: 6.97 ug/kg
RT: 24.65 min Scan# 2191
Delta R.T. -0.04 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:252 Resp: 2440

Ion	Ratio	Lower	Upper
252	100		
253	26.0	2.1	42.1
125	14.6	0.0	34.4

#24
Benzo[e]pyrene
Concen: 10.36 ug/kg
RT: 25.71 min Scan# 2341
Delta R.T. -0.03 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:252 Resp: 3885

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.2	42.2
125	18.1	0.0	36.1

#25
Benzo[a]pyrene
Concen: 13.18 ug/kg
RT: 25.88 min Scan# 2366
Delta R.T. -0.03 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:252 Resp: 5050

Ion	Ratio	Lower	Upper
252	100		
253	22.7	1.9	41.9
125	11.3	0.0	31.7

#27
Indeno[1,2,3-cd]pyrene
Concen: 7.61 ug/kg
RT: 29.46 min Scan# 2872
Delta R.T. -0.04 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:276 Resp: 3167

Ion	Ratio	Lower	Upper
276	100		
138	14.9	6.7	46.7
277	24.0	5.8	45.8

#28
Benzo[g,h,i]perylene
Concen: 9.76 ug/kg
RT: 30.53 min Scan# 3023
Delta R.T. -0.04 min
Lab File: 16051507.D
Acq: 15 May 2016 3:15 pm

Tgt Ion:276 Resp: 3169

Ion	Ratio	Lower	Upper
276	100		
138	17.9	0.0	39.1
277	23.6	4.0	44.0

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051508.D Vial: 8
Acq On : 15 May 2016 3:55 pm Operator:
Sample : 1605071-53A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:37 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1296051	4000.00	ug/kg	112
5) Acenaphthene-d10	13.27	164	835925	4000.00	ug/kg	73
11) Phenanthrene-d10	15.36	188	1604216	4000.00	ug/kg	79
17) Chrysene-d12	21.09	240	1817545	4000.00	ug/kg	80
20) Perylene-d12	26.24	264	1614171	4000.00	ug/kg	78

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	18940	77.67	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.94%#			
16) 4-Terphenyl-d14	17.85	244	28806	69.41	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.74%#			

Target Compounds						Qvalue
14) Fluoranthene	17.34	202	3572	8.18	ug/kg	99
15) Pyrene	17.93	202	3132	6.91	ug/kg	98
23) Benzo(j)fluoranthene	24.66	252	689	1.94	ug/kg	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051508.D Vial: 8
Acq On : 15 May 2016 3:55 pm Operator:
Sample : 1605071-53A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:37 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#14
Fluoranthene
Concen: 8.18 ug/kg
RT: 17.34 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 16051508.D
Acq: 15 May 2016 3:55 pm

Tgt Ion:202 Resp: 3572

Ion	Ratio	Lower	Upper
202	100		
101	13.0	0.0	43.0
203	17.0	0.0	47.9

#15
Pyrene
Concen: 6.91 ug/kg
RT: 17.93 min Scan# 1212
Delta R.T. -0.01 min
Lab File: 16051508.D
Acq: 15 May 2016 3:55 pm

Tgt Ion:202 Resp: 3132

Ion	Ratio	Lower	Upper
202	100		
200	19.9	0.0	50.0
203	16.6	0.0	48.0

#23
Benzo(j)fluoranthene
Concen: 1.94 ug/kg
RT: 24.66 min Scan# 2192
Delta R.T. -0.03 min
Lab File: 16051508.D
Acq: 15 May 2016 3:55 pm

Tgt Ion:252 Resp: 689

Ion	Ratio	Lower	Upper
252	100		
253	14.8	2.1	42.1
125	14.5	0.0	34.4

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051509.D Vial: 9
Acq On : 15 May 2016 4:34 pm Operator:
Sample : 1605071-54A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:37 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1235812	4000.00 ug/kg	107
5) Acenaphthene-d10	13.27	164	793397	4000.00 ug/kg	69
11) Phenanthrene-d10	15.36	188	1546951	4000.00 ug/kg	76
17) Chrysene-d12	21.08	240	1730774	4000.00 ug/kg	76
20) Perylene-d12	26.23	264	1544866	4000.00 ug/kg	75

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	19030	82.22 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.06%#		
16) 4-Terphenyl-d14	17.85	244	29563	73.87 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.85%#		

Target Compounds					Qvalue
9) Acenaphthene	13.27	154	2439	~~11.50 ug/kg#~~	9
23) Benzo(j)fluoranthene	24.65	252	73	0.21 ug/kg#	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051509.D Vial: 9
Acq On : 15 May 2016 4:34 pm Operator:
Sample : 1605071-54A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:37 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

#9
Acenaphthene
Concen: 11.50 ug/kg
RT: 13.27 min Scan# 399
Delta R.T. -0.05 min
Lab File: 16051509.D
Acq: 15 May 2016 4:34 pm

Tgt Ion:154 Resp: 2439

Ion	Ratio	Lower	Upper
154	100		
152	0.6	18.9	78.9#
153	1.3	75.2	135.2#

#23
Benzo(j)fluoranthene
Concen: 0.21 ug/kg
RT: 24.65 min Scan# 2191
Delta R.T. -0.04 min
Lab File: 16051509.D
Acq: 15 May 2016 4:34 pm

Tgt Ion:252 Resp: 73

Ion	Ratio	Lower	Upper
252	100		
253	196.6	2.1	42.1#
125	34.5	0.0	34.4#

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051516.D Vial: 16
Acq On : 15 May 2016 9:12 pm Operator:
Sample : 1605071-53AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1291276	4000.00	ug/kg	111
5) Acenaphthene-d10	13.27	164	801472	4000.00	ug/kg	70
11) Phenanthrene-d10	15.36	188	1527851	4000.00	ug/kg	75
17) Chrysene-d12	21.08	240	1715808	4000.00	ug/kg	76
20) Perylene-d12	26.23	264	1570418	4000.00	ug/kg	76

System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	20216	86.47	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.16%#			
16) 4-Terphenyl-d14	17.85	244	29618	74.93	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.87%#			

Target Compounds						Qvalue
2) Naphthalene	10.88	128	24509	75.88	ug/kg	99
3) 2-Methyl naphthalene	11.70	142	17978	63.01	ug/kg	96
4) 1-Methyl naphthalene	11.91	142	16180	61.92	ug/kg	96
6) Dibenzofuran	13.47	168	27054	90.06	ug/kg	99
8) Acenaphthylene	13.15	152	29394	85.16	ug/kg	99
9) Acenaphthene	13.32	154	17574	82.03	ug/kg	99
10) Fluorene	13.97	166	22840	87.78	ug/kg	100
12) Phenanthrene	15.39	178	36135	89.93	ug/kg	99
13) Anthracene	15.43	178	33941	89.25	ug/kg	99
14) Fluoranthene	17.34	202	39791	95.70	ug/kg	97
15) Pyrene	17.93	202	39919	92.42	ug/kg	99
18) Benzo[a]anthracene	20.91	228	34787	86.54	ug/kg	99
19) Chrysene	21.16	228	32976	84.91	ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	35596	86.00	ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	32458	83.59	ug/kg	100
23) Benzo(j)fluoranthene	24.65	252	29232	84.51	ug/kg	97
24) Benzo[e]pyrene	25.71	252	31498	84.97	ug/kg	99
25) Benzo[a]pyrene	25.88	252	30946	81.70	ug/kg	100
26) Dibenz[a,h]anthracene	29.46	278	25604	74.22	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.46	276	30895	75.07	ug/kg	94
28) Benzo[g,h,i]perylene	30.53	276	25819	80.46	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051516.D Vial: 16
Acq On : 15 May 2016 9:12 pm Operator:
Sample : 1605071-53AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051517.D Vial: 17
Acq On : 15 May 2016 9:52 pm Operator:
Sample : 1605071-53AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1369136	4000.00 ug/kg	118
5) Acenaphthene-d10	13.26	164	830325	4000.00 ug/kg	72
11) Phenanthrene-d10	15.35	188	1573733	4000.00 ug/kg	77
17) Chrysene-d12	21.08	240	1774376	4000.00 ug/kg	78
20) Perylene-d12	26.23	264	1639071	4000.00 ug/kg	80

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.20	172	19997	82.56 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.06%#	
16) 4-Terphenyl-d14	17.85	244	29061	71.38 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	

Target Compounds					Qvalue
2) Naphthalene	10.88	128	26162	76.39 ug/kg	99
3) 2-Methyl naphthalene	11.70	142	18353	60.67 ug/kg	97
4) 1-Methyl naphthalene	11.91	142	16592	59.89 ug/kg	98
6) Dibenzofuran	13.47	168	26719	85.86 ug/kg	99
8) Acenaphthylene	13.15	152	29189	81.63 ug/kg	99
9) Acenaphthene	13.32	154	17418	78.48 ug/kg	99
10) Fluorene	13.97	166	22616	83.90 ug/kg	98
12) Phenanthrene	15.39	178	34302	82.88 ug/kg	99
13) Anthracene	15.43	178	32917	84.03 ug/kg	98
14) Fluoranthene	17.34	202	36337	84.84 ug/kg	98
15) Pyrene	17.93	202	37088	83.36 ug/kg	99
18) Benzo[a]anthracene	20.91	228	32932	79.22 ug/kg	100
19) Chrysene	21.16	228	31193	77.66 ug/kg	99
21) Benzo[b]fluoranthene	24.47	252	33480	77.50 ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	31887	78.68 ug/kg	99
23) Benzo(j)fluoranthene	24.65	252	28664	79.40 ug/kg	99
24) Benzo[e]pyrene	25.71	252	30528	78.91 ug/kg	99
25) Benzo[a]pyrene	25.88	252	30072	76.06 ug/kg	99
26) Dibenz[a,h]anthracene	29.46	278	25793	71.64 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.46	276	30178	70.26 ug/kg	96
28) Benzo[g,h,i]perylene	30.53	276	25381	75.78 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051517.D Vial: 17
Acq On : 15 May 2016 9:52 pm Operator:
Sample : 1605071-53AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051519.D Vial: 19
Acq On : 15 May 2016 11:08 pm Operator:
Sample : ICV2-160515 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1219321	4000.00 ug/kg	105
5) Acenaphthene-d10	13.27	164	788106	4000.00 ug/kg	68
11) Phenanthrene-d10	15.36	188	1509544	4000.00 ug/kg	74
17) Chrysene-d12	21.08	240	1636051	4000.00 ug/kg	72
20) Perylene-d12	26.23	264	1469355	4000.00 ug/kg	71

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	447706	1947.42 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.69%		
16) 4-Terphenyl-d14	17.85	244	669358	1713.90 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 42.85%		

Target Compounds					Qvalue
2) Naphthalene	10.88	128	528759	1733.65 ug/kg	99
3) 2-Methyl naphthalene	11.70	142	388676	1442.68 ug/kg	98
4) 1-Methyl naphthalene	11.90	142	351598	1424.95 ug/kg	93
6) Dibenzofuran	13.48	168	559684	1894.83 ug/kg	99
8) Acenaphthylene	13.15	152	637158	1877.28 ug/kg	99
9) Acenaphthene	13.32	154	370891	1760.57 ug/kg	97
10) Fluorene	13.97	166	475081	1856.92 ug/kg	97
12) Phenanthrene	15.39	178	676456	1703.98 ug/kg	100
13) Anthracene	15.43	178	693152	1844.71 ug/kg	100
14) Fluoranthene	17.34	202	731701	1781.11 ug/kg	99
15) Pyrene	17.93	202	732175	1715.72 ug/kg	100
18) Benzo[a]anthracene	20.91	228	694616	1812.26 ug/kg	100
19) Chrysene	21.17	228	635779	1716.78 ug/kg	100
21) Benzo[b]fluoranthene	24.49	252	683492	1764.89 ug/kg	99
22) Benzo[k]fluoranthene	24.57	252	636370	1751.65 ug/kg	100
23) Benzo(j)fluoranthene	24.67	252	592086	1829.56 ug/kg	99
24) Benzo[e]pyrene	25.72	252	630781	1818.74 ug/kg	99
25) Benzo[a]pyrene	25.90	252	618833	1746.08 ug/kg	99
26) Dibenz[a,h]anthracene	29.48	278	529358	1640.03 ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.48	276	610817	1586.31 ug/kg	97
28) Benzo[g,h,i]perylene	30.55	276	501184	1669.18 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051519.D Vial: 19
Acq On : 15 May 2016 11:08 pm Operator:
Sample : ICV2-160515 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160515\16051519.D Vial: 19
Acq On : 15 May 2016 11:08 pm Operator:
Sample : ICV2-160515 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 23:41 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Multiple Level Calibration

TIC: 16051519.D

(21) Benzo[b]fluoranthene (CP)

24.49min 1764.89ug/kg

response 683492

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	21.95
125.00	11.00	11.42
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051521.D Vial: 21
Acq On : 16 May 2016 12:27 am Operator:
Sample : SB-160515 Inst : GC/MS #6
Misc : SBLK Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1190621	4000.00 ug/kg	103
5) Acenaphthene-d10	13.26	164	783067	4000.00 ug/kg	68
11) Phenanthrene-d10	15.35	188	1437641	4000.00 ug/kg	70
17) Chrysene-d12	21.08	240	1522883	4000.00 ug/kg	67
20) Perylene-d12	26.22	264	1405530	4000.00 ug/kg	68

System Monitoring Compounds					
7) 2-Fluorobiphenyl	12.21	172	42	0.18 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.00%#	
16) 4-Terphenyl-d14	17.85	244	176	0.47 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#	

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.65	252	176	0.57 ug/kg	86

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051521.D Vial: 21
Acq On : 16 May 2016 12:27 am Operator:
Sample : SB-160515 Inst : GC/MS #6
Misc : SBLK Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160515\16051531.D Vial: 31
Acq On : 16 May 2016 7:06 am Operator:
Sample : CCV1-160515 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Naphthalene-d8	10.86	136	1396807	4000.00 ug/kg	120
5) Acenaphthene-d10	13.27	164	874748	4000.00 ug/kg	76
11) Phenanthrene-d10	15.36	188	1592265	4000.00 ug/kg	78
17) Chrysene-d12	21.09	240	1837430	4000.00 ug/kg	81
20) Perylene-d12	26.24	264	1681099	4000.00 ug/kg	82

System Monitoring Compounds

7) 2-Fluorobiphenyl	12.20	172	278249	1090.44 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 27.26%#		
16) 4-Terphenyl-d14	17.85	244	408837	992.45 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 24.81%#		

Target Compounds					Qvalue
2) Naphthalene	10.89	128	355708	1018.07 ug/kg	100
3) 2-Methyl naphthalene	11.70	142	260532	844.16 ug/kg	96
4) 1-Methyl naphthalene	11.91	142	233588	826.39 ug/kg	98
6) Dibenzofuran	13.47	168	328936	1003.32 ug/kg	99
8) Acenaphthylene	13.16	152	410335	1089.23 ug/kg	99
9) Acenaphthene	13.32	154	235207	1005.91 ug/kg	99
10) Fluorene	13.97	166	290148	1021.76 ug/kg	99
12) Phenanthrene	15.39	178	410793	981.02 ug/kg	99
13) Anthracene	15.43	178	393526	992.90 ug/kg	99
14) Fluoranthene	17.34	202	454002	1047.72 ug/kg	99
15) Pyrene	17.93	202	459461	1020.73 ug/kg	99
18) Benzo[a]anthracene	20.92	228	431020	1001.29 ug/kg	99
19) Chrysene	21.17	228	396437	953.17 ug/kg	99
21) Benzo[b]fluoranthene	24.48	252	429235	968.75 ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	401643	966.30 ug/kg	100
23) Benzo(j)fluoranthene	24.66	252	355496	960.13 ug/kg	98
24) Benzo[e]pyrene	25.72	252	372927	939.83 ug/kg	99
25) Benzo[a]pyrene	25.90	252	389591	960.80 ug/kg	99
26) Dibenz[a,h]anthracene	29.47	278	327954	888.07 ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.48	276	383773	871.13 ug/kg	96
28) Benzo[g,h,i]perylene	30.55	276	307951	896.44 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160515\16051531.D Vial: 31
Acq On : 16 May 2016 7:06 am Operator:
Sample : CCV1-160515 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 16 10:28 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri May 13 09:17:45 2016
Response via : Initial Calibration

GCMS6
Calibration Curve
For

DHL Work Order
1605071

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

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

GCMS8
For

DHL Work Order
1605071

GCMS8_160512A
For

DHL Work Order
1605071

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_160512A
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: Sherri Herschmann Date: **VARIANCE APPROVED** By Sherri Herschmann at 12:57:51 PM, 5/16/2016

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	x 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	x Other (describe below)	___ Accept data
x 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.
1605047-24AMSD: Injected 20 minutes past initial DFTPP injection. Following runs (tune and ICV) show that proper instrument conditions still met after this run. Client approved variance.
1605047-45A/-46A: Surrogate 4-Terphenyl-d14 high. Very high levels of hydrocarbons present - did not run less than 1000x.

Analyst: Karyn Lane Date: 5/13/2016

Second-Level Review: Sherri Herschmann Date: **REVIEWED/APPROVED** By Sherri Herschmann at 12:27:53 PM, 5/16/2016 **05/16/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160512A **Run No.:** 85793

Analytical Run Date: 5/12/2016 **InstrumentID:** GCMS8

Analyst: Don Winston **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 658 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160510.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160512	1	PAH_LL_SDOD1	TUNE	R85793	5/12/2016 12:16:00 PM		
ICV-160512	1	PAH_LL_SDOD1	ICV	R85793	5/12/2016 12:53:00 PM		
LCS-75021	1	PAH_LL_SDOD1	LCS	75021	5/12/2016 2:09:00 PM		
MB-75021	1	PAH_LL_SDOD1	MBLK	75021	5/12/2016 2:45:00 PM		
1605047-11A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 3:22:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605047-12A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 3:59:00 PM		
1605047-13A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 4:36:00 PM		
1605047-14A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 5:13:00 PM		
1605047-15A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 5:50:00 PM		
1605047-16A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 6:27:00 PM		
1605047-17A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 7:04:00 PM		
1605047-18A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 7:41:00 PM		
1605047-19A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 8:18:00 PM		
1605047-20A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 8:55:00 PM		
1605047-21A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 9:32:00 PM		
1605047-22A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 10:09:00 PM		
1605047-23A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 10:46:00 PM		
1605047-24A	10	PAH_LL_SDOD1	SAMP	75021	5/12/2016 11:23:00 PM		
1605047-24AMS	10	PAH_LL_SDOD1	MS	75021	5/13/2016		
1605047-24AMSD	10	PAH_LL_SDOD1	MSD	75021	5/13/2016 12:36:00 AM		Injected 20 minutes past initial DFTPP injection. Following runs (tune and ICV) show that proper instrument conditions still met after this run.
DFTPP2-160512	1	PAH_LL_SDOD1	TUNE	R85793	5/13/2016 1:13:00 AM		
ICV2-160512	1	PAH_LL_SDOD1	ICV	R85793	5/13/2016 1:50:00 AM		
SB-160512	1	PAH_LL_SDOD1	SBLK	75021	5/13/2016 3:03:00 AM		
1605047-25A	10	PAH_LL_SDOD1	SAMP	75021	5/13/2016 3:40:00 AM		
1605071-16A	10	PAH_LL_SDOD1	SAMP	75021	5/13/2016 4:17:00 AM		
1605071-17A	10	PAH_LL_SDOD1	SAMP	75021	5/13/2016 4:53:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 12:28:28 PM, 5/16/2016

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
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: **GCMS8_160512A** **Run No.:** 85793

1605071-18A	10	PAH_LL_SDOD1	SAMP	75021	5/13/2016 5:30:00 AM		
1605047-45A	1000	PAH_LL_SDOD1	SAMP	75021	5/13/2016 6:07:00 AM		Surrogate 4-Terphenyl-d14 high. Very high levels of hydrocarbons present - did not run less than 1000x.
1605047-46A	1000	PAH_LL_SDOD1	SAMP	75021	5/13/2016 6:44:00 AM		Surrogate 4-Terphenyl-d14 high. Very high levels of hydrocarbons present - did not run less than 1000x.
CCV1-150512	1	PAH_LL_SDOD1	CCV	R85793	5/13/2016 7:21:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 12:28:41 PM, 5/16/2016

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
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

Sequence Name: C:\msdchem\1\sequence\160512.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160512\
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	16051201	DFTPPPAH	DFTPP-160512
2)	Sample	2	16051202	PAH160510	ICV-160512
3)	Sample	3	16051203	PAH160510	SBLK
4)	Sample	4	16051204	PAH160510	LQV1-74876
5)	Sample	1	16051205	DFTPPPAH	DFTPP-160512
6)	Sample	2	16051206	PAH160510	ICV-160512
7)	Sample	3	16051207	PAH160510	LQV1-74876
8)	Sample	4	16051208	PAH160510	LCS-75021
9)	Sample	5	16051209	PAH160510	MB-75021
10)	Sample	6	16051210	PAH160510	1605047-11A
11)	Sample	7	16051211	PAH160510	1605047-12A
12)	Sample	8	16051212	PAH160510	1605047-13A
13)	Sample	9	16051213	PAH160510	1605047-14A
14)	Sample	10	16051214	PAH160510	1605047-15A
15)	Sample	11	16051215	PAH160510	1605047-16A
16)	Sample	12	16051216	PAH160510	1605047-17A
17)	Sample	13	16051217	PAH160510	1605047-18A
18)	Sample	14	16051218	PAH160510	1605047-19A
19)	Sample	15	16051219	PAH160510	1605047-20A
20)	Sample	16	16051220	PAH160510	1605047-21A
21)	Sample	17	16051221	PAH160510	1605047-22A
22)	Sample	18	16051222	PAH160510	1605047-23A
23)	Sample	19	16051223	PAH160510	1605047-24A
24)	Sample	20	16051224	PAH160510	1605047-24AMS
25)	Sample	21	16051225	PAH160510	1605047-24AMSD
26)	Sample	22	16051226	DFTPPPAH	DFTPP2-160512
27)	Sample	23	16051227	PAH160510	ICV2-160512
28)	Sample	24	16051228	PAH160510	SBLK
29)	Sample	25	16051229	PAH160510	SB-160512
30)	Sample	26	16051230	PAH160510	1605047-25A
31)	Sample	27	16051231	PAH160510	1605071-16A
32)	Sample	28	16051232	PAH160510	1605071-17A
33)	Sample	29	16051233	PAH160510	1605071-18A
34)	Sample	30	16051234	PAH160510	1605047-45A
35)	Sample	31	16051235	PAH160510	1605047-46A
36)	Sample	32	16051236	PAH160510	CCV1-150512
37)	Sample	33	16051237	PAH160510	LCS-75137
38)	Sample	34	16051238	PAH160510	SBLK
39)	Sample	35	16051239	PAH160510	MB-75137
40)	Sample	36	16051240	PAH160510	1605103-01A
41)	Sample	37	16051241	PAH160510	1605103-01AMS
42)	Sample	38	16051242	PAH160510	1605103-01AMSD

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 2:16:02 PM**
Digestion:
Prep End Date: **5/10/2016 11:52:00 AM**

Prep Batch **75021** 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
1605047-11A	Soil		10.08	10	0.992	1 of 1	
1605047-12A	Soil		10.08	10	0.992	1 of 1	
1605047-13A	Soil		10.37	10	0.964	1 of 1	
1605047-14A	Soil		10.63	10	0.941	1 of 1	
1605047-15A	Soil		10.18	10	0.982	1 of 1	
1605047-16A	Soil		10.15	10	0.985	1 of 1	
1605047-17A	Soil		10.24	10	0.977	1 of 1	
1605047-18A	Soil		10.28	10	0.973	1 of 1	
1605047-19A	Soil		10.26	10	0.975	1 of 1	
1605047-20A	Soil		10.04	10	0.996	1 of 1	
1605047-21A	Soil		10.03	10	0.997	1 of 1	
1605047-22A	Soil		10.1	10	0.990	1 of 1	
1605047-23A	Soil		10.16	10	0.984	1 of 1	
1605047-24A	Soil		10.22	10	0.978	2 of 3	
1605047-24AMS	Soil		10.02	10	0.998	2 of	
1605047-24AMSD	Soil		10.03	10	0.997	2 of	
1605047-25A	Soil		10.13	10	0.987	1 of 1	
1605047-45A	Solid		1.07	10	9.346	1 of 1	
talk to JD before prep. PAH warning !!!							
1605047-46A	Solid		1.04	10	9.615	1 of 1	
talk to JD before prep PAH warning !!!							
1605071-16A	Soil		10.04	10	0.996	1 of 1	
1605071-17A	Soil		10.11	10	0.989	1 of 1	
1605071-18A	Soil		10.12	10	0.988	1 of 1	
LCS-75021	Soil		10	10	1.000	of	
MB-75021	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160317	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	05/09/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.25	07/15/2016

REVIEWED BY
By Janice Whitt at 9:17:11 AM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 2:16:02 PM**
Digestion:
Prep End Date: 5/10/16 11:52AM

Prep Batch **75021** 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
1605047-11A	Soil		10.08	10	1.000	1 of 1	Added @ 9:19 AM 5/10/16
1605047-12A	Soil		10.08	10	1.000	1 of 1	
1605047-13A	Soil		10.37	10	1.000	1 of 1	
1605047-14A	Soil		10.63	10	1.000	1 of 1	
1605047-15A	Soil		10.18	10	1.000	1 of 1	
1605047-16A	Soil		10.15	10	1.000	1 of 1	
1605047-17A	Soil		10.24	10	1.000	1 of 1	
1605047-18A	Soil		10.28	10	1.000	1 of 1	
1605047-19A	Soil		10.26	10	1.000	1 of 1	
1605047-20A	Soil		10.04	10	1.000	1 of 1	
1605047-21A	Soil		10.03	10	1.000	1 of 1	
1605047-22A	Soil		10.10	10	1.000	1 of 1	
1605047-23A	Soil		10.16	10	1.000	1 of 1	
1605047-24A	Soil		10.22	10	0.978	2 of 3	
1605047-24AMS	Soil		10.02	10	0.998	2 of 3	
1605047-24AMSD	Soil		10.03	10	0.997	2 of 3	
1605047-25A	Soil		10.13	10	1.000	1 of 1	Added @ 9:19 AM 5/10/16
1605047-45A	Solid		1.07	10	9.346	1 of 1	
talk to JD before prep. PAH warning !!!							
1605047-46A	Solid		1.04	10	9.615	1 of 1	
talk to JD before prep PAH warning !!!							
1605071-16A	Soil		10.04	10	0.996	1 of 1	~~Added @ 9:19AM 5/10/16~~
1605071-17A	Soil		10.11	10	0.989	1 of 1	
1605071-18A	Soil		10.12	10	0.988	1 of 1	5/9/16
LCS-75021	Soil		10	10	1.000	of	
MB-75021	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160317	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	05/09/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.25	07/15/2016

REVIEWED BY
By Janice Whitt at 9:17:05 AM, 5/16/2016

5/10/16 | 5/10/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 2:16:02 PM**
Digestion:
Prep End Date: 5/10/16 11:52AM

Prep Batch **75021** 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
1605047-24A	Soil		10 .22	10	1.000	2 of 3	
1605047-24AMS	Soil		10 .02	10	1.000	3 of 3	
1605047-24AMSD	Soil		10 .03	10	1.000	3 of 3	
1605047-45A	Solid	5/9/16 AK	~~10 .07~~ 1.07	10	1.000	1 of 1	
talk to JD before prep. PAH warning !!!							
1605047-46A	Solid		~~10~~ 1.04	10	1.000	1 of 1	
talk to JD before prep PAH warning !!!							
1605071-16A	Soil		10 .04	10	1.000	1 of 1	
1605071-17A	Soil		10 .11	10	1.000	1 of 1	
1605071-18A	Soil		10 .12	10	1.000	1 of 1	
LCS-75021	Soil		10	10	1.000	of	
MB-75021	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160317	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	05/09/2016
SVPREP160415-A	40 PPM Surrogate Standard	ALL	0.25	07/15/2016

5/9/16 / AK 5/9/16
5/10/16

REVIEWED BY
By Janice Whitt at 9:17:08 AM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/5/2016 2:00:00 PM**
Digestion: **Start: 5/5/2016 5:00:00 PM / Stop: 5/7/2016 9:00:00 AM**
Prep End Date: **5/7/2016 3:30:00 PM**

Prep Batch **74972** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605047-01A	Soil		0	0	#Num!	1	of	1	
1605047-02A	Soil		0	0	#Num!	1	of	1	
1605047-03A	Soil		0	0	#Num!		of	3	
1605047-04A	Soil		0	0	#Num!	1	of	1	
1605047-05A	Soil		0	0	#Num!	1	of	1	
1605047-06A	Soil		0	0	#Num!	1	of	1	
1605047-07A	Soil		0	0	#Num!	1	of	1	
1605047-08A	Soil		0	0	#Num!	1	of	1	
1605047-09A	Soil		0	0	#Num!	1	of	1	
1605047-10A	Soil		0	0	#Num!	1	of	1	
1605047-11A	Soil		0	0	#Num!	1	of	1	
1605047-12A	Soil		0	0	#Num!	1	of	1	
1605047-13A	Soil		0	0	#Num!	1	of	1	
1605047-14A	Soil		0	0	#Num!	1	of	1	
1605047-15A	Soil		0	0	#Num!	1	of	1	
1605047-16A	Soil		0	0	#Num!	1	of	1	
1605047-17A	Soil		0	0	#Num!	1	of	1	
1605047-18A	Soil		0	0	#Num!	1	of	1	
1605047-19A	Soil		0	0	#Num!	1	of	1	
1605047-20A	Soil		0	0	#Num!	1	of	1	
1605047-21A	Soil		0	0	#Num!	1	of	1	
1605047-22A	Soil		0	0	#Num!	1	of	1	
1605047-23A	Soil		0	0	#Num!	1	of	1	
1605047-24A	Soil		0	0	#Num!		of	3	
1605047-25A	Soil		0	0	#Num!	1	of	1	
1605047-26A	Soil		0	0	#Num!	1	of	1	
1605047-27A	Soil		0	0	#Num!	1	of	1	

REVIEWED BY
By Janice Whitt at 9:17:20 AM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/5/2016 2:00:00 PM**
Digestion: **Start: 5/5/2016 5:00:00 PM / Stop: 5/7/2016 9:00:00 AM**
Prep End Date: **5/7/2016 3:30:00 PM**

Prep Batch **74972** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-28A	Soil		0	0	#Num!	1 of 1	
1605047-29A	Soil		0	0	#Num!	1 of 1	
1605047-30A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:17:23 AM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/7/2016 3:15:00 PM**
Digestion: **Start: 5/7/2016 3:30:00 PM / Stop: 5/9/2016 9:30:00 AM**
Prep End Date: **5/9/2016 11:00:00 AM**

Prep Batch **74999** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-16A	Soil		0	0	#Num!	1 of 1	
	Sample were sieved thru both sieves						
1605071-17A	Soil		0	0	#Num!	1 of 1	
	Sample were sieved thru both sieves						
1605071-18A	Soil		0	0	#Num!	1 of 1	
	Sample were sieved thru both sieves						

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051205.D
Acq On : 12 May 2016 12:16 pm
Operator :
Sample : DFTPP-160512
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	43.5	58362	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	47.4	63560	PASS
70	69	0.00	2	0.3	202	PASS
127	198	10	80	50.2	67378	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	134192	PASS
199	198	5	9	6.8	9084	PASS
275	198	10	60	29.5	39562	PASS
365	198	1	200	3.2	4310	PASS
441	442	0.01	24	16.1	34169	PASS
442	198	50	400	157.9	211909	PASS
443	442	15	24	19.4	41167	PASS

REVIEWED/APPROVED

By Sherri Herschmann at 12:32:13 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051226.D
Acq On : 13 May 2016 1:13 am
Operator :
Sample : DFTPP2-160512
Misc : TUNE
ALS Vial : 22 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	42.1	59336	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	45.9	64744	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	49.4	69642	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	140901	PASS
199	198	5	9	6.9	9662	PASS
275	198	10	60	29.7	41792	PASS
365	198	1	200	3.3	4657	PASS
441	442	0.01	24	16.1	38887	PASS
442	198	50	400	170.9	240808	PASS
443	442	15	24	19.6	47225	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 12:32:17 PM, 5/16/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051206.D
Acq On : 12 May 2016 12:53 pm
Operator :
Sample : ICV-160512
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 13 08:19:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1477388	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	973224	4000.00	ug/kg	100
11) Phenanthrene-d10	14.981	188	3045520	4000.00	ug/kg	98
16) Chrysene-d12	20.991	240	3290157	4000.00	ug/kg	94
20) Perylene-d12	26.258	264	2827283	4000.00	ug/kg	95

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	638460	2198.84	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 54.97%			
17) 4-Terphenyl-d14	17.588	244	1464588	1926.58	ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.16%#			

Target Compounds						Qvalue
2) Naphthalene	10.305	128	725244	2025.56	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	527006	2179.30	ug/kg	98
4) 1-Methyl naphthalene	11.444	142	482268	2146.43	ug/kg	98
7) Acenaphthylene	12.744	152	930277	2034.08	ug/kg	100
8) Acenaphthene	12.906	153	584009	2017.84	ug/kg	100
9) Dibenzofuran	13.068	168	933819	1998.00	ug/kg	96
10) Fluorene	13.559	166	892758	2031.18	ug/kg	99
12) Phenanthrene	15.019	178	1719022	1950.23	ug/kg	100
13) Anthracene	15.061	178	1780118	1864.04	ug/kg	100
14) Fluoranthene	17.065	202	2086301	1808.61	ug/kg	82
15) Pyrene	17.709	202	2089851	1806.26	ug/kg	94
18) Benzo[a]anthracene	20.815	228	1826498	1974.85	ug/kg	100
19) Chrysene	21.086	228	1671302	1974.00	ug/kg	100
21) Benzo[b]fluoranthene	24.478	252	1615765	2006.72	ug/kg	100
22) Benzo[k]fluoranthene	24.558	252	1385313	2145.10	ug/kg	100
23) Benzo(j)fluoranthene	24.668	252	1379869	2113.96	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1522283	1969.79	ug/kg	99
25) Benzo[a]pyrene	25.928	252	1477798	1996.93	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.532	276	1673645	2041.37	ug/kg	98
27) Dibenz[a,h]anthracene	29.517	278	1373839	2055.42	ug/kg	99
28) Benzo[g,h,i]perylene	30.675	276	1427891	1995.91	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051206.D
Acq On : 12 May 2016 12:53 pm
Operator :
Sample : ICV-160512
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 13 08:19:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051206.D
Acq On : 12 May 2016 12:53 pm
Operator :
Sample : ICV-160512
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 13 08:19:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

TIC: 16051206.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.478min (-0.022) 2006.72ug/kg

response 1615765

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.57
125.00	13.80	13.76
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051208.D
Acq On : 12 May 2016 2:09 pm
Operator :
Sample : LCS-75021
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 13 08:19:13 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1427936	4000.00 ug/kg	91
6) Acenaphthene-d10	12.857	164	907032	4000.00 ug/kg	93
11) Phenanthrene-d10	14.979	188	2542743	4000.00 ug/kg	82
16) Chrysene-d12	20.992	240	3428045	4000.00 ug/kg	98
20) Perylene-d12	26.259	264	2959255	4000.00 ug/kg	100

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	231671	825.50 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.64%#		
17) 4-Terphenyl-d14	17.589	244	594323	750.35 ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.76%#		

Target Compounds					Qvalue
2) Naphthalene	10.309	128	269670	779.26 ug/kg	99
3) 2-Methyl naphthalene	11.222	142	199421	845.76 ug/kg	97
4) 1-Methyl naphthalene	11.449	142	187374	862.83 ug/kg	100
7) Acenaphthylene	12.744	152	356946	837.43 ug/kg	99
8) Acenaphthene	12.906	153	222388	824.46 ug/kg	99
9) Dibenzofuran	13.068	168	338702	777.57 ug/kg	95
10) Fluorene	13.560	166	313884	766.25 ug/kg	99
12) Phenanthrene	15.017	178	626721	851.60 ug/kg	98
13) Anthracene	15.061	178	637495	799.54 ug/kg	98
14) Fluoranthene	17.066	202	887401	921.40 ug/kg	87
15) Pyrene	17.696	202	894338	925.82 ug/kg	90
18) Benzo[a]anthracene	20.809	228	832653	864.07 ug/kg	99
19) Chrysene	21.080	228	770655	873.62 ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	720096	854.45 ug/kg	99
22) Benzo[k]fluoranthene	24.552	252	643203	951.56 ug/kg	98
23) Benzo(j)fluoranthene	24.662	252	618116	904.73 ug/kg	99
24) Benzo(e)pyrene	25.738	252	678474	838.77 ug/kg	99
25) Benzo[a]pyrene	25.914	252	638639	824.50 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.518	276	746421	869.82 ug/kg	100
27) Dibenz[a,h]anthracene	29.511	278	605358	865.29 ug/kg	97
28) Benzo[g,h,i]perylene	30.661	276	642840	858.49 ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051208.D
Acq On : 12 May 2016 2:09 pm
Operator :
Sample : LCS-75021
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 13 08:19:13 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051209.D
Acq On : 12 May 2016 2:45 pm
Operator :
Sample : MB-75021
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 13 08:19:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1504945	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	974166	4000.00	ug/kg	100
11) Phenanthrene-d10	14.979	188	2651447	4000.00	ug/kg	85
16) Chrysene-d12	20.991	240	3726105	4000.00	ug/kg	107
20) Perylene-d12	26.258	264	3208815	4000.00	ug/kg	108

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	230887	780.61	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.52%#			
17) 4-Terphenyl-d14	17.588	244	610967	709.66	ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery = 17.74%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.653	252	1118	1.51	ug/kg	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051209.D
Acq On : 12 May 2016 2:45 pm
Operator :
Sample : MB-75021
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 13 08:19:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051224.D
Acq On : 13 May 2016 12:00 am
Operator :
Sample : 1605047-24AMS
Misc : MS
ALS Vial : 20 Sample Multiplier: 10

Quant Time: May 13 08:19:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1502253	4000.00 ug/kg	96
6) Acenaphthene-d10	12.852	164	1042889	4000.00 ug/kg	107
11) Phenanthrene-d10	14.977	188	2964222	4000.00 ug/kg	95
16) Chrysene-d12	20.984	240	3225856	4000.00 ug/kg	92
20) Perylene-d12	26.244	264	2780983	4000.00 ug/kg	94

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	23456	79.44 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.99%#	
17) 4-Terphenyl-d14	17.589	244	55186	74.04 ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.85%#	

Target Compounds					Qvalue
2) Naphthalene	10.305	128	26905	73.90 ug/kg	100
3) 2-Methyl naphthalene	11.227	142	19666	81.88 ug/kg	99
4) 1-Methyl naphthalene	11.445	142	18882	82.65 ug/kg	97
7) Acenaphthylene	12.739	152	38509	78.58 ug/kg	99
8) Acenaphthene	12.906	153	24406	78.69 ug/kg	100
9) Dibenzofuran	13.063	168	39797	79.46 ug/kg	89
10) Fluorene	13.559	166	37529	79.68 ug/kg	100
12) Phenanthrene	15.013	178	73093	85.20 ug/kg	97
13) Anthracene	15.055	178	72588	78.09 ug/kg	97
14) Fluoranthene	17.066	202	91498	81.49 ug/kg	98
15) Pyrene	17.696	202	89944	79.87 ug/kg	99
18) Benzo[a]anthracene	20.808	228	69754	76.92 ug/kg	98
19) Chrysene	21.072	228	67407	81.20 ug/kg	99
21) Benzo[b]fluoranthene	24.464	252	56851	71.78 ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	46640	73.42 ug/kg	97
23) Benzo(j)fluoranthene	24.654	252	48215	75.10 ug/kg	98
24) Benzo(e)pyrene	25.731	252	56988	74.97 ug/kg	98
25) Benzo[a]pyrene	25.907	252	49826	68.45 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.511	276	59872	74.24 ug/kg	97
27) Dibenz[a,h]anthracene	29.496	278	47199	71.79 ug/kg	98
28) Benzo[g,h,i]perylene	30.646	276	53650	76.24 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051224.D
Acq On : 13 May 2016 12:00 am
Operator :
Sample : 1605047-24AMS
Misc : MS
ALS Vial : 20 Sample Multiplier: 10

Quant Time: May 13 08:19:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051225.D
Acq On : 13 May 2016 12:36 am
Operator :
Sample : 1605047-24AMSD
Misc : MSD
ALS Vial : 21 Sample Multiplier: 10

Quant Time: May 13 08:19:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1550173	4000.00 ug/kg	99
6) Acenaphthene-d10	12.856	164	1109201	4000.00 ug/kg	114
11) Phenanthrene-d10	14.976	188	3124789	4000.00 ug/kg	101
16) Chrysene-d12	20.983	240	3385072	4000.00 ug/kg	97
20) Perylene-d12	26.250	264	2923727	4000.00 ug/kg	99

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	24753	81.25 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.03%#	
17) 4-Terphenyl-d14	17.589	244	57118	73.03 ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.83%#	

Target Compounds					Qvalue
2) Naphthalene	10.304	128	27835	74.09 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	20040	80.90 ug/kg	99
4) 1-Methyl naphthalene	11.448	142	19971	84.71 ug/kg	100
7) Acenaphthylene	12.738	152	40819	78.31 ug/kg	99
8) Acenaphthene	12.905	153	25767	78.11 ug/kg	100
9) Dibenzofuran	13.067	168	42195	79.21 ug/kg	100
10) Fluorene	13.558	166	39628	79.11 ug/kg	100
12) Phenanthrene	15.012	178	76713	84.82 ug/kg	96
13) Anthracene	15.056	178	75438	76.99 ug/kg	97
14) Fluoranthene	17.066	202	93940	79.37 ug/kg	99
15) Pyrene	17.697	202	93033	78.37 ug/kg	98
18) Benzo[a]anthracene	20.807	228	71573	75.22 ug/kg	98
19) Chrysene	21.071	228	69327	79.59 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	57972	69.62 ug/kg	98
22) Benzo[k]fluoranthene	24.543	252	48174	72.13 ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	50539	74.87 ug/kg	98
24) Benzo(e)pyrene	25.730	252	58670	73.41 ug/kg	99
25) Benzo[a]pyrene	25.906	252	51345	67.09 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.510	276	62054	73.19 ug/kg	97
27) Dibenz[a,h]anthracene	29.502	278	48175	69.70 ug/kg	97
28) Benzo[g,h,i]perylene	30.645	276	55221	74.64 ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051225.D
Acq On : 13 May 2016 12:36 am
Operator :
Sample : 1605047-24AMSD
Misc : MSD
ALS Vial : 21 Sample Multiplier: 10

Quant Time: May 13 08:19:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051227.D
Acq On : 13 May 2016 1:50 am
Operator :
Sample : ICV2-160512
Misc : ICV
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 13 08:19:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1394038	4000.00	ug/kg	89
6) Acenaphthene-d10	12.856	164	943246	4000.00	ug/kg	97
11) Phenanthrene-d10	14.976	188	2949649	4000.00	ug/kg	95
16) Chrysene-d12	20.983	240	3051240	4000.00	ug/kg	87
20) Perylene-d12	26.250	264	2613093	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	608090	2219.46	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 55.49%			
17) 4-Terphenyl-d14	17.589	244	1363050	1933.40	ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.34%#			

Target Compounds						Qvalue
2) Naphthalene	10.304	128	686372	2031.61	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	500516	2193.76	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	457108	2156.09	ug/kg	99
7) Acenaphthylene	12.738	152	903147	2037.52	ug/kg	100
8) Acenaphthene	12.905	153	567173	2021.95	ug/kg	99
9) Dibenzofuran	13.062	168	912061	2013.47	ug/kg	92
10) Fluorene	13.558	166	872395	2047.93	ug/kg	98
12) Phenanthrene	15.016	178	1666975	1952.65	ug/kg	100
13) Anthracene	15.059	178	1710129	1848.95	ug/kg	100
14) Fluoranthene	17.066	202	1962347	1756.44	ug/kg	91
15) Pyrene	17.696	202	1949237	1739.49	ug/kg	95
18) Benzo[a]anthracene	20.807	228	1680270	1958.99	ug/kg	100
19) Chrysene	21.078	228	1544193	1966.68	ug/kg	100
21) Benzo[b]fluoranthene	24.470	252	1457321	1958.30	ug/kg	100
22) Benzo[k]fluoranthene	24.551	252	1318728	2209.38	ug/kg	99
23) Benzo(j)fluoranthene	24.660	252	1276263	2115.51	ug/kg	99
24) Benzo(e)pyrene	25.737	252	1405817	1968.19	ug/kg	99
25) Benzo[a]pyrene	25.920	252	1363523	1993.54	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.517	276	1564629	2064.83	ug/kg	97
27) Dibenz[a,h]anthracene	29.510	278	1279455	2071.12	ug/kg	98
28) Benzo[g,h,i]perylene	30.660	276	1343792	2032.33	ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051227.D
Acq On : 13 May 2016 1:50 am
Operator :
Sample : ICV2-160512
Misc : ICV
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 13 08:19:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051227.D
Acq On : 13 May 2016 1:50 am
Operator :
Sample : ICV2-160512
Misc : ICV
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 13 02:21:25 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

TIC: 16051227.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.470min (-0.030) 1958.30ug/kg

response 1457321

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.45
125.00	13.80	13.61
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051229.D
Acq On : 13 May 2016 3:03 am
Operator :
Sample : SB-160512
Misc : SBLK
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 13 08:19:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1292677	4000.00	ug/kg	83
6) Acenaphthene-d10	12.856	164	953482	4000.00	ug/kg	98
11) Phenanthrene-d10	14.978	188	2731486	4000.00	ug/kg	88
16) Chrysene-d12	20.982	240	2789784	4000.00	ug/kg	80
20) Perylene-d12	26.249	264	2388643	4000.00	ug/kg	81

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.789	172	12	0.05	ug/kg	0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.602	244	359	0.56	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.652	252	64	0.12	ug/kg	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051229.D
Acq On : 13 May 2016 3:03 am
Operator :
Sample : SB-160512
Misc : SBLK
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 13 08:19:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051231.D
Acq On : 13 May 2016 4:17 am
Operator :
Sample : 1605071-16A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 13 08:21:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.267	136	1532803	4000.00 ug/kg	98
6) Acenaphthene-d10	12.857	164	1130427	4000.00 ug/kg	116
11) Phenanthrene-d10	14.976	188	3166383	4000.00 ug/kg	102
16) Chrysene-d12	20.984	240	3376571	4000.00 ug/kg	97
20) Perylene-d12	26.251	264	3031029	4000.00 ug/kg	102

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	24828	82.42 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.06%#		
17) 4-Terphenyl-d14	17.588	244	60361	77.37 ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.93%#		

Target Compounds					Qvalue
12) Phenanthrene	15.012	178	18391	20.07 ug/kg	96
14) Fluoranthene	17.065	202	55664	46.41 ug/kg	97
15) Pyrene	17.696	202	52588	43.72 ug/kg	100
18) Benzo[a]anthracene	20.808	228	27528	29.00 ug/kg	98
19) Chrysene	21.072	228	30777	35.42 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	30005	34.76 ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	12170	17.58 ug/kg	95
23) Benzo(j)fluoranthene	24.654	252	12892	18.42 ug/kg	92
24) Benzo(e)pyrene	25.731	252	24359	29.40 ug/kg	96
25) Benzo[a]pyrene	25.914	252	31033	39.12 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.510	276	21683	24.67 ug/kg	90
28) Benzo[g,h,i]perylene	30.646	276	24016	31.31 ug/kg	99

CONFIRMED
By Sherri Herschmann at 12:43:15 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051231.D
Acq On : 13 May 2016 4:17 am
Operator :
Sample : 1605071-16A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 13 08:21:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 20.07 ug/kg
RT: 15.012 min Scan# 1216
Delta R.T. -0.017 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:178 Resp: 18391

Ion	Ratio	Lower	Upper
178	100		
179	13.1	0.0	36.4
176	18.5	0.0	39.2

#14
Fluoranthene
Concen: 46.41 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. -0.027 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:202 Resp: 55664

Ion	Ratio	Lower	Upper
202	100		
101	13.0	0.0	32.0

#15
Pyrene
Concen: 43.72 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. -0.026 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:202 Resp: 52588

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	35.9

#18
Benzo[a]anthracene
Concen: 29.00 ug/kg
RT: 20.808 min Scan# 2149
Delta R.T. -0.029 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:228 Resp: 27528

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.7	40.7
226	26.4	5.9	45.9

#19
Chrysene
Concen: 35.42 ug/kg
RT: 21.072 min Scan# 2185
Delta R.T. -0.029 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:228 Resp: 30777

Ion	Ratio	Lower	Upper
228	100		
226	29.2	8.8	48.8
229	19.5	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 34.76 ug/kg
RT: 24.463 min Scan# 2648
Delta R.T. -0.037 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:252 Resp: 30005

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.6	42.6
125	12.4	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 17.58 ug/kg
RT: 24.544 min Scan# 2659
Delta R.T. -0.036 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:252 Resp: 12170

Ion	Ratio	Lower	Upper
252	100		
253	20.3	2.8	42.8
125	12.6	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 18.42 ug/kg
RT: 24.654 min Scan# 2674
Delta R.T. -0.036 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:252 Resp: 12892

Ion	Ratio	Lower	Upper
252	100		
253	28.8	2.3	42.3
125	20.1	0.0	39.2

#24
Benzo(e)pyrene
Concen: 29.40 ug/kg
RT: 25.731 min Scan# 2821
Delta R.T. -0.036 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:252 Resp: 24359

Ion	Ratio	Lower	Upper
252	100		
125	18.6	0.8	40.8
253	24.0	2.4	42.4

#25
Benzo[a]pyrene
Concen: 39.12 ug/kg
RT: 25.914 min Scan# 2846
Delta R.T. -0.036 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:252 Resp: 31033

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.5	42.5
125	14.5	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 24.67 ug/kg
RT: 29.510 min Scan# 3337
Delta R.T. -0.044 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:276 Resp: 21683

Ion	Ratio	Lower	Upper
276	100		
138	26.4	12.0	52.0

#28
Benzo[g,h,i]perylene
Concen: 31.31 ug/kg
RT: 30.646 min Scan# 3492
Delta R.T. -0.051 min
Lab File: 16051231.D
Acq: 13 May 2016 4:17 am

Tgt Ion:276 Resp: 24016

Ion	Ratio	Lower	Upper
276	100		
138	28.7	9.3	49.3
277	23.5	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051232.D
Acq On : 13 May 2016 4:53 am
Operator :
Sample : 1605071-17A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 13 08:21:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1452008	4000.00 ug/kg	93
6) Acenaphthene-d10	12.857	164	1111152	4000.00 ug/kg	114
11) Phenanthrene-d10	14.977	188	3100840	4000.00 ug/kg	100
16) Chrysene-d12	20.983	240	3128938	4000.00 ug/kg	90
20) Perylene-d12	26.243	264	2744009	4000.00 ug/kg	93

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	24743	86.70 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.17%#	
17) 4-Terphenyl-d14	17.588	244	57678	79.78 ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.99%#	

Target Compounds					Qvalue
12) Phenanthrene	15.012	178	21552	24.01 ug/kg	98
14) Fluoranthene	17.065	202	64202	54.66 ug/kg	98
15) Pyrene	17.695	202	55552	47.16 ug/kg	97
18) Benzo[a]anthracene	20.808	228	28396	32.28 ug/kg	97
19) Chrysene	21.071	228	33219	41.26 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	29909	38.27 ug/kg	98
22) Benzo[k]fluoranthene	24.536	252	12149	19.38 ug/kg	94
23) Benzo(j)fluoranthene	24.646	252	12644	19.96 ug/kg	92
24) Benzo(e)pyrene	25.730	252	23269	31.02 ug/kg	96
25) Benzo[a]pyrene	25.906	252	28665	39.91 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.510	276	20493	25.75 ug/kg	90
28) Benzo[g,h,i]perylene	30.645	276	22461	32.35 ug/kg	98

CONFIRMED
By Sherri Herschmann at 12:43:38 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051232.D
Acq On : 13 May 2016 4:53 am
Operator :
Sample : 1605071-17A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 13 08:21:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 24.01 ug/kg
RT: 15.012 min Scan# 1216
Delta R.T. -0.017 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:178 Resp: 21552

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	36.4
176	18.6	0.0	39.2

#14
Fluoranthene
Concen: 54.66 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. -0.027 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:202 Resp: 64202

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	32.0

#15
Pyrene
Concen: 47.16 ug/kg
RT: 17.695 min Scan# 1811
Delta R.T. -0.027 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:202 Resp: 55552

Ion	Ratio	Lower	Upper
202	100		
101	14.8	0.0	35.9

#18
Benzo[a]anthracene
Concen: 32.28 ug/kg
RT: 20.808 min Scan# 2149
Delta R.T. -0.029 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:228 Resp: 28396

Ion	Ratio	Lower	Upper
228	100		
229	19.1	0.7	40.7
226	24.9	5.9	45.9

#19
Chrysene
Concen: 41.26 ug/kg
RT: 21.071 min Scan# 2185
Delta R.T. -0.030 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:228 Resp: 33219

Ion	Ratio	Lower	Upper
228	100		
226	28.6	8.8	48.8
229	19.8	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 38.27 ug/kg
RT: 24.463 min Scan# 2648
Delta R.T. -0.037 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:252 Resp: 29909

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.6	42.6
125	12.4	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 19.38 ug/kg
RT: 24.536 min Scan# 2658
Delta R.T. -0.044 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:252 Resp: 12149

Ion	Ratio	Lower	Upper
252	100		
253	19.9	2.8	42.8
125	12.4	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 19.96 ug/kg
RT: 24.646 min Scan# 2673
Delta R.T. -0.044 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:252 Resp: 12644

Ion	Ratio	Lower	Upper
252	100		
253	28.4	2.3	42.3
125	18.1	0.0	39.2

#24
Benzo(e)pyrene
Concen: 31.02 ug/kg
RT: 25.730 min Scan# 2821
Delta R.T. -0.037 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:252 Resp: 23269

Ion	Ratio	Lower	Upper
252	100		
125	19.7	0.8	40.8
253	25.1	2.4	42.4

#25
Benzo[a]pyrene
Concen: 39.91 ug/kg
RT: 25.906 min Scan# 2845
Delta R.T. -0.044 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:252 Resp: 28665

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.5	42.5
125	14.9	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 25.75 ug/kg
RT: 29.510 min Scan# 3337
Delta R.T. -0.044 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:276 Resp: 20493

Ion	Ratio	Lower	Upper
276	100		
138	26.5	12.0	52.0

#28
Benzo[g,h,i]perylene
Concen: 32.35 ug/kg
RT: 30.645 min Scan# 3492
Delta R.T. -0.052 min
Lab File: 16051232.D
Acq: 13 May 2016 4:53 am

Tgt Ion:276 Resp: 22461

Ion	Ratio	Lower	Upper
276	100		
138	28.0	9.3	49.3
277	23.0	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051233.D
Acq On : 13 May 2016 5:30 am
Operator :
Sample : 1605071-18A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 13 08:21:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.268	136	1483552	4000.00 ug/kg	95
6) Acenaphthene-d10	12.852	164	1131439	4000.00 ug/kg	116
11) Phenanthrene-d10	14.977	188	3128821	4000.00 ug/kg	101
16) Chrysene-d12	20.984	240	3172987	4000.00 ug/kg	91
20) Perylene-d12	26.243	264	2794803	4000.00 ug/kg	94

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	25479	87.38 ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.18%#	
17) 4-Terphenyl-d14	17.588	244	57396	78.29 ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.96%#	

Target Compounds					Qvalue
12) Phenanthrene	15.013	178	16843	18.60 ug/kg	98
14) Fluoranthene	17.065	202	50203	42.36 ug/kg	99
15) Pyrene	17.696	202	43465	36.57 ug/kg	97
18) Benzo[a]anthracene	20.801	228	22602	25.34 ug/kg	98
19) Chrysene	21.072	228	26324	32.24 ug/kg	99
21) Benzo[b]fluoranthene	24.456	252	24581	30.88 ug/kg	98
22) Benzo[k]fluoranthene	24.536	252	9996	15.66 ug/kg	95
23) Benzo(j)fluoranthene	24.646	252	10368	16.07 ug/kg	93
24) Benzo(e)pyrene	25.730	252	18944	24.80 ug/kg	96
25) Benzo[a]pyrene	25.906	252	23731	32.44 ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.510	276	17284	21.33 ug/kg	85
27) Dibenz[a,h]anthracene	29.488	278	3784	5.73 ug/kg	97
28) Benzo[g,h,i]perylene	30.646	276	19442	27.49 ug/kg	97

CONFIRMED
By Sherri Herschmann at 12:44:16 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051233.D
Acq On : 13 May 2016 5:30 am
Operator :
Sample : 1605071-18A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 13 08:21:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 18.60 ug/kg
RT: 15.013 min Scan# 1216
Delta R.T. -0.016 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:178 Resp: 16843

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.4
176	18.2	0.0	39.2

#14
Fluoranthene
Concen: 42.36 ug/kg
RT: 17.065 min Scan# 1763
Delta R.T. -0.027 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:202 Resp: 50203

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	32.0

#15
Pyrene
Concen: 36.57 ug/kg
RT: 17.696 min Scan# 1810
Delta R.T. -0.026 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:202 Resp: 43465

Ion	Ratio	Lower	Upper
202	100		
101	14.8	0.0	35.9

#18
Benzo[a]anthracene
Concen: 25.34 ug/kg
RT: 20.801 min Scan# 2147
Delta R.T. -0.036 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:228 Resp: 22602

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.7	40.7
226	25.2	5.9	45.9

#19
Chrysene
Concen: 32.24 ug/kg
RT: 21.072 min Scan# 2184
Delta R.T. -0.029 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:228 Resp: 26324

Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.8	48.8
229	19.6	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 30.88 ug/kg
RT: 24.456 min Scan# 2646
Delta R.T. -0.044 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:252 Resp: 24581

Ion	Ratio	Lower	Upper
252	100		
253	21.5	2.6	42.6
125	13.4	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 15.66 ug/kg
RT: 24.536 min Scan# 2657
Delta R.T. -0.044 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:252 Resp: 9996

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.8	42.8
125	12.3	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 16.07 ug/kg
RT: 24.646 min Scan# 2672
Delta R.T. -0.044 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:252 Resp: 10368

Ion	Ratio	Lower	Upper
252	100		
253	27.9	2.3	42.3
125	18.6	0.0	39.2

#24
Benzo(e)pyrene
Concen: 24.80 ug/kg
RT: 25.730 min Scan# 2820
Delta R.T. -0.037 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:252 Resp: 18944

Ion	Ratio	Lower	Upper
252	100		
125	19.8	0.8	40.8
253	25.2	2.4	42.4

#25
Benzo[a]pyrene
Concen: 32.44 ug/kg
RT: 25.906 min Scan# 2844
Delta R.T. -0.044 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:252 Resp: 23731

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.5	42.5
125	15.6	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 21.33 ug/kg
RT: 29.510 min Scan# 3336
Delta R.T. -0.044 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:276 Resp: 17284

Ion	Ratio	Lower	Upper
276	100		
138	23.6	12.0	52.0

#27
Dibenz[a,h]anthracene
Concen: 5.73 ug/kg
RT: 29.488 min Scan# 3333
Delta R.T. -0.051 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:278 Resp: 3784

Ion	Ratio	Lower	Upper
278	100		
139	24.1	2.9	42.9
279	22.4	4.4	44.4

#28
Benzo[g,h,i]perylene
Concen: 27.49 ug/kg
RT: 30.646 min Scan# 3491
Delta R.T. -0.051 min
Lab File: 16051233.D
Acq: 13 May 2016 5:30 am

Tgt Ion:276 Resp: 19442

Ion	Ratio	Lower	Upper
276	100		
138	27.4	9.3	49.3
277	23.3	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051236.D
Acq On : 13 May 2016 7:21 am
Operator :
Sample : CCV1-150512
Misc : CCV
ALS Vial : 32 Sample Multiplier: 1

Quant Time: May 13 08:48:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.265	136	1420573	4000.00	ug/kg	91
6) Acenaphthene-d10	12.852	164	1050551	4000.00	ug/kg	107
11) Phenanthrene-d10	14.977	188	3110465	4000.00	ug/kg	100
16) Chrysene-d12	20.984	240	3057474	4000.00	ug/kg	87
20) Perylene-d12	26.243	264	2683783	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	330580	1184.04	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 29.60%#			
17) 4-Terphenyl-d14	17.588	244	706934	1000.70	ug/kg	-0.03
Spiked Amount 4000.000	Range 51 - 135		Recovery = 25.02%#			

Target Compounds						Qvalue
2) Naphthalene	10.302	128	351806	1021.87	ug/kg	100
3) 2-Methyl naphthalene	11.220	142	265295	1132.53	ug/kg	98
4) 1-Methyl naphthalene	11.442	142	244068	1129.72	ug/kg	98
7) Acenaphthylene	12.739	152	507032	1027.04	ug/kg	100
8) Acenaphthene	12.906	153	316502	1013.07	ug/kg	99
9) Dibenzofuran	13.063	168	518041	1026.82	ug/kg	100
10) Fluorene	13.554	166	497942	1049.51	ug/kg	100
12) Phenanthrene	15.012	178	898225	997.76	ug/kg	99
13) Anthracene	15.057	178	938438	962.16	ug/kg	99
14) Fluoranthene	17.065	202	1030012	874.27	ug/kg	99
15) Pyrene	17.696	202	1011100	855.65	ug/kg	99
18) Benzo[a]anthracene	20.801	228	850919	990.05	ug/kg	99
19) Chrysene	21.072	228	773946	983.68	ug/kg	99
21) Benzo[b]fluoranthene	24.456	252	745926	975.95	ug/kg	99
22) Benzo[k]fluoranthene	24.544	252	666415	1087.09	ug/kg	98
23) Benzo(j)fluoranthene	24.654	252	644900	1040.82	ug/kg	99
24) Benzo(e)pyrene	25.730	252	716156	976.23	ug/kg	99
25) Benzo[a]pyrene	25.906	252	693950	987.87	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.510	276	820826	1054.71	ug/kg	95
27) Dibenz[a,h]anthracene	29.495	278	674145	1062.53	ug/kg	97
28) Benzo[g,h,i]perylene	30.645	276	701467	1032.94	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160512\
Data File : 16051236.D
Acq On : 13 May 2016 7:21 am
Operator :
Sample : CCV1-150512
Misc : CCV
ALS Vial : 32 Sample Multiplier: 1

Quant Time: May 13 08:48:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

GCMS8_160513A
For

DHL Work Order
1605071

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS8_160513A**
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) - $R^2 \geq 0.990$	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		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)	X High Levels of target analytes	___ Verify H2O/reagents are clean
X 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
___ 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: **All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.**

RPD out of limits for 9 analytes in batch MS/MSD (75101).

ICV3 functions as CCV for this analytical run. This run did not meet ICV criteria, the rest of the batch 75151 will be rerun

1605071-25AMSD: % RPD out of limits for 9 analytes due to matrix. Recoveries ok for all target analytes. RPD is very low for surrogates and analytes with low results in the sample.

Analyst: Karyn Lane Date: 5/16/2016 9:44

Second-Level Review: Sherri Herschmann Date: ***REVIEWED/APPROVED*** **05/16/2016**

By Sherri Herschmann at 2:57:11 PM, 5/16/2016

DHL Analytical, Inc.

Run ID: GCMS8_160513A **Run No.:** 85824

Analytical Run Date: 5/13/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 658 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160510.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/13/2016 1:38:00 PM		
ICV-160513	1	PAH_LL_SDOD1	ICV	R85824	5/13/2016 2:14:00 PM		
LCS-75101	1	PAH_LL_SDOD1	LCS	75101	5/13/2016 2:52:00 PM		
MB-75101	1	PAH_LL_SDOD1	MBLK	75101	5/13/2016 3:29:00 PM		
1605071-24A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 4:06:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605071-25A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 4:43:00 PM		
1605071-26A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 5:20:00 PM		
1605071-27A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 5:57:00 PM		
1605071-30A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 6:33:00 PM		
1605071-40A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 7:10:00 PM		
1605071-41A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 7:47:00 PM		
1605071-42A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 8:24:00 PM		
1605071-43A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 9:00:00 PM		
1605071-44A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 9:37:00 PM		
1605071-45A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 10:13:00 PM		
1605071-46A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 10:50:00 PM		
1605071-25AMS	10	PAH_LL_SDOD1	MS	75101	5/13/2016 11:27:00 PM		
1605071-25AMSD	10	PAH_LL_SDOD1	MSD	75101	5/14/2016 12:03:00 AM		% RPD out of limits for 9 analytes due to matrix. Recoveries ok for all target analytes. RPD is very low for surrogates and analytes with low results in the sample.
DFTPP2-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/14/2016 12:40:00 AM		
ICV2-160513	1	PAH_LL_SDOD1	ICV	R85824	5/14/2016 1:17:00 AM		
SBLK-160513	1	PAH_LL_SDOD1	SBLK	75101	5/14/2016 1:54:00 AM		
1605071-47A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 2:31:00 AM		
1605071-48A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 3:08:00 AM		
1605071-49A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 3:45:00 AM		
LCS-75151	1	PAH_LL_SDOD1	LCS	75151	5/14/2016 4:22:00 AM		
MB-75151	1	PAH_LL_SDOD1	MBLK	75151	5/14/2016 5:00:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 3:01:23 PM, 5/16/2016

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
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: **GCMS8_160513A** **Run No.:** 85824

1605097-21A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 5:36:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605097-23A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 6:13:00 AM		
1605098-31A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 6:51:00 AM		
1605098-34A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 7:28:00 AM		
1605098-37A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 8:05:00 AM		
1605096-23A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 8:43:00 AM		
1605096-24A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 9:20:00 AM		
1605096-14A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 9:57:00 AM		
1605096-14AMS	10	PAH_LL_SDOD1	MS	75151	5/14/2016 10:33:00 AM		
1605096-14AMSD	10	PAH_LL_SDOD1	MSD	75151	5/14/2016 11:10:00 AM		
DFTPP3-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/14/2016 11:47:00 AM		
ICV3-160513	1	PAH_LL_SDOD1	CCV	R85824	5/14/2016 12:24:00 PM		Does not meet ICV criteria - imported as a CCV to close out the batch. The rest of batch 75151 will be rerun.

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 3:01:48 PM, 5/16/2016

Sequence Name: C:\msdchem\1\sequence\160513.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160513\
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	16051301	DFTPPPAH	DFTPP-160513
2)	Sample	2	16051302	PAH160510	ICV-160513
3)	Sample	1	16051303	PAH160510	SBLK
4)	Sample	2	16051304	DFTPPPAH	DFTPP-160513
5)	Sample	3	16051305	PAH160510	ICV-160513
6)	Sample	4	16051306	PAH160510	LCS-75101
7)	Sample	5	16051307	PAH160510	MB-75101
8)	Sample	6	16051308	PAH160510	1605071-24A
9)	Sample	7	16051309	PAH160510	1605071-25A
10)	Sample	8	16051310	PAH160510	1605071-26A
11)	Sample	9	16051311	PAH160510	1605071-27A
12)	Sample	10	16051312	PAH160510	1605071-30A
13)	Sample	11	16051313	PAH160510	1605071-40A
14)	Sample	12	16051314	PAH160510	1605171-41A
15)	Sample	13	16051315	PAH160510	1605071-42A
16)	Sample	14	16051316	PAH160510	1605071-43A
17)	Sample	15	16051317	PAH160510	1605071-44A
18)	Sample	16	16051318	PAH160510	1605071-45A
19)	Sample	17	16051319	PAH160510	1605071-46A
20)	Sample	18	16051320	PAH160510	1605071-25AMS
21)	Sample	19	16051321	PAH160510	1605071-25AMSD
22)	Sample	20	16051322	DFTPPPAH	DFTPP2-160513
23)	Sample	21	16051323	PAH160510	ICV2-160513
24)	Sample	22	16051324	PAH160510	SBLK-160513
25)	Sample	23	16051325	PAH160510	1605071-47A
26)	Sample	24	16051326	PAH160510	1605071-48A
27)	Sample	25	16051327	PAH160510	1605071-49A
28)	Sample	26	16051328	PAH160510	LCS-75151
29)	Sample	27	16051329	PAH160510	MB-75151
30)	Sample	28	16051330	PAH160510	1605097-21A
31)	Sample	29	16051331	PAH160510	1605097-23A
32)	Sample	30	16051332	PAH160510	1605098-31A
33)	Sample	31	16051333	PAH160510	1605098-34A
34)	Sample	32	16051334	PAH160510	1605098-37A
35)	Sample	33	16051335	PAH160510	1605096-23A
36)	Sample	34	16051336	PAH160510	1605096-24A
37)	Sample	35	16051337	PAH160510	1605096-14A
38)	Sample	36	16051338	PAH160510	1605096-14AMS
39)	Sample	37	16051339	PAH160510	1605096-14AMSD
40)	Sample	20	16051340	DFTPPPAH	DFTPP3-160513
41)	Sample	21	16051341	PAH160510	ICV3-160513
~~42)~~	~~Sample~~	~~22~~	~~16051342~~	~~PAH160510~~	~~SBLK-160513~~
~~43)~~	~~Sample~~	~~38~~	~~16051343~~	~~PAH160510~~	~~1605096-01A~~

Remainder of sequence will be rerun. ICV3 does not meet ICV specifications and if imported as a CCV.

Sequence Name: C:\msdchem\1\sequence\160513.S

	Line	Type	Vial	DataFile	Method	Sample Name
44)		Sample	39	16051344	PAH160510	1605096-02A
45)		Sample	40	16051345	PAH160510	1605096-03A
46)		Sample	41	16051346	PAH160510	1605096-13A
47)		Sample	42	16051347	PAH160510	1605096-15A
48)		Sample	43	16051348	PAH160510	1605096-16A
49)		Sample	44	16051349	PAH160510	1605096-17A
50)		Sample	45	16051350	PAH160510	1605096-18A
51)		Sample	46	16051351	PAH160510	1605096-19A
52)		Sample	47	16051352	PAH160510	1605096-20A
53)		Sample	48	16051353	PAH160510	1605096-21A
54)		Sample	49	16051354	PAH160510	1605096-22A
55)		Sample	50	16051355	PAH160510	CCV-160513

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: 5/11/16 2:30PM

Prep Batch **75101** 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
1605071-24A	Soil		10 .11	10	1.000	1 of 1	
1605071-25A	Soil		10 .39	10	1.000	1 of 1	
1605071-25AMS	Soil		10 .00	10	1.000	of	
1605071-25AMSD	Soil		10 .05	10	1.000	of	
1605071-26A	Soil		10 .13	10	1.000	1 of 1	
1605071-27A	Soil		10 .03	10	1.000	1 of 1	
1605071-30A	Soil		10 .58	10	1.000	1 of 1	
proceed w/testing. V. high moisture see JD							
1605071-32A	Soil		10 .36	10	1.000	1 of 1	V high MOISTURE Content
Extract and hold for PAH							
1605071-35A	Soil		10 .45	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-36A	Soil		10 .07	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-38A	Soil		10 .78	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-39A	Soil		10 .87	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-40A	Soil		10 .31	10	1.000	1 of 1	
1605071-41A	Soil		10 .04	10	1.000	1 of 1	
1605071-42A	Soil		10 .07	10	1.000	1 of 1	
1605071-43A	Soil		10 .29	10	1.000	1 of 1	
1605071-44A	Soil		10 .07	10	1.000	1 of 1	
1605071-45A	Soil		10 .03	10	1.000	1 of 1	
1605071-46A	Soil		10 .05	10	1.000	1 of 1	slow to Filter
1605071-47A	Soil		10 .10	10	1.000	1 of 1	
1605071-48A	Soil		10 .05	10	1.000	1 of 1	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED
By Sherri Herschmann at 3:12:35 PM, 5/16/2016

5/11/16 5/11/16 AR 5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: 5/11/16 2:30PM

Prep Batch **75101** 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
1605071-49A	Soil 10		10 10	10	1.000	1 of 1	
LCS-75101	Soil		10	10	1.000	of	
MB-75101	Soil		10	10	1.000	of	

REVIEWED/APPROVED

By Sherri Herschmann at 3:12:37 PM, 5/16/2016

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

5/11/16 5/11/16 AR 5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-04A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-05A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-09A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-10A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-14A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-15A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED/APPROVED

By Sherri Herschmann at 3:29:53 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-42A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-43A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-44A	Soil		0	0	#Num!	1 of 1	
1605071-45A	Soil		0	0	#Num!	1 of 1	
1605071-46A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-47A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-48A	Soil		0	0	#Num!	1 of 1	
1605071-49A	Soil		0	0	#Num!	1 of 1	
1605071-50A	Soil		0	0	#Num!	1 of 1	
1605071-51A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-52A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-53A	Soil		0	0	#Num!	of 3	
Extra sample was subsampled for MS/MSD							
1605071-54A	Soil		0	0	#Num!	1 of 1	

REVIEWED/APPROVED

By Sherri Herschmann at 3:30:03 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: **5/11/2016 2:30:00 PM**

Prep Batch **75101** 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
1605071-24A	Soil		10.11	10	0.989	1 of 1	
1605071-25A	Soil		10.39	10	0.962	1 of 1	
1605071-25AMS	Soil		10	10	1.000	of	
1605071-25AMSD	Soil		10.05	10	0.995	of	
1605071-26A	Soil		10.13	10	0.987	1 of 1	
1605071-27A	Soil		10.03	10	0.997	1 of 1	
1605071-30A	Soil		10.38	10	0.963	1 of 1	
	proceed w/testing. V. high moisture see JD						
1605071-32A	Soil		10.36	10	0.965	1 of 1	
	Very high moisture content						
	Extract and hold for PAH						
1605071-35A	Soil		10.45	10	0.957	1 of 1	
	Extract and hold for PAH						
1605071-36A	Soil		10.07	10	0.993	1 of 1	
	Extract and hold for PAH						
1605071-38A	Soil		10.78	10	0.928	1 of 1	
	Extract and hold for PAH						
1605071-39A	Soil		10.87	10	0.920	1 of 1	
	Extract and hold for PAH						
1605071-40A	Soil		10.31	10	0.970	1 of 1	
1605071-41A	Soil		10.04	10	0.996	1 of 1	
1605071-42A	Soil		10.07	10	0.993	1 of 1	
1605071-43A	Soil		10.29	10	0.972	1 of 1	
1605071-44A	Soil		10.07	10	0.993	1 of 1	
1605071-45A	Soil		10.03	10	0.997	1 of 1	
1605071-46A	Soil		10.05	10	0.995	1 of 1	
	Slow to filter						

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:06 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: **5/11/2016 2:30:00 PM**

Prep Batch **75101** 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
1605071-47A	Soil		10.1	10	0.990	1 of 1	
Slow to filter							
1605071-48A	Soil		10.05	10	0.995	1 of 1	
1605071-49A	Soil		10.16	10	0.984	1 of 1	
LCS-75101	Soil		10	10	1.000	of	
MB-75101	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:31:35 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051304.D
Acq On : 13 May 2016 1:38 pm
Operator :
Sample : DFTPP-160513
Misc : TUNE
ALS Vial : 2 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	44991	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.4	50042	PASS
70	69	0.00	2	0.4	188	PASS
127	198	10	80	47.1	54384	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	115349	PASS
199	198	5	9	6.8	7870	PASS
275	198	10	60	29.9	34527	PASS
365	198	1	200	3.3	3797	PASS
441	442	0.01	24	16.2	32591	PASS
442	198	50	400	174.4	201200	PASS
443	442	15	24	19.3	38843	PASS

REVIEWED/APPROVED

By Sherri Herschmann at 3:14:07 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051322.D
Acq On : 14 May 2016 12:40 am
Operator :
Sample : DFTPP2-160513
Misc : TUNE
ALS Vial : 20 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	40.6	52696	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	45.2	58605	PASS
70	69	0.00	2	0.3	201	PASS
127	198	10	80	49.3	63933	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	129720	PASS
199	198	5	9	6.7	8696	PASS
275	198	10	60	29.7	38561	PASS
365	198	1	200	3.4	4400	PASS
441	442	0.01	24	16.3	36047	PASS
442	198	50	400	170.8	221517	PASS
443	442	15	24	19.6	43356	PASS

REVIEWED/APPROVED

By Sherri Herschmann at 3:14:17 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051340.D
Acq On : 14 May 2016 11:47 am
Operator :
Sample : DFTPP3-160513
Misc : TUNE
ALS Vial : 20 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	41.8	53781	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	46.1	59410	PASS
70	69	0.00	2	0.3	200	PASS
127	198	10	80	49.6	63829	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	128749	PASS
199	198	5	9	6.7	8671	PASS
275	198	10	60	29.2	37557	PASS
365	198	1	200	2.9	3699	PASS
441	442	0.01	24	16.3	31612	PASS
442	198	50	400	150.8	194201	PASS
443	442	15	24	19.9	38648	PASS

REVIEWED/APPROVED

By Sherri Herschmann at 3:14:19 PM, 5/16/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 16 09:01:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1468119	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	854900	4000.00	ug/kg	87
11) Phenanthrene-d10	14.979	188	2439452	4000.00	ug/kg	79
16) Chrysene-d12	20.992	240	3300716	4000.00	ug/kg	94
20) Perylene-d12	26.259	264	2819826	4000.00	ug/kg	95

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	560276	1941.76	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.54%			
17) 4-Terphenyl-d14	17.589	244	1467513	1924.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.11%#			

Target Compounds						Qvalue
2) Naphthalene	10.306	128	704269	1979.40	ug/kg	100
3) 2-Methyl naphthalene	11.223	142	500668	2081.89	ug/kg	99
4) 1-Methyl naphthalene	11.445	142	455417	2039.72	ug/kg	98
7) Acenaphthylene	12.744	152	802733	1998.13	ug/kg	100
8) Acenaphthene	12.906	153	492723	1938.06	ug/kg	99
9) Dibenzofuran	13.064	168	717380	1747.35	ug/kg	88
10) Fluorene	13.560	166	662703	1716.45	ug/kg	99
12) Phenanthrene	15.017	178	1324260	1875.62	ug/kg	99
13) Anthracene	15.059	178	1378662	1802.32	ug/kg	99
14) Fluoranthene	17.066	202	1886532	2041.74	ug/kg	87
15) Pyrene	17.696	202	1920184	2071.94	ug/kg	91
18) Benzo[a]anthracene	20.816	228	1799412	1939.34	ug/kg	100
19) Chrysene	21.080	228	1648971	1941.39	ug/kg	100
21) Benzo[b]fluoranthene	24.471	252	1628703	2028.14	ug/kg	100
22) Benzo[k]fluoranthene	24.559	252	1482736	2302.03	ug/kg	98
23) Benzo(j)fluoranthene	24.662	252	1399385	2149.53	ug/kg	98
24) Benzo(e)pyrene	25.746	252	1492934	1936.92	ug/kg	98
25) Benzo[a]pyrene	25.922	252	1485885	2013.17	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.526	276	1689151	2065.73	ug/kg	94
27) Dibenz[a,h]anthracene	29.511	278	1426131	2139.30	ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	1444297	2024.19	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 16 09:01:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 13 14:46:12 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

TIC: 16051305.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.471min (+0.002) 2028.14ug/kg

response 1628703

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.54
125.00	13.80	13.61
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051306.D
Acq On : 13 May 2016 2:52 pm
Operator :
Sample : LCS-75101
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 16 09:01:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1631796	4000.00 ug/kg	104
6) Acenaphthene-d10	12.857	164	996350	4000.00 ug/kg	102
11) Phenanthrene-d10	14.979	188	2406531	4000.00 ug/kg	78
16) Chrysene-d12	20.991	240	3501404	4000.00 ug/kg	100
20) Perylene-d12	26.258	264	3189331	4000.00 ug/kg	108

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	223623	697.28 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.43%#		
17) 4-Terphenyl-d14	17.589	244	540141	667.66 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 16.69%#		

Target Compounds					Qvalue
2) Naphthalene	10.305	128	271073	685.45 ug/kg	100
3) 2-Methyl naphthalene	11.222	142	206975	767.94 ug/kg	99
4) 1-Methyl naphthalene	11.449	142	189560	763.84 ug/kg	99
7) Acenaphthylene	12.744	152	351444	750.61 ug/kg	99
8) Acenaphthene	12.906	153	216450	730.51 ug/kg	99
9) Dibenzofuran	13.068	168	311681	651.40 ug/kg	93
10) Fluorene	13.559	166	284422	632.09 ug/kg	100
12) Phenanthrene	15.017	178	536030	769.60 ug/kg	98
13) Anthracene	15.059	178	534240	707.97 ug/kg	98
14) Fluoranthene	17.065	202	785210	861.44 ug/kg	93
15) Pyrene	17.696	202	792472	866.80 ug/kg	95
18) Benzo[a]anthracene	20.808	228	788304	800.91 ug/kg	99
19) Chrysene	21.079	228	730536	810.79 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	747269	822.73 ug/kg	99
22) Benzo[k]fluoranthene	24.551	252	680817	934.55 ug/kg	97
23) Benzo(j)fluoranthene	24.661	252	624762	848.49 ug/kg	98
24) Benzo(e)pyrene	25.738	252	674235	773.40 ug/kg	98
25) Benzo[a]pyrene	25.914	252	652903	782.11 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	785880	849.74 ug/kg	92
27) Dibenz[a,h]anthracene	29.503	278	658520	873.38 ug/kg	97
28) Benzo[g,h,i]perylene	30.660	276	666820	826.28 ug/kg	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051306.D
Acq On : 13 May 2016 2:52 pm
Operator :
Sample : LCS-75101
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 16 09:01:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051307.D
Acq On : 13 May 2016 3:29 pm
Operator :
Sample : MB-75101
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 16 09:01:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.274	136	1652863	4000.00 ug/kg	106
6) Acenaphthene-d10	12.857	164	1013401	4000.00 ug/kg	104
11) Phenanthrene-d10	14.979	188	2425991	4000.00 ug/kg	78
16) Chrysene-d12	20.991	240	3674535	4000.00 ug/kg	105
20) Perylene-d12	26.258	264	3217916	4000.00 ug/kg	108

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	205023	631.13 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 15.78%#		
17) 4-Terphenyl-d14	17.588	244	535570	630.81 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 15.77%#		

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.661	252	374	0.50 ug/kg#	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051307.D
Acq On : 13 May 2016 3:29 pm
Operator :
Sample : MB-75101
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 16 09:01:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051308.D
Acq On : 13 May 2016 4:06 pm
Operator :
Sample : 1605071-24A
Misc : SAMP
ALS Vial : 6 Sample Multiplier: 10

Quant Time: May 16 09:02:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1506861	4000.00 ug/kg	96
6) Acenaphthene-d10	12.861	164	948610	4000.00 ug/kg	97
11) Phenanthrene-d10	14.980	188	2653468	4000.00 ug/kg	85
16) Chrysene-d12	20.990	240	3432468	4000.00 ug/kg	98
20) Perylene-d12	26.256	264	2858778	4000.00 ug/kg	96

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	23089	77.96 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.95%#		
17) 4-Terphenyl-d14	17.589	244	63968	80.66 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.02%#		

Target Compounds					Qvalue
14) Fluoranthene	17.065	202	14678	14.60 ug/kg	91
15) Pyrene	17.696	202	13422	13.31 ug/kg	95
18) Benzo[a]anthracene	20.814	228	8307	8.61 ug/kg	99
19) Chrysene	21.078	228	10155	11.50 ug/kg	98
21) Benzo[b]fluoranthene	24.469	252	10805	13.27 ug/kg	98
22) Benzo[k]fluoranthene	24.550	252	4606	7.05 ug/kg	91
23) Benzo(j)fluoranthene	24.660	252	4525	6.86 ug/kg	89
24) Benzo(e)pyrene	25.736	252	8179	10.47 ug/kg	94
25) Benzo[a]pyrene	25.912	252	9679	12.94 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.516	276	8308	10.02 ug/kg	85
28) Benzo[g,h,i]perylene	30.651	276	8343	11.53 ug/kg	98

CONFIRMED
By Sherri Herschmann at 3:16:56 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051308.D
Acq On : 13 May 2016 4:06 pm
Operator :
Sample : 1605071-24A
Misc : SAMP
ALS Vial : 6 Sample Multiplier: 10

Quant Time: May 16 09:02:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#14
Fluoranthene
Concen: 14.60 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:202 Resp: 14678

Ion	Ratio	Lower	Upper
202	100		
101	15.4	0.0	32.0

#15
Pyrene
Concen: 13.31 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:202 Resp: 13422

Ion	Ratio	Lower	Upper
202	100		
101	18.2	0.0	35.9

#18
Benzo[a]anthracene
Concen: 8.61 ug/kg
RT: 20.814 min Scan# 2150
Delta R.T. 0.008 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:228 Resp: 8307

Ion	Ratio	Lower	Upper
228	100		
229	20.2	0.7	40.7
226	25.9	5.9	45.9

#19
Chrysene
Concen: 11.50 ug/kg
RT: 21.078 min Scan# 2186
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:228 Resp: 10155

Ion	Ratio	Lower	Upper
228	100		
226	27.7	8.8	48.8
229	19.7	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 13.27 ug/kg
RT: 24.469 min Scan# 2649
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:252 Resp: 10805

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.6	42.6
125	12.0	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 7.05 ug/kg
RT: 24.550 min Scan# 2660
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:252 Resp: 4606

Ion	Ratio	Lower	Upper
252	100		
253	18.7	2.8	42.8
125	10.5	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 6.86 ug/kg
RT: 24.660 min Scan# 2675
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:252 Resp: 4525

Ion	Ratio	Lower	Upper
252	100		
253	31.2	2.3	42.3
125	18.5	0.0	39.2

#24
Benzo(e)pyrene
Concen: 10.47 ug/kg
RT: 25.736 min Scan# 2822
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:252 Resp: 8179

Ion	Ratio	Lower	Upper
252	100		
125	20.0	0.8	40.8
253	27.5	2.4	42.4

#25
Benzo[a]pyrene
Concen: 12.94 ug/kg
RT: 25.912 min Scan# 2846
Delta R.T. -0.007 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:252 Resp: 9679

Ion	Ratio	Lower	Upper
252	100		
253	23.1	2.5	42.5
125	14.3	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 10.02 ug/kg
RT: 29.516 min Scan# 3338
Delta R.T. 0.000 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:276 Resp: 8308

Ion	Ratio	Lower	Upper
276	100		
138	23.8	12.0	52.0

#28
Benzo[g,h,i]perylene
Concen: 11.53 ug/kg
RT: 30.651 min Scan# 3493
Delta R.T. -0.014 min
Lab File: 16051308.D
Acq: 13 May 2016 4:06 pm

Tgt Ion:276 Resp: 8343

Ion	Ratio	Lower	Upper
276	100		
138	27.9	9.3	49.3
277	24.1	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051309.D
Acq On : 13 May 2016 4:43 pm
Operator :
Sample : 1605071-25A
Misc : SAMP
ALS Vial : 7 Sample Multiplier: 10

Quant Time: May 16 09:02:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.275	136	1475628	4000.00 ug/kg	94
6) Acenaphthene-d10	12.861	164	935389	4000.00 ug/kg	96
11) Phenanthrene-d10	14.980	188	2688532	4000.00 ug/kg	87
16) Chrysene-d12	20.990	240	3288488	4000.00 ug/kg	94
20) Perylene-d12	26.257	264	2799661	4000.00 ug/kg	94

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	21555	74.32 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.86%#	
17) 4-Terphenyl-d14	17.589	244	58748	77.32 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.93%#	

Target Compounds					Qvalue
12) Phenanthrene	15.018	178	9659	12.41 ug/kg	98
14) Fluoranthene	17.066	202	39273	38.57 ug/kg	90
15) Pyrene	17.696	202	35740	34.99 ug/kg	94
18) Benzo[a]anthracene	20.815	228	20313	21.97 ug/kg	99
19) Chrysene	21.078	228	23864	28.20 ug/kg	98
21) Benzo[b]fluoranthene	24.470	252	23040	28.90 ug/kg	97
22) Benzo[k]fluoranthene	24.550	252	10040	15.70 ug/kg	94
23) Benzo(j)fluoranthene	24.653	252	10083	15.60 ug/kg	89
24) Benzo(e)pyrene	25.737	252	17631	23.04 ug/kg	92
25) Benzo[a]pyrene	25.913	252	22031	30.06 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.517	276	16755	20.64 ug/kg	86
27) Dibenz[a,h]anthracene	29.502	278	4213	6.37 ug/kg	96
28) Benzo[g,h,i]perylene	30.660	276	17726	25.02 ug/kg	94

CONFIRMED
By Sherri Herschmann at 3:17:44 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051309.D
Acq On : 13 May 2016 4:43 pm
Operator :
Sample : 1605071-25A
Misc : SAMP
ALS Vial : 7 Sample Multiplier: 10

Quant Time: May 16 09:02:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 12.41 ug/kg
RT: 15.018 min Scan# 1219
Delta R.T. 0.002 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:178 Resp: 9659

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	36.4
176	18.1	0.0	39.2

#14
Fluoranthene
Concen: 38.57 ug/kg
RT: 17.066 min Scan# 1764
Delta R.T. 0.000 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:202 Resp: 39273

Ion	Ratio	Lower	Upper
202	100		
101	15.7	0.0	32.0

#15
Pyrene
Concen: 34.99 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.000 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:202 Resp: 35740

Ion	Ratio	Lower	Upper
202	100		
101	18.4	0.0	35.9

#18
Benzo[a]anthracene
Concen: 21.97 ug/kg
RT: 20.815 min Scan# 2150
Delta R.T. 0.008 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:228 Resp: 20313

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.7	40.7
226	25.8	5.9	45.9

#19
Chrysene
Concen: 28.20 ug/kg
RT: 21.078 min Scan# 2186
Delta R.T. 0.001 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:228 Resp: 23864

Ion	Ratio	Lower	Upper
228	100		
226	27.7	8.8	48.8
229	19.8	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 28.90 ug/kg
RT: 24.470 min Scan# 2649
Delta R.T. 0.001 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:252 Resp: 23040

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.6	42.6
125	12.4	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 15.70 ug/kg
RT: 24.550 min Scan# 2660
Delta R.T. 0.001 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:252 Resp: 10040

Ion	Ratio	Lower	Upper
252	100		
253	19.5	2.8	42.8
125	12.8	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 15.60 ug/kg
RT: 24.653 min Scan# 2674
Delta R.T. -0.006 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:252 Resp: 10083

Ion	Ratio	Lower	Upper
252	100		
253	30.5	2.3	42.3
125	17.2	0.0	39.2

#24
Benzo(e)pyrene
Concen: 23.04 ug/kg
RT: 25.737 min Scan# 2822
Delta R.T. 0.001 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:252 Resp: 17631

Ion	Ratio	Lower	Upper
252	100		
125	19.1	0.8	40.8
253	28.4	2.4	42.4

#25
Benzo[a]pyrene
Concen: 30.06 ug/kg
RT: 25.913 min Scan# 2846
Delta R.T. -0.006 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:252 Resp: 22031

Ion	Ratio	Lower	Upper
252	100		
253	23.0	2.5	42.5
125	13.8	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 20.64 ug/kg
RT: 29.517 min Scan# 3338
Delta R.T. 0.001 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:276 Resp: 16755

Ion	Ratio	Lower	Upper
276	100		
138	24.1	12.0	52.0

#27
Dibenz[a,h]anthracene
Concen: 6.37 ug/kg
RT: 29.502 min Scan# 3336
Delta R.T. -0.006 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:278 Resp: 4213

Ion	Ratio	Lower	Upper
278	100		
139	21.7	2.9	42.9
279	22.1	4.4	44.4

#28
Benzo[g,h,i]perylene
Concen: 25.02 ug/kg
RT: 30.660 min Scan# 3494
Delta R.T. -0.006 min
Lab File: 16051309.D
Acq: 13 May 2016 4:43 pm

Tgt Ion:276 Resp: 17726

Ion	Ratio	Lower	Upper
276	100		
138	24.7	9.3	49.3
277	22.8	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051310.D
Acq On : 13 May 2016 5:20 pm
Operator :
Sample : 1605071-26A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 16 09:02:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.275	136	1531788	4000.00 ug/kg	98
6) Acenaphthene-d10	12.861	164	966805	4000.00 ug/kg	99
11) Phenanthrene-d10	14.982	188	2793269	4000.00 ug/kg	90
16) Chrysene-d12	20.998	240	3410422	4000.00 ug/kg	98
20) Perylene-d12	26.257	264	2929889	4000.00 ug/kg	99

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	21469	71.31 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	
17) 4-Terphenyl-d14	17.589	244	59953	76.08 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.90%#	

Target Compounds					Qvalue
14) Fluoranthene	17.066	202	5492	5.19 ug/kg	89
23) Benzo(j)fluoranthene	24.660	252	1269	1.88 ug/kg#	66

CONFIRMED
By Sherri Herschmann at 3:18:07 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051310.D
Acq On : 13 May 2016 5:20 pm
Operator :
Sample : 1605071-26A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 16 09:02:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#14
Fluoranthene
Concen: 5.19 ug/kg
RT: 17.066 min Scan# 1764
Delta R.T. 0.001 min
Lab File: 16051310.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:202 Resp: 5492

Ion	Ratio	Lower	Upper
202	100		
101	16.3	0.0	32.0

#23
Benzo(j)fluoranthene
Concen: 1.88 ug/kg
RT: 24.660 min Scan# 2675
Delta R.T. 0.001 min
Lab File: 16051310.D
Acq: 13 May 2016 5:20 pm

Tgt Ion:252 Resp: 1269

Ion	Ratio	Lower	Upper
252	100		
253	52.5	2.3	42.3#
125	18.8	0.0	39.2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051311.D
Acq On : 13 May 2016 5:57 pm
Operator :
Sample : 1605071-27A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 10

Quant Time: May 16 09:02:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1420802	4000.00 ug/kg	91
6) Acenaphthene-d10	12.862	164	888034	4000.00 ug/kg	91
11) Phenanthrene-d10	14.981	188	2526505	4000.00 ug/kg	81
16) Chrysene-d12	20.998	240	3037014	4000.00 ug/kg	87
20) Perylene-d12	26.258	264	2576636	4000.00 ug/kg	87

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	19866	71.14 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#	
17) 4-Terphenyl-d14	17.588	244	54718	77.98 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.95%#	

Target Compounds					Qvalue
14) Fluoranthene	17.079	202	7364	7.70 ug/kg	95
15) Pyrene	17.709	202	6561	6.84 ug/kg	92
19) Chrysene	21.079	228	4464	5.71 ug/kg	99
21) Benzo[b]fluoranthene	24.470	252	4269	5.82 ug/kg	98
23) Benzo(j)fluoranthene	24.661	252	1848	3.11 ug/kg	78
25) Benzo[a]pyrene	25.921	252	3798	5.63 ug/kg	93
28) Benzo[g,h,i]perylene	30.660	276	3303	5.07 ug/kg	96

CONFIRMED
By Sherri Herschmann at 3:18:26 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051311.D
Acq On : 13 May 2016 5:57 pm
Operator :
Sample : 1605071-27A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 10

Quant Time: May 16 09:02:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#14
Fluoranthene
Concen: 7.70 ug/kg
RT: 17.079 min Scan# 1764
Delta R.T. 0.013 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:202 Resp: 7364

Ion	Ratio	Lower	Upper
202	100		
101	10.0	0.0	32.0

#15
Pyrene
Concen: 6.84 ug/kg
RT: 17.709 min Scan# 1811
Delta R.T. 0.013 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:202 Resp: 6561

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	35.9

#19
Chrysene
Concen: 5.71 ug/kg
RT: 21.079 min Scan# 2185
Delta R.T. 0.002 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:228 Resp: 4464

Ion	Ratio	Lower	Upper
228	100		
226	28.5	8.8	48.8
229	19.9	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 5.82 ug/kg
RT: 24.470 min Scan# 2648
Delta R.T. 0.002 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:252 Resp: 4269

Ion	Ratio	Lower	Upper
252	100		
253	23.5	2.6	42.6
125	13.4	0.0	33.8

#23
Benzo(j)fluoranthene
Concen: 3.11 ug/kg
RT: 24.661 min Scan# 2674
Delta R.T. 0.002 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:252 Resp: 1848

Ion	Ratio	Lower	Upper
252	100		
253	40.8	2.3	42.3
125	20.4	0.0	39.2

#25
Benzo[a]pyrene
Concen: 5.63 ug/kg
RT: 25.921 min Scan# 2846
Delta R.T. 0.002 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:252 Resp: 3798

Ion	Ratio	Lower	Upper
252	100		
253	26.2	2.5	42.5
125	13.0	0.0	35.5

#28
Benzo[g,h,i]perylene
Concen: 5.07 ug/kg
RT: 30.660 min Scan# 3493
Delta R.T. -0.006 min
Lab File: 16051311.D
Acq: 13 May 2016 5:57 pm

Tgt Ion:276 Resp: 3303

Ion	Ratio	Lower	Upper
276	100		
138	26.9	9.3	49.3
277	22.9	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051312.D
Acq On : 13 May 2016 6:33 pm
Operator :
Sample : 1605071-30A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 16 09:02:53 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.275	136	1540454	4000.00 ug/kg	99
6) Acenaphthene-d10	12.861	164	986386	4000.00 ug/kg	101
11) Phenanthrene-d10	14.982	188	2823196	4000.00 ug/kg	91
16) Chrysene-d12	20.998	240	3321593	4000.00 ug/kg	95
20) Perylene-d12	26.264	264	2844590	4000.00 ug/kg	96

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	20860	68.90 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.72%#		
17) 4-Terphenyl-d14	17.589	244	57253	74.60 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.87%#		

Target Compounds					Qvalue
12) Phenanthrene	15.020	178	4116	5.04 ug/kg	96
14) Fluoranthene	17.080	202	11949	11.17 ug/kg	94
15) Pyrene	17.710	202	10191	9.50 ug/kg	90
18) Benzo[a]anthracene	20.815	228	4838	5.18 ug/kg	97
19) Chrysene	21.078	228	5569	6.52 ug/kg	98
21) Benzo[b]fluoranthene	24.470	252	4844	5.98 ug/kg	97
23) Benzo(j)fluoranthene	24.660	252	2261	3.44 ug/kg	91
25) Benzo[a]pyrene	25.920	252	4466	6.00 ug/kg	94
28) Benzo[g,h,i]perylene	30.659	276	3622	5.03 ug/kg	97

CONFIRMED
By Sherri Herschmann at 3:18:35 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051312.D
Acq On : 13 May 2016 6:33 pm
Operator :
Sample : 1605071-30A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 16 09:02:53 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 5.04 ug/kg
RT: 15.020 min Scan# 1220
Delta R.T. 0.004 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:178 Resp: 4116

Ion	Ratio	Lower	Upper
178	100		
179	14.5	0.0	36.4
176	17.2	0.0	39.2

#14
Fluoranthene
Concen: 11.17 ug/kg
RT: 17.080 min Scan# 1765
Delta R.T. 0.014 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:202 Resp: 11949

Ion	Ratio	Lower	Upper
202	100		
101	9.5	0.0	32.0

#15
Pyrene
Concen: 9.50 ug/kg
RT: 17.710 min Scan# 1812
Delta R.T. 0.014 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:202 Resp: 10191

Ion	Ratio	Lower	Upper
202	100		
101	11.8	0.0	35.9

#18
Benzo[a]anthracene
Concen: 5.18 ug/kg
RT: 20.815 min Scan# 2150
Delta R.T. 0.008 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:228 Resp: 4838

Ion	Ratio	Lower	Upper
228	100		
229	18.6	0.7	40.7
226	24.9	5.9	45.9

#19
Chrysene
Concen: 6.52 ug/kg
RT: 21.078 min Scan# 2186
Delta R.T. 0.001 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:228 Resp: 5569

Ion	Ratio	Lower	Upper
228	100		
226	27.8	8.8	48.8
229	19.8	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 5.98 ug/kg
RT: 24.470 min Scan# 2649
Delta R.T. 0.001 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:252 Resp: 4844

Ion	Ratio	Lower	Upper
252	100		
253	22.9	2.6	42.6
125	11.0	0.0	33.8

#23
Benzo(j)fluoranthene
Concen: 3.44 ug/kg
RT: 24.660 min Scan# 2675
Delta R.T. 0.001 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:252 Resp: 2261

Ion	Ratio	Lower	Upper
252	100		
253	29.5	2.3	42.3
125	17.9	0.0	39.2

#25
Benzo[a]pyrene
Concen: 6.00 ug/kg
RT: 25.920 min Scan# 2847
Delta R.T. 0.001 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:252 Resp: 4466

Ion	Ratio	Lower	Upper
252	100		
253	25.5	2.5	42.5
125	12.9	0.0	35.5

#28
Benzo[g,h,i]perylene
Concen: 5.03 ug/kg
RT: 30.659 min Scan# 3494
Delta R.T. -0.006 min
Lab File: 16051312.D
Acq: 13 May 2016 6:33 pm

Tgt Ion:276 Resp: 3622

Ion	Ratio	Lower	Upper
276	100		
138	26.8	9.3	49.3
277	23.7	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051313.D
Acq On : 13 May 2016 7:10 pm
Operator :
Sample : 1605071-40A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 16 09:03:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.275	136	1523972	4000.00 ug/kg	98
6) Acenaphthene-d10	12.861	164	977347	4000.00 ug/kg	100
11) Phenanthrene-d10	14.982	188	2851526	4000.00 ug/kg	92
16) Chrysene-d12	20.999	240	3153954	4000.00 ug/kg	90
20) Perylene-d12	26.259	264	2762405	4000.00 ug/kg	93

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.764	172	23441	78.26 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.96%#	
17) 4-Terphenyl-d14	17.588	244	60315	82.77 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.07%#	

Target Compounds					Qvalue
2) Naphthalene	10.312	128	2452	6.64 ug/kg	98
3) 2-Methyl naphthalene	11.229	142	537	5.54 ug/kg	95
8) Acenaphthene	12.910	153	2984	10.27 ug/kg	99
9) Dibenzofuran	13.072	168	2587	5.51 ug/kg	97
10) Fluorene	13.563	166	2588	5.86 ug/kg	97
12) Phenanthrene	15.020	178	252513	305.96 ug/kg	97
13) Anthracene	15.062	178	52749	58.99 ug/kg	97
14) Fluoranthene	17.079	202	627109	580.62 ug/kg	94
15) Pyrene	17.709	202	523748	483.47 ug/kg	92
18) Benzo[a]anthracene	20.816	228	300243	338.65 ug/kg	99
19) Chrysene	21.080	228	332221	409.34 ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	302498	384.52 ug/kg	98
22) Benzo[k]fluoranthene	24.552	252	134885	213.77 ug/kg	96
23) Benzo(j)fluoranthene	24.662	252	130724	204.97 ug/kg	88
24) Benzo(e)pyrene	25.746	252	214036	283.46 ug/kg	97
25) Benzo[a]pyrene	25.922	252	290908	402.33 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	206747	258.10 ug/kg	89
27) Dibenz[a,h]anthracene	29.504	278	45320	69.40 ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	206631	295.61 ug/kg	96

CONFIRMED
By Sherri Herschmann at 3:18:45 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051313.D
Acq On : 13 May 2016 7:10 pm
Operator :
Sample : 1605071-40A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 16 09:03:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#2
Naphthalene
Concen: 6.64 ug/kg
RT: 10.312 min Scan# 51
Delta R.T. 0.008 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:128 Resp: 2452

Ion	Ratio	Lower	Upper
128	100		
129	11.6	0.0	31.3
127	12.2	0.0	33.5

#3
2-Methyl naphthalene
Concen: 5.54 ug/kg
RT: 11.229 min Scan# 274
Delta R.T. 0.008 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:142 Resp: 537

Ion	Ratio	Lower	Upper
142	100		
141	83.9	63.9	103.9
115	36.3	6.7	46.7

#8
Acenaphthene
Concen: 10.27 ug/kg
RT: 12.910 min Scan# 657
Delta R.T. 0.005 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:153 Resp: 2984

Ion	Ratio	Lower	Upper
153	100		
152	47.9	27.2	67.2
154	94.8	74.3	114.3

#9
Dibenzofuran
Concen: 5.51 ug/kg
RT: 13.072 min Scan# 690
Delta R.T. 0.010 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:168 Resp: 2587

Ion	Ratio	Lower	Upper
168	100		
139	26.1	7.8	47.8

#10
Fluorene
Concen: 5.86 ug/kg
RT: 13.563 min Scan# 790
Delta R.T. 0.005 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:166 Resp: 2588

Ion	Ratio	Lower	Upper
166	100		
165	94.2	71.9	111.9
167	15.6	0.0	33.8

#12
Phenanthrene
Concen: 305.96 ug/kg
RT: 15.020 min Scan# 1220
Delta R.T. 0.004 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:178 Resp: 252513

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.3	0.0	39.2

#13
Anthracene
Concen: 58.99 ug/kg
RT: 15.062 min Scan# 1240
Delta R.T. 0.004 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:178 Resp: 52749

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.5
176	17.3	0.0	38.6

#14
Fluoranthene
Concen: 580.62 ug/kg
RT: 17.079 min Scan# 1765
Delta R.T. 0.013 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:202 Resp: 627109

Ion	Ratio	Lower	Upper
202	100		
101	9.8	0.0	32.0

#15
Pyrene
Concen: 483.47 ug/kg
RT: 17.709 min Scan# 1812
Delta R.T. 0.013 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:202 Resp: 523748

Ion	Ratio	Lower	Upper
202	100		
101	12.6	0.0	35.9

#18
Benzo[a]anthracene
Concen: 338.65 ug/kg
RT: 20.816 min Scan# 2150
Delta R.T. 0.010 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:228 Resp: 300243

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.7	40.7
226	25.7	5.9	45.9

#19
Chrysene
Concen: 409.34 ug/kg
RT: 21.080 min Scan# 2186
Delta R.T. 0.003 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:228 Resp: 332221

Ion	Ratio	Lower	Upper
228	100		
226	28.4	8.8	48.8
229	20.0	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 384.52 ug/kg
RT: 24.471 min Scan# 2649
Delta R.T. 0.003 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:252 Resp: 302498

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.6	42.6
125	12.5	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 213.77 ug/kg
RT: 24.552 min Scan# 2660
Delta R.T. 0.003 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:252 Resp: 134885

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.8	42.8
125	12.6	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 204.97 ug/kg
RT: 24.662 min Scan# 2675
Delta R.T. 0.003 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:252 Resp: 130724

Ion	Ratio	Lower	Upper
252	100		
253	31.0	2.3	42.3
125	17.4	0.0	39.2

#24
Benzo(e)pyrene
Concen: 283.46 ug/kg
RT: 25.746 min Scan# 2823
Delta R.T. 0.010 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:252 Resp: 214036

Ion	Ratio	Lower	Upper
252	100		
125	18.9	0.8	40.8
253	23.6	2.4	42.4

#25
Benzo[a]pyrene
Concen: 402.33 ug/kg
RT: 25.922 min Scan# 2847
Delta R.T. 0.003 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:252 Resp: 290908

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.5	42.5
125	13.9	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 258.10 ug/kg
RT: 29.518 min Scan# 3338
Delta R.T. 0.003 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:276 Resp: 206747

Ion	Ratio	Lower	Upper
276	100		
138	25.7	12.0	52.0

#27
Dibenz[a,h]anthracene
Concen: 69.40 ug/kg
RT: 29.504 min Scan# 3336
Delta R.T. -0.005 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:278 Resp: 45320

Ion	Ratio	Lower	Upper
278	100		
139	22.4	2.9	42.9
279	23.0	4.4	44.4

#28
Benzo[g,h,i]perylene
Concen: 295.61 ug/kg
RT: 30.661 min Scan# 3494
Delta R.T. -0.005 min
Lab File: 16051313.D
Acq: 13 May 2016 7:10 pm

Tgt Ion:276 Resp: 206631

Ion	Ratio	Lower	Upper
276	100		
138	26.3	9.3	49.3
277	23.7	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051314.D
Acq On : 13 May 2016 7:47 pm
Operator : 1605071
Sample : ~~1605171~~-41A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 16 09:03:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.276	136	1434450	4000.00 ug/kg	92
6) Acenaphthene-d10	12.862	164	918950	4000.00 ug/kg	94
11) Phenanthrene-d10	14.983	188	2645643	4000.00 ug/kg	85
16) Chrysene-d12	20.991	240	3097372	4000.00 ug/kg	89
20) Perylene-d12	26.258	264	2636448	4000.00 ug/kg	89

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	23575	83.62 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.09%#		
17) 4-Terphenyl-d14	17.588	244	59567	83.23 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.08%#		

Target Compounds					Qvalue
12) Phenanthrene	15.019	178	9836	12.85 ug/kg	97
14) Fluoranthene	17.065	202	42909	42.82 ug/kg	87
15) Pyrene	17.696	202	38117	37.92 ug/kg	91
18) Benzo[a]anthracene	20.815	228	24186	27.78 ug/kg	99
19) Chrysene	21.079	228	28055	35.20 ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	27827	37.06 ug/kg	98
22) Benzo[k]fluoranthene	24.551	252	12034	19.98 ug/kg	95
23) Benzo(j)fluoranthene	24.661	252	11859	19.48 ug/kg	90
24) Benzo(e)pyrene	25.738	252	20786	28.84 ug/kg	94
25) Benzo[a]pyrene	25.914	252	28062	40.66 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	19994	26.15 ug/kg	89
27) Dibenz[a,h]anthracene	29.503	278	4301	6.90 ug/kg	97
28) Benzo[g,h,i]perylene	30.653	276	21467	32.18 ug/kg	99

CONFIRMED
By Sherri Herschmann at 3:46:08 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051314.D
Acq On : 13 May 2016 7:47 pm
Operator : 1605071
Sample : ~~160517~~1-41A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 16 09:03:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 12.85 ug/kg
RT: 15.019 min Scan# 1219
Delta R.T. 0.003 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:178 Resp: 9836

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	36.4
176	17.8	0.0	39.2

#14
Fluoranthene
Concen: 42.82 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. 0.000 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:202 Resp: 42909

Ion	Ratio	Lower	Upper
202	100		
101	17.0	0.0	32.0

#15
Pyrene
Concen: 37.92 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.000 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:202 Resp: 38117

Ion	Ratio	Lower	Upper
202	100		
101	19.6	0.0	35.9

#18
Benzo[a]anthracene
Concen: 27.78 ug/kg
RT: 20.815 min Scan# 2150
Delta R.T. 0.009 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:228 Resp: 24186

Ion	Ratio	Lower	Upper
228	100		
229	19.3	0.7	40.7
226	25.9	5.9	45.9

#19
Chrysene
Concen: 35.20 ug/kg
RT: 21.079 min Scan# 2186
Delta R.T. 0.002 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:228 Resp: 28055

Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.8	48.8
229	19.9	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 37.06 ug/kg
RT: 24.471 min Scan# 2649
Delta R.T. 0.002 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:252 Resp: 27827

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.6	42.6
125	12.8	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 19.98 ug/kg
RT: 24.551 min Scan# 2660
Delta R.T. 0.002 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:252 Resp: 12034

Ion	Ratio	Lower	Upper
252	100		
253	20.6	2.8	42.8
125	12.5	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 19.48 ug/kg
RT: 24.661 min Scan# 2675
Delta R.T. 0.002 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:252 Resp: 11859

Ion	Ratio	Lower	Upper
252	100		
253	29.6	2.3	42.3
125	17.3	0.0	39.2

#24
Benzo(e)pyrene
Concen: 28.84 ug/kg
RT: 25.738 min Scan# 2822
Delta R.T. 0.002 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:252 Resp: 20786

Ion	Ratio	Lower	Upper
252	100		
125	19.4	0.8	40.8
253	26.2	2.4	42.4

#25
Benzo[a]pyrene
Concen: 40.66 ug/kg
RT: 25.914 min Scan# 2846
Delta R.T. -0.006 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:252 Resp: 28062

Ion	Ratio	Lower	Upper
252	100		
253	23.1	2.5	42.5
125	14.6	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 26.15 ug/kg
RT: 29.518 min Scan# 3338
Delta R.T. 0.002 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:276 Resp: 19994

Ion	Ratio	Lower	Upper
276	100		
138	26.0	12.0	52.0

#27
Dibenz[a,h]anthracene
Concen: 6.90 ug/kg
RT: 29.503 min Scan# 3336
Delta R.T. -0.006 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:278 Resp: 4301

Ion	Ratio	Lower	Upper
278	100		
139	23.9	2.9	42.9
279	22.7	4.4	44.4

#28
Benzo[g,h,i]perylene
Concen: 32.18 ug/kg
RT: 30.653 min Scan# 3493
Delta R.T. -0.013 min
Lab File: 16051314.D
Acq: 13 May 2016 7:47 pm

Tgt Ion:276 Resp: 21467

Ion	Ratio	Lower	Upper
276	100		
138	28.9	9.3	49.3
277	24.1	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051315.D
Acq On : 13 May 2016 8:24 pm
Operator :
Sample : 1605071-42A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 16 09:03:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1530219	4000.00	ug/kg	98
6) Acenaphthene-d10	12.861	164	988029	4000.00	ug/kg	101
11) Phenanthrene-d10	14.982	188	2860649	4000.00	ug/kg	92
16) Chrysene-d12	20.992	240	3266755	4000.00	ug/kg	93
20) Perylene-d12	26.259	264	2789238	4000.00	ug/kg	94

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	22599	75.14	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.88%#			
17) 4-Terphenyl-d14	17.589	244	60385	80.00	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.00%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.662	252	219	0.34	ug/kg	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051315.D
Acq On : 13 May 2016 8:24 pm
Operator :
Sample : 1605071-42A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 16 09:03:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#23
Benzo(j)fluoranthene
Concen: 0.34 ug/kg
RT: 24.662 min Scan# 2675
Delta R.T. 0.003 min
Lab File: 16051315.D
Acq: 13 May 2016 8:24 pm

Tgt Ion:252 Resp: 219

Ion	Ratio	Lower	Upper
252	100		
253	19.2	2.3	42.3
125	8.2	0.0	39.2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051316.D
Acq On : 13 May 2016 9:00 pm
Operator :
Sample : 1605071-43A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 16 09:03:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1534091	4000.00 ug/kg	98
6) Acenaphthene-d10	12.857	164	990109	4000.00 ug/kg	101
11) Phenanthrene-d10	14.981	188	2814999	4000.00 ug/kg	91
16) Chrysene-d12	20.991	240	3144598	4000.00 ug/kg	90
20) Perylene-d12	26.258	264	2751530	4000.00 ug/kg	93

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	23853	79.11 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.98%#		
17) 4-Terphenyl-d14	17.588	244	57372	78.96 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.97%#		

Target Compounds					Qvalue
14) Fluoranthene	17.065	202	8533	8.00 ug/kg	87
15) Pyrene	17.696	202	8207	7.67 ug/kg	91
18) Benzo[a]anthracene	20.815	228	4437	5.02 ug/kg	98
19) Chrysene	21.079	228	5645	6.98 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	5623	7.18 ug/kg	97
23) Benzo(j)fluoranthene	24.661	252	2364	3.72 ug/kg	88
24) Benzo(e)pyrene	25.738	252	4367	5.81 ug/kg	87
25) Benzo[a]pyrene	25.921	252	5226	7.26 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.517	276	4509	5.65 ug/kg	89
28) Benzo[g,h,i]perylene	30.660	276	4546	6.53 ug/kg	95

CONFIRMED
By Sherri Herschmann at 3:46:34 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051316.D
Acq On : 13 May 2016 9:00 pm
Operator :
Sample : 1605071-43A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 16 09:03:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#14
Fluoranthene
Concen: 8.00 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. 0.000 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:202 Resp: 8533

Ion	Ratio	Lower	Upper
202	100		
101	17.0	0.0	32.0

#15
Pyrene
Concen: 7.67 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.000 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:202 Resp: 8207

Ion	Ratio	Lower	Upper
202	100		
101	19.6	0.0	35.9

#18
Benzo[a]anthracene
Concen: 5.02 ug/kg
RT: 20.815 min Scan# 2150
Delta R.T. 0.009 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:228 Resp: 4437

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.7	40.7
226	24.3	5.9	45.9

#19
Chrysene
Concen: 6.98 ug/kg
RT: 21.079 min Scan# 2186
Delta R.T. 0.002 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:228 Resp: 5645

Ion	Ratio	Lower	Upper
228	100		
226	28.7	8.8	48.8
229	19.1	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 7.18 ug/kg
RT: 24.463 min Scan# 2648
Delta R.T. -0.006 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:252 Resp: 5623

Ion	Ratio	Lower	Upper
252	100		
253	20.6	2.6	42.6
125	12.9	0.0	33.8

#23
Benzo(j)fluoranthene
Concen: 3.72 ug/kg
RT: 24.661 min Scan# 2675
Delta R.T. 0.002 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:252 Resp: 2364

Ion	Ratio	Lower	Upper
252	100		
253	31.6	2.3	42.3
125	17.8	0.0	39.2

#24
Benzo(e)pyrene
Concen: 5.81 ug/kg
RT: 25.738 min Scan# 2822
Delta R.T. 0.002 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:252 Resp: 4367

Ion	Ratio	Lower	Upper
252	100		
125	20.4	0.8	40.8
253	33.7	2.4	42.4

#25
Benzo[a]pyrene
Concen: 7.26 ug/kg
RT: 25.921 min Scan# 2847
Delta R.T. 0.002 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:252 Resp: 5226

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.5	42.5
125	13.4	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 5.65 ug/kg
RT: 29.517 min Scan# 3338
Delta R.T. 0.002 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:276 Resp: 4509

Ion	Ratio	Lower	Upper
276	100		
138	26.1	12.0	52.0

#28
Benzo[g,h,i]perylene
Concen: 6.53 ug/kg
RT: 30.660 min Scan# 3494
Delta R.T. -0.006 min
Lab File: 16051316.D
Acq: 13 May 2016 9:00 pm

Tgt Ion:276 Resp: 4546

Ion	Ratio	Lower	Upper
276	100		
138	24.5	9.3	49.3
277	23.8	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051317.D
Acq On : 13 May 2016 9:37 pm
Operator :
Sample : 1605071-44A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 16 09:03:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1566414	4000.00	ug/kg	100
6) Acenaphthene-d10	12.857	164	1002948	4000.00	ug/kg	103
11) Phenanthrene-d10	14.981	188	2910669	4000.00	ug/kg	94
16) Chrysene-d12	20.991	240	3230552	4000.00	ug/kg	92
20) Perylene-d12	26.258	264	2795946	4000.00	ug/kg	94

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	22400	72.76	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.82%#			
17) 4-Terphenyl-d14	17.589	244	58015	77.72	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.94%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.654	252	164	0.25	ug/kg#	68

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051317.D
Acq On : 13 May 2016 9:37 pm
Operator :
Sample : 1605071-44A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 16 09:03:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#23
Benzo(j)fluoranthene
Concen: 0.25 ug/kg
RT: 24.654 min Scan# 2674
Delta R.T. -0.006 min
Lab File: 16051317.D
Acq: 13 May 2016 9:37 pm

Tgt Ion:252 Resp: 164

Ion	Ratio	Lower	Upper
252	100		
253	43.9	2.3	42.3#
125	26.8	0.0	39.2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051318.D
Acq On : 13 May 2016 10:13 pm
Operator :
Sample : 1605071-45A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 16 09:03:32 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1507259	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	988125	4000.00	ug/kg	101
11) Phenanthrene-d10	14.981	188	2833692	4000.00	ug/kg	91
16) Chrysene-d12	20.991	240	3075613	4000.00	ug/kg	88
20) Perylene-d12	26.258	264	2727103	4000.00	ug/kg	92

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	22879	77.23	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.93%#			
17) 4-Terphenyl-d14	17.588	244	57091	80.34	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.01%#			

Target Compounds						Qvalue
2) Naphthalene	10.308	128	8938	24.47	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	2021	11.46	ug/kg	97
4) 1-Methyl naphthalene	11.448	142	1345	5.87	ug/kg	99
8) Acenaphthene	12.911	153	13671	46.52	ug/kg	99
9) Dibenzofuran	13.068	168	9837	20.73	ug/kg	94
10) Fluorene	13.559	166	19476	43.64	ug/kg	99
12) Phenanthrene	15.019	178	925329	1128.26	ug/kg	99
13) Anthracene	15.061	178	230016	258.86	ug/kg	98
14) Fluoranthene	17.078	202	1970443	1835.86	ug/kg	96
15) Pyrene	17.709	202	1615520	1500.67	ug/kg	93
18) Benzo[a]anthracene	20.815	228	891268	1030.88	ug/kg	99
19) Chrysene	21.079	228	938450	1185.73	ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	759367	977.75	ug/kg	99
22) Benzo[k]fluoranthene	24.551	252	357147	573.34	ug/kg	96
23) Benzo(j)fluoranthene	24.661	252	349220	554.66	ug/kg	88
24) Benzo(e)pyrene	25.738	252	526098	705.76	ug/kg	96
25) Benzo[a]pyrene	25.921	252	755758	1058.76	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.525	276	494907	625.82	ug/kg	86
27) Dibenz[a,h]anthracene	29.503	278	115355	178.92	ug/kg	98
28) Benzo[g,h,i]perylene	30.660	276	477706	692.27	ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

CONFIRMED
By Sherri Herschmann at 3:47:13 PM, 5/16/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051318.D
Acq On : 13 May 2016 10:13 pm
Operator :
Sample : 1605071-45A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 16 09:03:32 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#2
Naphthalene
Concen: 24.47 ug/kg
RT: 10.308 min Scan# 50
Delta R.T. 0.005 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:128 Resp: 8938

Ion	Ratio	Lower	Upper
128	100		
129	11.3	0.0	31.3
127	13.4	0.0	33.5

#3
2-Methyl naphthalene
Concen: 11.46 ug/kg
RT: 11.226 min Scan# 273
Delta R.T. 0.005 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:142 Resp: 2021

Ion	Ratio	Lower	Upper
142	100		
141	83.3	63.9	103.9
115	32.5	6.7	46.7

#4
1-Methyl naphthalene
Concen: 5.87 ug/kg
RT: 11.448 min Scan# 327
Delta R.T. 0.005 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:142 Resp: 1345

Ion	Ratio	Lower	Upper
142	100		
141	87.3	67.6	107.6
115	30.2	8.0	48.0

#8
Acenaphthene
Concen: 46.52 ug/kg
RT: 12.911 min Scan# 657
Delta R.T. 0.006 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:153 Resp: 13671

Ion	Ratio	Lower	Upper
153	100		
152	46.1	27.2	67.2
154	94.6	74.3	114.3

#9
Dibenzofuran
Concen: 20.73 ug/kg
RT: 13.068 min Scan# 689
Delta R.T. 0.006 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:168 Resp: 9837

Ion	Ratio	Lower	Upper
168	100		
139	31.2	7.8	47.8

#10
Fluorene
Concen: 43.64 ug/kg
RT: 13.559 min Scan# 789
Delta R.T. 0.001 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:166 Resp: 19476

Ion	Ratio	Lower	Upper
166	100		
165	93.1	71.9	111.9
167	14.5	0.0	33.8

#12
Phenanthrene
Concen: 1128.26 ug/kg
RT: 15.019 min Scan# 1219
Delta R.T. 0.003 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:178 Resp: 925329

Ion	Ratio	Lower	Upper
178	100		
179	15.9	0.0	36.4
176	18.6	0.0	39.2

#13
Anthracene
Concen: 258.86 ug/kg
RT: 15.061 min Scan# 1239
Delta R.T. 0.003 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:178 Resp: 230016

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	36.5
176	17.6	0.0	38.6

#14
Fluoranthene
Concen: 1835.86 ug/kg
RT: 17.078 min Scan# 1765
Delta R.T. 0.013 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:202 Resp: 1970443

Ion	Ratio	Lower	Upper
202	100		
101	10.6	0.0	32.0

#15
Pyrene
Concen: 1500.67 ug/kg
RT: 17.709 min Scan# 1812
Delta R.T. 0.013 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:202 Resp: 1615520

Ion	Ratio	Lower	Upper
202	100		
101	12.9	0.0	35.9

#18
Benzo[a]anthracene
Concen: 1030.88 ug/kg
RT: 20.815 min Scan# 2150
Delta R.T. 0.009 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:228 Resp: 891268

Ion	Ratio	Lower	Upper
228	100		
229	20.2	0.7	40.7
226	25.7	5.9	45.9

#19
Chrysene
Concen: 1185.73 ug/kg
RT: 21.079 min Scan# 2186
Delta R.T. 0.002 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:228 Resp: 938450

Ion	Ratio	Lower	Upper
228	100		
226	28.5	8.8	48.8
229	20.3	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 977.75 ug/kg
RT: 24.471 min Scan# 2649
Delta R.T. 0.002 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:252 Resp: 759367

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.6	42.6
125	13.0	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 573.34 ug/kg
RT: 24.551 min Scan# 2660
Delta R.T. 0.002 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:252 Resp: 357147

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.8	42.8
125	12.8	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 554.66 ug/kg
RT: 24.661 min Scan# 2675
Delta R.T. 0.002 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:252 Resp: 349220

Ion	Ratio	Lower	Upper
252	100		
253	31.3	2.3	42.3
125	17.6	0.0	39.2

#24
Benzo(e)pyrene
Concen: 705.76 ug/kg
RT: 25.738 min Scan# 2822
Delta R.T. 0.002 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:252 Resp: 526098

Ion	Ratio	Lower	Upper
252	100		
125	19.1	0.8	40.8
253	24.1	2.4	42.4

#25
Benzo[a]pyrene
Concen: 1058.76 ug/kg
RT: 25.921 min Scan# 2847
Delta R.T. 0.002 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:252 Resp: 755758

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.5	42.5
125	14.7	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 625.82 ug/kg
RT: 29.525 min Scan# 3339
Delta R.T. 0.009 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:276 Resp: 494907

Ion	Ratio	Lower	Upper
276	100		
138	24.1	12.0	52.0

#27
Dibenz[a,h]anthracene
Concen: 178.92 ug/kg
RT: 29.503 min Scan# 3336
Delta R.T. -0.006 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:278 Resp: 115355

Ion	Ratio	Lower	Upper
278	100		
139	22.5	2.9	42.9
279	23.4	4.4	44.4

#28
Benzo[g,h,i]perylene
Concen: 692.27 ug/kg
RT: 30.660 min Scan# 3494
Delta R.T. -0.006 min
Lab File: 16051318.D
Acq: 13 May 2016 10:13 pm

Tgt Ion:276 Resp: 477706

Ion	Ratio	Lower	Upper
276	100		
138	27.5	9.3	49.3
277	24.0	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051319.D
Acq On : 13 May 2016 10:50 pm
Operator :
Sample : 1605071-46A
Misc : SAMP
ALS Vial : 17 Sample Multiplier: 10

Quant Time: May 16 09:03:42 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1496686	4000.00 ug/kg	96
6) Acenaphthene-d10	12.861	164	984068	4000.00 ug/kg	101
11) Phenanthrene-d10	14.980	188	2754965	4000.00 ug/kg	89
16) Chrysene-d12	20.991	240	3054953	4000.00 ug/kg	87
20) Perylene-d12	26.258	264	2661991	4000.00 ug/kg	90

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	24162	82.14 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.05%#		
17) 4-Terphenyl-d14	17.588	244	56707	80.34 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.01%#		

Target Compounds					Qvalue
12) Phenanthrene	15.018	178	47024	58.98 ug/kg	97
13) Anthracene	15.060	178	10480	12.13 ug/kg	97
14) Fluoranthene	17.065	202	96942	92.90 ug/kg	92
15) Pyrene	17.696	202	73944	70.65 ug/kg	95
18) Benzo[a]anthracene	20.808	228	35401	41.22 ug/kg	98
19) Chrysene	21.079	228	37299	47.45 ug/kg	98
21) Benzo[b]fluoranthene	24.463	252	26484	34.93 ug/kg	97
22) Benzo[k]fluoranthene	24.551	252	12752	20.97 ug/kg	95
23) Benzo(j)fluoranthene	24.653	252	12714	20.69 ug/kg	91
24) Benzo(e)pyrene	25.738	252	18666	25.65 ug/kg	95
25) Benzo[a]pyrene	25.913	252	25553	36.67 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.517	276	17174	22.25 ug/kg	88
27) Dibenz[a,h]anthracene	29.503	278	3892	6.18 ug/kg	95
28) Benzo[g,h,i]perylene	30.653	276	17848	26.50 ug/kg	95

CONFIRMED
By Sherri Herschmann at 3:48:01 PM, 5/16/2016

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051319.D
Acq On : 13 May 2016 10:50 pm
Operator :
Sample : 1605071-46A
Misc : SAMP
ALS Vial : 17 Sample Multiplier: 10

Quant Time: May 16 09:03:42 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#12
Phenanthrene
Concen: 58.98 ug/kg
RT: 15.018 min Scan# 1219
Delta R.T. 0.002 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:178 Resp: 47024

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.2	0.0	39.2

#13
Anthracene
Concen: 12.13 ug/kg
RT: 15.060 min Scan# 1239
Delta R.T. 0.002 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:178 Resp: 10480

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.5
176	17.4	0.0	38.6

#14
Fluoranthene
Concen: 92.90 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. -0.000 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:202 Resp: 96942

Ion	Ratio	Lower	Upper
202	100		
101	15.2	0.0	32.0

#15
Pyrene
Concen: 70.65 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. -0.000 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:202 Resp: 73944

Ion	Ratio	Lower	Upper
202	100		
101	17.8	0.0	35.9

#18
Benzo[a]anthracene
Concen: 41.22 ug/kg
RT: 20.808 min Scan# 2149
Delta R.T. 0.001 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:228 Resp: 35401

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.7	40.7
226	25.5	5.9	45.9

#19
Chrysene
Concen: 47.45 ug/kg
RT: 21.079 min Scan# 2186
Delta R.T. 0.001 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:228 Resp: 37299

Ion	Ratio	Lower	Upper
228	100		
226	27.8	8.8	48.8
229	19.7	0.5	40.5

#21
Benzo[b]fluoranthene
Concen: 34.93 ug/kg
RT: 24.463 min Scan# 2648
Delta R.T. -0.006 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:252 Resp: 26484

Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.6	42.6
125	13.2	0.0	33.8

#22
Benzo[k]fluoranthene
Concen: 20.97 ug/kg
RT: 24.551 min Scan# 2660
Delta R.T. 0.001 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:252 Resp: 12752

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.8	42.8
125	12.2	0.0	34.7

#23
Benzo(j)fluoranthene
Concen: 20.69 ug/kg
RT: 24.653 min Scan# 2674
Delta R.T. -0.006 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:252 Resp: 12714

Ion	Ratio	Lower	Upper
252	100		
253	28.6	2.3	42.3
125	17.4	0.0	39.2

#24
Benzo(e)pyrene
Concen: 25.65 ug/kg
RT: 25.738 min Scan# 2822
Delta R.T. 0.001 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:252 Resp: 18666

Ion	Ratio	Lower	Upper
252	100		
125	19.8	0.8	40.8
253	25.9	2.4	42.4

#25
Benzo[a]pyrene
Concen: 36.67 ug/kg
RT: 25.913 min Scan# 2846
Delta R.T. -0.006 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:252 Resp: 25553

Ion	Ratio	Lower	Upper
252	100		
253	22.5	2.5	42.5
125	13.8	0.0	35.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 22.25 ug/kg
RT: 29.517 min Scan# 3338
Delta R.T. 0.001 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:276 Resp: 17174

Ion	Ratio	Lower	Upper
276	100		
138	25.1	12.0	52.0

#27
Dibenz[a,h]anthracene
Concen: 6.18 ug/kg
RT: 29.503 min Scan# 3336
Delta R.T. -0.006 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:278 Resp: 3892

Ion	Ratio	Lower	Upper
278	100		
139	20.6	2.9	42.9
279	22.1	4.4	44.4

#28
Benzo[g,h,i]perylene
Concen: 26.50 ug/kg
RT: 30.653 min Scan# 3493
Delta R.T. -0.013 min
Lab File: 16051319.D
Acq: 13 May 2016 10:50 pm

Tgt Ion:276 Resp: 17848

Ion	Ratio	Lower	Upper
276	100		
138	33.6	9.3	49.3
277	23.3	4.3	44.3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051320.D
Acq On : 13 May 2016 11:27 pm
Operator :
Sample : 1605071-25AMS
Misc : MS
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 16 09:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1478096	4000.00 ug/kg	95
6) Acenaphthene-d10	12.856	164	969820	4000.00 ug/kg	99
11) Phenanthrene-d10	14.982	188	2873755	4000.00 ug/kg	93
16) Chrysene-d12	20.990	240	3031059	4000.00 ug/kg	87
20) Perylene-d12	26.257	264	2628780	4000.00 ug/kg	89

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	20399	70.22 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#	
17) 4-Terphenyl-d14	17.588	244	52228	74.58 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.86%#	

Target Compounds					Qvalue
2) Naphthalene	10.308	128	25928	72.38 ug/kg	100
3) 2-Methyl naphthalene	11.225	142	18410	78.07 ug/kg	98
4) 1-Methyl naphthalene	11.448	142	17567	78.15 ug/kg	99
7) Acenaphthylene	12.743	152	34710	76.16 ug/kg	99
8) Acenaphthene	12.910	153	21846	75.75 ug/kg	99
9) Dibenzofuran	13.067	168	33530	71.99 ug/kg	96
10) Fluorene	13.558	166	32479	74.15 ug/kg	99
12) Phenanthrene	15.018	178	82196	98.82 ug/kg	96
13) Anthracene	15.060	178	71515	79.36 ug/kg	97
14) Fluoranthene	17.065	202	125694	115.48 ug/kg	93
15) Pyrene	17.696	202	118019	108.10 ug/kg	96
18) Benzo[a]anthracene	20.807	228	83784	98.33 ug/kg	99
19) Chrysene	21.078	228	81153	104.04 ug/kg	98
21) Benzo[b]fluoranthene	24.462	252	76477	102.15 ug/kg	99
22) Benzo[k]fluoranthene	24.543	252	58968	98.20 ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	57265	94.35 ug/kg	97
24) Benzo(e)pyrene	25.737	252	67855	94.43 ug/kg	97
25) Benzo[a]pyrene	25.913	252	71062	103.28 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.517	276	77915	102.21 ug/kg	91
27) Dibenz[a,h]anthracene	29.502	278	55047	88.58 ug/kg	96
28) Benzo[g,h,i]perylene	30.652	276	70315	105.71 ug/kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051320.D
Acq On : 13 May 2016 11:27 pm
Operator :
Sample : 1605071-25AMS
Misc : MS
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 16 09:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051321.D
Acq On : 14 May 2016 12:03 am
Operator :
Sample : 1605071-25AMSD
Misc : MSD
ALS Vial : 19 Sample Multiplier: 10

Quant Time: May 16 09:01:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1499453	4000.00 ug/kg	96
6) Acenaphthene-d10	12.857	164	997896	4000.00 ug/kg	102
11) Phenanthrene-d10	14.979	188	2914311	4000.00 ug/kg	94
16) Chrysene-d12	20.991	240	3027353	4000.00 ug/kg	87
20) Perylene-d12	26.258	264	2634762	4000.00 ug/kg	89

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	20299	68.88 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.72%#	
17) 4-Terphenyl-d14	17.588	244	49891	71.33 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.78%#	

Target Compounds					Qvalue
2) Naphthalene	10.309	128	22697	62.46 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	17149	71.96 ug/kg	98
4) 1-Methyl naphthalene	11.448	142	16368	71.78 ug/kg	99
7) Acenaphthylene	12.744	152	33763	72.00 ug/kg	99
8) Acenaphthene	12.906	153	21631	72.89 ug/kg	100
9) Dibenzofuran	13.068	168	33205	69.29 ug/kg	100
10) Fluorene	13.559	166	32399	71.89 ug/kg	99
12) Phenanthrene	15.017	178	89856	106.53 ug/kg	96
13) Anthracene	15.059	178	71032	77.73 ug/kg	97
14) Fluoranthene	17.065	202	170186	154.18 ug/kg	94
15) Pyrene	17.695	202	158340	143.02 ug/kg	97
18) Benzo[a]anthracene	20.808	228	107382	126.18 ug/kg	99
19) Chrysene	21.079	228	110560	141.92 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	105022	139.96 ug/kg	99
22) Benzo[k]fluoranthene	24.544	252	70943	117.88 ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	68086	111.93 ug/kg	96
24) Benzo(e)pyrene	25.738	252	88085	122.31 ug/kg	98
25) Benzo[a]pyrene	25.913	252	98131	142.29 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	97767	127.96 ug/kg	95
27) Dibenz[a,h]anthracene	29.503	278	59327	95.25 ug/kg	96
28) Benzo[g,h,i]perylene	30.653	276	88899	133.34 ug/kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051321.D
Acq On : 14 May 2016 12:03 am
Operator :
Sample : 1605071-25AMSD
Misc : MSD
ALS Vial : 19 Sample Multiplier: 10

Quant Time: May 16 09:01:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:01:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1441846	4000.00	ug/kg	92
6) Acenaphthene-d10	12.856	164	912357	4000.00	ug/kg	93
11) Phenanthrene-d10	14.981	188	2775672	4000.00	ug/kg	89
16) Chrysene-d12	20.991	240	2907770	4000.00	ug/kg	83
20) Perylene-d12	26.258	264	2554349	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	570857	2014.48	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 50.36%			
17) 4-Terphenyl-d14	17.587	244	1345289	2002.36	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.06%#			

Target Compounds						Qvalue
2) Naphthalene	10.309	128	698664	1999.43	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	499170	2114.01	ug/kg	100
4) 1-Methyl naphthalene	11.448	142	455970	2079.41	ug/kg	100
7) Acenaphthylene	12.743	152	867089	2022.40	ug/kg	100
8) Acenaphthene	12.910	153	540524	1992.19	ug/kg	98
9) Dibenzofuran	13.068	168	814621	1859.25	ug/kg	99
10) Fluorene	13.559	166	780831	1895.04	ug/kg	100
12) Phenanthrene	15.019	178	1540126	1917.14	ug/kg	100
13) Anthracene	15.063	178	1585191	1821.30	ug/kg	100
14) Fluoranthene	17.077	202	1844784	1754.71	ug/kg	96
15) Pyrene	17.708	202	1831925	1737.27	ug/kg	93
18) Benzo[a]anthracene	20.815	228	1582135	1935.59	ug/kg	99
19) Chrysene	21.086	228	1464810	1957.62	ug/kg	99
21) Benzo[b]fluoranthene	24.478	252	1448333	1990.98	ug/kg	99
22) Benzo[k]fluoranthene	24.558	252	1306896	2239.91	ug/kg	98
23) Benzo(j)fluoranthene	24.668	252	1252205	2123.36	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1345392	1926.91	ug/kg	99
25) Benzo[a]pyrene	25.921	252	1330830	1990.49	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.525	276	1584981	2139.80	ug/kg	99
27) Dibenz[a,h]anthracene	29.517	278	1323884	2192.32	ug/kg	97
28) Benzo[g,h,i]perylene	30.667	276	1362420	2107.88	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:01:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 14 01:48:59 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

TIC: 16051323.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.478min (+0.009) 1990.98ug/kg

response 1448333

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.48
125.00	13.80	12.93
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051324.D
Acq On : 14 May 2016 1:54 am
Operator :
Sample : SBLK-160513
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 16 09:01:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1437759	4000.00	ug/kg	92
6) Acenaphthene-d10	12.861	164	963036	4000.00	ug/kg	99
11) Phenanthrene-d10	14.982	188	2871913	4000.00	ug/kg	92
16) Chrysene-d12	20.990	240	2820304	4000.00	ug/kg	81
20) Perylene-d12	26.257	264	2437867	4000.00	ug/kg	82

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	36	0.13	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.602	244	445	0.68	ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.02%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.653	252	223	0.40	ug/kg	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051324.D
Acq On : 14 May 2016 1:54 am
Operator :
Sample : SBLK-160513
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 16 09:01:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051325.D
Acq On : 14 May 2016 2:31 am
Operator :
Sample : 1605071-47A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 16 09:03:51 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1498720	4000.00	ug/kg	96
6) Acenaphthene-d10	12.861	164	1003846	4000.00	ug/kg	103
11) Phenanthrene-d10	14.980	188	2858345	4000.00	ug/kg	92
16) Chrysene-d12	20.990	240	2994601	4000.00	ug/kg	86
20) Perylene-d12	26.257	264	2655228	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	23398	79.44	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.99%#			
17) 4-Terphenyl-d14	17.589	244	54940	79.40	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.99%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.660	252	963	1.57	ug/kg	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051325.D
Acq On : 14 May 2016 2:31 am
Operator :
Sample : 1605071-47A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 16 09:03:51 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#23
Benzo(j)fluoranthene
Concen: 1.57 ug/kg
RT: 24.660 min Scan# 2675
Delta R.T. 0.001 min
Lab File: 16051325.D
Acq: 14 May 2016 2:31 am

Tgt Ion:252 Resp: 963

Ion	Ratio	Lower	Upper
252	100		
253	17.5	2.3	42.3
125	15.6	0.0	39.2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051326.D
Acq On : 14 May 2016 3:08 am
Operator :
Sample : 1605071-48A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 16 09:03:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.272	136	1439332	4000.00 ug/kg	92
6) Acenaphthene-d10	12.861	164	967656	4000.00 ug/kg	99
11) Phenanthrene-d10	14.983	188	2836391	4000.00 ug/kg	91
16) Chrysene-d12	20.991	240	2919835	4000.00 ug/kg	84
20) Perylene-d12	26.258	264	2551822	4000.00 ug/kg	86

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	22238	78.61 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.97%#		
17) 4-Terphenyl-d14	17.588	244	53845	79.81 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.00%#		

Target Compounds					Qvalue
23) Benzo(j)fluoranthene	24.661	252	250	0.42 ug/kg	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051326.D
Acq On : 14 May 2016 3:08 am
Operator :
Sample : 1605071-48A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 16 09:03:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#23
Benzo(j)fluoranthene
Concen: 0.42 ug/kg
RT: 24.661 min Scan# 2675
Delta R.T. 0.001 min
Lab File: 16051326.D
Acq: 14 May 2016 3:08 am

Tgt Ion:252 Resp: 250

Ion	Ratio	Lower	Upper
252	100		
253	33.6	2.3	42.3
125	15.6	0.0	39.2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051327.D
Acq On : 14 May 2016 3:45 am
Operator :
Sample : 1605071-49A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 16 09:03:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1553378	4000.00	ug/kg	99
6) Acenaphthene-d10	12.861	164	1041058	4000.00	ug/kg	107
11) Phenanthrene-d10	14.983	188	2970354	4000.00	ug/kg	96
16) Chrysene-d12	20.998	240	3251739	4000.00	ug/kg	93
20) Perylene-d12	26.257	264	2827866	4000.00	ug/kg	95

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	22805	74.70	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.87%#			
17) 4-Terphenyl-d14	17.589	244	56489	75.19	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.668	252	94	0.14	ug/kg#	31

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051327.D
Acq On : 14 May 2016 3:45 am
Operator :
Sample : 1605071-49A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 16 09:03:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

#23
Benzo(j)fluoranthene
Concen: 0.14 ug/kg
RT: 24.668 min Scan# 2676
Delta R.T. 0.008 min
Lab File: 16051327.D
Acq: 14 May 2016 3:45 am

Tgt Ion:252 Resp: 94

Ion	Ratio	Lower	Upper
252	100		
253	74.5	2.3	42.3#
125	8.5	0.0	39.2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051328.D
Acq On : 14 May 2016 4:22 am
Operator :
Sample : LCS-75151
Misc : LCS
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 16 09:01:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.274	136	1629610	4000.00 ug/kg	104
6) Acenaphthene-d10	12.857	164	994443	4000.00 ug/kg	102
11) Phenanthrene-d10	14.981	188	2502142	4000.00 ug/kg	81
16) Chrysene-d12	20.992	240	3035249	4000.00 ug/kg	87
20) Perylene-d12	26.258	264	2727872	4000.00 ug/kg	92

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	256294	800.22 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.01%#		
17) 4-Terphenyl-d14	17.589	244	561233	800.27 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 20.01%#		

Target Compounds					Qvalue
2) Naphthalene	10.311	128	301940	764.53 ug/kg	99
3) 2-Methyl naphthalene	11.224	142	228727	850.01 ug/kg	97
4) 1-Methyl naphthalene	11.451	142	209606	845.75 ug/kg	99
7) Acenaphthylene	12.744	152	393069	841.12 ug/kg	99
8) Acenaphthene	12.911	153	243076	821.95 ug/kg	98
9) Dibenzofuran	13.069	168	355574	744.55 ug/kg	99
10) Fluorene	13.560	166	331368	737.83 ug/kg	100
12) Phenanthrene	15.017	178	620608	856.98 ug/kg	98
13) Anthracene	15.061	178	622427	793.31 ug/kg	98
14) Fluoranthene	17.066	202	806737	851.23 ug/kg	90
15) Pyrene	17.696	202	801977	843.68 ug/kg	92
18) Benzo[a]anthracene	20.816	228	756404	886.52 ug/kg	99
19) Chrysene	21.079	228	702605	899.55 ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	707841	911.15 ug/kg	99
22) Benzo[k]fluoranthene	24.552	252	648477	1040.73 ug/kg	98
23) Benzo(j)fluoranthene	24.661	252	599026	951.15 ug/kg	98
24) Benzo(e)pyrene	25.738	252	656101	879.91 ug/kg	98
25) Benzo[a]pyrene	25.921	252	629330	881.40 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	779024	984.82 ug/kg	98
27) Dibenz[a,h]anthracene	29.503	278	648951	1006.29 ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	665477	964.11 ug/kg	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051328.D
Acq On : 14 May 2016 4:22 am
Operator :
Sample : LCS-75151
Misc : LCS
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 16 09:01:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051329.D
Acq On : 14 May 2016 5:00 am
Operator :
Sample : MB-75151
Misc : MBLK
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 16 09:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1595656	4000.00	ug/kg	102
6) Acenaphthene-d10	12.861	164	981031	4000.00	ug/kg	100
11) Phenanthrene-d10	14.980	188	2451579	4000.00	ug/kg	79
16) Chrysene-d12	20.990	240	3103897	4000.00	ug/kg	89
20) Perylene-d12	26.257	264	2928373	4000.00	ug/kg	99

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	243825	777.49	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.44%#			
17) 4-Terphenyl-d14	17.589	244	553063	771.18	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 19.28%#			

Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.660	252	677	1.00	ug/kg	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051329.D
Acq On : 14 May 2016 5:00 am
Operator :
Sample : MB-75151
Misc : MBLK
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 16 09:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051338.D
Acq On : 14 May 2016 10:33 am
Operator :
Sample : 1605096-14AMS
Misc : MS
ALS Vial : 36 Sample Multiplier: 10

Quant Time: May 16 09:02:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1507603	4000.00 ug/kg	96
6) Acenaphthene-d10	12.856	164	1100755	4000.00 ug/kg	113
11) Phenanthrene-d10	14.979	188	2986740	4000.00 ug/kg	96
16) Chrysene-d12	20.984	240	2783605	4000.00 ug/kg	80
20) Perylene-d12	26.250	264	2511903	4000.00 ug/kg	85

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	26210	88.46 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.21%#	
17) 4-Terphenyl-d14	17.587	244	57816	89.89 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.25%#	

Target Compounds					Qvalue
2) Naphthalene	10.308	128	30719	84.08 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23312	96.11 ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21853	95.31 ug/kg	99
7) Acenaphthylene	12.743	152	47350	91.54 ug/kg	99
8) Acenaphthene	12.906	153	30141	92.08 ug/kg	99
9) Dibenzofuran	13.068	168	46634	88.22 ug/kg	96
10) Fluorene	13.559	166	45390	91.31 ug/kg	99
12) Phenanthrene	15.015	178	105311	121.83 ug/kg	97
13) Anthracene	15.059	178	87323	93.24 ug/kg	97
14) Fluoranthene	17.064	202	166339	147.04 ug/kg	97
15) Pyrene	17.695	202	152768	134.64 ug/kg	98
18) Benzo[a]anthracene	20.808	228	110528	141.25 ug/kg	99
19) Chrysene	21.072	228	110606	154.41 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	113090	158.09 ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	78525	136.86 ug/kg	96
23) Benzo(j)fluoranthene	24.654	252	74257	128.05 ug/kg	97
24) Benzo(e)pyrene	25.730	252	94991	138.35 ug/kg	97
25) Benzo[a]pyrene	25.913	252	104882	159.52 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	111060	152.47 ug/kg	93
27) Dibenz[a,h]anthracene	29.495	278	70099	118.04 ug/kg	98
28) Benzo[g,h,i]perylene	30.653	276	102832	161.79 ug/kg	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051338.D
Acq On : 14 May 2016 10:33 am
Operator :
Sample : 1605096-14AMS
Misc : MS
ALS Vial : 36 Sample Multiplier: 10

Quant Time: May 16 09:02:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051339.D
Acq On : 14 May 2016 11:10 am
Operator :
Sample : 1605096-14AMSD
Misc : MSD
ALS Vial : 37 Sample Multiplier: 10

Quant Time: May 16 09:02:04 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.271	136	1529462	4000.00 ug/kg	98
6) Acenaphthene-d10	12.857	164	1118986	4000.00 ug/kg	115
11) Phenanthrene-d10	14.979	188	2989296	4000.00 ug/kg	96
16) Chrysene-d12	20.984	240	2817619	4000.00 ug/kg	81
20) Perylene-d12	26.250	264	2541193	4000.00 ug/kg	86

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	26820	89.22 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.23%#	
17) 4-Terphenyl-d14	17.588	244	57456	88.26 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.21%#	

Target Compounds					Qvalue
2) Naphthalene	10.308	128	31040	83.74 ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23489	95.47 ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21942	94.33 ug/kg	99
7) Acenaphthylene	12.744	152	47794	90.89 ug/kg	99
8) Acenaphthene	12.906	153	30317	91.11 ug/kg	99
9) Dibenzofuran	13.068	168	46427	86.40 ug/kg	97
10) Fluorene	13.559	166	45263	89.57 ug/kg	99
12) Phenanthrene	15.016	178	106392	122.97 ug/kg	96
13) Anthracene	15.059	178	86586	92.37 ug/kg	98
14) Fluoranthene	17.065	202	170530	150.61 ug/kg	94
15) Pyrene	17.695	202	157001	138.25 ug/kg	97
18) Benzo[a]anthracene	20.808	228	111552	140.84 ug/kg	98
19) Chrysene	21.072	228	112802	155.58 ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	113007	156.15 ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	78601	135.41 ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	74653	127.24 ug/kg	96
24) Benzo(e)pyrene	25.730	252	94798	136.48 ug/kg	97
25) Benzo[a]pyrene	25.913	252	105067	157.96 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	110154	149.48 ug/kg	94
27) Dibenz[a,h]anthracene	29.495	278	69559	115.78 ug/kg	97
28) Benzo[g,h,i]perylene	30.653	276	101816	158.34 ug/kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051339.D
Acq On : 14 May 2016 11:10 am
Operator :
Sample : 1605096-14AMSD
Misc : MSD
ALS Vial : 37 Sample Multiplier: 10

Quant Time: May 16 09:02:04 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:02:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1450577	4000.00	ug/kg	93
6) Acenaphthene-d10	12.856	164	1026002	4000.00	ug/kg	105
11) Phenanthrene-d10	14.980	188	2972526	4000.00	ug/kg	96
16) Chrysene-d12	20.991	240	2832657	4000.00	ug/kg	81
20) Perylene-d12	26.258	264	2537523	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	604792	2121.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 53.03%			
17) 4-Terphenyl-d14	17.588	244	1311494	2003.82	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.10%#			

Target Compounds						Qvalue
2) Naphthalene	10.311	128	708132	2014.33	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	515155	2169.51	ug/kg	98
4) 1-Methyl naphthalene	11.446	142	478801	2170.39	ug/kg	99
7) Acenaphthylene	12.743	152	973810	2019.73	ug/kg	100
8) Acenaphthene	12.905	153	613130	2009.49	ug/kg	99
9) Dibenzofuran	13.067	168	940579	1908.95	ug/kg	96
10) Fluorene	13.559	166	901263	1945.05	ug/kg	99
12) Phenanthrene	15.018	178	1658855	1928.18	ug/kg	100
13) Anthracene	15.060	178	1677822	1800.06	ug/kg	100
14) Fluoranthene	17.065	202	1810671	1608.21	ug/kg	87
15) Pyrene	17.695	202	1770337	1567.68	ug/kg	89
18) Benzo[a]anthracene	20.815	228	1553445	1950.89	ug/kg	100
19) Chrysene	21.079	228	1433597	1966.71	ug/kg	100
21) Benzo[b]fluoranthene	24.470	252	1443152	1997.01	ug/kg	100
22) Benzo[k]fluoranthene	24.558	252	1293627	2231.87	ug/kg	98
23) Benzo(j)fluoranthene	24.668	252	1238229	2113.59	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1351056	1947.86	ug/kg	99
25) Benzo[a]pyrene	25.921	252	1330941	2003.86	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.525	276	1615795	2195.86	ug/kg	98
27) Dibenz[a,h]anthracene	29.510	278	1345426	2242.77	ug/kg	99
28) Benzo[g,h,i]perylene	30.667	276	1391591	2167.29	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:02:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 14 12:55:38 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

TIC: 16051341.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.470min (+0.002) 1997.01ug/kg

response 1443152

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.45
125.00	13.80	13.86
0.00	0.00	0.00

GCMS8_160518D
For

DHL Work Order
1605071

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_160518D
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	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 Date: 5/19/2016

Second-Level Review: Janice Whitt Date: 5/23/2016

REVIEWED BY
By Janice Whitt at 1:06:03 PM, 5/23/2016

DHL Analytical, Inc.

Run ID: **GCMS8_160518D** **Run No.:** 85877

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
DFTPP2-160518	1	PAH_LL_SDOD1	TUNE	R85877	5/18/2016 8:11:00 PM		
ICV2-160518	1	PAH_LL_SDOD1	ICV	R85877	5/18/2016 8:49:00 PM		
SBLK-160518	1	PAH_LL_SDOD1	SBLK	75101	5/18/2016 10:03:00 PM		
1605071-38A	10	PAH_LL_SDOD1	SAMP	75101	5/19/2016 1:45:00 AM		Added on from hold - original QC in GCMS8_160513A.
1605071-32A	10	PAH_LL_SDOD1	SAMP	75101	5/19/2016 2:22:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers. Some are run at larger dilution due to color of the extract and high concentration of hydrocarbons.
CCV-160520	1	PAH_LL_SDOD1	CCV	R85877	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

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: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: 5/11/16 2:30PM

Prep Batch **75101** 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
1605071-24A	Soil		10 .11	10	1.000	1 of 1	
1605071-25A	Soil		10 .39	10	1.000	1 of 1	
1605071-25AMS	Soil		10 .00	10	1.000	of	
1605071-25AMSD	Soil		10 .05	10	1.000	of	
1605071-26A	Soil		10 .13	10	1.000	1 of 1	
1605071-27A	Soil		10 .03	10	1.000	1 of 1	
1605071-30A	Soil		10 .58	10	1.000	1 of 1	
proceed w/testing. V. high moisture see JD							
1605071-32A	Soil		10 .36	10	1.000	1 of 1	V high MOISTURE Content
Extract and hold for PAH							
1605071-35A	Soil		10 .45	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-36A	Soil		10 .07	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-38A	Soil		10 .78	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-39A	Soil		10 .87	10	1.000	1 of 1	
Extract and hold for PAH							
1605071-40A	Soil		10 .31	10	1.000	1 of 1	
1605071-41A	Soil		10 .04	10	1.000	1 of 1	
1605071-42A	Soil		10 .07	10	1.000	1 of 1	
1605071-43A	Soil		10 .29	10	1.000	1 of 1	
1605071-44A	Soil		10 .07	10	1.000	1 of 1	
1605071-45A	Soil		10 .03	10	1.000	1 of 1	
1605071-46A	Soil		10 .05	10	1.000	1 of 1	slow to Filter
1605071-47A	Soil		10 .10	10	1.000	1 of 1	
1605071-48A	Soil		10 .05	10	1.000	1 of 1	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED
By Sherri Herschmann at 3:12:35 PM, 5/16/2016

5/11/16 5/11/16 AR 5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: 5/11/16 2:30PM

Prep Batch **75101** 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
1605071-49A	Soil 10		10 10	10	1.000	1 of 1	
LCS-75101	Soil		10	10	1.000	of	
MB-75101	Soil		10	10	1.000	of	

REVIEWED/APPROVED

By Sherri Herschmann at 3:12:37 PM, 5/16/2016

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

5/11/16 5/11/16 AR 5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-04A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-05A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-09A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-10A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-14A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-15A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED/APPROVED

By Sherri Herschmann at 3:29:53 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605071-42A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-43A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-44A	Soil		0	0	#Num!	1	of	1	
1605071-45A	Soil		0	0	#Num!	1	of	1	
1605071-46A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-47A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-48A	Soil		0	0	#Num!	1	of	1	
1605071-49A	Soil		0	0	#Num!	1	of	1	
1605071-50A	Soil		0	0	#Num!	1	of	1	
1605071-51A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-52A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-53A	Soil		0	0	#Num!		of	3	
Extra sample was subsampled for MS/MSD									
1605071-54A	Soil		0	0	#Num!	1	of	1	

REVIEWED/APPROVED

By Sherri Herschmann at 3:30:03 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: **5/11/2016 2:30:00 PM**

Prep Batch **75101** 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
1605071-24A	Soil		10.11	10	0.989	1 of 1	
1605071-25A	Soil		10.39	10	0.962	1 of 1	
1605071-25AMS	Soil		10	10	1.000	of	
1605071-25AMSD	Soil		10.05	10	0.995	of	
1605071-26A	Soil		10.13	10	0.987	1 of 1	
1605071-27A	Soil		10.03	10	0.997	1 of 1	
1605071-30A	Soil		10.38	10	0.963	1 of 1	
	proceed w/testing. V. high moisture see JD						
1605071-32A	Soil		10.36	10	0.965	1 of 1	
	Very high moisture content						
	Extract and hold for PAH						
1605071-35A	Soil		10.45	10	0.957	1 of 1	
	Extract and hold for PAH						
1605071-36A	Soil		10.07	10	0.993	1 of 1	
	Extract and hold for PAH						
1605071-38A	Soil		10.78	10	0.928	1 of 1	
	Extract and hold for PAH						
1605071-39A	Soil		10.87	10	0.920	1 of 1	
	Extract and hold for PAH						
1605071-40A	Soil		10.31	10	0.970	1 of 1	
1605071-41A	Soil		10.04	10	0.996	1 of 1	
1605071-42A	Soil		10.07	10	0.993	1 of 1	
1605071-43A	Soil		10.29	10	0.972	1 of 1	
1605071-44A	Soil		10.07	10	0.993	1 of 1	
1605071-45A	Soil		10.03	10	0.997	1 of 1	
1605071-46A	Soil		10.05	10	0.995	1 of 1	
	Slow to filter						

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:06 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:57:30 AM**
Digestion:
Prep End Date: **5/11/2016 2:30:00 PM**

Prep Batch **75101** 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
1605071-47A	Soil		10.1	10	0.990	1 of 1	
Slow to filter							
1605071-48A	Soil		10.05	10	0.995	1 of 1	
1605071-49A	Soil		10.16	10	0.984	1 of 1	
LCS-75101	Soil		10	10	1.000	of	
MB-75101	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:31:35 PM, 5/16/2016

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 : 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 : 16051828.D
Acq On : 19 May 2016 1:45 am
Operator :
Sample : 1605071-38A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 19 09:19:10 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

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1540469	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1262017	4000.00	ug/kg	101
11) Phenanthrene-d10	14.977	188	2592233	4000.00	ug/kg	89
16) Chrysene-d12	20.988	240	2554902	4000.00	ug/kg	94
20) Perylene-d12	26.248	264	2395824	4000.00	ug/kg	96

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	23384	68.18	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.70%#			
17) 4-Terphenyl-d14	17.587	244	44070	81.49	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.04%#			

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 : 16051828.D
Acq On : 19 May 2016 1:45 am
Operator :
Sample : 1605071-38A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 19 09:19:10 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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051829.D
Acq On : 19 May 2016 2:22 am
Operator :
Sample : 1605071-32A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 19 09:19:13 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	1556484	4000.00 ug/kg	95
6) Acenaphthene-d10	12.856	164	1250586	4000.00 ug/kg	100
11) Phenanthrene-d10	14.978	188	2635228	4000.00 ug/kg	90
16) Chrysene-d12	20.988	240	2571010	4000.00 ug/kg	95
20) Perylene-d12	26.255	264	2410445	4000.00 ug/kg	97

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	28439	82.06 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.05%#	
17) 4-Terphenyl-d14	17.587	244	44234	81.29 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.03%#	

Target Compounds					Qvalue
12) Phenanthrene	15.016	178	11167	15.40 ug/kg	98
14) Fluoranthene	17.071	202	37491	49.30 ug/kg	98
15) Pyrene	17.701	202	33418	44.74 ug/kg	97
18) Benzo[a]anthracene	20.805	228	25268	36.09 ug/kg	99
19) Chrysene	21.068	228	28709	43.96 ug/kg	99
21) Benzo[b]fluoranthene	24.460	252	28636	42.91 ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	13842	22.86 ug/kg	96
23) Benzo(j)fluoranthene	24.650	252	14745	23.35 ug/kg	91
24) Benzo(e)pyrene	25.727	252	22175	34.03 ug/kg	94
25) Benzo[a]pyrene	25.910	252	28057	44.99 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	20884	25.50 ug/kg	94
27) Dibenz[a,h]anthracene	29.492	278	5920	5.16 ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	20950	30.00 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051829.D
Acq On : 19 May 2016 2:22 am
Operator :
Sample : 1605071-32A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 19 09:19:13 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: 15.40 ug/kg
RT: 15.016 min Scan# 1218
Delta R.T. -0.003 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:178 Resp: 11167

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.4
176	18.5	0.0	39.0

#14
Fluoranthene
Concen: 49.30 ug/kg
RT: 17.071 min Scan# 2047
Delta R.T. -0.005 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:202 Resp: 37491

Ion	Ratio	Lower	Upper
202	100		
101	13.7	0.0	34.4

#15
Pyrene
Concen: 44.74 ug/kg
RT: 17.701 min Scan# 2263
Delta R.T. -0.005 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:202 Resp: 33418

Ion	Ratio	Lower	Upper
202	100		
101	16.1	0.0	37.3

#18
Benzo[a]anthracene
Concen: 36.09 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:228 Resp: 25268

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.3	40.3
226	25.8	5.7	45.7

#19
Chrysene
Concen: 43.96 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:228 Resp: 28709

Ion	Ratio	Lower	Upper
228	100		
226	28.6	8.2	48.2
229	19.9	0.3	40.3

#21
Benzo[b]fluoranthene
Concen: 42.91 ug/kg
RT: 24.460 min Scan# 3450
Delta R.T. -0.015 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:252 Resp: 28636

Ion	Ratio	Lower	Upper
252	100		
253	22.8	2.3	42.3
125	12.3	0.0	32.2

#22
Benzo[k]fluoranthene
Concen: 22.86 ug/kg
RT: 24.541 min Scan# 3461
Delta R.T. -0.014 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:252 Resp: 13842

Ion	Ratio	Lower	Upper
252	100		
253	19.5	2.5	42.5
125	12.7	0.0	32.6

#23
Benzo(j)fluoranthene
Concen: 23.35 ug/kg
RT: 24.650 min Scan# 3476
Delta R.T. -0.015 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:252 Resp: 14745

Ion	Ratio	Lower	Upper
252	100		
253	29.7	2.2	42.2
125	16.8	0.0	37.3

#24
Benzo(e)pyrene
Concen: 34.03 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:252 Resp: 22175

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	26.9	2.3	42.3

#25
Benzo[a]pyrene
Concen: 44.99 ug/kg
RT: 25.910 min Scan# 3648
Delta R.T. -0.015 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:252 Resp: 28057

Ion	Ratio	Lower	Upper
252	100		
253	23.2	2.3	42.3
125	13.7	0.0	33.5

#26
Indeno[1,2,3-cd]pyrene
Concen: 25.50 ug/kg
RT: 29.507 min Scan# 4139
Delta R.T. -0.022 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:276 Resp: 20884

Ion	Ratio	Lower	Upper
276	100		
138	25.2	8.3	48.3

#27
Dibenz[a,h]anthracene
Concen: 5.16 ug/kg
RT: 29.492 min Scan# 4137
Delta R.T. -0.022 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:278 Resp: 5920

Ion	Ratio	Lower	Upper
278	100		
139	20.8	0.0	40.0
279	24.2	4.2	44.2

#28
Benzo[g,h,i]perylene
Concen: 30.00 ug/kg
RT: 30.650 min Scan# 4295
Delta R.T. -0.022 min
Lab File: 16051829.D
Acq: 19 May 2016 2:22 am

Tgt Ion:276 Resp: 20950

Ion	Ratio	Lower	Upper
276	100		
138	25.4	5.8	45.8
277	23.7	4.4	44.4

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
Calibration Curve
For

DHL Work Order
1605071

CAL ID: 658

Method 8270 PAH Calibration Curve Sheet

Instrument ID: GCMS #8 **Calibration File Name:** PP160510.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: Don Winston Date: 05/11/16

Second-Level Review: Date: 05/13/16

Tue May 10 17:43:08 2016 Instrument: GCMS #8
C:\MSDCHEM\1\5973\atune.u

Mass	Ab	Pw50
69.05	345305	0.61
219.05	158305	0.60
502.15	11191	0.60

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	1129
EntOffs	19.33		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10

Zones:

MS Source	230	Foreline	42
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 0 Step: 0.10
1104 peaks Base: 69.05 Abundance: 313856

Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	313856	100.00	70.05	3636	1.16
219.05	140864	44.88	219.95	6244	4.43
502.05	10193	3.25	503.05	1021	10.02

Air/Water Check: H20~0.52% N2~8.62% O2~2.46% CO2~0.08% N2/H2O~1654.80%

Column Flow: Front: 0 Back: 1.887 ml/min. Interface Temp: 310

Ramp Criteria:
Ion Focus Maximum 125 volts using ion 219; EM Gain 4120
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 : PAH160510.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Wed May 11 10:43:33 2016
Response Via : Initial Calibration

Calibration Files
1 =16051003.D 2 =16051004.D 3 =16051005.D 4 =16051006.D 5 =16051007.D 6 =16051008.D 7 =16051009.D
8 =16051010.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	0.990	0.957	0.981	0.991	0.980	0.983	0.972	0.901	0.969	3.05	A	0.0305	0.0000	0.9694	0.0000
3)	T	2-Methyl napht...	0.422	0.448	0.511	0.539	0.631	0.672	0.671	0.637	0.566	17.63	*Q	0.9991	-0.0006	0.6679	-0.0223
4)	T	1-Methyl napht...	0.579	0.555	0.575	0.595	0.665	0.661	0.642	0.594	0.608	6.89	A	0.0689	0.0000	0.6083	0.0000
5)	S	2-Fluorobiphenyl	0.801	0.710	0.768	0.789	0.820	0.840	0.809	0.752	0.786	5.28	A	0.0528	0.0000	0.7862	0.0000
6)	I	Acenaphthene-d10	----------ISTD----------														
7)	T	Acenaphthylene	1.977	1.879	1.907	1.925	1.894	1.889	1.874	1.694	1.880	4.37	A	0.0437	0.0000	1.8797	0.0000
8)	T	Acenaphthene	1.251	1.184	1.210	1.217	1.191	1.200	1.179	1.085	1.190	4.04	A	0.0404	0.0000	1.1895	0.0000
9)	T	Dibenzofuran	2.007	1.939	1.988	1.985	1.943	1.925	1.867	1.713	1.921	4.94	A	0.0494	0.0000	1.9209	0.0000
10)	T	Fluorene	1.915	1.810	1.845	1.817	1.805	1.821	1.760	1.680	1.806	3.73	A	0.0373	0.0000	1.8065	0.0000
11)	I	Phenanthrene-d10	----------ISTD----------														
12)	T	Phenanthrene	1.345	1.221	1.191	1.165	1.134	1.129	1.104	0.971	1.158	9.20	A	0.0920	0.0000	1.1577	0.0000
13)	T	Anthracene	1.456	1.302	1.300	1.290	1.248	1.211	1.197	1.032	1.254	9.57	A	0.0957	0.0000	1.2543	0.0000
14)	T	Fluoranthene	1.832	1.581	1.558	1.594	1.510	1.453	1.427	1.165	1.515	12.40	A	0.1240	0.0000	1.5151	0.0000
15)	T	Pyrene	1.863	1.601	1.565	1.586	1.498	1.446	1.422	1.176	1.520	12.79	A	0.1279	0.0000	1.5196	0.0000
16)	I	Chrysene-d12	----------ISTD----------														
17)	S	4-Terphenyl-d14	1.049	0.947	0.949	0.924	0.908	0.894	0.798	0.924	8.11	A	0.0811	0.0000	0.9242	0.0000	
18)	T	Benzo[a]anthra...	1.301	1.142	1.093	1.121	1.113	1.121	1.111	0.994	1.124	7.50	A	0.0750	0.0000	1.1244	0.0000
19)	T	Chrysene	1.199	1.032	1.009	1.027	1.021	1.020	1.013	0.913	1.029	7.60	A	0.0760	0.0000	1.0293	0.0000
20)	I	Perylene-d12	----------ISTD----------														
21)	T	Benzo[b]fluora...	1.383	1.128	1.060	1.095	1.118	1.152	1.129	1.048	1.139	9.20	A	0.0920	0.0000	1.1392	0.0000
22)	T	Benzo[k]fluora...	0.881	0.783	0.823	0.900	0.988	1.003	1.014	0.917	0.914	9.26	A	0.0926	0.0000	0.9137	0.0000
23)	cp	Benzo(j)fluora...	0.888	0.814	0.891	0.945	0.980	0.988	0.984	0.897	0.923	6.69	A	0.0669	0.0000	0.9235	0.0000
24)	T	Benzo(e)pyrene	1.226	1.103	1.074	1.100	1.096	1.095	1.071	0.982	1.093	6.08	A	0.0608	0.0000	1.0934	0.0000
25)	T	Benzo[a]pyrene	1.183	1.057	1.005	1.025	1.036	1.053	1.045	0.972	1.047	5.91	A	0.0591	0.0000	1.0470	0.0000
26)	T	Indeno[1,2,3-c...	1.307	1.133	1.106	1.126	1.150	1.176	1.172	1.108	1.160	5.60	A	0.0560	0.0000	1.1599	0.0000
27)	T	Dibenz[a,h]ant...	0.964	1.011	0.896	0.907	0.935	0.968	0.973	0.911	0.946	4.23	A	0.0423	0.0000	0.9456	0.0000
28)	T	Benzo[g,h,i]pe...	1.171	1.003	0.975	0.985	0.988	1.008	1.006	0.962	1.012	6.54	A	0.0654	0.0000	1.0121	0.0000

(#) = Out of Range

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051001.D
Acq On : 10 May 2016 6:03 pm
Operator :
Sample : DFTPP-160510
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 438, 439, 440; Background Corrected with Scan 434

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	48.3	72280	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	50.9	76210	PASS
70	69	0.00	2	0.3	215	PASS
127	198	10	80	52.2	78125	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	149602	PASS
199	198	5	9	6.7	10041	PASS
275	198	10	60	29.4	43976	PASS
365	198	1	200	3.3	4880	PASS
441	442	0.01	24	16.5	40030	PASS
442	198	50	400	162.6	243242	PASS
443	442	15	24	19.5	47348	PASS

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051019.D
Acq On : 11 May 2016 8:41 am
Operator :
Sample : DFTPP-160511
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 437, 438, 439; Background Corrected with Scan 433

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	42.7	61954	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	46.7	67805	PASS
70	69	0.00	2	0.3	205	PASS
127	198	10	80	49.8	72253	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	145138	PASS
199	198	5	9	6.6	9630	PASS
275	198	10	60	29.3	42553	PASS
365	198	1	200	3.0	4358	PASS
441	442	0.01	24	16.4	36333	PASS
442	198	50	400	152.3	221042	PASS
443	442	15	24	19.6	43414	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051003.D
Acq On : 10 May 2016 7:16 pm
Operator :
Sample : PAH1-160510 5ppb
Misc : CAL1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 11 10:44:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.293	136	1579654	4000.00 ug/kg	98
6) Acenaphthene-d10	12.876	164	1063753	4000.00 ug/kg	102
11) Phenanthrene-d10	15.002	188	3341261	4000.00 ug/kg	99
16) Chrysene-d12	21.028	240	3890154	4000.00 ug/kg	104
20) Perylene-d12	26.302	264	3253488	4000.00 ug/kg	103

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.786	172	1581	5.09 ug/kg	0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.13%#		
17) 4-Terphenyl-d14	17.628	244	6680	7.43 ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.19%#		

Target Compounds					Qvalue
2) Naphthalene	10.330	128	1955	5.11 ug/kg	98
3) 2-Methyl naphthalene	11.251	142	834	6.59 ug/kg	93
4) 1-Methyl naphthalene	11.469	142	1143	4.76 ug/kg	93
7) Acenaphthylene	12.763	152	2629	5.26 ug/kg	98
8) Acenaphthene	12.930	153	1663	5.26 ug/kg	98
9) Dibenzofuran	13.097	168	2669	5.22 ug/kg	94
10) Fluorene	13.588	166	2546	5.30 ug/kg	99
12) Phenanthrene	15.040	178	5619	5.81 ug/kg	98
13) Anthracene	15.084	178	6080	5.80 ug/kg	95
14) Fluoranthene	17.105	202	7652	6.05 ug/kg	97
15) Pyrene	17.736	202	7780	6.13 ug/kg	99
18) Benzo[a]anthracene	20.852	228	6326	5.78 ug/kg	99
19) Chrysene	21.116	228	5828	5.82 ug/kg	97
21) Benzo[b]fluoranthene	24.522	252	5625	6.07 ug/kg	97
22) Benzo[k]fluoranthene	24.603	252	3581	4.82 ug/kg	98
23) Benzo(j)fluoranthene	24.705	252	3612	4.81 ug/kg	97
24) Benzo(e)pyrene	25.782	252	4985	5.61 ug/kg	90
25) Benzo[a]pyrene	25.965	252	4812	5.65 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.576	276	5315	5.63 ug/kg	95
27) Dibenz[a,h]anthracene	29.569	278	3919	5.10 ug/kg	99
28) Benzo[g,h,i]perylene	30.719	276	4763	5.79 ug/kg	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051003.D
Acq On : 10 May 2016 7:16 pm
Operator :
Sample : PAH1-160510 5ppb
Misc : CAL1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 11 10:44:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051004.D
Acq On : 10 May 2016 7:53 pm
Operator :
Sample : PAH2-160510 10ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 11 10:45:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.293	136	1604398	4000.00 ug/kg	100
6) Acenaphthene-d10	12.877	164	1120203	4000.00 ug/kg	107
11) Phenanthrene-d10	15.002	188	3513300	4000.00 ug/kg	104
16) Chrysene-d12	21.028	240	3960265	4000.00 ug/kg	105
20) Perylene-d12	26.302	264	3295886	4000.00 ug/kg	104

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.782	172	2849	9.04 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.23%#		
17) 4-Terphenyl-d14	17.629	244	10384	11.35 ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.28%#		

Target Compounds					Qvalue
2) Naphthalene	10.326	128	3839	9.87 ug/kg	99
3) 2-Methyl naphthalene	11.247	142	1798	10.14 ug/kg	97
4) 1-Methyl naphthalene	11.469	142	2228	9.13 ug/kg	99
7) Acenaphthylene	12.764	152	5262	10.00 ug/kg	98
8) Acenaphthene	12.926	153	3315	9.95 ug/kg	95
9) Dibenzofuran	13.093	168	5430	10.09 ug/kg	91
10) Fluorene	13.584	166	5068	10.02 ug/kg	97
12) Phenanthrene	15.038	178	10725	10.55 ug/kg	96
13) Anthracene	15.083	178	11433	10.38 ug/kg	98
14) Fluoranthene	17.106	202	13885	10.43 ug/kg	98
15) Pyrene	17.737	202	14059	10.53 ug/kg	97
18) Benzo[a]anthracene	20.852	228	11307	10.16 ug/kg	99
19) Chrysene	21.116	228	10216	10.02 ug/kg	99
21) Benzo[b]fluoranthene	24.515	252	9296	9.90 ug/kg	99
22) Benzo[k]fluoranthene	24.596	252	6454	8.57 ug/kg	97
23) Benzo(j)fluoranthene	24.705	252	6705	8.81 ug/kg	98
24) Benzo(e)pyrene	25.782	252	9085	10.08 ug/kg	95
25) Benzo[a]pyrene	25.965	252	8709	10.10 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.577	276	9338	9.77 ug/kg	96
27) Dibenz[a,h]anthracene	29.569	278	8277	10.62 ug/kg	95
28) Benzo[g,h,i]perylene	30.712	276	8261	9.91 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051004.D
Acq On : 10 May 2016 7:53 pm
Operator :
Sample : PAH2-160510 10ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 11 10:45:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051005.D
Acq On : 10 May 2016 8:30 pm
Operator :
Sample : PAH3-160510 50ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 11 10:45:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.290	136	1587879	4000.00 ug/kg	99
6) Acenaphthene-d10	12.876	164	1079979	4000.00 ug/kg	103
11) Phenanthrene-d10	15.000	188	3384980	4000.00 ug/kg	101
16) Chrysene-d12	21.027	240	3907046	4000.00 ug/kg	104
20) Perylene-d12	26.302	264	3287870	4000.00 ug/kg	104

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.779	172	15251	48.87 ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.22%#	
17) 4-Terphenyl-d14	17.628	244	46251	51.23 ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.28%#	

Target Compounds					Qvalue
2) Naphthalene	10.327	128	19480	50.62 ug/kg	99
3) 2-Methyl naphthalene	11.248	142	10141	41.69 ug/kg	98
4) 1-Methyl naphthalene	11.466	142	11421	47.29 ug/kg	98
7) Acenaphthylene	12.763	152	25743	50.72 ug/kg	98
8) Acenaphthene	12.925	153	16337	50.87 ug/kg	99
9) Dibenzofuran	13.088	168	26835	51.74 ug/kg	91
10) Fluorene	13.584	166	24907	51.07 ug/kg	99
12) Phenanthrene	15.036	178	50392	51.44 ug/kg	97
13) Anthracene	15.080	178	54990	51.81 ug/kg	98
14) Fluoranthene	17.091	202	65928	51.42 ug/kg	85
15) Pyrene	17.735	202	66234	51.51 ug/kg	96
18) Benzo[a]anthracene	20.844	228	53356	48.58 ug/kg	98
19) Chrysene	21.115	228	49286	49.02 ug/kg	98
21) Benzo[b]fluoranthene	24.507	252	43553	46.51 ug/kg	99
22) Benzo[k]fluoranthene	24.595	252	33838	45.06 ug/kg	98
23) Benzo(j)fluoranthene	24.697	252	36600	48.22 ug/kg	99
24) Benzo(e)pyrene	25.774	252	44132	49.11 ug/kg	100
25) Benzo[a]pyrene	25.957	252	41286	47.97 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.569	276	45459	47.68 ug/kg	99
27) Dibenz[a,h]anthracene	29.561	278	36685	47.20 ug/kg	98
28) Benzo[g,h,i]perylene	30.704	276	40076	48.17 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051005.D
Acq On : 10 May 2016 8:30 pm
Operator :
Sample : PAH3-160510 50ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 11 10:45:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051006.D
Acq On : 10 May 2016 9:07 pm
Operator :
Sample : PAH4-160510 100ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 11 10:45:08 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.288	136	1574320	4000.00 ug/kg	98
6) Acenaphthene-d10	12.871	164	1055323	4000.00 ug/kg	101
11) Phenanthrene-d10	14.998	188	3251486	4000.00 ug/kg	97
16) Chrysene-d12	21.020	240	3827236	4000.00 ug/kg	102
20) Perylene-d12	26.294	264	3182996	4000.00 ug/kg	100

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.777	172	31039	100.32 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.51%#		
17) 4-Terphenyl-d14	17.615	244	90784	102.66 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.57%#		

Target Compounds					Qvalue
2) Naphthalene	10.325	128	39007	102.24 ug/kg	99
3) 2-Methyl naphthalene	11.243	142	21207	84.16 ug/kg	98
4) 1-Methyl naphthalene	11.465	142	23413	97.79 ug/kg	99
7) Acenaphthylene	12.759	152	50778	102.39 ug/kg	99
8) Acenaphthene	12.925	153	32099	102.28 ug/kg	99
9) Dibenzofuran	13.088	168	52376	103.35 ug/kg	98
10) Fluorene	13.579	166	47934	100.57 ug/kg	99
12) Phenanthrene	15.034	178	94723	100.66 ug/kg	97
13) Anthracene	15.078	178	104836	102.82 ug/kg	98
14) Fluoranthene	17.092	202	129587	105.22 ug/kg	93
15) Pyrene	17.722	202	128916	104.36 ug/kg	93
18) Benzo[a]anthracene	20.844	228	107249	99.69 ug/kg	98
19) Chrysene	21.108	228	98309	99.82 ug/kg	99
21) Benzo[b]fluoranthene	24.500	252	87156	96.15 ug/kg	99
22) Benzo[k]fluoranthene	24.588	252	71623	98.51 ug/kg	98
23) Benzo(j)fluoranthene	24.697	252	73967	100.65 ug/kg	99
24) Benzo(e)pyrene	25.774	252	87538	100.61 ug/kg	99
25) Benzo[a]pyrene	25.950	252	81560	97.89 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.561	276	89633	97.11 ug/kg	99
27) Dibenz[a,h]anthracene	29.547	278	72155	95.89 ug/kg	98
28) Benzo[g,h,i]perylene	30.704	276	78373	97.31 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051006.D
Acq On : 10 May 2016 9:07 pm
Operator :
Sample : PAH4-160510 100ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 11 10:45:08 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051007.D
Acq On : 10 May 2016 9:44 pm
Operator :
Sample : PAH5-160510 500ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 11 10:45:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.284	136	1616531	4000.00	ug/kg	100
6) Acenaphthene-d10	12.871	164	1052604	4000.00	ug/kg	101
11) Phenanthrene-d10	14.996	188	3326988	4000.00	ug/kg	99
16) Chrysene-d12	21.020	240	3820943	4000.00	ug/kg	102
20) Perylene-d12	26.287	264	3197705	4000.00	ug/kg	101

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.773	172	165670	521.45	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 13.04%#			
17) 4-Terphenyl-d14	17.615	244	441296	499.86	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 12.50%#			

Target Compounds						Qvalue
2) Naphthalene	10.321	128	197925	505.21	ug/kg	100
3) 2-Methyl naphthalene	11.239	142	127484	477.61	ug/kg	99
4) 1-Methyl naphthalene	11.461	142	134372	546.57	ug/kg	99
7) Acenaphthylene	12.759	152	249148	503.69	ug/kg	99
8) Acenaphthene	12.921	153	156678	500.52	ug/kg	99
9) Dibenzofuran	13.083	168	255650	505.74	ug/kg	98
10) Fluorene	13.574	166	237488	499.58	ug/kg	100
12) Phenanthrene	15.032	178	471774	489.95	ug/kg	98
13) Anthracene	15.076	178	518768	497.27	ug/kg	98
14) Fluoranthene	17.092	202	627904	498.28	ug/kg	98
15) Pyrene	17.722	202	622926	492.85	ug/kg	98
18) Benzo[a]anthracene	20.837	228	531791	495.11	ug/kg	99
19) Chrysene	21.108	228	487688	496.00	ug/kg	98
21) Benzo[b]fluoranthene	24.500	252	446872	490.71	ug/kg	99
22) Benzo[k]fluoranthene	24.580	252	394934	540.70	ug/kg	98
23) Benzo(j)fluoranthene	24.690	252	391806	530.72	ug/kg	99
24) Benzo(e)pyrene	25.767	252	438198	501.33	ug/kg	99
25) Benzo[a]pyrene	25.950	252	414276	494.96	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.547	276	459506	495.54	ug/kg	97
27) Dibenz[a,h]anthracene	29.539	278	373713	494.35	ug/kg	98
28) Benzo[g,h,i]perylene	30.689	276	394763	487.88	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051007.D
Acq On : 10 May 2016 9:44 pm
Operator :
Sample : PAH5-160510 500ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 11 10:45:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051008.D
Acq On : 10 May 2016 10:21 pm
Operator :
Sample : PAH6-160510 1000ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 11 10:45:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.281	136	1609199	4000.00 ug/kg	100
6) Acenaphthene-d10	12.866	164	1043592	4000.00 ug/kg	100
11) Phenanthrene-d10	14.993	188	3366458	4000.00 ug/kg	100
16) Chrysene-d12	21.013	240	3758565	4000.00 ug/kg	100
20) Perylene-d12	26.280	264	3167827	4000.00 ug/kg	100

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.771	172	338103	1069.04 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 26.73%#		
17) 4-Terphenyl-d14	17.615	244	853490	982.80 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.57%#		

Target Compounds					Qvalue
2) Naphthalene	10.319	128	395299	1013.61 ug/kg	100
3) 2-Methyl naphthalene	11.236	142	270515	1018.82 ug/kg	99
4) 1-Methyl naphthalene	11.458	142	265900	1086.50 ug/kg	100
7) Acenaphthylene	12.753	152	492825	1004.92 ug/kg	99
8) Acenaphthene	12.920	153	313128	1008.96 ug/kg	99
9) Dibenzofuran	13.077	168	502264	1002.18 ug/kg	96
10) Fluorene	13.573	166	475116	1008.08 ug/kg	98
12) Phenanthrene	15.029	178	950311	975.34 ug/kg	99
13) Anthracene	15.073	178	1019159	965.46 ug/kg	99
14) Fluoranthene	17.092	202	1223282	959.36 ug/kg	98
15) Pyrene	17.723	202	1217297	951.81 ug/kg	98
18) Benzo[a]anthracene	20.837	228	1052978	996.62 ug/kg	99
19) Chrysene	21.101	228	958443	990.95 ug/kg	99
21) Benzo[b]fluoranthene	24.500	252	912278	1011.22 ug/kg	99
22) Benzo[k]fluoranthene	24.580	252	794172	1097.55 ug/kg	99
23) Benzo(j)fluoranthene	24.683	252	782779	1070.30 ug/kg	99
24) Benzo(e)pyrene	25.767	252	867399	1001.73 ug/kg	99
25) Benzo[a]pyrene	25.943	252	834302	1006.19 ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.547	276	931689	1014.23 ug/kg	99
27) Dibenz[a,h]anthracene	29.539	278	766967	1024.12 ug/kg	98
28) Benzo[g,h,i]perylene	30.690	276	797908	995.42 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051008.D
Acq On : 10 May 2016 10:21 pm
Operator :
Sample : PAH6-160510 1000ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 11 10:45:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051009.D
Acq On : 10 May 2016 10:58 pm
Operator :
Sample : PAH7-160510 2000ppb
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 11 10:45:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.280	136	1562362	4000.00	ug/kg	97
6) Acenaphthene-d10	12.867	164	977263	4000.00	ug/kg	94
11) Phenanthrene-d10	14.992	188	3104845	4000.00	ug/kg	92
16) Chrysene-d12	21.013	240	3495950	4000.00	ug/kg	93
20) Perylene-d12	26.280	264	2966012	4000.00	ug/kg	94

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.769	172	632072	2058.44	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 51.46%			
17) 4-Terphenyl-d14	17.615	244	1563267	1935.33	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.38%#			

Target Compounds						Qvalue
2) Naphthalene	10.317	128	759401	2005.61	ug/kg	100
3) 2-Methyl naphthalene	11.235	142	523991	2046.89	ug/kg	100
4) 1-Methyl naphthalene	11.457	142	501831	2112.02	ug/kg	100
7) Acenaphthylene	12.754	152	915681	1993.89	ug/kg	100
8) Acenaphthene	12.916	153	576336	1983.10	ug/kg	100
9) Dibenzofuran	13.078	168	912453	1944.22	ug/kg	100
10) Fluorene	13.569	166	859915	1948.37	ug/kg	100
12) Phenanthrene	15.030	178	1714290	1907.70	ug/kg	100
13) Anthracene	15.074	178	1858022	1908.44	ug/kg	100
14) Fluoranthene	17.092	202	2215471	1883.89	ug/kg	100
15) Pyrene	17.723	202	2207662	1871.63	ug/kg	100
18) Benzo[a]anthracene	20.838	228	1941914	1976.04	ug/kg	100
19) Chrysene	21.101	228	1770777	1968.37	ug/kg	100
21) Benzo[b]fluoranthene	24.500	252	1673798	1981.57	ug/kg	100
22) Benzo[k]fluoranthene	24.581	252	1504300	2220.40	ug/kg	100
23) Benzo(j)fluoranthene	24.691	252	1459957	2132.04	ug/kg	100
24) Benzo(e)pyrene	25.767	252	1588413	1959.22	ug/kg	100
25) Benzo[a]pyrene	25.951	252	1549020	1995.27	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.555	276	1738697	2021.53	ug/kg	100
27) Dibenz[a,h]anthracene	29.540	278	1443267	2058.30	ug/kg	100
28) Benzo[g,h,i]perylene	30.697	276	1492122	1988.14	ug/kg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051009.D
Acq On : 10 May 2016 10:58 pm
Operator :
Sample : PAH7-160510 2000ppb
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 11 10:45:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051010.D
Acq On : 10 May 2016 11:34 pm
Operator :
Sample : PAH8-160510 5000ppb
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 11 10:45:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.279	136	1607500	4000.00 ug/kg	100
6) Acenaphthene-d10	12.866	164	1048910	4000.00 ug/kg	101
11) Phenanthrene-d10	14.991	188	3489646	4000.00 ug/kg	104
16) Chrysene-d12	21.012	240	3642647	4000.00 ug/kg	97
20) Perylene-d12	26.286	264	3135775	4000.00 ug/kg	99

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.769	172	1510643	4781.51 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 119.54%		
17) 4-Terphenyl-d14	17.616	244	3633740	4317.42 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 107.94%		

Target Compounds					Qvalue
2) Naphthalene	10.317	128	1810982	4648.57 ug/kg	99
3) 2-Methyl naphthalene	11.234	142	1280055	4979.05 ug/kg	99
4) 1-Methyl naphthalene	11.456	142	1192892	4879.47 ug/kg	99
7) Acenaphthylene	12.753	152	2220480	4504.81 ug/kg	98
8) Acenaphthene	12.915	153	1422129	4559.13 ug/kg	99
9) Dibenzofuran	13.077	168	2245752	4458.31 ug/kg	98
10) Fluorene	13.568	166	2202341	4649.14 ug/kg	99
12) Phenanthrene	15.031	178	4235828	4193.94 ug/kg	96
13) Anthracene	15.075	178	4500062	4112.49 ug/kg	96
14) Fluoranthene	17.093	202	5080861	3844.01 ug/kg	94
15) Pyrene	17.723	202	5128610	3868.52 ug/kg	90
18) Benzo[a]anthracene	20.844	228	4526014	4420.07 ug/kg	97
19) Chrysene	21.107	228	4159232	4437.15 ug/kg	98
21) Benzo[b]fluoranthene	24.513	252	4109167	4601.37 ug/kg	98
22) Benzo[k]fluoranthene	24.594	252	3594211	5017.97 ug/kg	98
23) Benzo(j)fluoranthene	24.704	252	3516896	4857.85 ug/kg	98
24) Benzo(e)pyrene	25.781	252	3849551	4491.16 ug/kg	98
25) Benzo[a]pyrene	25.964	252	3809209	4640.96 ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.568	276	4344207	4777.43 ug/kg	88
27) Dibenz[a,h]anthracene	29.560	278	3568930	4814.24 ug/kg	97
28) Benzo[g,h,i]perylene	30.725	276	3771267	4752.90 ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051010.D
Acq On : 10 May 2016 11:34 pm
Operator :
Sample : PAH8-160510 5000ppb
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 11 10:45:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051012.D
Acq On : 11 May 2016 12:49 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 11 10:45:24 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.280	136	1855821	4000.00 ug/kg	115
6) Acenaphthene-d10	12.867	164	1123330	4000.00 ug/kg	108
11) Phenanthrene-d10	14.987	188	2598636	4000.00 ug/kg	77
16) Chrysene-d12	21.006	240	3825814	4000.00 ug/kg	102
20) Perylene-d12	26.280	264	3299401	4000.00 ug/kg	104

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	1675854	4594.67 ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 114.87%		
17) 4-Terphenyl-d14	17.615	244	3374351	3817.28 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 95.43%		

Target Compounds					Qvalue	
2) Naphthalene	10.317	128	953	2.12 ug/kg	76	
3) 2-Methyl naphthalene	11.239	142	531	5.14 ug/kg	93	
4) 1-Methyl naphthalene	11.457	142	562	1.99 ug/kg	95	
7) Acenaphthylene	12.754	152	1045	1.98 ug/kg	96	
8) Acenaphthene	12.916	153	751	2.25 ug/kg	97	
9) Dibenzofuran	13.073	168	1056592	1958.60 ug/kg	93	See rerun for dibenzofuran.
10) Fluorene	13.574	166	10421	20.54 ug/kg	99	
12) Phenanthrene	15.025	178	1893	2.52 ug/kg	97	
13) Anthracene	15.070	178	1817	2.23 ug/kg	100	
14) Fluoranthene	17.092	202	2752	2.80 ug/kg	99	
15) Pyrene	17.723	202	3178	3.22 ug/kg	96	
18) Benzo[a]anthracene	20.830	228	3027	2.81 ug/kg	99	
19) Chrysene	21.094	228	2819	2.86 ug/kg	97	
21) Benzo[b]fluoranthene	24.493	252	2910	3.10 ug/kg	100	
22) Benzo[k]fluoranthene	0.000	252	0	N.D.		
23) Benzo(j)fluoranthene	24.683	252	1990617	2613.26 ug/kg	100	
24) Benzo(e)pyrene	25.760	252	664023	736.28 ug/kg	99	
25) Benzo[a]pyrene	25.760	252	641359	742.65 ug/kg	95	
26) Indeno[1,2,3-cd]pyrene	29.562	276	2706	2.83 ug/kg	98	
27) Dibenz[a,h]anthracene	29.547	278	2621	3.36 ug/kg	95	
28) Benzo[g,h,i]perylene	30.682	276	2447	2.93 ug/kg	96	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051012.D
Acq On : 11 May 2016 12:49 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 11 10:45:24 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051013.D
Acq On : 11 May 2016 1:26 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 11 10:45:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.278	136	1554639	4000.00	ug/kg	97
6) Acenaphthene-d10	12.866	164	1006608	4000.00	ug/kg	96
11) Phenanthrene-d10	14.989	188	3157008	4000.00	ug/kg	94
16) Chrysene-d12	21.006	240	3463869	4000.00	ug/kg	92
20) Perylene-d12	26.280	264	2950519	4000.00	ug/kg	93

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.763	172	779363	2550.73	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 63.77%			
17) 4-Terphenyl-d14	17.602	244	1768654	2209.88	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 55.25%			

Target Compounds						Qvalue
2) Naphthalene	10.315	128	894398	2373.87	ug/kg	100
3) 2-Methyl naphthalene	11.232	142	717289	2833.51	ug/kg	100
4) 1-Methyl naphthalene	11.454	142	656912	2778.44	ug/kg	100
7) Acenaphthylene	12.748	152	1098072	2321.34	ug/kg	100
8) Acenaphthene	12.915	153	729094	2435.59	ug/kg	99
9) Dibenzofuran	13.082	168	3308	6.84	ug/kg	93
10) Fluorene	13.568	166	1095429	2409.63	ug/kg	98
12) Phenanthrene	15.027	178	2064186	2259.11	ug/kg	99
13) Anthracene	15.071	178	2115711	2137.21	ug/kg	99
14) Fluoranthene	17.092	202	2598569	2173.14	ug/kg	97
15) Pyrene	17.722	202	2593276	2162.22	ug/kg	97
18) Benzo[a]anthracene	20.837	228	2215618	2275.43	ug/kg	100
19) Chrysene	21.101	228	1891125	2121.62	ug/kg	100
21) Benzo[b]fluoranthene	24.493	252	1991808	2370.43	ug/kg	99
22) Benzo[k]fluoranthene	24.581	252	1882427	2793.12	ug/kg	99
23) Benzo(j)fluoranthene	0.000	252	0	N.D.		
24) Benzo(e)pyrene	25.767	252	1976951	2451.27	ug/kg	100
25) Benzo[a]pyrene	25.943	252	1884992	2440.78	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.554	276	2091753	2444.78	ug/kg	100
27) Dibenz[a,h]anthracene	29.540	278	1738477	2492.33	ug/kg	100
28) Benzo[g,h,i]perylene	30.697	276	1798976	2409.59	ug/kg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051013.D
Acq On : 11 May 2016 1:26 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 11 10:45:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051020.D
Acq On : 11 May 2016 9:18 am
Operator :
Sample : SSCV-160511
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 11 10:45:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	%Rec
1) Naphthalene-d8	10.280	136	1399599	4000.00 ug/kg	87
6) Acenaphthene-d10	12.872	164	1004361	4000.00 ug/kg	96
11) Phenanthrene-d10	14.994	188	3100424	4000.00 ug/kg	92
16) Chrysene-d12	21.013	240	3551246	4000.00 ug/kg	94
20) Perylene-d12	26.280	264	2998619	4000.00 ug/kg	95

System Monitoring Compounds					Dev(Min)
5) 2-Fluorobiphenyl	11.790	172	161	0.59 ug/kg	0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery	= 0.01%#	
17) 4-Terphenyl-d14	17.615	244	1074	1.31 ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery	= 0.03%#	

Target Compounds					Qvalue
2) Naphthalene	10.321	128	189	0.56 ug/kg	80
3) 2-Methyl naphthalene	11.243	142	73	3.74 ug/kg#	71
4) 1-Methyl naphthalene	11.527	142	17	0.08 ug/kg	96
7) Acenaphthylene	12.759	152	258	0.55 ug/kg	97
8) Acenaphthene	12.921	153	264	0.88 ug/kg	90
9) Dibenzofuran	13.078	168	1144093	2372.02 ug/kg	92
10) Fluorene	13.579	166	11574	25.52 ug/kg	99
12) Phenanthrene	15.032	178	1088	1.21 ug/kg	98
13) Anthracene	15.076	178	957	0.98 ug/kg	96
14) Fluoranthene	17.092	202	1237	1.05 ug/kg	91
15) Pyrene	17.722	202	1577	1.34 ug/kg	95
18) Benzo[a]anthracene	20.838	228	1390	1.39 ug/kg	97
19) Chrysene	21.101	228	1149	1.26 ug/kg	97
21) Benzo[b]fluoranthene	24.500	252	1334	1.56 ug/kg	97
22) Benzo[k]fluoranthene	24.581	252	806	1.18 ug/kg	99
23) Benzo(j)fluoranthene	24.683	252	177	0.26 ug/kg	72
24) Benzo(e)pyrene	25.767	252	510	0.62 ug/kg	94
25) Benzo[a]pyrene	25.943	252	1108	1.41 ug/kg	93
26) Indeno[1,2,3-cd]pyrene	29.569	276	1222	1.41 ug/kg	95
27) Dibenz[a,h]anthracene	29.576	278	1493	2.11 ug/kg	90
28) Benzo[g,h,i]perylene	30.704	276	997	1.31 ug/kg	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051020.D
Acq On : 11 May 2016 9:18 am
Operator :
Sample : SSCV-160511
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 11 10:45:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

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: [signature] 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-MS4
For

DHL Work Order
1605071

ICP-MS4_160511C
For

DHL Work Order
1605071

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_160511C 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: 05/12/2016

Second-Level Review: Janice Whitt Date Stamp: 5/12/2016

REVIEWED BY
By Janice Whitt at 4:50:49 PM, 5/12/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160511C** **Run No.:** 85761

Analytical Run Date: 5/11/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:22:00 PM		
L2-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:24:00 PM		
L-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:26:00 PM		
10X-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:28:00 PM		
5X-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:30:00 PM		
2X-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:32:00 PM		
H-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:34:00 PM		
H2-160511	1	ICPMS_TWDOD	CAL	R85761	5/11/2016 5:36:00 PM		
ICSA-160511	1	ICPMS_TWDOD	ICSA	R85761	5/11/2016 5:42:00 PM		
ICSAB-160511	1	ICPMS_TWDOD	ICSB	R85761	5/11/2016 5:44:00 PM		
ICV2-160511	1	ICPMS_TWDOD	ICV	R85761	5/11/2016 5:55:00 PM		
ILCVL2-160511	1	ICPMS_TWDOD	LCVL	R85761	5/11/2016 6:00:00 PM		
ICB2-160511	1	ICPMS_TWDOD	ICB	R85761	5/11/2016 6:06:00 PM		
MB-75056	5	ICPMS_TSDOD1	MBLK	75056	5/11/2016 6:08:00 PM		
LCS-75056	5	ICPMS_TSDOD1	LCS	75056	5/11/2016 6:10:00 PM		
LCSD-75056	5	ICPMS_TSDOD1	LCSD	75056	5/11/2016 6:12:00 PM		
1605071-09A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:16:00 PM		
1605071-09A SD	25	ICPMS_TSDOD1	SD	75056	5/11/2016 6:18:00 PM		
1605047-33A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:20:00 PM		
1605047-34A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:22:00 PM		
1605047-35A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:24:00 PM		
1605047-36A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:26:00 PM		
1605047-37A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:28:00 PM		
1605047-39A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:30:00 PM		
1605047-42A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:31:00 PM		
1605047-45A	50	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:33:00 PM		Ran @ 50X due to sample being very dark
1605047-46A	50	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:35:00 PM		Ran @ 50X due to sample being very dark
1605071-09A PDS	5	ICPMS_TSDOD1	PDS	75056	5/11/2016 6:37:00 PM		
1605071-09A MS	5	ICPMS_TSDOD1	MS	75056	5/11/2016 6:39:00 PM		
1605071-09A MSD	5	ICPMS_TSDOD1	MSD	75056	5/11/2016 6:41:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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-MS4_160511C** **Run No.:** 85761

CCV1-160511	1	ICPMS_TWDOD	CCV	R85761	5/11/2016 6:43:00 PM		
LCVL1-160511	1	ICPMS_TWDOD	LCVL	R85761	5/11/2016 6:47:00 PM		
CCB1-160511	1	ICPMS_TWDOD	CCB	R85761	5/11/2016 6:49:00 PM		
1605071-01A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:51:00 PM		
1605071-02A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:53:00 PM		
1605071-03A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:55:00 PM		
1605071-04A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:57:00 PM		
1605071-05A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 6:59:00 PM		
1605071-06A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 7:01:00 PM		
1605071-07A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 7:03:00 PM		
1605071-08A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 7:05:00 PM		
1605071-10A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 7:07:00 PM		
1605071-11A	5	ICPMS_TSDOD1	SAMP	75056	5/11/2016 7:09:00 PM		
CCV2-160511	1	ICPMS_TWDOD	CCV	R85761	5/11/2016 7:11:00 PM		
LCVL2-160511	1	ICPMS_TWDOD	LCVL	R85761	5/11/2016 7:15:00 PM		
CCB2-160511	1	ICPMS_TWDOD	CCB	R85761	5/11/2016 7:17:00 PM		
MB-75019	5	ICPMS_TSDOD1	MBLK	75019	5/11/2016 7:19:00 PM		
LCS-75019	5	ICPMS_TSDOD1	LCS	75019	5/11/2016 7:21:00 PM		
LCSD-75019	5	ICPMS_TSDOD1	LCSD	75019	5/11/2016 7:23:00 PM		
1605047-24A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:27:00 PM		
1605047-24A SD	25	ICPMS_TSDOD1	SD	75019	5/11/2016 7:29:00 PM		
1605047-11A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:32:00 PM		
1605047-12A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:33:00 PM		
1605047-13A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:35:00 PM		
1605047-14A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:37:00 PM		
1605047-15A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:39:00 PM		
1605047-16A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:41:00 PM		
1605047-17A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:43:00 PM		
1605047-18A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:45:00 PM		
1605047-19A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 7:47:00 PM		
1605047-24A PDS	5	ICPMS_TSDOD1	PDS	75019	5/11/2016 7:49:00 PM		
1605047-24A MS	5	ICPMS_TSDOD1	MS	75019	5/11/2016 7:51:00 PM		
1605047-24A MSD	5	ICPMS_TSDOD1	MSD	75019	5/11/2016 7:53:00 PM		
CCV3-160511	1	ICPMS_TWDOD	CCV	R85761	5/11/2016 7:55:00 PM		
LCVL3-160511	1	ICPMS_TWDOD	LCVL	R85761	5/11/2016 7:59:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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-MS4_160511C** **Run No.:** 85761

CCB3-160511	1	ICPMS_TWDOD	CCB	R85761	5/11/2016 8:01:00 PM		
1605047-20A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:03:00 PM		
1605047-21A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:05:00 PM		
1605047-22A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:07:00 PM		
1605047-23A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:09:00 PM		
1605047-25A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:11:00 PM		
1605047-26A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:13:00 PM		
1605047-27A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:15:00 PM		
1605047-28A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:17:00 PM		
1605047-29A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:19:00 PM		
1605047-30A	5	ICPMS_TSDOD1	SAMP	75019	5/11/2016 8:21:00 PM		
CCV4-160511	1	ICPMS_TWDOD	CCV	R85761	5/11/2016 8:23:00 PM		
LCVL4-160511	1	ICPMS_TWDOD	LCVL	R85761	5/11/2016 8:27:00 PM		
CCB4-160511	1	ICPMS_TWDOD	CCB	R85761	5/11/2016 8:43:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160511.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	L2-160511	CAL ICPMS_TW	2102	
14	CCB		CAL ICPMS_TW	1102	
15	CCB		CAL ICPMS_TW	1102	
16	CCB		CAL ICPMS_TW	1103	
17	CCB		CAL ICPMS_TW	1103	
18	CCB		CAL ICPMS_TW	1103	
19	CCB		CAL ICPMS_TW	1103	
20	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	

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

Sample List

20 1

#	Sample Type	Sample Name	Comment	Vial#	File Name
21	CalStd	L2-160511	CAL ICPMS_TW	2102	
22	CalStd	L-160511	CAL ICPMS_TW	2103	
23	CalStd	10X-160511	CAL ICPMS_TW	2104	
24	CalStd	5X-160511	CAL ICPMS_TW	2105	
25	CalStd	2X-160511	CAL ICPMS_TW	2106	
26	CalStd	H-160511	CAL ICPMS_TW	2107	
27	CalStd	H2-160511	CAL ICPMS_TW	2108	
28	ICB	BLANK	CCB ICPMS_TW	1101	
29	ICB	BLANK	CCB ICPMS_TW	1102	
30	ICSA	ICSA-160511	ICSAICPMS_TW	2109	
31	ICSB	ICSAB-160511	ICSBICPMS_TW	2110	
32	ICB	BLANK	CCB ICPMS_TW	1101	
33	ICB	BLANK	CCB ICPMS_TW	1102	
34	ICV	ICV-160511	ICV ICPMS_TW	2111	
35	ICB	ICB-160511	ICB ICPMS_TW	1101	
36	LLICV	LCVL-160511	LCVLICPMS_TW	2112	
37	ICB	ICB-160511	ICB ICPMS_TW	1102	
38	ICB	ICB-160511	ICB ICPMS_TW	1103	
39	PB_W	MB-75065	MBLK200.8	2201	
40	LCS_200	LCS-75065	LCS 200.8	2202	

#	Level	Dilution	Skip
21	2		
22	3		
23	4		
24	5		
25	6		
26	7		
27	8		
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39		1	
40		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	LCS_200	LCSD-75065	LCSD200.8	2203	
42	CCB	RINSE	CCB ICPMS_TW	1101	
43	AllRef	1605079-01A	SAMP200.8	2204	
44	SD	1605079-01A SD	SD 200.8	2205	
45	SAMP_W	1605077-01B	SAMP200.8	2206	

Sample List

46	SAMP_W	1605078-01A	SAMP200.8	2207
47	PDS	1605079-01A PDS	PDS 200.8	2208
48	MS_W	1605079-01A MS	MS 200.8	2209
49	MS_W	1605079-01A MSD	MSD 200.8	2210
50	CCB	RINSE	CCB ICPMS_TW	1102
51	CCB	RINSE	CCB ICPMS_TW	1103
52	CCB	RINSE	CCB ICPMS_TW	1103
53	PB_W	MB-74943	MBLK6020A_W	2301
54	LCS_W	LCS-74943	LCS 6020A_W	2302
55	LCS_W	LCSD-74943	LCSD6020A_W	2303
56	CCB	RINSE	CCB ICPMS_TW	1101
57	AllRef	1605015-02B	SAMP6020A_W	2304
58	SD	1605015-02B SD	SD 6020A_W	2305
59	SAMP_W	1605015-01B	SAMP6020A_W	2306
60	SAMP_W	1605015-03B	SAMP6020A_W	2307

#	Level	Dilution	Skip
41		1	
42			
43		1	
44		5	
45		1	
46		1	
47		1	
48		1	
49		1	
50			
51			
52			
53		1	
54		1	
55		1	
56			
57		10	
58		50	
59		10	
60		10	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	SAMP_W	1605015-04B	SAMP6020A_W	2308	
62	PDS	1605015-02B PDS	PDS 6020A_W	2309	
63	MS_W	1605015-02B MS	MS 6020A_W	2310	
64	MS_W	1605015-02B MSD	MSD 6020A_W	2311	
65	CCB	CCB1-160511	CCB ICPMS_TW	1102	
66	CCB	CCB1-160511	CCB ICPMS_TW	1103	
67	CCV	CCV1-160511	CCV ICPMS_TW	1207	
68	CCV	CCV1-160511	CCV ICPMS_TW	1207	
69	CCB	CCB1-160511	CCB ICPMS_TW	1102	
70	CCB	CCB1-160511	CCB ICPMS_TW	1103	
71	LLCCV	LCVL1-160511	LCVLICPMS_TW	2112	
72	CCB	CCB1-160511	CCB ICPMS_TW	1103	
73	PB_W	MB-75029	MBLKICPMS_TW	3101	

Sample List

74	LCS_W	LCS-75029	LCS ICPMS_TW	3102
75	LCS_W	LCSD-75029	LCSDICPMS_TW	3103
76	CCB	RINSE	CCB ICPMS_TW	1101
77	AllRef	1605045-03B	SAMPICPMS_TW	3104
78	SD	1605045-03B SD	SD ICPMS_TW	3105
79	SAMP_W	1605045-01B	SAMPICPMS_TW	3106
80	SAMP_W	1605045-02B	SAMPICPMS_TW	3107

#	Level	Dilution	Skip
61		10	
62		10	
63		10	
64		10	
65			
66			
67			
68			
69			
70			
71			
72			
73		1	
74		1	
75		1	
76			
77		100	
78		500	
79		100	
80		100	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605045-04B	SAMPICPMS_TW	3108	
82	SAMP_W	1605045-05B	SAMPICPMS_TW	3109	
83	SAMP_W	1605045-06B	SAMPICPMS_TW	3110	
84	SAMP_W	1605045-07B	SAMPICPMS_TW	3111	
85	SAMP_W	1605045-08B	SAMPICPMS_TW	3112	
86	SAMP_W	1605070-01B	SAMPICPMS_TW	3201	
87	SAMP_W	1605070-02B	SAMPICPMS_TW	3202	
88	PDS	1605045-03B PDS	PDS ICPMS_TW	3203	
89	MS_W	1605045-03B MS	MS ICPMS_TW	3204	
90	MS_W	1605045-03B MSD	MSD ICPMS_TW	3205	
91	CCV	CCV2-160511	CCV ICPMS_TW	1207	
92	CCB	CCB2-160511	CCB ICPMS_TW	1102	
93	LLCCV	LCVL2-160511	LCVLICPMS_TW	2112	
94	CCB	CCB2-160511	CCB ICPMS_TW	1103	
95	SAMP_W	1605070-03B	SAMPICPMS_TW	3206	
96	SAMP_W	1605070-04B	SAMPICPMS_TW	3207	
97	SAMP_W	1605070-05B	SAMPICPMS_TW	3208	
98	SAMP_W	1605073-01B	SAMPICPMS_TW	3209	
99	SAMP_W	1605075-01B	SAMPICPMS_TW	3210	
100	SAMP_W	1605075-02B	SAMPICPMS_TW	3211	

Sample List

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	SAMP_W	1605075-03B	SAMPICPMS_TW	3212	
102	SAMP_W	1605075-04B	SAMPICPMS_TW	3301	
103	SAMP_W	1605075-05B	SAMPICPMS_TW	3302	
104	SAMP_W	1605075-07B	SAMPICPMS_TW	3303	
105	CCV	CCV3-160511	CCV ICPMS_TW	1207	
106	CCB	CCB3-160511	CCB ICPMS_TW	1102	
107	LLCCV	LCVL3-160511	LCVLICPMS_TW	2512	
108	CCB	CCB3-160511	CCB ICPMS_TW	1103	
109	PB_W	MB-75012	MBLK6020A_W	3311	
110	LCS_W	LCS-75012	LCS 6020A_W	3312	
111	LCS_W	LCSD-75012	LCSD6020A_W	3401	
112	CCB	RINSE	CCB ICPMS_TW	1101	
113	AllRef	1605064-04A	SAMP6020A_W	3402	
114	SD	1605064-04A SD	SD 6020A_W	3403	

#	Level	Dilution	Skip
101		100	
102		100	
103		100	
104		100	
105			
106			
107			
108			
109		1	
110		1	
111		1	
112			
113		1	

Sample List

114 5

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160511Z.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	L2-160511	CAL ICPMS_TW	2102	
14	CalStd	L-160511	CAL ICPMS_TW	2103	
15	CalStd	10X-160511	CAL ICPMS_TW	2104	
16	CalStd	5X-160511	CAL ICPMS_TW	2105	
17	CalStd	2X-160511	CAL ICPMS_TW	2106	
18	CalStd	H-160511	CAL ICPMS_TW	2107	
19	CalStd	H2-160511	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	ICSA	ICSA-160511	ICSAICPMS_TW	2109	
23	ICSB	ICSAB-160511	ICSBICPMS_TW	2110	
24	ICB	BLANK	CCB ICPMS_TW	1101	
25	ICB	BLANK	CCB ICPMS_TW	1102	
26	ICV	ICV2-160511	ICV ICPMS_TW	2111	
27	ICB	ICB2-160511	ICB ICPMS_TW	1101	
28	LLICV	ILCVL2-160511	LCVLICPMS_TW	2112	
29	ICB	ICB2-160511	ICB ICPMS_TW	1102	
30	ICB	ICB2-160511	ICB ICPMS_TW	1103	
31	PB	MB-75056	MBLKICPMS_TSDOD	2201	
32	LCS_S	LCS-75056	LCS ICPMS_TSDOD	2202	
33	LCS_S	LCSD-75056	LCSDICPMS_TSDOD	2203	
34	CCB	RINSE	CCB ICPMS_TW	1101	
35	AllRef	1605071-09A	SAMPICPMS_TSDOD	2204	
36	SD	1605071-09A SD	SD ICPMS_TSDOD	2205	
37	Sample	1605047-33A	SAMPICPMS_TSDOD	2206	
38	Sample	1605047-34A	SAMPICPMS_TSDOD	2207	
39	Sample	1605047-35A	SAMPICPMS_TSDOD	2208	
40	Sample	1605047-36A	SAMPICPMS_TSDOD	2209	

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	Sample	1605047-37A	SAMPICPMS_TSDOD	2210	
42	Sample	1605047-39A	SAMPICPMS_TSDOD	2211	
43	Sample	1605047-42A	SAMPICPMS_TSDOD	2212	
44	Sample	1605047-45A	SAMPICPMS_TSDOD	2301	
45	Sample	1605047-46A	SAMPICPMS_TSDOD	2302	

Sample List

46	PDS	1605071-09A PDS	PDS ICPMS_TSDOD	2303
47	MS_S	1605071-09A MS	MS ICPMS_TSDOD	2304
48	MS_S	1605071-09A MSD	MSD ICPMS_TSDOD	2305
49	CCV	CCV1-160511	CCV ICPMS_TW	1207
50	CCB	CCB1-160511	CCB ICPMS_TW	1102
51	LLCCV	LCVL1-160511	LCVLICPMS_TW	2112
52	CCB	CCB1-160511	CCB ICPMS_TW	1103
53	Sample	1605071-01A	SAMPICPMS_TSDOD	2306
54	Sample	1605071-02A	SAMPICPMS_TSDOD	2307
55	Sample	1605071-03A	SAMPICPMS_TSDOD	2308
56	Sample	1605071-04A	SAMPICPMS_TSDOD	2309
57	Sample	1605071-05A	SAMPICPMS_TSDOD	2310
58	Sample	1605071-06A	SAMPICPMS_TSDOD	2311
59	Sample	1605071-07A	SAMPICPMS_TSDOD	2312
60	Sample	1605071-08A	SAMPICPMS_TSDOD	2401

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	Sample	1605071-10A	SAMPICPMS_TSDOD	2402	
62	Sample	1605071-11A	SAMPICPMS_TSDOD	2403	
63	CCV	CCV2-160511	CCV ICPMS_TW	1207	
64	CCB	CCB2-160511	CCB ICPMS_TW	1102	
65	LLCCV	LCVL2-160511	LCVLICPMS_TW	2112	
66	CCB	CCB2-160511	CCB ICPMS_TW	1103	
67	PB	MB-75019	MBLKICPMS_TSDOD	3101	
68	LCS_S	LCS-75019	LCS ICPMS_TSDOD	3102	
69	LCS_S	LCSD-75019	LCSDICPMS_TSDOD	3103	
70	CCB	RINSE	CCB ICPMS_TW	1101	
71	AllRef	1605047-24A	SAMPICPMS_TSDOD	3104	
72	SD	1605047-24A SD	SD ICPMS_TSDOD	3105	
73	Sample	1605047-11A	SAMPICPMS_TSDOD	3106	

Sample List

74	Sample	1605047-12A	SAMPICPMS_TSDOD	3107
75	Sample	1605047-13A	SAMPICPMS_TSDOD	3108
76	Sample	1605047-14A	SAMPICPMS_TSDOD	3109
77	Sample	1605047-15A	SAMPICPMS_TSDOD	3110
78	Sample	1605047-16A	SAMPICPMS_TSDOD	3111
79	Sample	1605047-17A	SAMPICPMS_TSDOD	3112
80	Sample	1605047-18A	SAMPICPMS_TSDOD	3201

#	Level	Dilution	Skip
61		5	
62		5	
63			
64			
65			
66			
67		5	
68		5	
69		5	
70			
71		5	
72		25	
73		5	
74		5	
75		5	
76		5	
77		5	
78		5	
79		5	
80		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	Sample	1605047-19A	SAMPICPMS_TSDOD	3202	
82	PDS	1605047-24A PDS	PDS ICPMS_TSDOD	3203	
83	MS_S	1605047-24A MS	MS ICPMS_TSDOD	3204	
84	MS_S	1605047-24A MSD	MSD ICPMS_TSDOD	3205	
85	CCV	CCV3-160511	CCV ICPMS_TW	1207	
86	CCB	CCB3-160511	CCB ICPMS_TW	1102	
87	LLCCV	LCVL3-160511	LCVLICPMS_TW	2512	
88	CCB	CCB3-160511	CCB ICPMS_TW	1103	
89	Sample	1605047-20A	SAMPICPMS_TSDOD	3206	
90	Sample	1605047-21A	SAMPICPMS_TSDOD	3207	
91	Sample	1605047-22A	SAMPICPMS_TSDOD	3208	
92	Sample	1605047-23A	SAMPICPMS_TSDOD	3209	
93	Sample	1605047-25A	SAMPICPMS_TSDOD	3210	
94	Sample	1605047-26A	SAMPICPMS_TSDOD	3211	
95	Sample	1605047-27A	SAMPICPMS_TSDOD	3212	
96	Sample	1605047-28A	SAMPICPMS_TSDOD	3301	
97	Sample	1605047-29A	SAMPICPMS_TSDOD	3302	
98	Sample	1605047-30A	SAMPICPMS_TSDOD	3303	
99	CCV	CCV4-160511	CCV ICPMS_TW	1207	
100	CCB	CCB4-160511	CCB ICPMS_TW	1102	

Sample List

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	LLCCV	LCVL4-160511	LCVLICPMS_TW	2512	
102	CCB	CCB4-160511	CCB ICPMS_TW	1102	
103	CCB	CCB4-160511	CCB ICPMS_TW	1102	
104	CCB	CCB4-160511	CCB ICPMS_TW	1102	
105	CCB	CCB4-160511	CCB ICPMS_TW	1102	
106	CCB	CCB4-160511	CCB ICPMS_TW	1103	
107	CCB	CCB4-160511	CCB ICPMS_TW	1103	
108	CCB	CCB4-160511	CCB ICPMS_TW	1103	
109	CCB	CCB4-160511	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
101			
102			
103			
104			
105			
106			
107			
108			
109			

Unknown Samples:

Blank Samples:

Periodic Block

Sample List

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 10:30:00 AM**
Digestion: **Start: 5/10/2016 1:50:00 PM / Stop: 5/10/2016 3:50:00 PM**
Prep End Date: **5/11/2016 9:25:49 AM**

Prep Batch **75056** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #4
Thermometer #71
Balance #30
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-33A	Soil		1.05	50	47.619	1 of 1	
1605047-34A	Soil		1.07	50	46.729	1 of 1	
1605047-35A	Soil		1.03	50	48.544	1 of 1	
1605047-36A	Soil		1.12	50	44.643	1 of 1	
1605047-37A	Soil		1.08	50	46.296	1 of 1	
1605047-39A	Soil		1.19	50	42.017	1 of 1	
1605047-42A	Soil		1.06	50	47.170	1 of 1	
1605047-45A	Solid		0.44	50	113.636	1 of 1	
	J.D said to use 0.4-0.5 talk to JD before prep. PAH warning !!!						
1605047-46A	Solid		0.44	50	113.636	1 of 1	
	J.D said to use 0.4-0.5 talk to JD before prep PAH warning !!!						
1605071-01A	Soil		1.04	50	48.077	1 of 1	
1605071-02A	Soil		1.11	50	45.045	1 of 1	
1605071-03A	Soil		1.15	50	43.478	1 of 1	
1605071-04A	Soil		1.01	50	49.505	1 of 1	
1605071-05A	Soil		1.1	50	45.455	1 of 1	
1605071-06A	Soil		1.05	50	47.619	1 of 1	
1605071-07A	Soil		1.04	50	48.077	1 of 1	
1605071-08A	Soil		1.07	50	46.729	1 of 1	
1605071-09A	Soil		1.04	50	48.077	1 of 1	
1605071-09A MS	Soil		1.04	50	48.077	of	
1605071-09A MSD	Soil		1.04	50	48.077	of	
1605071-09A PDS	Soil		1.04	50	48.077	of	
1605071-09A SD	Soil		1.04	50	48.077	of	
1605071-10A	Soil		1.18	50	42.373	1 of 1	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

REVIEWED BY
By Janice Whitt at 4:34:32 PM, 5/12/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 10:30:00 AM**
Digestion: **Start: 5/10/2016 1:50:00 PM / Stop: 5/10/2016 3:50:00 PM**
Prep End Date: **5/11/2016 9:25:49 AM**

Prep Batch **75056** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #4
- Thermometer #71
- Balance #30
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-11A	Soil		1.03	50	48.544	1 of 1	
LCS-75056	Soil		1	50	50.000	of	
LCSD-75056	Soil		1	50	50.000	of	
MB-75056	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

REVIEWED BY
By Janice Whitt at 4:34:34 PM, 5/12/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	Ryan Oliver	**BALANCE #:**	30	
TEST DATE:	05/11/2016	**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	5.00	4.9975	4.9875	99.75	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9941	4.9841	99.68		
3		4.9922	4.9822	99.64		
AVERAGE (MEAN)		4.995	4.985	99.69		0.054
						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	0.9933	0.9913	99.13	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.9934	0.9914	99.14		
3		0.9946	0.9926	99.26		
AVERAGE (MEAN)		0.994	0.992	99.18		0.073
						PASS

PIPETTE ID: P-31	TEST VOLUME (mL)	TOTAL WT (g)	Volume of H_2O at °C	% TEST VOL (98-102%)	MEAN CRITERIA (± 2%)	% RSD Calculated
1	0.500	0.4979	0.4969	99.38	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.4980	0.4970	99.40		
3		0.4973	0.4963	99.26		
AVERAGE (MEAN)		0.498	0.497	99.35		0.076
						PASS

5/11/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 4:32:50 PM, 5/12/2016

Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 9:05:34 AM**
Digestion:
Prep End Date:

Prep Batch **75056** Prep Code: **3050_IDOD** Technician: **Will Boston** Prep Factor Units: **mL/g**

Equipment List
Hot Block #4
Thermometer #71
Balance #30
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-33A	Soil		1 .05	50	50.000	1 of 1	
1605047-34A	Soil		1 .07	50	50.000	1 of 1	
1605047-35A	Soil		1 .03	50	50.000	1 of 1	
1605047-36A	Soil		1 .12	50	50.000	1 of 1	
1605047-37A	Soil		1 .08	50	50.000	1 of 1	
1605047-39A	Soil		1 .19	50	50.000	1 of 1	
1605047-42A	Soil		1 .06	50	50.000	1 of 1	
1605047-45A	Solid		~0.44	50	50.000	1 of 1	JD said use 0.4-0.5
talk to JD before prep. PAH warning !!!							
1605047-46A	Solid		~0.44	50	50.000	1 of 1	" "
talk to JD before prep PAH warning !!!							
1605071-01A	Soil		1 .04	50	50.000	1 of 1	
1605071-02A	Soil		1 .11	50	50.000	1 of 1	
1605071-03A	Soil		1 .15	50	50.000	1 of 1	
1605071-04A	Soil		1 .01	50	50.000	1 of 1	
1605071-05A	Soil		1 .10	50	50.000	1 of 1	
1605071-06A	Soil		1 .05	50	50.000	1 of 1	
1605071-07A	Soil		1 .04	50	50.000	1 of 1	
1605071-08A	Soil		1 .07	50	50.000	1 of 1	
1605071-09A	Soil		1 .04	50	50.000	1 of 1	
1605071-10A	Soil		1 .18	50	50.000	1 of 1	
1605071-11A	Soil		1 .03	50	50.000	1 of 1	
LCS-75056	Soil		1	50	50.000	of	
LCSD-75056	Soil		1	50	50.000	of	
MB-75056	Soil		1	50	50.000	of	
MS			1.04				71-09A
MSD			1.04				

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160428-05	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	07/27/2016
MET-SPIKE-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016

11:00-11:10
11:13-13:13
~~14:50-16:50~~ 13:50-15:50
16:20-16:35

WB 05/11/16

REVIEWED BY
By Janice Whitt at 4:34:21 PM, 5/12/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-04A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-05A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-09A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-10A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-14A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-15A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED BY
By Janice Whitt at 4:35:33 PM, 5/12/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-42A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-43A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-44A	Soil		0	0	#Num!	1 of 1	
1605071-45A	Soil		0	0	#Num!	1 of 1	
1605071-46A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-47A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-48A	Soil		0	0	#Num!	1 of 1	
1605071-49A	Soil		0	0	#Num!	1 of 1	
1605071-50A	Soil		0	0	#Num!	1 of 1	
1605071-51A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-52A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-53A	Soil		0	0	#Num!	of 3	
Extra sample was subsampled for MS/MSD							
1605071-54A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 4:35:35 PM, 5/12/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/10/2016	**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	5.0043	4.9943	99.89	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0007	4.9907	99.81		
3		5.0013	4.9913	99.83		
AVERAGE (MEAN)		**5.002**	**4.992**	**99.84**		**0.039**
						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	0.2015	0.2011	100.55	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2026	0.2022	101.10		
3		0.2023	0.2019	100.95		
AVERAGE (MEAN)		**0.202**	**0.202**	**100.86**		**0.281**
						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)						

5/10/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 4:28:55 PM, 5/12/2016

Review and Approved / Date

X:\LOGS\Syringe and Pipetter Cal Logbook\MET-HG PREP\Pipetter Accuracy Check-CVD-05.09.16

Calibration Summary Report

Date Acquired 5/11/2016 10:46
Data Batch 160511.b

Level	Calibration File Name
1	020CALB.d
2	021CALS.d
3	022CALS.d
4	023CALS.d
5	024CALS.d
6	025CALS.d
7	026CALS.d
8	027CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0013 * x + 4.2345E-004
Be	1.0000	y = 4.6698E-005 * x + 3.6973E-006
B	1.0000	y = 1.7987E-005 * x + 5.9119E-005
Na	1.0000	y = 7.1087E-004 * x + 0.0629
Mg	0.9999	y = 3.4930E-004 * x + 7.5045E-004
Al	1.0000	y = 1.3665E-004 * x + 3.6278E-004
K	0.9999	y = 3.8033E-004 * x + 0.0514
Ca	1.0000	y = 2.1467E-005 * x + 2.4108E-004
Ti	1.0000	y = 1.4692E-004 * x + 1.7692E-006
V	0.9999	y = 0.0045 * x + 0.0055
Cr	0.9999	y = 0.0052 * x + 0.0014
Mn	1.0000	y = 0.0030 * x + 1.4305E-004
Fe	1.0000	y = 0.0044 * x + 0.0074
Co	1.0000	y = 0.0119 * x + 9.7809E-005
Ni	1.0000	y = 0.0032 * x + 2.9974E-004
Cu	0.9999	y = 0.0084 * x + 0.0058
Zn	1.0000	y = 0.0015 * x + 5.8885E-004
Se	1.0000	y = 8.2466E-005 * x + 1.1765E-004
Sr	1.0000	y = 6.9273E-004 * x + 2.3008E-005
Mo	0.9999	y = 5.6311E-004 * x + 2.5926E-006
Ag	1.0000	y = 0.0016 * x + 7.8723E-006
Cd	1.0000	y = 2.5954E-004 * x + 1.5306E-006
Sn	1.0000	y = 5.4416E-004 * x + 5.7998E-005
Sb	0.9999	y = 8.3690E-004 * x + 1.7985E-005
Tl	1.0000	y = 0.0016 * x + 3.6568E-006
Ba	1.0000	y = 2.6551E-004 * x + 3.0521E-006
Pb	1.0000	y = 0.0022 * x + 1.0916E-004
Li	0.9999	y = 3.2350E-005 * x + 1.2177E-005

REVIEWED BY
By Janice Whitt at 9:57:18 AM, 5/12/2016

Calibration Summary Report

Level 7 Cal

Ele	Conc	Calc	%Rec
As	500	502.71	101
Be	500	508.89	102
B	500	506.46	101
Na	10000	10132.94	101
Mg	10000	10200.80	102
Al	10000	9998.54	100
K	10000	10225.57	102
Ca	10000	10028.61	100
Ti	500	512.50	103
V	500	521.87	104
Cr	500	520.41	104
Mn	500	517.18	103
Fe	10000	10013.17	100
Co	500	516.10	103
Ni	500	514.32	103
Cu	500	526.59	105
Zn	500	505.17	101
Se	500	502.90	101
Sr	500	512.23	102
Mo	500	521.58	104
Ag	500	499.26	100
Cd	500	503.22	101
Sn	500	512.67	103
Sb	500	502.51	101
Tl	500	503.89	101
Ba	500	501.97	100
Pb	500	505.18	101

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1999.07	100
Be	2000	1997.32	100
B	2000	1997.94	100
Na	25000	24912.41	100
Mg	25000	24885.89	100
K	25000	24875.93	100
Ca	25000		#DIV/0!
Ti	2000	1996.36	100
V	2000	1993.20	100
Cr	2000	1993.52	100
Mn	2000	1994.67	100
Co	2000	1994.53	100
Ni	2000	1994.93	100
Cu	2000	1990.81	100
Zn	2000	1997.59	100
Se	2000	1998.85	100
Sr	2000	1996.81	100
Mo	2000	1993.71	100
Cd	2000	1999.31	100
Sn	2000	1997.08	100
Tl	2000	1998.64	100
Ba	2000	2000.01	100
Pb	2000	1997.96	100
Li	2000	1994.73	100

Use Level 7 Cal. jw 5/12/2016

REVIEWED BY
By Janice Whitt at 9:57:23 AM, 5/12/2016

Calibration Summary Report

Date Acquired 5/11/2016 17:22
Data Batch 60511Z.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 + 2.9401E-004
Be	1.0000	y = 5.3023E-005 * x + 3.2874E-006
B	1.0000	y = 1.9036E-005 * x + 4.7841E-005
Na	1.0000	y = 7.8705E-004 * x + 0.0528
Mg	0.9999	y = 3.8665E-004 * x + 4.3653E-004
Al	1.0000	y = 1.5189E-004 * x + 2.6414E-004
K	0.9999	y = 4.2011E-004 * x + 0.0522
Ca	0.9998	y = 2.4419E-005 * x + 2.5448E-004
Ti	1.0000	y = 1.5669E-004 * x + 1.0966E-005
V	1.0000	y = 0.0047 * x + 0.0024
Cr	1.0000	y = 0.0058 * x + 0.0012
Mn	1.0000	y = 0.0033 * x + 3.0609E-004
Fe	1.0000	y = 0.0051 * x + 0.0052
Co	1.0000	y = 0.0129 * x + 1.2363E-004
Ni	1.0000	y = 0.0036 * x + 2.0607E-004
Cu	0.9999	y = 0.0098 * x + 0.0119
Zn	1.0000	y = 0.0017 * x + 6.0822E-004
Se	1.0000	y = 8.6939E-005 * x + 1.3075E-004
Sr	1.0000	y = 7.0651E-004 * x + 1.5528E-005
Mo	1.0000	y = 5.6578E-004 * x + 2.4894E-006
Ag	0.9999	y = 0.0017 * x + 4.9749E-006
Cd	1.0000	y = 2.5949E-004 * x + 2.0206E-006
Sn	1.0000	y = 5.3836E-004 * x + 1.3593E-004
Sb	1.0000	y = 8.3884E-004 * x + 5.2912E-005
Tl	1.0000	y = 0.0017 * x + 1.2795E-005
Ba	1.0000	y = 2.7229E-004 * x + 2.9632E-006
Pb	1.0000	y = 0.0023 * x + 3.6698E-004
Li	1.0000	y = 3.8183E-005 * x + 4.1863E-006

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By Janice Whitt at 9:58:00 AM, 5/12/2016

Calibration Summary Report

Level 7 Cal

Ele	Conc	Calc	%Rec
As	500	501.34	100
Be	500	501.27	100
B	500	506.16	101
Na	10000	9905.40	99
Mg	10000	10185.41	102
Al	10000	9980.98	100
K	10000	10255.99	103
Ca	10000	9578.37	96
Ti	500	492.57	99
V	500	497.99	100
Cr	500	500.89	100
Mn	500	501.51	100
Fe	10000	9989.85	100
Co	500	516.92	103
Ni	500	509.97	102
Cu	500	517.15	103
Zn	500	507.09	101
Se	500	508.59	102
Sr	500	493.32	99
Mo	500	499.54	100
Ag	500	497.87	100
Cd	500	496.64	99
Sn	500	502.93	101
Sb	500	499.29	100
Tl	500	482.08	96
Ba	500	493.10	99
Pb	500	493.36	99

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1999.75	100
Be	2000	1999.07	100
B	2000	1997.50	100
Na	25000	25018.07	100
Mg	25000	24885.15	100
K	25000	24856.03	101
Ca	25000	25220.76	99
Ti	2000	2002.18	100
V	2000	2000.60	100
Cr	2000	1999.47	100
Mn	2000	1999.52	100
Co	2000	1994.24	100
Ni	2000	1996.43	100
Cu	2000	1994.00	100
Zn	2000	1997.44	100
Se	2000	1997.50	100
Sr	2000	2002.13	100
Mo	2000	2000.14	100
Cd	2000	2000.84	100
Sn	2000	1999.13	100
Tl	2000	2005.07	100
Ba	2000	2002.22	100
Pb	2000	2002.01	100
Li	2000	1996.93	100

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Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
51	500	296	279.6	8.45
59	2000	948	993.2	4.97
89	2000	918	985.2	4.34
140	5000	2292	2235.1	3.57
205	2000	1634	1763.3	4.32
156/140	1	0.262 %	0.423 %	40.90
75	50	9	12.1	37.67
78	50	13	13.0	43.59
56	1000	841	822.0	3.94
31	100	72	69.7	15.06

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.60
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	6.9
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	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	2.34E+2	Pa	Carrier Gas(BP)	2.21E+2	kPa
Analyzer Press	2.17E-4	Pa	Reflected Power	1	W
Forward Power	1552	W			

Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
51	200	118	103.7	11.62
59	2000	1019	1015.0	4.86
89	2000	973	984.2	3.96
140	5000	2456	2544.2	3.46
205	5000	2394	2447.4	2.81
156/140	1	0.285 %	0.223 %	45.19
75	20	9	8.1	28.03
78	20	8	8.4	39.44
56	1000	724	697.5	3.41
31	50	13	22.6	30.33

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.50
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	6.0
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	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	2.49E+2	Pa	Carrier Gas(BP)	1.54E+2	kPa
Analyzer Press	2.18E-4	Pa	Reflected Power	3	W
Forward Power	1549	W			

Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
7	1000	897	869.4	2.50
59	2000	1525	1476.0	3.61
89	5000	2328	2302.3	2.87
140	5000	2070	2057.7	4.74
205	2000	1260	1247.4	3.05
156/140	2	1.401 %	1.252 %	17.19
78	2000	1897	1936.3	2.07
63	2000	1624	1591.2	2.31
75	10000	8953	9016.2	1.82

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.60
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	6.9
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	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	2.32E+2	Pa	Carrier Gas(BP)	2.22E+2	kPa
Analyzer Press	1.19E-4	Pa	Reflected Power	1	W
Forward Power	1551	W			

Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1040	1031.8	3.22
59	2000	1636	1661.2	4.23
89	5000	2521	2571.9	2.86
140	5000	2610	2575.3	3.21
205	5000	1994	1883.7	4.64
156/140	1	0.958 %	0.659 %	27.38
78	2000	1475	1419.0	3.24
63	1000	977	956.7	2.94
75	5000	4118	3988.8	1.94

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.50
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	6.0
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	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	2.48E+2	Pa	Carrier Gas(BP)	1.55E+2	kPa
Analyzer Press	1.31E-4	Pa	Reflected Power	3	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	574203	0.38	5.00	
59	894110	0.40	5.00	
115	1115083	0.50	5.00	
205	886120	0.53	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	577002	572278	573568	572215	575949
59	895993	898582	891973	894541	889461
115	1112362	1115650	1111602	1111296	1124503
205	888713	892357	885682	880225	883622

Integration Time [sec] = 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	83717	7.00	6.9 - 7.1		0.837	0.850	
59	144972	58.90	58.9 - 59.1		0.765	0.850	
115	197650	114.95	114.9 - 115.1		0.756	0.850	
205	151893	204.95	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	0.60	L/min	Makeup/Dilution Gas	0.45	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	-90	V	Deflect	7.0	V
Omega Lens	6.9	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	%			

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By Janice Whitt at 9:58:13 AM, 5/12/2016

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	707447	0.39	5.00	
59	952283	0.33	5.00	
115	1282120	0.23	5.00	
205	1162756	1.56	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	704004	705517	707480	709440	710793
59	955151	955428	952702	949810	948322
115	1284744	1282397	1284625	1277690	1281143
205	1193586	1163687	1155952	1151693	1148861

Integration Time [sec] = 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	108499	7.00	6.9 - 7.1		0.804	0.850	
59	160996	58.90	58.9 - 59.1		0.746	0.850	
115	234880	114.95	114.9 - 115.1		0.743	0.850	
205	201781	205.00	204.9 - 205.1		0.794	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	0.50	L/min	Makeup/Dilution Gas	0.55	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	-90	V	Deflect	7.0	V
Omega Lens	6.0	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	%			

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By Janice Whitt at 9:58:18 AM, 5/12/2016

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: BLANK STD 1
Data File: 020CALB.d
Acquired: 05/11/2016 10:46:55

========= Detector Parameters and P/A Factors =========
Discriminator: 5.7 mV
AnalogHV: 1710 V
PulseHV: 1243 V

Acquired: 05/11/2016 09:56:35

Mass[u]	Element	P/A Factor
6	Li	0.110975
9	Be	0.121942
23	Na	0.128564
24	Mg	0.130632
27	Al	0.130742
39	K	0.135131
45	Sc	0.135581
48		0.136359
51	V	0.136317
52	Cr	0.138370
55	Mn	0.138873
59	Co	0.139472
60	Ni	0.137025
63	Cu	0.137778
66	Zn	0.140997
72		0.138972
74	Ge	0.140559
75	As	0.141415
88	Sr	0.140779
89		0.141422
95		0.139136
97	Mo	0.140129
98	Mo	0.141565
99	[Mo]	0.140325
101		0.139897
105		0.141940
111	Cd	0.139749
114	Cd	0.141412
115	In	0.141622
118	Sn	0.142212
121		0.142119
123	Sb	0.141946
135	Ba	0.141657
138		0.141575
175		0.141782
193		0.142357
205	Tl	0.141181
206	[Pb]	0.141865
207	[Pb]	0.139740
208	Pb	0.141177
209	Bi	0.141388
232		0.141810
238	U	0.142487
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 9:58:24 AM, 5/12/2016

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: CCB4-160511
Data File: 109_CCB.d
Acquired: 05/11/2016 20:43:53

========= Detector Parameters and P/A Factors =========
Discriminator: 4.5 mV
AnalogHV: 1765 V
PulseHV: 1212 V

Acquired: 05/11/2016 16:49:34

Mass[u]	Element	P/A Factor
6	Li	0.098606
9	Be	0.110992
23	Na	0.119443
24	Mg	0.124175
27	Al	0.128068
39	K	0.129332
45	Sc	0.131211
48		0.132280
51	V	0.133711
52	Cr	0.136599
55	Mn	0.138683
59	Co	0.142289
60	Ni	0.144604
63	Cu	0.145226
66	Zn	0.145305
72		0.143984
74	Ge	0.144770
75	As	0.144212
88	Sr	0.146041
89		0.144068
95		0.143632
97	Mo	0.144028
98	Mo	0.145065
99	[Mo]	0.146271
101		0.147360
105		0.149322
111	Cd	0.151923
114	Cd	0.151546
115	In	0.151630
118	Sn	0.150245
121		0.150467
123	Sb	0.151118
135	Ba	0.150839
138		0.152311
175		0.156213
193		0.157197
205	Tl	0.157791
206	[Pb]	0.158716
207	[Pb]	0.159203
208	Pb	0.159394
209	Bi	0.159468
232		0.159474
238	U	0.159032
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

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By Janice Whitt at 9:58:31 AM, 5/12/2016

Calibration Blank Report

Date Acquired	5/11/2016 17:22	Sample Name	BLANK STD 1
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	012CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	5	44.61
9	Be	45	4	78.73
11	B	45	53	55.56
23	Na	45	58873	0.56
24	Mg	45	487	6.28
27	Al	45	294	18.30
39	K	45	58135	0.07
44	Ca	45	284	12.62
47	Ti	45	12	15.73
51	V	45	2632	1.90
52	Cr	45	1328	5.40
55	Mn	45	341	14.24
56	Fe	45	5762	2.67
59	Co	72	93	14.29
60	Ni	72	156	29.25
63	Cu	72	9005	3.18
66	Zn	72	459	26.49
75	As	72	222	6.19
78	Se	72	99	3.03
88	Sr	115	111	37.03
95	Mo	115	18	28.64
107	Ag	115	36	23.58
111	Cd	115	14	53.28
118	Sn	115	971	4.41
121	Sb	115	378	12.36
137	Ba	115	21	36.45
205	Tl	209	188	19.95
208	Pb	209	5382	1.35

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	1114717	0.40
72	Ge	754800	0.29
115	In	7144493	1.16
209	Bi	14670662	1.93

Calibration Standard Report

Date Acquired	5/11/2016 17:24	Sample Name	L2-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	013CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	53	9.74
9	Be	45	56	20.82
11	B	45	74	6.84
23	Na	45	76477	1.50
24	Mg	45	8771	2.19
27	Al	45	3616	4.10
39	K	45	67708	2.01
44	Ca	45	832	15.52
47	Ti	45	183	7.27
51	V	45	7707	1.19
52	Cr	45	7744	2.98
55	Mn	45	3861	7.82
56	Fe	45	113436	0.51
59	Co	72	10147	2.48
60	Ni	72	2954	5.83
63	Cu	72	16555	0.81
66	Zn	72	1736	12.20
75	As	72	1243	2.64
78	Se	72	149	14.10
88	Sr	115	4617	0.40
95	Mo	115	3916	2.63
107	Ag	115	12176	1.87
111	Cd	115	1776	11.55
118	Sn	115	4413	2.42
121	Sb	115	6237	1.79
137	Ba	115	1928	2.86
205	Tl	209	23337	0.19
208	Pb	209	36313	1.19

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1111555	1.44	1114717	99.72	70	120	
72	Ge	744279	0.56	754800	98.61	70	120	
115	In	7054192	1.67	7144493	98.74	70	120	
209	Bi	14659871	0.48	14670662	99.93	70	120	

Calibration Standard Report

Date Acquired	5/11/2016 17:26	Sample Name	L-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	014CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	438	5.27
9	Be	45	581	5.16
11	B	45	271	23.98
23	Na	45	230517	0.90
24	Mg	45	85394	1.89
27	Al	45	32474	1.33
39	K	45	149350	1.09
44	Ca	45	5536	7.36
47	Ti	45	1656	11.38
51	V	45	52750	1.23
52	Cr	45	64094	0.33
55	Mn	45	36821	0.24
56	Fe	45	1098267	0.46
59	Co	72	99039	0.73
60	Ni	72	27003	1.51
63	Cu	72	84183	0.66
66	Zn	72	12842	3.12
75	As	72	10323	1.01
78	Se	72	772	1.91
88	Sr	115	47592	1.08
95	Mo	115	38312	1.81
107	Ag	115	119599	1.29
111	Cd	115	17532	0.73
118	Sn	115	37679	1.10
121	Sb	115	57356	1.56
137	Ba	115	18167	1.16
205	Tl	209	234281	0.54
208	Pb	209	319505	1.12

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1111543	0.58	1114717	99.72	70	120	
72	Ge	740376	0.52	754800	98.09	70	120	
115	In	7127923	2.10	7144493	99.77	70	120	
209	Bi	14493184	0.74	14670662	98.79	70	120	

Calibration Standard Report

Date Acquired	5/11/2016 17:28	Sample Name	10X-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	015CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2123	2.63
9	Be	45	2922	2.57
11	B	45	1108	9.37
23	Na	45	910308	0.17
24	Mg	45	430256	0.93
27	Al	45	164064	0.48
39	K	45	520733	0.28
44	Ca	45	25595	1.68
47	Ti	45	8416	2.12
51	V	45	255984	0.77
52	Cr	45	313459	0.75
55	Mn	45	181518	0.20
56	Fe	45	5532980	0.90
59	Co	72	489655	0.89
60	Ni	72	135549	1.27
63	Cu	72	384882	0.76
66	Zn	72	64079	0.81
75	As	72	51108	0.67
78	Se	72	3365	2.96
88	Sr	115	237661	2.00
95	Mo	115	190865	1.68
107	Ag	115	599360	0.69
111	Cd	115	87967	1.16
118	Sn	115	182274	0.62
121	Sb	115	283975	1.60
137	Ba	115	90461	0.73
205	Tl	209	1176842	0.50
208	Pb	209	1584243	1.24

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1113441	1.53	1114717	99.89	70	120	
72	Ge	742002	0.52	754800	98.30	70	120	
115	In	7065171	0.77	7144493	98.89	70	120	
209	Bi	14516191	0.85	14670662	98.95	70	120	

Calibration Standard Report

Date Acquired	5/11/2016 17:30	Sample Name	5X-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	016CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4291	0.32
9	Be	45	5847	1.28
11	B	45	2175	2.31
23	Na	45	1804903	0.55
24	Mg	45	878931	1.26
27	Al	45	333293	0.61
39	K	45	1005961	0.59
44	Ca	45	51826	1.03
47	Ti	45	16984	2.18
51	V	45	515091	0.38
52	Cr	45	636480	0.41
55	Mn	45	365694	1.14
56	Fe	45	11115504	0.77
59	Co	72	1003879	0.24
60	Ni	72	273896	1.05
63	Cu	72	767223	1.16
66	Zn	72	129823	2.06
75	As	72	103111	0.47
78	Se	72	6615	1.55
88	Sr	115	480990	0.46
95	Mo	115	388876	0.22
107	Ag	115	1218034	0.54
111	Cd	115	180000	0.44
118	Sn	115	372902	0.91
121	Sb	115	579418	0.20
137	Ba	115	185381	0.27
205	Tl	209	2391186	0.48
208	Pb	209	3198901	0.46

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1103490	0.48	1114717	98.99	70	120	
72	Ge	734604	1.60	754800	97.32	70	120	
115	In	6995475	2.22	7144493	97.91	70	120	
209	Bi	14484882	0.95	14670662	98.73	70	120	

Calibration Standard Report

Date Acquired	5/11/2016 17:32	Sample Name	2X-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	017CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	10720	1.39
9	Be	45	14722	1.23
11	B	45	5381	5.75
23	Na	45	4425678	0.74
24	Mg	45	2180090	0.18
27	Al	45	834994	0.12
39	K	45	2430279	0.44
44	Ca	45	127519	0.66
47	Ti	45	42386	1.71
51	V	45	1290905	0.47
52	Cr	45	1584505	0.99
55	Mn	45	906956	0.47
56	Fe	45	27648015	0.58
59	Co	72	2479293	0.45
60	Ni	72	678679	0.58
63	Cu	72	1902792	0.27
66	Zn	72	319812	0.67
75	As	72	255497	0.33
78	Se	72	16320	1.16
88	Sr	115	1208123	0.26
95	Mo	115	979445	0.33
107	Ag	115	3032940	0.58
111	Cd	115	448897	0.83
118	Sn	115	937205	1.61
121	Sb	115	1460976	0.58
137	Ba	115	465391	0.29
205	Tl	209	6000442	0.30
208	Pb	209	8040887	0.27

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1088228	0.47	1114717	97.62	70	120	
72	Ge	740905	0.89	754800	98.16	70	120	
115	In	6900708	2.28	7144493	96.59	70	120	
209	Bi	14172729	1.21	14670662	96.61	70	120	

Calibration Standard Report

Date Acquired	5/11/2016 17:34	Sample Name	H-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	018CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	21072	0.62
9	Be	45	28870	0.30
11	B	45	10517	1.96
23	Na	45	8524667	2.67
24	Mg	45	4277639	0.73
27	Al	45	1646805	0.45
39	K	45	4736214	0.53
44	Ca	45	254299	0.88
47	Ti	45	83836	0.19
51	V	45	2560579	0.56
52	Cr	45	3133002	0.64
55	Mn	45	1807523	0.18
56	Fe	45	54830032	2.05
59	Co	72	4864736	0.76
60	Ni	72	1328821	1.41
63	Cu	72	3704228	0.08
66	Zn	72	627224	1.40
75	As	72	506804	1.02
78	Se	72	32370	1.49
88	Sr	115	2385790	0.58
95	Mo	115	1934659	0.56
107	Ag	115	5894894	0.48
111	Cd	115	882367	1.41
118	Sn	115	1854544	0.74
121	Sb	115	2867683	0.84
137	Ba	115	919107	0.42
205	Tl	209	11719468	0.68
208	Pb	209	15958020	1.63

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1086078	0.35	1114717	97.43	70	120	
72	Ge	729958	1.01	754800	96.71	70	120	
115	In	6847038	1.87	7144493	95.84	70	120	
209	Bi	14200997	2.34	14670662	96.80	70	120	

Calibration Standard Report

Date Acquired	5/11/2016 17:36	Sample Name	H2-160511
Data Batch	60511Z.b	Comment	CAL ICPMS_TW
Data File Name	019CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	81140	0.58
9	Be	45	112790	0.23
11	B	45	40511	0.62
23	Na	45	21008402	1.16
24	Mg	45	10238561	1.86
27	Al	45	2425	17.68
39	K	45	11167648	1.92
44	Ca	45	655559	0.80
47	Ti	45	333831	0.44
51	V	45	10070731	0.33
52	Cr	45	12248891	0.79
55	Mn	45	7059171	1.34
56	Fe	45	50426	20.33
59	Co	72	18826878	1.30
60	Ni	72	5217831	1.15
63	Cu	72	14302971	0.87
66	Zn	72	2476974	0.81
75	As	72	2027215	0.75
78	Se	72	127256	0.79
88	Sr	115	9551032	0.46
95	Mo	115	7640619	0.68
107	Ag	115	2609	19.19
111	Cd	115	3505672	1.06
118	Sn	115	7268490	1.39
121	Sb	115	3844	8.57
137	Ba	115	3680737	0.85
205	Tl	209	47348280	1.28
208	Pb	209	62894444	2.15

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	1064084	0.68	1114717	95.46	70	120	
72	Ge	732226	0.38	754800	97.01	70	120	
115	In	6752757	1.49	7144493	94.52	70	120	
209	Bi	13790953	0.48	14670662	94.00	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/11/2016 17:42	Sample Name	ICSA-160511
Data Batch	60511Z.b	Comment	ICSAICPMS_TW
Data File Name	022ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	-0.033	2	91.7	1.2	0.8	
11	B	34.613	764	8.6	30	30	FailAq FailSoil
51	V	-0.088	2102	0.6	10	10	
52	Cr	0.447	4071	3.4	8	5	
55	Mn	1.399	5351	1.8	8	10	
59	Co	0.589	5555	2.5	8	10	
60	Ni	0.479	1379	11.7	8	10	
63	Cu	0.565	12572	1.5	8	10	
66	Zn	1.972	2841	2.7	10	5	
75	As	0.727	936	5.4	4	5	
78	Se	0.155	104	17.2	2	5	
88	Sr	1.473	7054	2.4	10	10	
107	Ag	0.158	1853	3.4	0.8	2	
111	Cd	0.537	943	5.6	1.2	1	
118	Sn	0.949	4315	4.9	10	10	
121	Sb	0.436	2794	5.0	4	2.5	
137	Ba	0.371	693	13.8	8	10	
205	Tl	0.099	2472	10.1	4	1.5	
208	Pb	0.443	18592	4.4	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1081601	0.21	1114717	97.03	70	120	
72	Ge	719920	1.00	754800	95.38	70	120	
115	In	6676749	1.71	7144493	93.45	70	120	
209	Bi	13514542	0.62	14670662	92.12	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/11/2016 17:44	Sample Name	ICSAB-160511
Data Batch	60511Z.b	Comment	ICSBICPMS_TW
Data File Name	023ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	39.932	210176	0.62	40	99.8	80	120	
52	Cr	45	20.966	133966	0.93	20	104.8	80	120	
55	Mn	45	19.735	72306	0.31	20	98.7	80	120	
59	Co	72	41.833	394459	0.16	40	104.6	80	120	
60	Ni	72	38.985	101891	0.71	40	97.5	80	120	
63	Cu	72	21.000	159060	0.82	20	105.0	80	120	
66	Zn	72	20.741	26126	1.60	20	103.7	80	120	
75	As	72	20.620	21086	1.30	20	103.1	80	120	
78	Se	72	20.901	1425	3.77	20	104.5	80	120	
107	Ag	115	18.714	220884	0.46	20	93.6	80	120	
111	Cd	115	9.944	17619	1.37	10	99.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1099119	0.36	1114717	98.60	70	120	
72	Ge	731234	0.82	754800	96.88	70	120	
115	In	6823320	0.87	7144493	95.50	70	120	
209	Bi	13568729	0.61	14670662	92.49	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/11/2016 17:55	Sample Name	ICV2-160511
Data Batch	60511Z.b	Comment	ICV ICPMS_TW
Data File Name	026_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	104.446	4442	1.79	100	104.4	90	110	
9	Be	45	103.980	6137	0.73	100	104.0	90	110	
11	B	45	109.128	2365	5.26	100	109.1	90	110	
23	Na	45	2651.656	2380556	0.79	2500	106.1	90	110	
24	Mg	45	2613.634	1124723	0.30	2500	104.5	90	110	
27	Al	45	2515.978	425440	0.84	2500	100.6	90	110	
39	K	45	2599.012	1272759	0.83	2500	104.0	90	110	
44	Ca	45	2359.378	64380	1.88	2500	94.4	90	110	
47	Ti	45	101.570	17718	0.41	100	101.6	90	110	
51	V	45	101.934	538979	0.28	100	101.9	90	110	
52	Cr	45	107.318	688658	0.84	100	107.3	90	110	
55	Mn	45	101.633	375483	0.66	100	101.6	90	110	
56	Fe	45	2534.894	14256058	0.62	2500	101.4	90	110	
59	Co	72	109.244	1042299	0.31	100	109.2	90	110	
60	Ni	72	109.756	290018	0.98	100	109.8	90	110	
63	Cu	72	104.829	768243	0.18	100	104.8	90	110	
66	Zn	72	105.526	132675	1.04	100	105.5	90	110	
75	As	72	102.184	104889	0.30	100	102.2	90	110	
78	Se	72	102.832	6713	1.60	100	102.8	90	110	
88	Sr	115	101.404	495294	0.78	100	101.4	90	110	
95	Mo	115	100.357	392481	0.77	100	100.4	90	110	
107	Ag	115	99.652	1191268	0.25	100	99.7	90	110	
111	Cd	115	100.314	179925	0.18	100	100.3	90	110	
118	Sn	115	104.518	389842	0.42	100	104.5	90	110	
121	Sb	115	100.606	583661	0.25	100	100.6	90	110	
137	Ba	115	99.599	187446	1.25	100	99.6	90	110	
205	Tl	209	99.602	2396293	1.38	100	99.6	90	110	
208	Pb	209	101.025	3237599	0.21	100	101.0	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1112522	0.49	1114717	99.80	70	120	
72	Ge	739992	0.74	754800	98.04	70	120	
115	In	6912204	1.16	7144493	96.75	70	120	
209	Bi	14049365	1.42	14670662	95.77	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/11/2016 18:00	Sample Name	ILCVL2-160511
Data Batch	60511Z.b	Comment	LCVLICPMS_TW
Data File Name	028LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.290	449	7.14	10	102.9	70	130	
9	Be	45	1.010	64	18.02	1	101.0	70	130	
11	B	45	26.227	619	16.52	20	131.1	70	130	Fail
23	Na	45	108.974	156624	0.88	100	109.0	70	130	
24	Mg	45	100.772	44528	2.31	100	100.8	70	130	
27	Al	45	95.707	16728	1.09	100	95.7	70	130	
39	K	45	110.782	111544	0.40	100	110.8	70	130	
44	Ca	45	90.677	2791	3.62	100	90.7	70	130	
47	Ti	45	4.967	892	8.76	5	99.3	70	130	
51	V	45	0.996	7992	2.09	1	99.6	70	130	
52	Cr	45	5.076	34377	0.26	5	101.5	70	130	
55	Mn	45	4.837	18482	1.70	5	96.7	70	130	
56	Fe	45	97.211	560988	1.30	100	97.2	70	130	
59	Co	72	5.178	50613	0.33	5	103.6	70	130	
60	Ni	72	5.278	14411	2.07	5	105.6	70	130	
63	Cu	72	4.839	44874	1.57	5	96.8	70	130	
66	Zn	72	5.045	6924	4.91	5	100.9	70	130	
75	As	72	5.005	5465	1.23	5	100.1	70	130	
78	Se	72	5.257	445	4.96	5	105.1	70	130	
88	Sr	115	4.932	24377	0.95	5	98.6	70	130	
95	Mo	115	4.894	19303	2.73	5	97.9	70	130	
107	Ag	115	1.952	23553	2.51	2	97.6	70	130	
111	Cd	115	1.000	1823	6.12	1	100.0	70	130	
118	Sn	115	5.224	20531	2.81	5	104.5	70	130	
121	Sb	115	1.927	11625	1.40	2	96.3	70	130	
137	Ba	115	4.938	9390	2.13	5	98.8	70	130	
205	Tl	209	0.970	23829	2.01	1	97.0	70	130	
208	Pb	209	1.015	38155	1.14	1	101.5	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1130290	0.91	1114717	101.40	70	120	
72	Ge	756712	0.16	754800	100.25	70	120	
115	In	6966990	1.63	7144493	97.52	70	120	
209	Bi	14239939	0.88	14670662	97.06	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/11/2016 18:06	Sample Name	ICB2-160511
Data Batch	60511Z.b	Comment	ICB ICPMS_TW
Data File Name	030_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.184	13	26.6	2	5	
9	Be	45	-0.057	0	173.2	0.4	0.3	
11	B	45	7.518	221	3.5	10	10	
23	Na	45	4.509	65261	1.2	50	100	
24	Mg	45	-0.866	118	5.9	50	100	
27	Al	45	-0.569	206	21.1	50	10	
39	K	45	6.066	63345	2.0	50	100	
44	Ca	45	0.084	297	6.2	50	100	
47	Ti	45	-0.046	4	114.6	4	3	
51	V	45	-0.017	2645	6.0	4	3	
52	Cr	45	-0.004	1356	2.3	2	2	
55	Mn	45	-0.011	312	1.6	2	3	
56	Fe	45	0.076	6428	3.2	50	50	
59	Co	72	-0.006	34	39.1	2	3	
60	Ni	72	-0.027	86	35.4	2	3	
63	Cu	72	-0.445	5832	4.8	2	2	
66	Zn	72	-0.218	184	12.0	4	2	
75	As	72	-0.042	182	6.7	2	2	
78	Se	72	0.029	103	13.6	1	2	
88	Sr	115	-0.004	89	5.7	4	3	
95	Mo	115	0.008	50	24.0	2	2	
107	Ag	115	0.008	133	28.4	0.4	1	
111	Cd	115	0.007	27	37.5	0.4	0.3	
118	Sn	115	0.138	1502	4.2	4	3	
121	Sb	115	-0.025	230	13.8	2	0.8	
137	Ba	115	-0.002	17	60.0	2	3	
205	Tl	209	0.002	241	19.2	2	0.5	
208	Pb	209	0.031	6451	5.1	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1158022	1.10	1114717	103.88	70	120	
72	Ge	769766	0.45	754800	101.98	70	120	
115	In	7149260	0.30	7144493	100.07	70	120	
209	Bi	14707297	2.12	14670662	100.25	70	120	

Method Blank Report

Date Acquired	5/11/16 6:08 PM	Sample Name	MB-75056
Data Batch	60511Z.b	Comment	MBLKICPMS_TSDOD
Data File Name	031_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.098	9	61.86		
9	Be	45	-0.018	3	78.06		
11	B	45	5.412	171	14.75		
23	Na	45	15.560	73783	0.47		
24	Mg	45	2.062	1399	1.07		
27	Al	45	4.454	1067	2.71		
39	K	45	13.208	65435	0.88		
44	Ca	45	46.129	1566	0.61		
47	Ti	45	0.180	44	31.23		
51	V	45	0.074	3076	3.41		
52	Cr	45	0.172	2475	3.58		
55	Mn	45	0.685	2924	5.83		
56	Fe	45	3.454	25655	0.86		
59	Co	72	0.002	111	42.46		
60	Ni	72	0.101	429	10.92		
63	Cu	72	-0.257	7128	2.70		
66	Zn	72	1.589	2497	2.70		
75	As	72	-0.011	211	18.16		
78	Se	72	-0.133	90	10.71		
88	Sr	115	0.063	427	5.12		
95	Mo	115	0.027	124	20.81		
107	Ag	115	0.009	144	17.01		
111	Cd	115	0.000	13	108.98		
118	Sn	115	4.141	16824	1.79		J
121	Sb	115	-0.031	190	12.28		
137	Ba	115	0.023	66	22.93		
205	Tl	209	0.004	287	3.49		
208	Pb	209	0.103	8803	1.03		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1134035	0.12	1114717	101.73	70	120	
72	Ge	756996	0.33	754800	100.29	70	120	
115	In	7112358	1.58	7144493	99.55	70	120	
209	Bi	14633686	1.50	14670662	99.75	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/11/2016 18:10	Sample Name	LCS-75056
Data Batch	60511Z.b	Comment	LCS ICPMS_TSDOD
Data File Name	032_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	201.221	8637	2.36	200	100.6	80	120	
9	Be	45	202.420	12064	2.03	200	101.2	80	120	
11	B	45	199.366	4318	3.31	200	99.7	80	120	
23	Na	45	4963.811	4448849	0.50	1000	496.4	80	120	Fail
24	Mg	45	4968.946	2159203	0.54	1000	496.9	80	120	Fail
27	Al	45	955.956	163441	0.30	1000	95.6	80	120	
39	K	45	4929.240	2385338	0.62	1000	492.9	80	120	Fail
44	Ca	45	4550.985	125152	0.67	1000	455.1	80	120	Fail
47	Ti	45	190.513	33554	0.99	200	95.3	80	120	
51	V	45	195.805	1043218	1.08	200	97.9	80	120	
52	Cr	45	196.849	1274642	0.43	200	98.4	80	120	
55	Mn	45	193.771	722732	0.26	200	96.9	80	120	
56	Fe	45	966.612	5493934	0.26	1000	96.7	80	120	
59	Co	72	205.351	1995337	0.60	200	102.7	80	120	
60	Ni	72	201.647	542582	0.99	200	100.8	80	120	
63	Cu	72	202.901	1506051	0.20	200	101.5	80	120	
66	Zn	72	211.216	269996	0.70	200	105.6	80	120	
75	As	72	195.592	204276	0.22	200	97.8	80	120	
78	Se	72	195.509	12908	1.41	200	97.8	80	120	
88	Sr	115	188.492	940777	0.09	200	94.2	80	120	
95	Mo	115	193.031	771521	0.90	200	96.5	80	120	
107	Ag	115	193.729	2366842	0.41	200	96.9	80	120	
111	Cd	115	192.329	352567	0.87	200	96.2	80	120	
118	Sn	115	199.402	759272	0.47	200	99.7	80	120	
121	Sb	115	188.655	1118237	0.38	200	94.3	80	120	
137	Ba	115	186.992	359669	0.66	200	93.5	80	120	
205	Tl	209	192.955	4691630	0.15	200	96.5	80	120	
208	Pb	209	192.435	6229281	0.59	200	96.2	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1123622	0.68	1114717	100.80	70	120	
72	Ge	753661	0.61	754800	99.85	70	120	
115	In	7064378	1.25	7144493	98.88	70	120	
209	Bi	14201093	1.37	14670662	96.80	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/11/2016 18:12	Sample Name	LCSD-75056
Data Batch	60511Z.b	Comment	LCSDICPMS_TSDOD
Data File Name	033_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.853	8923	0.50	200	103.9	80	120	
9	Be	45	207.096	12343	1.17	200	103.5	80	120	
11	B	45	203.743	4412	3.60	200	101.9	80	120	
23	Na	45	5115.276	4583376	0.16	1000	511.5	80	120	Fail
24	Mg	45	5162.358	2243453	0.83	1000	516.2	80	120	Fail
27	Al	45	984.319	168304	0.77	1000	98.4	80	120	
39	K	45	5141.854	2486019	0.30	1000	514.2	80	120	Fail
44	Ca	45	4671.354	128472	1.46	1000	467.1	80	120	Fail
47	Ti	45	197.375	34766	0.62	200	98.7	80	120	
51	V	45	200.865	1070216	0.97	200	100.4	80	120	
52	Cr	45	203.125	1315367	0.57	200	101.6	80	120	
55	Mn	45	200.565	748137	0.31	200	100.3	80	120	
56	Fe	45	1011.514	5749331	0.82	1000	101.2	80	120	
59	Co	72	213.635	2068447	0.74	200	106.8	80	120	
60	Ni	72	210.833	565244	0.57	200	105.4	80	120	
63	Cu	72	212.323	1569892	1.13	200	106.2	80	120	
66	Zn	72	206.863	263490	0.58	200	103.4	80	120	
75	As	72	200.404	208542	0.07	200	100.2	80	120	
78	Se	72	199.807	13142	1.51	200	99.9	80	120	
88	Sr	115	200.994	965695	0.35	200	100.5	80	120	
95	Mo	115	208.036	800306	0.54	200	104.0	80	120	
107	Ag	115	204.878	2409438	0.37	200	102.4	80	120	
111	Cd	115	204.652	361135	1.10	200	102.3	80	120	
118	Sn	115	211.887	776522	1.03	200	105.9	80	120	
121	Sb	115	201.754	1151093	0.66	200	100.9	80	120	
137	Ba	115	199.920	370157	1.18	200	100.0	80	120	
205	Tl	209	199.547	4770734	0.56	200	99.8	80	120	
208	Pb	209	200.751	6389021	0.55	200	100.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1123724	0.40	1114717	100.81	70	120	
72	Ge	750942	0.48	754800	99.49	70	120	
115	In	6800692	1.57	7144493	95.19	70	120	
209	Bi	13961956	0.59	14670662	95.17	70	120	

Sample Report

Date Acquired	5/11/16 6:16 PM	Sample Name	1605071-09A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	035_ARF.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	75.598	3246	0.64	2000	>RL
9	Be	45	2.474	151	16.18	2000	>RL
11	B	45	175.400	3803	4.63	2000	>RL
23	Na	45	17014.712	15094688	1.47	25000	>RL
24	Mg	45	18104.888	7860004	0.83	25000	>RL
27	Al	45	65881.036	11235706	2.39	10000	OUTCAL
39	K	45	12780.396	6086866	1.30	25000	>RL
44	Ca	45	111145.874	3047534	0.22	25000	OUTCAL
47	Ti	45	382.274	67265	0.57	2000	>RL
51	V	45	105.929	565162	0.55	2000	>RL
52	Cr	45	86.544	560731	0.32	2000	>RL
55	Mn	45	517.013	1926376	0.34	2000	>RL
56	Fe	45	59479.247	337458707	0.96	10000	OUTCAL
59	Co	72	21.752	207176	0.41	2000	>RL
60	Ni	72	50.220	132513	0.66	2000	>RL
63	Cu	72	22.447	171085	0.17	2000	>RL
66	Zn	72	186.395	233505	0.36	2000	>RL
75	As	72	18.024	18640	0.79	2000	>RL
78	Se	72	4.654	395	7.50	2000	>RL
88	Sr	115	426.069	2038968	0.44	2000	>RL
95	Mo	115	5.173	19833	3.40	2000	>RL
107	Ag	115	0.055	681	8.57	500	
111	Cd	115	0.398	713	11.33	2000	
118	Sn	115	5.606	21366	0.83	2000	>RL
121	Sb	115	0.391	2582	2.68	500	
137	Ba	115	1005.332	1854132	0.47	2000	>RL
205	Tl	209	0.613	14390	6.50	2000	
208	Pb	209	28.320	878450	0.41	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1122771	0.16	1114717	100.72	70	120	
72	Ge	738445	0.67	754800	97.83	70	120	
115	In	6775575	2.09	7144493	94.84	70	120	
209	Bi	13543278	1.76	14670662	92.32	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/11/2016 18:18	Sample Name	1605071-09A SD
Data Batch	60511Z.b	Comment	SD ICPMS_TSDOD
Data File Name	036_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	15.194	680	5.51	75.6	100.5	110	90	Good
9	Be	45	0.419	30	9.73	2.5	84.6	110	90	
11	B	45	40.321	949	6.29	175.4	114.9	110	90	
23	Na	45	3352.979	3132430	0.65	17014.7	98.5	110	90	Good
24	Mg	45	3610.999	1625249	0.63	18104.9	99.7	110	90	Good
27	Al	45	12954.846	2290087	0.75	65881.0	98.3	110	90	Good
39	K	45	2550.208	1307416	0.31	12780.4	99.8	110	90	Good
44	Ca	45	21647.997	615455	0.80	111145.9	97.4	110	90	Good
47	Ti	45	73.911	13490	1.31	382.3	96.7	110	90	Good
51	V	45	20.511	115641	1.00	105.9	96.8	110	90	Good
52	Cr	45	16.976	115093	1.45	86.5	98.1	110	90	Good
55	Mn	45	101.468	392093	0.86	517.0	98.1	110	90	Good
56	Fe	45	11692.507	68755217	2.76	59479.2	98.3	110	90	Good
59	Co	72	4.276	42817	1.39	21.8	98.3	110	90	Good
60	Ni	72	9.805	27275	1.11	50.2	97.6	110	90	Good
63	Cu	72	4.406	42667	0.55	22.4	98.1	110	90	Good
66	Zn	72	37.258	49355	0.86	186.4	99.9	110	90	Good
75	As	72	3.515	3999	1.89	18.0	97.5	110	90	Good
78	Se	72	0.782	154	9.64	4.7	84.0	110	90	
88	Sr	115	80.770	414974	0.66	426.1	94.8	110	90	Good
95	Mo	115	0.947	3911	1.93	5.2	91.5	110	90	Good
107	Ag	115	0.021	303	15.27	0.1	192.6	110	90	
111	Cd	115	0.074	154	8.99	0.4	93.0	110	90	Good
118	Sn	115	1.018	4970	3.69	5.6	90.8	110	90	Good
121	Sb	115	0.047	671	10.04	0.4	60.2	110	90	
137	Ba	115	190.070	376286	0.72	1005.3	94.5	110	90	Good
205	Tl	209	0.124	3200	5.68	0.6	100.9	110	90	Good
208	Pb	209	5.530	184652	0.56	28.3	97.6	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1163760	1.19	1114717	104.40	70	120	
72	Ge	774884	0.71	754800	102.66	70	120	
115	In	7271344	1.94	7144493	101.78	70	120	
209	Bi	14246127	1.30	14670662	97.11	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/11/2016 18:37	Sample Name	1605071-09A PDS
Data Batch	60511Z.b	Comment	PDS ICPMS_TSDOD
Data File Name	046_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	266.749	11971	0.31	75.6	200	95.6	75	125	
9	Be	45	197.110	12283	1.85	2.5	200	97.3	75	125	
11	B	45	350.284	7890	2.93	175.4	200	87.4	75	125	
23	Na	45	21683.971	20111934	0.74	17014.7	5000	93.4	75	125	
24	Mg	45	22593.722	10262957	2.05	18104.9	5000	89.8	75	125	
27	Al	45	68421.197	12209438	1.21	65881.0	5000	50.8	75	125	Fail
39	K	45	17568.017	8732055	0.42	12780.4	5000	95.8	75	125	
44	Ca	45	########	3267162	0.36	111145.9	5000	54.6	75	125	Fail
47	Ti	45	571.316	105179	1.22	382.3	200	94.5	75	125	
51	V	45	298.954	1663891	1.15	105.9	200	96.5	75	125	
52	Cr	45	278.550	1885286	0.27	86.5	200	96.0	75	125	
55	Mn	45	690.390	2691432	0.62	517.0	200	86.7	75	125	
56	Fe	45	61584.796	365593239	1.70	59479.2	5000	42.1	75	125	Fail
59	Co	72	224.448	2195153	0.59	21.8	200	101.3	75	125	
60	Ni	72	243.855	660410	0.70	50.2	200	96.8	75	125	
63	Cu	72	215.386	1608648	0.24	22.4	200	96.5	75	125	
66	Zn	72	379.846	488377	0.74	186.4	200	96.7	75	125	
75	As	72	215.048	226051	0.56	18.0	200	98.5	75	125	
78	Se	72	200.043	13291	1.13	4.7	200	97.7	75	125	
88	Sr	115	639.500	3039591	0.88	426.1	200	106.7	75	125	
95	Mo	115	205.380	781783	0.50	5.2	200	100.1	75	125	
107	Ag	115	184.037	2141449	0.92	0.1	200	92.0	75	125	
111	Cd	115	193.263	337439	1.27	0.4	200	96.4	75	125	
118	Sn	115	213.593	774545	0.41	5.6	200	104.0	75	125	
121	Sb	115	203.089	1146595	0.58	0.4	200	101.3	75	125	
137	Ba	115	1218.194	2231672	0.27	1005.3	200	106.4	75	125	
205	Tl	209	197.059	4427527	0.46	0.6	200	98.2	75	125	
208	Pb	209	226.291	6767672	0.23	28.3	200	99.0	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1174814	0.34	1114717	105.39	70	120	
72	Ge	758611	0.79	754800	100.50	70	120	
115	In	6729186	1.65	7144493	94.19	70	120	
209	Bi	13121167	0.55	14670662	89.44	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/11/2016 18:39	Sample Name	1605071-09A MS
Data Batch	60511Z.b	Comment	MS ICPMS_TSDOD
Data File Name	047_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	267.554	11921	0.55	75.6	200	96.0	80	120	
9	Be	45	197.443	12214	1.19	2.5	200	97.5	80	120	
11	B	45	369.408	8258	0.83	175.4	200	97.0	80	120	
23	Na	45	22987.312	21162189	1.91	17014.7	1000	597.3	80	120	Fail
24	Mg	45	24189.744	10908913	1.40	18104.9	1000	608.5	80	120	Fail
27	Al	45	71523.508	12671079	1.12	65881.0	1000	564.2	80	120	Fail
39	K	45	18757.871	9252169	0.77	12780.4	1000	597.7	80	120	Fail
44	Ca	45	########	3152015	0.18	111145.9	1000	-48.9	80	120	Fail
47	Ti	45	571.592	104483	1.19	382.3	200	94.7	80	120	
51	V	45	304.840	1684464	1.04	105.9	200	99.5	80	120	
52	Cr	45	272.186	1829089	0.43	86.5	200	92.8	80	120	
55	Mn	45	724.802	2805374	0.16	517.0	200	103.9	80	120	
56	Fe	45	62752.943	369877585	1.31	59479.2	1000	327.4	80	120	Fail
59	Co	72	222.318	2172578	0.49	21.8	200	100.3	80	120	
60	Ni	72	243.405	658622	0.55	50.2	200	96.6	80	120	
63	Cu	72	218.125	1627562	1.08	22.4	200	97.8	80	120	
66	Zn	72	386.240	496154	0.32	186.4	200	99.9	80	120	
75	As	72	214.917	225718	0.28	18.0	200	98.4	80	120	
78	Se	72	200.970	13342	0.93	4.7	200	98.2	80	120	
88	Sr	115	647.063	3086986	0.69	426.1	200	110.5	80	120	
95	Mo	115	192.403	735064	0.55	5.2	200	93.6	80	120	
107	Ag	115	189.692	2215592	0.68	0.1	200	94.8	80	120	
111	Cd	115	195.603	342787	0.89	0.4	200	97.6	80	120	
118	Sn	115	206.183	750495	0.44	5.6	200	100.3	80	120	
121	Sb	115	69.157	392096	0.45	0.4	200	34.4	80	120	Fail
137	Ba	115	1116.892	2053533	0.59	1005.3	200	55.8	80	120	Fail
205	Tl	209	196.513	4477217	1.25	0.6	200	97.9	80	120	
208	Pb	209	223.741	6785785	0.21	28.3	200	97.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1166419	0.65	1114717	104.64	70	120	
72	Ge	757953	0.43	754800	100.42	70	120	
115	In	6753540	1.44	7144493	94.53	70	120	
209	Bi	13306500	0.93	14670662	90.70	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/11/2016 18:41	Sample Name	1605071-09A MSD
Data Batch	60511Z.b	Comment	MSD ICPMS_TSDOD
Data File Name	048_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	267.003	12037	1.07	75.6	200	95.7	80	120	
9	Be	45	193.920	12139	0.58	2.5	200	95.7	80	120	
11	B	45	365.297	8263	1.11	175.4	200	94.9	80	120	
23	Na	45	21252.515	19803532	1.24	17014.7	1000	423.8	80	120	Fail
24	Mg	45	23266.010	10617301	0.78	18104.9	1000	516.1	80	120	Fail
27	Al	45	69014.828	12373902	2.32	65881.0	1000	313.4	80	120	Fail
39	K	45	18031.630	9002773	1.89	12780.4	1000	525.1	80	120	Fail
44	Ca	45	########	3208538	1.10	111145.9	1000	16.8	80	120	Fail
47	Ti	45	546.588	101091	0.73	382.3	200	82.2	80	120	
51	V	45	299.478	1674475	0.21	105.9	200	96.8	80	120	
52	Cr	45	267.435	1818487	0.04	86.5	200	90.4	80	120	
55	Mn	45	701.741	2748273	0.79	517.0	200	92.4	80	120	
56	Fe	45	61351.800	365856412	3.19	59479.2	1000	187.3	80	120	Fail
59	Co	72	218.885	2169245	1.19	21.8	200	98.6	80	120	
60	Ni	72	239.146	656291	0.38	50.2	200	94.5	80	120	
63	Cu	72	212.850	1611141	0.70	22.4	200	95.2	80	120	
66	Zn	72	377.723	492147	0.59	186.4	200	95.7	80	120	
75	As	72	210.388	224097	0.71	18.0	200	96.2	80	120	
78	Se	72	195.797	13185	1.89	4.7	200	95.6	80	120	
88	Sr	115	656.338	3141362	0.41	426.1	200	115.1	80	120	
95	Mo	115	190.378	729666	0.63	5.2	200	92.6	80	120	
107	Ag	115	190.010	2226338	0.48	0.1	200	95.0	80	120	
111	Cd	115	194.863	342567	0.36	0.4	200	97.2	80	120	
118	Sn	115	205.620	750793	1.09	5.6	200	100.0	80	120	
121	Sb	115	67.677	384911	1.05	0.4	200	33.6	80	120	Fail
137	Ba	115	1488.913	2746471	0.68	1005.3	200	241.8	80	120	Fail
205	Tl	209	197.562	4437845	1.39	0.6	200	98.5	80	120	
208	Pb	209	223.482	6682312	0.09	28.3	200	97.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1180283	0.78	1114717	105.88	70	120	
72	Ge	768805	1.32	754800	101.86	70	120	
115	In	6774752	0.97	7144493	94.82	70	120	
209	Bi	13120550	1.62	14670662	89.43	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/11/2016 18:43	Sample Name	CCV1-160511
Data Batch	60511Z.b	Comment	CCV ICPMS_TW
Data File Name	049_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	204.041	9365	2.68	200	102.0	90	110	
9	Be	45	199.704	12725	2.89	200	99.9	90	110	
11	B	45	213.175	4933	2.68	200	106.6	90	110	
23	Na	45	4896.295	4693138	1.12	5000	97.9	90	110	
24	Mg	45	4889.205	2271664	0.23	5000	97.8	90	110	
27	Al	45	4830.538	881815	0.25	5000	96.6	90	110	
39	K	45	4987.907	2580184	0.54	5000	99.8	90	110	
44	Ca	45	4492.236	132096	0.43	5000	89.8	90	110	Fail
47	Ti	45	197.972	37280	1.77	200	99.0	90	110	
51	V	45	197.514	1125143	0.92	200	98.8	90	110	
52	Cr	45	198.144	1371862	1.06	200	99.1	90	110	
55	Mn	45	197.795	788825	0.68	200	98.9	90	110	
56	Fe	45	4788.768	29077872	2.38	5000	95.8	90	110	
59	Co	72	207.208	2129974	0.25	200	103.6	90	110	
60	Ni	72	204.740	582777	0.98	200	102.4	90	110	
63	Cu	72	206.794	1623589	0.40	200	103.4	90	110	
66	Zn	72	200.146	270675	0.61	200	100.1	90	110	
75	As	72	200.383	221389	0.73	200	100.2	90	110	
78	Se	72	200.464	13999	1.42	200	100.2	90	110	
88	Sr	115	202.948	1020751	0.44	200	101.5	90	110	
95	Mo	115	205.151	826195	0.91	200	102.6	90	110	
107	Ag	115	189.961	2338683	0.24	200	95.0	90	110	
111	Cd	115	199.037	367660	0.66	200	99.5	90	110	
118	Sn	115	203.128	779366	0.50	200	101.6	90	110	
121	Sb	115	195.289	1166456	0.82	200	97.6	90	110	
137	Ba	115	194.543	377087	0.81	200	97.3	90	110	
205	Tl	209	200.374	4709730	0.57	200	100.2	90	110	
208	Pb	209	201.600	6308388	0.62	200	100.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1201427	0.33	1114717	107.78	70	120	
72	Ge	797277	0.56	754800	105.63	70	120	
115	In	7120616	2.22	7144493	99.67	70	120	
209	Bi	13729696	1.69	14670662	93.59	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/11/2016 18:47	Sample Name	LCVL1-160511
Data Batch	60511Z.b	Comment	LCVLICPMS_TW
Data File Name	051LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.845	514	7.58	10	108.5	70	130	
9	Be	45	0.817	57	19.21	1	81.7	70	130	
11	B	45	36.748	919	7.27	20	183.7	70	130	Fail
23	Na	45	108.631	170025	0.29	100	108.6	70	130	
24	Mg	45	98.496	47348	1.94	100	98.5	70	130	
27	Al	45	97.231	18480	1.91	100	97.2	70	130	
39	K	45	112.212	122055	1.11	100	112.2	70	130	
44	Ca	45	93.040	3106	3.37	100	93.0	70	130	
47	Ti	45	5.082	992	8.24	5	101.6	70	130	
51	V	45	0.872	7974	2.52	1	87.2	70	130	
52	Cr	45	4.956	36538	1.62	5	99.1	70	130	
55	Mn	45	4.803	19966	1.34	5	96.1	70	130	
56	Fe	45	94.982	596353	0.36	100	95.0	70	130	
59	Co	72	5.203	54476	0.97	5	104.1	70	130	
60	Ni	72	5.125	14996	2.00	5	102.5	70	130	
63	Cu	72	5.150	50550	1.16	5	103.0	70	130	
66	Zn	72	4.877	7187	0.51	5	97.5	70	130	
75	As	72	4.943	5785	0.43	5	98.9	70	130	
78	Se	72	5.405	487	3.75	5	108.1	70	130	
88	Sr	115	4.980	25455	1.97	5	99.6	70	130	
95	Mo	115	5.020	20477	1.03	5	100.4	70	130	
107	Ag	115	1.978	24681	0.51	2	98.9	70	130	
111	Cd	115	1.000	1885	5.25	1	100.0	70	130	
118	Sn	115	5.090	20718	1.76	5	101.8	70	130	
121	Sb	115	1.915	11954	1.18	2	95.8	70	130	
137	Ba	115	4.810	9457	2.13	5	96.2	70	130	
205	Tl	209	0.983	23985	0.81	1	98.3	70	130	
208	Pb	209	1.062	39418	1.06	1	106.2	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1229299	0.63	1114717	110.28	70	120	
72	Ge	810680	0.34	754800	107.40	70	120	
115	In	7203930	0.80	7144493	100.83	70	120	
209	Bi	14151487	1.97	14670662	96.46	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/11/2016 18:49	Sample Name	CCB1-160511
Data Batch	60511Z.b	Comment	CCB ICPMS_TW
Data File Name	052_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.188	14	25.8	2	5	
9	Be	45	-0.042	1	43.3	0.4	0.3	
11	B	45	14.739	404	5.8	10	10	FailAq FailSoil
23	Na	45	8.527	73316	0.8	50	100	
24	Mg	45	-0.779	167	13.1	50	100	
27	Al	45	-0.076	311	4.5	50	10	
39	K	45	8.816	68795	0.9	50	100	
44	Ca	45	0.822	338	11.9	50	100	
47	Ti	45	0.028	19	44.4	4	3	
51	V	45	-0.147	2051	3.0	4	3	
52	Cr	45	0.010	1539	7.3	2	2	
55	Mn	45	-0.022	289	10.3	2	3	
56	Fe	45	0.400	8855	6.1	50	50	
59	Co	72	0.000	100	40.6	2	3	
60	Ni	72	-0.020	108	15.3	2	3	
63	Cu	72	-0.061	9188	0.5	2	2	
66	Zn	72	-0.169	261	11.5	4	2	
75	As	72	-0.042	192	3.6	2	2	
78	Se	72	0.236	123	25.8	1	2	
88	Sr	115	0.000	111	25.5	4	3	
95	Mo	115	0.007	44	15.6	2	2	
107	Ag	115	0.020	288	6.4	0.4	1	
111	Cd	115	0.002	19	40.7	0.4	0.3	
118	Sn	115	0.052	1179	2.7	4	3	
121	Sb	115	-0.007	337	15.9	2	0.8	
137	Ba	115	0.005	31	6.2	2	3	
205	Tl	209	0.019	640	5.4	2	0.5	
208	Pb	209	0.055	6953	2.6	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1231632	0.15	1114717	110.49	70	120	
72	Ge	810374	0.36	754800	107.36	70	120	
115	In	7185745	0.62	7144493	100.58	70	120	
209	Bi	14096450	0.99	14670662	96.09	70	120	

Sample Report

Date Acquired	5/11/16 6:51 PM	Sample Name	1605071-01A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	053SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	51.937	2413	0.81	2000	>RL
9	Be	45	2.103	139	3.95	2000	>RL
11	B	45	60.114	1448	9.11	2000	>RL
23	Na	45	2501.089	2453971	0.39	25000	>RL
24	Mg	45	11859.386	5567548	0.49	25000	>RL
27	Al	45	51755.567	9544831	1.02	10000	OUTCAL
39	K	45	11499.468	5928803	1.18	25000	>RL
44	Ca	45	102394.753	3036049	0.81	25000	OUTCAL
47	Ti	45	530.817	100992	1.04	2000	>RL
51	V	45	97.215	561101	1.10	2000	>RL
52	Cr	45	51.846	363811	0.81	2000	>RL
55	Mn	45	660.251	2660042	1.04	2000	>RL
56	Fe	45	54945.585	337073391	1.23	10000	OUTCAL
59	Co	72	20.281	203417	0.63	2000	>RL
60	Ni	72	35.907	99815	1.20	2000	>RL
63	Cu	72	26.276	209298	1.04	2000	>RL
66	Zn	72	198.480	261800	0.21	2000	>RL
75	As	72	19.738	21474	1.64	2000	>RL
78	Se	72	4.429	401	6.93	2000	>RL
88	Sr	115	410.926	2027940	0.80	2000	>RL
95	Mo	115	2.500	9897	2.75	2000	>RL
107	Ag	115	0.115	1426	6.95	500	
111	Cd	115	0.576	1058	6.46	2000	>RL
118	Sn	115	5.022	19834	2.17	2000	>RL
121	Sb	115	1.706	10366	1.05	500	
137	Ba	115	429.679	817250	0.27	2000	>RL
205	Tl	209	0.537	12841	0.77	2000	
208	Pb	209	58.542	1841263	0.29	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1214118	0.74	1114717	108.92	70	120	
72	Ge	777597	0.47	754800	103.02	70	120	
115	In	6984989	0.42	7144493	97.77	70	120	
209	Bi	13773294	1.79	14670662	93.88	70	120	

Sample Report

Date Acquired	5/11/16 6:53 PM	Sample Name	1605071-02A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	054SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	59.358	2732	1.04	2000	>RL
9	Be	45	2.733	178	8.69	2000	>RL
11	B	45	85.143	2008	4.17	2000	>RL
23	Na	45	6212.758	5947127	0.12	25000	>RL
24	Mg	45	13580.267	6318366	1.77	25000	>RL
27	Al	45	65646.720	11997990	1.08	10000	OUTCAL
39	K	45	14681.441	7484246	0.48	25000	>RL
44	Ca	45	90020.995	2645337	0.68	25000	OUTCAL
47	Ti	45	390.525	73641	1.21	2000	>RL
51	V	45	102.791	587817	0.35	2000	>RL
52	Cr	45	64.005	444793	0.78	2000	>RL
55	Mn	45	627.390	2505127	0.14	2000	>RL
56	Fe	45	59335.788	360787479	1.19	10000	OUTCAL
59	Co	72	21.793	218897	1.17	2000	>RL
60	Ni	72	37.977	105722	1.89	2000	>RL
63	Cu	72	25.032	200135	0.63	2000	>RL
66	Zn	72	189.577	250450	0.66	2000	>RL
75	As	72	25.921	28171	0.48	2000	>RL
78	Se	72	4.973	439	6.60	2000	>RL
88	Sr	115	373.142	1826214	0.39	2000	>RL
95	Mo	115	2.614	10264	1.38	2000	>RL
107	Ag	115	0.122	1500	8.56	500	
111	Cd	115	0.460	841	9.87	2000	>RL
118	Sn	115	4.917	19280	1.12	2000	>RL
121	Sb	115	1.424	8639	1.34	500	
137	Ba	115	537.125	1013118	0.55	2000	>RL
205	Tl	209	0.599	13975	1.07	2000	
208	Pb	209	54.859	1687265	0.33	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1203262	0.28	1114717	107.94	70	120	
72	Ge	778750	0.50	754800	103.17	70	120	
115	In	6927984	1.41	7144493	96.97	70	120	
209	Bi	13464416	0.77	14670662	91.78	70	120	

Sample Report

Date Acquired	5/11/16 6:55 PM	Sample Name	1605071-03A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	055SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	68.576	3159	1.33	2000	>RL
9	Be	45	2.621	171	8.18	2000	>RL
11	B	45	127.576	2983	5.98	2000	>RL
23	Na	45	11459.512	10928220	1.99	25000	>RL
24	Mg	45	15581.335	7258602	1.86	25000	>RL
27	Al	45	66226.737	12119287	1.88	10000	OUTCAL
39	K	45	14555.893	7429466	0.56	25000	>RL
44	Ca	45	92124.071	2710383	1.12	25000	OUTCAL
47	Ti	45	276.564	52224	2.91	2000	>RL
51	V	45	102.797	588535	0.94	2000	>RL
52	Cr	45	81.589	567283	1.09	2000	>RL
55	Mn	45	610.615	2440962	0.23	2000	>RL
56	Fe	45	63850.511	388659887	1.76	10000	OUTCAL
59	Co	72	23.020	232202	0.68	2000	>RL
60	Ni	72	43.602	121858	1.39	2000	>RL
63	Cu	72	24.355	195803	0.60	2000	>RL
66	Zn	72	206.261	273618	1.15	2000	>RL
75	As	72	22.687	24791	0.87	2000	>RL
78	Se	72	5.185	455	3.74	2000	>RL
88	Sr	115	458.792	2267171	0.27	2000	>RL
95	Mo	115	5.872	23254	0.29	2000	>RL
107	Ag	115	0.098	1219	9.48	500	
111	Cd	115	0.371	687	5.72	2000	
118	Sn	115	3.819	15329	0.95	2000	
121	Sb	115	0.780	4945	2.20	500	
137	Ba	115	424.041	807595	0.69	2000	>RL
205	Tl	209	0.594	13687	1.30	2000	
208	Pb	209	42.143	1280147	1.02	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1204702	0.91	1114717	108.07	70	120	
72	Ge	782098	0.94	754800	103.62	70	120	
115	In	6994684	1.06	7144493	97.90	70	120	
209	Bi	13286407	1.66	14670662	90.56	70	120	

Sample Report

Date Acquired	5/11/16 6:57 PM	Sample Name	1605071-04A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	056SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	64.500	2947	1.14	2000	>RL
9	Be	45	2.153	140	1.79	2000	>RL
11	B	45	154.869	3578	5.69	2000	>RL
23	Na	45	18291.276	17259164	2.19	25000	>RL
24	Mg	45	17316.570	7998219	1.05	25000	>RL
27	Al	45	60081.591	10901202	2.42	10000	OUTCAL
39	K	45	12559.335	6365118	2.65	25000	>RL
44	Ca	45	89661.343	2615681	0.30	25000	OUTCAL
47	Ti	45	316.649	59282	2.64	2000	>RL
51	V	45	95.747	543772	0.60	2000	>RL
52	Cr	45	80.041	551863	0.69	2000	>RL
55	Mn	45	508.385	2015336	0.13	2000	>RL
56	Fe	45	54976.845	331850956	0.89	10000	OUTCAL
59	Co	72	20.935	207251	0.41	2000	>RL
60	Ni	72	50.420	138283	0.88	2000	>RL
63	Cu	72	21.767	172718	0.08	2000	>RL
66	Zn	72	180.138	234577	0.31	2000	>RL
75	As	72	18.615	20004	1.29	2000	>RL
78	Se	72	4.407	394	8.11	2000	>RL
88	Sr	115	401.965	1963336	0.16	2000	>RL
95	Mo	115	4.494	17596	1.75	2000	>RL
107	Ag	115	0.066	822	11.44	500	
111	Cd	115	0.402	734	7.65	2000	>RL
118	Sn	115	3.506	13990	0.46	2000	
121	Sb	115	0.426	2837	4.04	500	
137	Ba	115	372.650	701456	1.15	2000	>RL
205	Tl	209	0.558	12695	2.59	2000	
208	Pb	209	29.447	884488	0.26	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1194577	0.53	1114717	107.16	70	120	
72	Ge	767531	0.37	754800	101.69	70	120	
115	In	6913840	1.39	7144493	96.77	70	120	
209	Bi	13115617	0.22	14670662	89.40	70	120	

Sample Report

Date Acquired	5/11/16 6:59 PM	Sample Name	1605071-05A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	057SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	69.917	3147	4.99	2000	>RL
9	Be	45	1.882	121	7.66	2000	>RL
11	B	45	115.296	2640	1.37	2000	>RL
23	Na	45	7371.739	6892790	0.73	25000	>RL
24	Mg	45	10055.399	4577833	1.02	25000	>RL
27	Al	45	37417.819	6692164	0.84	10000	OUTCAL
39	K	45	7630.659	3835757	0.57	25000	>RL
44	Ca	45	209559.813	6024787	2.13	25000	OUTCAL
47	Ti	45	146.058	26956	0.99	2000	>RL
51	V	45	63.860	358394	1.19	2000	>RL
52	Cr	45	40.182	273740	0.60	2000	>RL
55	Mn	45	126.663	495132	0.90	2000	>RL
56	Fe	45	54107.741	321925276	1.57	10000	OUTCAL
59	Co	72	21.221	208907	1.34	2000	>RL
60	Ni	72	21.829	59622	1.03	2000	>RL
63	Cu	72	7.710	66707	1.29	2000	>RL
66	Zn	72	126.893	164443	0.17	2000	>RL
75	As	72	16.859	18036	0.42	2000	>RL
78	Se	72	2.633	275	9.01	2000	>RL
88	Sr	115	1246.031	6186618	1.20	2000	>RL
95	Mo	115	2.282	9091	3.69	2000	>RL
107	Ag	115	0.044	572	7.69	500	
111	Cd	115	0.109	212	9.07	2000	
118	Sn	115	2.645	10962	5.89	2000	
121	Sb	115	0.081	852	6.66	500	
137	Ba	115	118.212	226217	0.24	2000	>RL
205	Tl	209	0.383	8858	1.22	2000	
208	Pb	209	18.395	559559	0.49	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1177451	1.05	1114717	105.63	70	120	
72	Ge	763230	0.86	754800	101.12	70	120	
115	In	7027559	0.67	7144493	98.36	70	120	
209	Bi	13242192	1.68	14670662	90.26	70	120	

Sample Report

Date Acquired	5/11/16 7:01 PM	Sample Name	1605071-06A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	058SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	52.606	2458	3.34	2000	>RL
9	Be	45	2.338	155	9.38	2000	>RL
11	B	45	57.228	1389	8.73	2000	>RL
23	Na	45	2028.113	2013682	0.92	25000	>RL
24	Mg	45	13284.961	6273372	2.52	25000	>RL
27	Al	45	54555.233	10119863	2.16	10000	OUTCAL
39	K	45	12106.843	6274368	2.08	25000	>RL
44	Ca	45	125240.950	3734883	0.38	25000	OUTCAL
47	Ti	45	504.855	96610	0.88	2000	>RL
51	V	45	100.958	585961	0.66	2000	>RL
52	Cr	45	49.791	351484	0.38	2000	>RL
55	Mn	45	717.579	2907814	0.43	2000	>RL
56	Fe	45	54805.170	338200760	1.62	10000	OUTCAL
59	Co	72	20.417	205460	0.42	2000	>RL
60	Ni	72	36.044	100526	0.88	2000	>RL
63	Cu	72	27.695	220858	0.52	2000	>RL
66	Zn	72	196.461	260029	0.99	2000	>RL
75	As	72	20.178	22023	0.85	2000	>RL
78	Se	72	4.715	422	2.68	2000	>RL
88	Sr	115	491.140	2393963	0.53	2000	>RL
95	Mo	115	2.219	8679	5.37	2000	>RL
107	Ag	115	0.117	1433	4.58	500	
111	Cd	115	0.533	969	8.53	2000	>RL
118	Sn	115	3.559	14154	0.70	2000	
121	Sb	115	1.474	8896	0.94	500	
137	Ba	115	542.361	1018850	0.54	2000	>RL
205	Tl	209	0.606	13758	2.01	2000	
208	Pb	209	46.599	1395858	0.66	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1221155	0.45	1114717	109.55	70	120	
72	Ge	780243	0.90	754800	103.37	70	120	
115	In	6898812	0.23	7144493	96.56	70	120	
209	Bi	13105858	0.09	14670662	89.33	70	120	

Sample Report

Date Acquired	5/11/16 7:03 PM	Sample Name	1605071-07A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	059SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	49.231	2307	2.13	2000	>RL
9	Be	45	2.218	148	5.85	2000	>RL
11	B	45	90.170	2160	1.49	2000	>RL
23	Na	45	6777.393	6595572	1.46	25000	>RL
24	Mg	45	11680.908	5530323	1.33	25000	>RL
27	Al	45	53394.464	9930212	0.93	10000	OUTCAL
39	K	45	11802.370	6134886	3.31	25000	>RL
44	Ca	45	96379.861	2881914	0.34	25000	OUTCAL
47	Ti	45	326.915	62731	1.48	2000	>RL
51	V	45	86.897	506098	0.78	2000	>RL
52	Cr	45	51.521	364605	1.13	2000	>RL
55	Mn	45	534.911	2173442	0.33	2000	>RL
56	Fe	45	48152.240	297930166	1.43	10000	OUTCAL
59	Co	72	20.544	208852	0.87	2000	>RL
60	Ni	72	32.287	90989	0.49	2000	>RL
63	Cu	72	20.324	166224	0.47	2000	>RL
66	Zn	72	158.175	211579	0.72	2000	>RL
75	As	72	22.528	24811	0.21	2000	>RL
78	Se	72	4.295	397	3.57	2000	>RL
88	Sr	115	346.313	1723516	0.30	2000	>RL
95	Mo	115	1.858	7423	2.56	2000	
107	Ag	115	0.103	1288	16.70	500	
111	Cd	115	0.335	628	15.88	2000	
118	Sn	115	3.341	13626	2.10	2000	
121	Sb	115	1.235	7670	1.74	500	
137	Ba	115	393.776	755300	0.67	2000	>RL
205	Tl	209	0.518	11994	1.31	2000	
208	Pb	209	49.681	1511866	0.16	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1224409	0.32	1114717	109.84	70	120	
72	Ge	788202	0.93	754800	104.43	70	120	
115	In	7044417	1.15	7144493	98.60	70	120	
209	Bi	13318726	1.22	14670662	90.78	70	120	

Sample Report

Date Acquired	5/11/16 7:05 PM	Sample Name	1605071-08A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	060SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	66.408	3170	1.92	2000	>RL
9	Be	45	2.553	173	7.10	2000	>RL
11	B	45	145.922	3526	3.43	2000	>RL
23	Na	45	13433.284	13261015	1.88	25000	>RL
24	Mg	45	17308.468	8352456	0.49	25000	>RL
27	Al	45	66595.736	12624138	1.94	10000	OUTCAL
39	K	45	14592.871	7715792	0.88	25000	>RL
44	Ca	45	62730.353	1912033	0.80	25000	OUTCAL
47	Ti	45	367.515	71882	0.68	2000	>RL
51	V	45	103.886	616139	0.76	2000	>RL
52	Cr	45	77.371	557362	0.35	2000	>RL
55	Mn	45	573.066	2373232	0.95	2000	>RL
56	Fe	45	59725.850	376637949	1.04	10000	OUTCAL
59	Co	72	22.211	229949	0.56	2000	>RL
60	Ni	72	43.992	126194	1.02	2000	>RL
63	Cu	72	25.556	210389	0.20	2000	>RL
66	Zn	72	194.782	265204	0.16	2000	>RL
75	As	72	24.661	27637	1.03	2000	>RL
78	Se	72	4.673	431	3.41	2000	>RL
88	Sr	115	359.019	1798576	0.52	2000	>RL
95	Mo	115	4.414	17725	2.62	2000	>RL
107	Ag	115	0.095	1205	8.16	500	
111	Cd	115	0.337	634	9.76	2000	
118	Sn	115	5.268	21076	5.91	2000	>RL
121	Sb	115	6.147	36934	0.67	500	>RL
137	Ba	115	579.056	1117990	0.18	2000	>RL
205	Tl	209	0.588	13666	3.39	2000	
208	Pb	209	417.102	12741896	0.51	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1248006	0.55	1114717	111.96	70	120	
72	Ge	802658	0.80	754800	106.34	70	120	
115	In	7090688	0.75	7144493	99.25	70	120	
209	Bi	13411079	2.02	14670662	91.41	70	120	

Sample Report

Date Acquired	5/11/16 7:07 PM	Sample Name	1605071-10A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	061SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	76.224	3502	2.34	2000	>RL
9	Be	45	2.272	149	3.70	2000	>RL
11	B	45	158.261	3677	3.33	2000	>RL
23	Na	45	11475.116	10914739	0.80	25000	>RL
24	Mg	45	12191.237	5663882	1.66	25000	>RL
27	Al	45	44930.390	8199447	1.97	10000	OUTCAL
39	K	45	8758.534	4483686	1.51	25000	>RL
44	Ca	45	222342.007	6524739	3.36	25000	OUTCAL
47	Ti	45	146.791	27651	2.12	2000	>RL
51	V	45	77.215	441595	0.84	2000	>RL
52	Cr	45	51.747	359337	1.44	2000	>RL
55	Mn	45	131.978	526486	1.86	2000	>RL
56	Fe	45	67921.918	412363397	1.63	10000	OUTCAL
59	Co	72	19.229	193768	2.06	2000	>RL
60	Ni	72	26.792	74857	0.79	2000	>RL
63	Cu	72	10.086	86451	0.39	2000	>RL
66	Zn	72	147.446	195504	1.16	2000	>RL
75	As	72	22.987	25086	1.13	2000	>RL
78	Se	72	3.415	334	4.71	2000	>RL
88	Sr	115	1868.824	9315215	2.36	2000	>RL
95	Mo	115	3.351	13389	1.42	2000	>RL
107	Ag	115	0.049	632	2.90	500	
111	Cd	115	0.112	220	4.01	2000	
118	Sn	115	4.173	16805	1.83	2000	>RL
121	Sb	115	0.131	1148	11.25	500	
137	Ba	115	235.676	452647	0.25	2000	>RL
205	Tl	209	0.384	8764	2.67	2000	
208	Pb	209	22.163	663979	0.78	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1201515	0.98	1114717	107.79	70	120	
72	Ge	781149	0.53	754800	103.49	70	120	
115	In	7054963	1.98	7144493	98.75	70	120	
209	Bi	13064481	3.11	14670662	89.05	70	120	

Sample Report

Date Acquired	5/11/16 7:09 PM	Sample Name	1605071-11A
Data Batch	60511Z.b	Comment	SAMPICPMS_TSDOD
Data File Name	062SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	45.193	2125	3.52	2000	>RL
9	Be	45	1.992	134	16.68	2000	>RL
11	B	45	62.822	1528	2.31	2000	>RL
23	Na	45	2059.741	2056708	0.52	25000	>RL
24	Mg	45	11221.030	5331587	1.49	25000	>RL
27	Al	45	46843.514	8742931	0.86	10000	OUTCAL
39	K	45	10632.113	5552251	2.49	25000	>RL
44	Ca	45	109699.912	3291846	0.83	25000	OUTCAL
47	Ti	45	436.777	84105	1.12	2000	>RL
51	V	45	86.654	506449	0.48	2000	>RL
52	Cr	45	46.725	331964	0.37	2000	>RL
55	Mn	45	585.869	2388804	0.13	2000	>RL
56	Fe	45	52932.465	328663907	1.24	10000	OUTCAL
59	Co	72	17.298	177154	0.51	2000	>RL
60	Ni	72	32.736	92928	0.98	2000	>RL
63	Cu	72	24.319	198494	1.18	2000	>RL
66	Zn	72	162.190	218519	1.32	2000	>RL
75	As	72	22.121	24544	0.14	2000	>RL
78	Se	72	4.211	394	7.82	2000	>RL
88	Sr	115	479.835	2364653	0.26	2000	>RL
95	Mo	115	2.164	8558	4.36	2000	>RL
107	Ag	115	0.112	1389	11.11	500	
111	Cd	115	0.572	1049	5.64	2000	>RL
118	Sn	115	4.056	16178	1.10	2000	>RL
121	Sb	115	1.545	9410	0.99	500	
137	Ba	115	502.897	955093	1.18	2000	>RL
205	Tl	209	0.514	11718	1.54	2000	
208	Pb	209	56.948	1707143	0.23	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1228801	1.17	1114717	110.23	70	120	
72	Ge	793919	0.53	754800	105.18	70	120	
115	In	6975079	0.71	7144493	97.63	70	120	
209	Bi	13127609	1.94	14670662	89.48	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/11/2016 19:11	Sample Name	CCV2-160511
Data Batch	60511Z.b	Comment	CCV ICPMS_TW
Data File Name	063_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	201.912	9234	0.52	200	101.0	90	110	
9	Be	45	200.717	12744	0.41	200	100.4	90	110	
11	B	45	200.213	4620	3.58	200	100.1	90	110	
23	Na	45	4958.505	4734979	1.25	5000	99.2	90	110	
24	Mg	45	4913.621	2274734	0.72	5000	98.3	90	110	
27	Al	45	4775.189	868563	1.22	5000	95.5	90	110	
39	K	45	5048.153	2601146	0.53	5000	101.0	90	110	
44	Ca	45	4570.924	133913	0.35	5000	91.4	90	110	
47	Ti	45	196.767	36918	1.32	200	98.4	90	110	
51	V	45	195.942	1112159	0.58	200	98.0	90	110	
52	Cr	45	196.907	1358377	0.43	200	98.5	90	110	
55	Mn	45	193.964	770738	0.20	200	97.0	90	110	
56	Fe	45	4779.788	28918546	4.43	5000	95.6	90	110	
59	Co	72	207.383	2117054	0.39	200	103.7	90	110	
60	Ni	72	200.974	568121	1.03	200	100.5	90	110	
63	Cu	72	203.173	1584342	0.57	200	101.6	90	110	
66	Zn	72	197.313	265008	0.75	200	98.7	90	110	
75	As	72	199.683	219091	0.12	200	99.8	90	110	
78	Se	72	196.928	13660	2.54	200	98.5	90	110	
88	Sr	115	200.305	999690	1.20	200	100.2	90	110	
95	Mo	115	199.393	796882	0.25	200	99.7	90	110	
107	Ag	115	186.150	2274213	0.57	200	93.1	90	110	
111	Cd	115	195.306	358027	1.05	200	97.7	90	110	
118	Sn	115	199.374	759208	1.42	200	99.7	90	110	
121	Sb	115	190.424	1128756	0.91	200	95.2	90	110	
137	Ba	115	190.080	365619	0.61	200	95.0	90	110	
205	Tl	209	199.499	4456811	1.10	200	99.7	90	110	
208	Pb	209	198.110	5891712	0.44	200	99.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1197072	0.57	1114717	107.39	70	120	
72	Ge	791767	0.48	754800	104.90	70	120	
115	In	7064526	1.52	7144493	98.88	70	120	
209	Bi	13046174	0.20	14670662	88.93	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/11/2016 19:15	Sample Name	LCVL2-160511
Data Batch	60511Z.b	Comment	LCVLICPMS_TW
Data File Name	065LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.366	478	4.59	10	103.7	70	130	
9	Be	45	0.968	65	23.83	1	96.8	70	130	
11	B	45	26.942	670	9.05	20	134.7	70	130	Fail
23	Na	45	117.651	173731	0.48	100	117.7	70	130	
24	Mg	45	102.014	47645	0.92	100	102.0	70	130	
27	Al	45	99.511	18373	2.15	100	99.5	70	130	
39	K	45	124.018	124561	0.40	100	124.0	70	130	
44	Ca	45	105.806	3391	3.00	100	105.8	70	130	
47	Ti	45	4.615	877	13.60	5	92.3	70	130	
51	V	45	0.875	7762	4.28	1	87.5	70	130	
52	Cr	45	5.033	36043	1.62	5	100.7	70	130	
55	Mn	45	4.765	19254	1.52	5	95.3	70	130	
56	Fe	45	99.236	605219	2.63	100	99.2	70	130	
59	Co	72	5.135	52514	0.92	5	102.7	70	130	
60	Ni	72	5.109	14601	2.64	5	102.2	70	130	
63	Cu	72	5.295	50493	0.51	5	105.9	70	130	
66	Zn	72	4.867	7006	2.52	5	97.3	70	130	
75	As	72	4.999	5712	0.82	5	100.0	70	130	
78	Se	72	5.170	459	5.37	5	103.4	70	130	
88	Sr	115	5.077	24591	1.84	5	101.5	70	130	
95	Mo	115	5.011	19372	0.49	5	100.2	70	130	
107	Ag	115	1.979	23396	1.91	2	98.9	70	130	
111	Cd	115	1.042	1861	2.90	1	104.2	70	130	
118	Sn	115	5.053	19503	0.88	5	101.1	70	130	
121	Sb	115	1.945	11503	2.10	2	97.2	70	130	
137	Ba	115	4.945	9212	3.27	5	98.9	70	130	
205	Tl	209	1.040	23369	0.62	1	104.0	70	130	
208	Pb	209	1.037	35583	2.26	1	103.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1194830	0.82	1114717	107.19	70	120	
72	Ge	791801	0.57	754800	104.90	70	120	
115	In	6828844	1.67	7144493	95.58	70	120	
209	Bi	13034225	0.24	14670662	88.85	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/11/2016 19:17	Sample Name	CCB2-160511
Data Batch	60511Z.b	Comment	CCB ICPMS_TW
Data File Name	066_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.255	17	24.2	2	5	
9	Be	45	0.001	4	43.3	0.4	0.3	
11	B	45	6.925	216	25.0	10	10	
23	Na	45	15.750	78161	0.1	50	100	
24	Mg	45	0.156	594	42.2	50	100	
27	Al	45	2.452	762	22.3	50	10	
39	K	45	17.467	71301	1.9	50	100	
44	Ca	45	7.895	536	24.3	50	100	
47	Ti	45	0.072	27	21.7	4	3	
51	V	45	-0.151	1977	3.9	4	3	
52	Cr	45	0.027	1610	10.2	2	2	
55	Mn	45	0.010	408	21.7	2	3	
56	Fe	45	2.727	22681	29.3	50	50	
59	Co	72	0.024	341	36.7	2	3	
60	Ni	72	0.008	184	21.4	2	3	
63	Cu	72	0.221	11136	2.1	2	2	
66	Zn	72	-0.187	230	13.3	4	2	
75	As	72	-0.041	187	7.5	2	2	
78	Se	72	0.480	136	14.5	1	2	
88	Sr	115	0.045	321	25.3	4	3	
95	Mo	115	0.032	141	59.4	2	2	
107	Ag	115	0.029	374	7.6	0.4	1	
111	Cd	115	0.029	64	29.4	0.4	0.3	
118	Sn	115	0.018	994	9.7	4	3	
121	Sb	115	0.006	394	36.8	2	0.8	
137	Ba	115	0.045	103	28.7	2	3	
205	Tl	209	0.031	844	31.8	2	0.5	
208	Pb	209	0.006	4868	5.1	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1198598	0.66	1114717	107.52	70	120	
72	Ge	790041	0.17	754800	104.67	70	120	
115	In	6824265	1.39	7144493	95.52	70	120	
209	Bi	12793769	0.44	14670662	87.21	70	120	

Method Blank Report

Date Acquired	5/11/16 7:19 PM	Sample Name	MB-75019
Data Batch	60511Z.b	Comment	MBLKICPMS_TSDOD
Data File Name	067_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.232	16	35.15		
9	Be	45	-0.031	2	132.29		
11	B	45	7.246	223	7.46		
23	Na	45	26.077	88164	0.97		
24	Mg	45	2.646	1755	4.15		
27	Al	45	7.030	1601	8.23		
39	K	45	25.480	75564	1.16		
44	Ca	45	29.392	1169	1.83		
47	Ti	45	0.201	51	58.82		
51	V	45	-0.135	2070	1.32		
52	Cr	45	0.230	3026	3.94		
55	Mn	45	0.259	1402	4.70		
56	Fe	45	8.241	56275	4.09		
59	Co	72	0.014	236	17.69		
60	Ni	72	0.904	2710	3.91		
63	Cu	72	0.791	15534	1.12		
66	Zn	72	1.429	2391	5.61		
75	As	72	-0.024	206	5.32		
78	Se	72	0.297	124	7.14		
88	Sr	115	0.081	509	9.94		
95	Mo	115	0.031	140	21.82		
107	Ag	115	0.017	237	17.59		
111	Cd	115	0.012	36	37.89		
118	Sn	115	3.893	15608	6.81		
121	Sb	115	-0.014	286	15.24		
137	Ba	115	0.049	114	26.90		
205	Tl	209	0.012	448	20.95		
208	Pb	209	0.076	7093	1.60		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1202146	0.18	1114717	107.84	70	120	
72	Ge	789512	0.89	754800	104.60	70	120	
115	In	6990675	2.03	7144493	97.85	70	120	
209	Bi	13174609	3.48	14670662	89.80	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/11/2016 19:21	Sample Name	LCS-75019
Data Batch	60511Z.b	Comment	LCS ICPMS_TSDOD
Data File Name	068_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.277	9464	1.42	200	103.6	80	120	
9	Be	45	205.812	13047	1.99	200	102.9	80	120	
11	B	45	202.013	4653	6.35	200	101.0	80	120	
23	Na	45	5178.801	4934129	2.61	1000	517.9	80	120	Fail
24	Mg	45	5164.989	2387227	0.57	1000	516.5	80	120	Fail
27	Al	45	983.455	178853	1.43	1000	98.3	80	120	
39	K	45	5317.812	2732407	0.45	1000	531.8	80	120	Fail
44	Ca	45	4686.628	137088	1.66	1000	468.7	80	120	Fail
47	Ti	45	195.967	36713	2.34	200	98.0	80	120	
51	V	45	201.738	1143137	0.26	200	100.9	80	120	
52	Cr	45	200.642	1381906	0.27	200	100.3	80	120	
55	Mn	45	198.476	787409	0.14	200	99.2	80	120	
56	Fe	45	960.358	5805796	1.69	1000	96.0	80	120	
59	Co	72	210.994	2131651	0.54	200	105.5	80	120	
60	Ni	72	206.374	577337	0.47	200	103.2	80	120	
63	Cu	72	206.143	1590815	1.30	200	103.1	80	120	
66	Zn	72	202.162	268715	1.52	200	101.1	80	120	
75	As	72	203.713	221198	0.96	200	101.9	80	120	
78	Se	72	199.163	13670	1.20	200	99.6	80	120	
88	Sr	115	203.957	986636	1.04	200	102.0	80	120	
95	Mo	115	206.106	798383	1.13	200	103.1	80	120	
107	Ag	115	201.872	2390406	0.62	200	100.9	80	120	
111	Cd	115	199.817	355015	0.58	200	99.9	80	120	
118	Sn	115	206.848	763364	0.71	200	103.4	80	120	
121	Sb	115	198.421	1139933	0.45	200	99.2	80	120	
137	Ba	115	195.513	364490	0.72	200	97.8	80	120	
205	Tl	209	204.832	4447201	0.44	200	102.4	80	120	
208	Pb	209	204.251	5903407	0.03	200	102.1	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1195168	0.67	1114717	107.22	70	120	
72	Ge	783598	0.89	754800	103.82	70	120	
115	In	6846667	0.74	7144493	95.83	70	120	
209	Bi	12679856	0.78	14670662	86.43	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/11/2016 19:23	Sample Name	LCSD-75019
Data Batch	60511Z.b	Comment	LCSDICPMS_TSDOD
Data File Name	069_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.706	9648	1.73	200	104.9	80	120	
9	Be	45	209.945	13410	0.84	200	105.0	80	120	
11	B	45	201.511	4677	4.27	200	100.8	80	120	
23	Na	45	5297.941	5085129	1.19	1000	529.8	80	120	Fail
24	Mg	45	5245.440	2442929	0.22	1000	524.5	80	120	Fail
27	Al	45	990.787	181553	0.77	1000	99.1	80	120	
39	K	45	5390.557	2790013	0.65	1000	539.1	80	120	Fail
44	Ca	45	4719.676	139095	0.87	1000	472.0	80	120	Fail
47	Ti	45	200.652	37876	1.04	200	100.3	80	120	
51	V	45	203.625	1162632	0.31	200	101.8	80	120	
52	Cr	45	205.184	1423932	0.40	200	102.6	80	120	
55	Mn	45	205.082	819821	0.48	200	102.5	80	120	
56	Fe	45	1014.393	6179124	1.43	1000	101.4	80	120	
59	Co	72	213.905	2193701	0.83	200	107.0	80	120	
60	Ni	72	209.329	594461	1.09	200	104.7	80	120	
63	Cu	72	208.912	1636359	0.58	200	104.5	80	120	
66	Zn	72	205.244	276922	0.51	200	102.6	80	120	
75	As	72	206.741	227876	0.59	200	103.4	80	120	
78	Se	72	199.981	13933	0.51	200	100.0	80	120	
88	Sr	115	204.325	1006529	0.38	200	102.2	80	120	
95	Mo	115	204.751	807645	1.56	200	102.4	80	120	
107	Ag	115	202.197	2438143	0.93	200	101.1	80	120	
111	Cd	115	204.306	369627	0.45	200	102.2	80	120	
118	Sn	115	211.093	793252	0.17	200	105.5	80	120	
121	Sb	115	200.617	1173617	0.28	200	100.3	80	120	
137	Ba	115	197.280	374531	0.40	200	98.6	80	120	
205	Tl	209	204.460	4544659	0.59	200	102.2	80	120	
208	Pb	209	205.293	6074960	0.71	200	102.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1204273	0.26	1114717	108.03	70	120	
72	Ge	795462	0.63	754800	105.39	70	120	
115	In	6971805	0.22	7144493	97.58	70	120	
209	Bi	12983376	1.71	14670662	88.50	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/11/2016 19:29	Sample Name	1605047-24A SD
Data Batch	60511Z.b	Comment	SD ICPMS_TSDOD
Data File Name	072_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	35.201	1675	0.87	171.5	102.6	110	90	Good
9	Be	45	0.677	49	26.50	3.9	87.2	110	90	
11	B	45	39.535	994	3.74	134.3	147.2	110	90	
23	Na	45	756.633	805611	0.62	3680.1	102.8	110	90	Good
24	Mg	45	3007.787	1445663	1.67	14398.3	104.4	110	90	Good
27	Al	45	12371.123	2335219	0.43	60713.2	101.9	110	90	Good
39	K	45	2485.024	1362090	0.76	12055.8	103.1	110	90	Good
44	Ca	45	20219.063	613817	0.57	99951.0	101.1	110	90	Good
47	Ti	45	36.438	7109	4.28	185.2	98.4	110	90	Good
51	V	45	21.846	131319	0.36	109.8	99.5	110	90	Good
52	Cr	45	13.140	95469	1.78	64.5	101.8	110	90	Good
55	Mn	45	243.165	1002906	0.19	1197.0	101.6	110	90	Good
56	Fe	45	18102.162	113661744	1.98	87741.4	103.2	110	90	Good
59	Co	72	10.472	109565	0.86	51.1	102.5	110	90	Good
60	Ni	72	16.608	48226	0.87	81.5	101.8	110	90	Good
63	Cu	72	1.907	24812	1.11	10.3	92.7	110	90	Good
66	Zn	72	63.563	87753	0.38	306.1	103.8	110	90	Good
75	As	72	5.638	6566	1.52	28.0	100.8	110	90	Good
78	Se	72	1.676	224	7.00	6.1	136.4	110	90	
88	Sr	115	135.815	683194	0.85	678.4	100.1	110	90	Good
95	Mo	115	0.536	2178	1.25	2.7	99.6	110	90	Good
107	Ag	115	0.027	364	22.87	0.1	202.7	110	90	
111	Cd	115	0.033	74	33.61	0.2	91.1	110	90	Good
118	Sn	115	0.833	4158	4.09	4.7	88.1	110	90	
121	Sb	115	0.038	604	7.81	0.3	63.8	110	90	
137	Ba	115	62.336	120865	0.53	315.7	98.7	110	90	Good
205	Tl	209	0.097	2431	9.07	0.5	96.0	110	90	Good
208	Pb	209	7.130	226600	0.62	35.6	100.1	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1242612	0.61	1114717	111.47	70	120	
72	Ge	810751	0.30	754800	107.41	70	120	
115	In	7120684	1.70	7144493	99.67	70	120	
209	Bi	13646018	1.21	14670662	93.02	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/11/2016 19:49	Sample Name	1605047-24A PDS
Data Batch	60511Z.b	Comment	PDS ICPMS_TSDOD
Data File Name	082_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	358.689	16747	0.71	171.5	200	93.6	75	125	
9	Be	45	192.557	12484	0.44	3.9	200	94.3	75	125	
11	B	45	324.999	7621	1.60	134.3	200	95.4	75	125	
23	Na	45	8540.846	8281529	1.66	3680.1	5000	97.2	75	125	
24	Mg	45	19313.567	9128721	1.92	14398.3	5000	98.3	75	125	
27	Al	45	66089.782	12271132	1.28	60713.2	5000	107.5	75	125	
39	K	45	16991.451	8789392	0.57	12055.8	5000	98.7	75	125	
44	Ca	45	########	3140801	0.27	99951.0	5000	105.2	75	125	
47	Ti	45	374.596	71760	0.86	185.2	200	94.7	75	125	
51	V	45	307.139	1778552	0.51	109.8	200	98.7	75	125	
52	Cr	45	260.399	1833898	0.13	64.5	200	97.9	75	125	
55	Mn	45	1397.560	5668628	0.78	1197.0	200	100.3	75	125	
56	Fe	45	92872.598	573651924	1.52	87741.4	5000	102.6	75	125	
59	Co	72	252.271	2572128	0.67	51.1	200	100.6	75	125	
60	Ni	72	273.927	773341	1.12	81.5	200	96.2	75	125	
63	Cu	72	198.661	1547429	0.25	10.3	200	94.2	75	125	
66	Zn	72	497.762	666988	1.02	306.1	200	95.8	75	125	
75	As	72	229.243	251182	0.56	28.0	200	100.6	75	125	
78	Se	72	202.423	14020	1.35	6.1	200	98.1	75	125	
88	Sr	115	904.901	4374860	1.23	678.4	200	113.3	75	125	
95	Mo	115	202.665	784663	1.35	2.7	200	100.0	75	125	
107	Ag	115	184.964	2189121	1.06	0.1	200	92.4	75	125	
111	Cd	115	193.374	343376	0.87	0.2	200	96.6	75	125	
118	Sn	115	211.967	781756	0.33	4.7	200	103.6	75	125	
121	Sb	115	204.325	1173150	0.25	0.3	200	102.0	75	125	
137	Ba	115	520.837	970434	0.63	315.7	200	102.6	75	125	
205	Tl	209	199.039	4377482	0.74	0.5	200	99.3	75	125	
208	Pb	209	233.960	6849053	0.85	35.6	200	99.2	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1222376	0.24	1114717	109.66	70	120	
72	Ge	790808	0.86	754800	104.77	70	120	
115	In	6842872	0.96	7144493	95.78	70	120	
209	Bi	12843778	0.94	14670662	87.55	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/11/2016 19:51	Sample Name	1605047-24A MS
Data Batch	60511Z.b	Comment	MS ICPMS_TSDOD
Data File Name	083_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	355.728	16548	0.55	171.5	200	92.1	80	120	
9	Be	45	198.726	12838	0.68	3.9	200	97.4	80	120	
11	B	45	327.990	7663	1.98	134.3	200	96.9	80	120	
23	Na	45	8645.098	8351555	1.13	3680.1	1000	496.5	80	120	Fail
24	Mg	45	19868.476	9356780	1.06	14398.3	1000	547.0	80	120	Fail
27	Al	45	63836.673	11810345	2.05	60713.2	1000	312.3	80	120	Fail
39	K	45	17274.548	8902325	1.07	12055.8	1000	521.9	80	120	Fail
44	Ca	45	91333.735	2716664	0.29	99951.0	1000	-861.7	80	120	Fail
47	Ti	45	344.312	65723	1.06	185.2	200	79.5	80	120	Fail
51	V	45	310.566	1791864	0.28	109.8	200	100.4	80	120	
52	Cr	45	261.666	1836139	0.50	64.5	200	98.6	80	120	
55	Mn	45	1363.263	5509351	0.86	1197.0	200	83.1	80	120	
56	Fe	45	88238.142	543075961	0.85	87741.4	1000	49.7	80	120	Fail
59	Co	72	254.068	2597919	0.55	51.1	200	101.5	80	120	
60	Ni	72	273.184	773463	0.24	81.5	200	95.8	80	120	
63	Cu	72	206.877	1615747	0.53	10.3	200	98.3	80	120	
66	Zn	72	484.656	651325	0.27	306.1	200	89.3	80	120	
75	As	72	226.723	249153	0.78	28.0	200	99.4	80	120	
78	Se	72	203.371	14126	0.97	6.1	200	98.6	80	120	
88	Sr	115	904.893	4336472	0.20	678.4	200	113.3	80	120	
95	Mo	115	195.728	751154	0.26	2.7	200	96.5	80	120	
107	Ag	115	199.988	2346275	0.71	0.1	200	100.0	80	120	
111	Cd	115	200.672	353177	0.94	0.2	200	100.2	80	120	
118	Sn	115	208.352	761674	0.64	4.7	200	101.8	80	120	
121	Sb	115	63.160	359739	0.87	0.3	200	31.4	80	120	Fail
137	Ba	115	674.520	1245734	0.40	315.7	200	179.4	80	120	Fail
205	Tl	209	201.524	4450769	0.35	0.5	200	100.5	80	120	
208	Pb	209	232.133	6824233	0.52	35.6	200	98.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1217971	0.45	1114717	109.26	70	120	
72	Ge	793120	0.67	754800	105.08	70	120	
115	In	6784003	1.70	7144493	94.95	70	120	
209	Bi	12898656	1.03	14670662	87.92	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/11/2016 19:53	Sample Name	1605047-24A MSD
Data Batch	60511Z.b	Comment	MSD ICPMS_TSDOD
Data File Name	084_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	362.579	16852	0.86	171.5	200	95.6	80	120	
9	Be	45	201.081	12977	0.59	3.9	200	98.6	80	120	
11	B	45	326.165	7613	3.14	134.3	200	96.0	80	120	
23	Na	45	8299.827	8013530	0.93	3680.1	1000	462.0	80	120	Fail
24	Mg	45	19340.908	9100840	1.41	14398.3	1000	494.3	80	120	Fail
27	Al	45	62996.247	11644771	2.11	60713.2	1000	228.3	80	120	Fail
39	K	45	17918.917	9224086	1.52	12055.8	1000	586.3	80	120	Fail
44	Ca	45	85700.934	2546910	0.65	99951.0	1000	#####	80	120	Fail
47	Ti	45	349.114	66582	1.14	185.2	200	81.9	80	120	
51	V	45	310.750	1791239	0.95	109.8	200	100.5	80	120	
52	Cr	45	262.872	1842941	1.48	64.5	200	99.2	80	120	
55	Mn	45	1390.490	5614295	0.54	1197.0	200	96.7	80	120	
56	Fe	45	93165.377	572884386	1.68	87741.4	1000	542.4	80	120	Fail
59	Co	72	253.336	2571225	0.44	51.1	200	101.1	80	120	
60	Ni	72	278.921	783801	0.54	81.5	200	98.7	80	120	
63	Cu	72	209.359	1622819	0.35	10.3	200	99.5	80	120	
66	Zn	72	507.675	677212	0.97	306.1	200	100.8	80	120	
75	As	72	230.945	251902	0.61	28.0	200	101.5	80	120	
78	Se	72	206.864	14260	1.05	6.1	200	100.4	80	120	
88	Sr	115	986.570	4822213	1.10	678.4	200	154.1	80	120	Fail
95	Mo	115	197.758	774078	0.53	2.7	200	97.5	80	120	
107	Ag	115	197.237	2359938	0.90	0.1	200	98.6	80	120	
111	Cd	115	198.277	355990	1.60	0.2	200	99.0	80	120	
118	Sn	115	206.023	768233	0.29	4.7	200	100.6	80	120	
121	Sb	115	64.088	372267	1.09	0.3	200	31.9	80	120	Fail
137	Ba	115	635.332	1196734	0.13	315.7	200	159.8	80	120	Fail
205	Tl	209	201.001	4449187	0.94	0.5	200	100.2	80	120	
208	Pb	209	234.395	6905650	0.24	35.6	200	99.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1216904	0.87	1114717	109.17	70	120	
72	Ge	787274	1.35	754800	104.30	70	120	
115	In	6920363	2.48	7144493	96.86	70	120	
209	Bi	12928657	1.92	14670662	88.13	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/11/2016 19:55	Sample Name	CCV3-160511
Data Batch	60511Z.b	Comment	CCV ICPMS_TW
Data File Name	085_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	202.579	9327	1.07	200	101.3	90	110	
9	Be	45	200.954	12847	1.99	200	100.5	90	110	
11	B	45	196.774	4572	3.31	200	98.4	90	110	
23	Na	45	4880.751	4693138	0.42	5000	97.6	90	110	
24	Mg	45	4866.627	2268316	0.80	5000	97.3	90	110	
27	Al	45	4750.094	869879	1.12	5000	95.0	90	110	
39	K	45	5038.208	2613831	0.84	5000	100.8	90	110	
44	Ca	45	4503.286	132823	0.51	5000	90.1	90	110	
47	Ti	45	195.201	36879	2.40	200	97.6	90	110	
51	V	45	197.153	1126712	1.39	200	98.6	90	110	
52	Cr	45	196.851	1367255	0.92	200	98.4	90	110	
55	Mn	45	196.071	784390	0.47	200	98.0	90	110	
56	Fe	45	4890.170	29784214	1.01	5000	97.8	90	110	
59	Co	72	207.598	2136593	0.91	200	103.8	90	110	
60	Ni	72	202.146	576100	0.45	200	101.1	90	110	
63	Cu	72	202.134	1589233	1.13	200	101.1	90	110	
66	Zn	72	198.485	268774	1.14	200	99.2	90	110	
75	As	72	200.102	221341	0.81	200	100.1	90	110	
78	Se	72	198.514	13881	1.09	200	99.3	90	110	
88	Sr	115	202.381	1006182	0.70	200	101.2	90	110	
95	Mo	115	200.514	798209	0.70	200	100.3	90	110	
107	Ag	115	188.426	2292937	0.95	200	94.2	90	110	
111	Cd	115	196.640	359027	0.90	200	98.3	90	110	
118	Sn	115	201.408	763839	0.82	200	100.7	90	110	
121	Sb	115	193.841	1144422	0.50	200	96.9	90	110	
137	Ba	115	193.961	371633	1.11	200	97.0	90	110	
205	Tl	209	197.028	4483164	0.68	200	98.5	90	110	
208	Pb	209	197.829	5992507	0.55	200	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1205287	1.45	1114717	108.12	70	120	
72	Ge	798261	0.67	754800	105.76	70	120	
115	In	7036334	0.81	7144493	98.49	70	120	
209	Bi	13289990	1.23	14670662	90.59	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/11/2016 19:59	Sample Name	LCVL3-160511
Data Batch	60511Z.b	Comment	LCVLICPMS_TW
Data File Name	087LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.271	470	4.55	10	102.7	70	130	
9	Be	45	1.030	69	13.53	1	103.0	70	130	
11	B	45	29.998	734	4.41	20	150.0	70	130	Fail
23	Na	45	115.164	170193	0.71	100	115.2	70	130	
24	Mg	45	104.332	48367	3.65	100	104.3	70	130	
27	Al	45	111.072	20320	7.48	100	111.1	70	130	
39	K	45	116.945	120171	0.62	100	116.9	70	130	
44	Ca	45	117.914	3716	7.45	100	117.9	70	130	
47	Ti	45	4.584	864	11.24	5	91.7	70	130	
51	V	45	0.901	7858	3.52	1	90.1	70	130	
52	Cr	45	5.030	35767	1.48	5	100.6	70	130	
55	Mn	45	4.933	19780	1.53	5	98.7	70	130	
56	Fe	45	116.891	706526	8.33	100	116.9	70	130	
59	Co	72	5.289	53566	1.58	5	105.8	70	130	
60	Ni	72	5.238	14822	1.28	5	104.8	70	130	
63	Cu	72	4.995	47706	1.03	5	99.9	70	130	
66	Zn	72	4.838	6900	4.00	5	96.8	70	130	
75	As	72	4.958	5612	1.30	5	99.2	70	130	
78	Se	72	5.107	451	4.04	5	102.1	70	130	
88	Sr	115	5.175	25532	3.48	5	103.5	70	130	
95	Mo	115	4.931	19416	3.10	5	98.6	70	130	
107	Ag	115	1.979	23825	0.68	2	98.9	70	130	
111	Cd	115	1.084	1970	6.47	1	108.4	70	130	
118	Sn	115	4.956	19493	1.19	5	99.1	70	130	
121	Sb	115	1.968	11844	2.61	2	98.4	70	130	
137	Ba	115	4.894	9283	0.74	5	97.9	70	130	
205	Tl	209	1.072	24254	2.90	1	107.2	70	130	
208	Pb	209	1.049	36164	2.54	1	104.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1186522	1.01	1114717	106.44	70	120	
72	Ge	784177	0.11	754800	103.89	70	120	
115	In	6951937	1.33	7144493	97.30	70	120	
209	Bi	13120210	1.01	14670662	89.43	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/11/2016 20:01	Sample Name	CCB3-160511
Data Batch	60511Z.b	Comment	CCB ICPMS_TW
Data File Name	088_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.521	29	19.2	2	5	
9	Be	45	0.049	7	51.5	0.4	0.3	
11	B	45	9.875	281	8.4	10	10	
23	Na	45	16.505	78430	3.1	50	100	
24	Mg	45	8.425	4403	69.7	50	100	
27	Al	45	32.677	6229	57.9	50	10	FailAq
39	K	45	15.788	70058	1.4	50	100	
44	Ca	45	43.176	1560	53.1	50	100	
47	Ti	45	0.168	44	78.8	4	3	
51	V	45	-0.016	2724	29.3	4	3	
52	Cr	45	0.182	2669	26.0	2	2	
55	Mn	45	0.399	1942	58.1	2	3	
56	Fe	45	40.562	250436	59.8	50	50	
59	Co	72	0.157	1709	60.2	2	3	
60	Ni	72	0.141	564	49.4	2	3	
63	Cu	72	0.097	10251	9.4	2	2	
66	Zn	72	0.069	577	34.0	4	2	
75	As	72	0.058	298	28.5	2	2	
78	Se	72	0.594	145	19.9	1	2	
88	Sr	115	0.340	1737	63.3	4	3	
95	Mo	115	0.159	630	57.0	2	2	
107	Ag	115	0.088	1069	59.9	0.4	1	
111	Cd	115	0.104	197	71.2	0.4	0.3	
118	Sn	115	0.108	1322	23.3	4	3	
121	Sb	115	0.108	976	54.4	2	0.8	
137	Ba	115	0.312	598	68.3	2	3	
205	Tl	209	0.141	3312	51.2	2	0.5	
208	Pb	209	0.118	8282	34.8	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1191802	0.58	1114717	106.92	70	120	
72	Ge	796232	0.89	754800	105.49	70	120	
115	In	6817025	1.73	7144493	95.42	70	120	
209	Bi	13080120	1.37	14670662	89.16	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/11/2016 20:23	Sample Name	CCV4-160511
Data Batch	60511Z.b	Comment	CCV ICPMS_TW
Data File Name	099_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	202.244	8808	1.72	200	101.1	90	110	
9	Be	45	196.195	11862	0.46	200	98.1	90	110	
11	B	45	192.561	4233	1.30	200	96.3	90	110	
23	Na	45	4867.419	4427045	0.29	5000	97.3	90	110	
24	Mg	45	4802.292	2117080	0.16	5000	96.0	90	110	
27	Al	45	4731.336	819496	0.32	5000	94.6	90	110	
39	K	45	5017.573	2462292	0.53	5000	100.4	90	110	
44	Ca	45	4545.068	126808	1.11	5000	90.9	90	110	
47	Ti	45	192.262	34354	0.87	200	96.1	90	110	
51	V	45	196.789	1063637	1.20	200	98.4	90	110	
52	Cr	45	195.317	1283058	1.15	200	97.7	90	110	
55	Mn	45	193.148	730870	0.84	200	96.6	90	110	
56	Fe	45	4810.967	27718661	2.22	5000	96.2	90	110	
59	Co	72	202.032	1975760	0.14	200	101.0	90	110	
60	Ni	72	197.183	533966	0.11	200	98.6	90	110	
63	Cu	72	198.168	1480565	0.61	200	99.1	90	110	
66	Zn	72	196.297	252573	0.96	200	98.1	90	110	
75	As	72	198.669	208825	0.70	200	99.3	90	110	
78	Se	72	195.464	12988	0.10	200	97.7	90	110	
88	Sr	115	201.414	942634	0.33	200	100.7	90	110	
95	Mo	115	202.222	757806	0.34	200	101.1	90	110	
107	Ag	115	187.710	2150415	0.39	200	93.9	90	110	
111	Cd	115	194.822	334875	0.77	200	97.4	90	110	
118	Sn	115	199.819	713391	0.69	200	99.9	90	110	
121	Sb	115	191.909	1066546	1.22	200	96.0	90	110	
137	Ba	115	190.538	343654	0.63	200	95.3	90	110	
205	Tl	209	194.563	4168749	1.09	200	97.3	90	110	
208	Pb	209	193.319	5514096	0.09	200	96.7	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1139929	0.44	1114717	102.26	70	120	
72	Ge	758517	0.82	754800	100.49	70	120	
115	In	6623879	1.06	7144493	92.71	70	120	
209	Bi	12516401	2.18	14670662	85.32	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/11/2016 20:27	Sample Name	LCVL4-160511
Data Batch	60511Z.b	Comment	LCVLICPMS_TW
Data File Name	101LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.353	463	5.62	10	103.5	70	130	
9	Be	45	1.327	85	9.40	1	132.7	70	130	Fail
11	B	45	28.669	688	8.84	20	143.3	70	130	Fail
23	Na	45	114.945	166053	1.29	100	114.9	70	130	
24	Mg	45	101.655	46056	1.62	100	101.7	70	130	
27	Al	45	101.572	18186	3.56	100	101.6	70	130	
39	K	45	122.645	120152	1.09	100	122.6	70	130	
44	Ca	45	103.937	3236	4.50	100	103.9	70	130	
47	Ti	45	4.703	867	5.00	5	94.1	70	130	
51	V	45	0.863	7470	5.55	1	86.3	70	130	
52	Cr	45	4.990	34671	0.84	5	99.8	70	130	
55	Mn	45	4.789	18768	0.49	5	95.8	70	130	
56	Fe	45	101.123	598195	3.23	100	101.1	70	130	
59	Co	72	5.120	51248	1.62	5	102.4	70	130	
60	Ni	72	5.068	14175	5.08	5	101.4	70	130	
63	Cu	72	5.327	49661	0.70	5	106.5	70	130	
66	Zn	72	4.668	6596	2.12	5	93.4	70	130	
75	As	72	4.937	5525	3.77	5	98.7	70	130	
78	Se	72	5.593	478	0.31	5	111.9	70	130	
88	Sr	115	5.216	24712	2.00	5	104.3	70	130	
95	Mo	115	5.018	18977	1.39	5	100.4	70	130	
107	Ag	115	1.947	22521	1.16	2	97.4	70	130	
111	Cd	115	1.099	1917	12.26	1	109.9	70	130	
118	Sn	115	4.997	18871	0.88	5	99.9	70	130	
121	Sb	115	1.926	11141	2.04	2	96.3	70	130	
137	Ba	115	4.883	8898	4.29	5	97.7	70	130	
205	Tl	209	1.037	22763	0.60	1	103.7	70	130	
208	Pb	209	0.915	31190	5.28	1	91.5	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1158900	0.24	1114717	103.96	70	120	
72	Ge	774918	0.52	754800	102.67	70	120	
115	In	6677706	0.47	7144493	93.47	70	120	
209	Bi	12726293	1.25	14670662	86.75	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/11/2016 20:43	Sample Name	CCB4-160511
Data Batch	60511Z.b	Comment	CCB ICPMS_TW
Data File Name	109_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.094	9	22.2	2	5	
9	Be	45	-0.046	1	173.2	0.4	0.3	
11	B	45	2.905	119	27.7	10	10	
23	Na	45	13.992	73634	1.3	50	100	
24	Mg	45	-0.321	360	20.8	50	100	
27	Al	45	1.321	536	28.0	50	10	
39	K	45	15.400	67624	0.7	50	100	
44	Ca	45	5.941	461	11.2	50	100	
47	Ti	45	0.004	13	66.2	4	3	
51	V	45	-0.181	1735	2.5	4	3	
52	Cr	45	0.003	1391	6.8	2	2	
55	Mn	45	-0.012	306	36.7	2	3	
56	Fe	45	3.072	23834	35.4	50	50	
59	Co	72	0.000	93	37.8	2	3	
60	Ni	72	-0.024	92	21.8	2	3	
63	Cu	72	-0.337	6578	0.4	2	2	
66	Zn	72	-0.237	158	23.2	4	2	
75	As	72	-0.082	138	5.7	2	2	
78	Se	72	0.415	127	2.4	1	2	
88	Sr	115	0.024	217	34.9	4	3	
95	Mo	115	0.005	36	32.9	2	2	
107	Ag	115	0.011	153	7.8	0.4	1	
111	Cd	115	-0.003	9	94.4	0.4	0.3	
118	Sn	115	-0.123	462	7.9	4	3	
121	Sb	115	-0.036	148	7.9	2	0.8	
137	Ba	115	0.026	66	40.8	2	3	
205	Tl	209	0.001	186	10.5	2	0.5	
208	Pb	209	-0.107	1550	12.1	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	1153596	0.75	1114717	103.49	70	120	
72	Ge	761849	0.27	754800	100.93	70	120	
115	In	6615665	0.87	7144493	92.60	70	120	
209	Bi	12550325	0.68	14670662	85.55	70	120	

ICP-MS4_160516B
For

DHL Work Order
1605071

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_160516B 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: Date of Completion: 05/17/2016

Second-Level Review: Janice Whitt Date Stamp: 5/17/2016

REVIEWED BY
By Janice Whitt at 10:36:04 AM, 5/17/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160516B** **Run No.:** 85839

Analytical Run Date: 5/16/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:13:00 PM		
L2-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:15:00 PM		
L-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:17:00 PM		
10X-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:19:00 PM		
5X-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:21:00 PM		
2X-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:23:00 PM		
H-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:25:00 PM		
H2-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:27:00 PM		
ICSA-160516	1	ICPMS_TWDOD	ICSA	R85839	5/16/2016 12:35:00 PM		
ICSAB-160516	1	ICPMS_TWDOD	ICSB	R85839	5/16/2016 12:37:00 PM		
ICV-160516	1	ICPMS_TWDOD	ICV	R85839	5/16/2016 12:45:00 PM		
LCVL-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 1:04:00 PM		
ICB-160516	1	ICPMS_TWDOD	ICB	R85839	5/16/2016 1:08:00 PM		
MB-75006	5	ICPMS_TSDOD1	MBLK	75006	5/16/2016 1:10:00 PM		
LCS-75006	5	ICPMS_TSDOD1	LCS	75006	5/16/2016 1:12:00 PM		
LCSD-75006	5	ICPMS_TSDOD1	LCSD	75006	5/16/2016 1:14:00 PM		
1605034-09A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:18:00 PM		
1605034-09A SD	25	ICPMS_TSDOD1	SD	75006	5/16/2016 1:20:00 PM		
1605034-01A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:22:00 PM		
1605034-02A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:24:00 PM		
1605034-03A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:26:00 PM		
1605034-04A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:28:00 PM		
1605034-05A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:30:00 PM		
1605034-06A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:32:00 PM		
1605034-07A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:34:00 PM		
1605034-08A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:36:00 PM		
1605034-10A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:38:00 PM		
1605034-09A PDS	5	ICPMS_TSDOD1	PDS	75006	5/16/2016 1:40:00 PM		
1605034-09A MS	5	ICPMS_TSDOD1	MS	75006	5/16/2016 1:42:00 PM		
1605034-09A MSD	5	ICPMS_TSDOD1	MSD	75006	5/16/2016 1:44:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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-MS4_160516B** **Run No.:** 85839

CCV1-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 1:46:00 PM		
LCVL1-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 1:54:00 PM		
CCB1-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 1:58:00 PM		
1605034-11A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:00:00 PM		
1605034-12A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:02:00 PM		
1605034-13A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:04:00 PM		
1605034-14A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:06:00 PM		
1605034-15A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:08:00 PM		
1605034-16A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:10:00 PM		
1605034-17A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:12:00 PM		
1605034-18A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:14:00 PM		
1605034-19A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:16:00 PM		
1605034-20A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:18:00 PM		
CCV2-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 2:20:00 PM		
LCVL2-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 2:25:00 PM		
CCB2-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 2:30:00 PM		
MB-75009	5	ICPMS_TSDOD1	MBLK	75009	5/16/2016 2:32:00 PM		
LCS-75009	5	ICPMS_TSDOD1	LCS	75009	5/16/2016 2:34:00 PM		
LCSD-75009	5	ICPMS_TSDOD1	LCSD	75009	5/16/2016 2:36:00 PM		
1605047-03A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:40:00 PM		
1605047-03A SD	25	ICPMS_TSDOD1	SD	75009	5/16/2016 2:42:00 PM		
1605034-21A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:44:00 PM		
1605034-22A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:46:00 PM		
1605034-23A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:48:00 PM		
1605034-24A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:50:00 PM		
1605034-25A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:52:00 PM		
1605034-26A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:54:00 PM		
1605034-27A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:56:00 PM		
1605034-28A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:58:00 PM		
1605034-29A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:00:00 PM		
1605047-03A PDS	5	ICPMS_TSDOD1	PDS	75009	5/16/2016 3:02:00 PM		
1605047-03A MS	5	ICPMS_TSDOD1	MS	75009	5/16/2016 3:04:00 PM		
1605047-03A MSD	5	ICPMS_TSDOD1	MSD	75009	5/16/2016 3:06:00 PM		
CCV3-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 3:08:00 PM		
LCVL3-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 3:12:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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-MS4_160516B **Run No.:** 85839

CCB3-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 3:14:00 PM		
1605034-30A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:16:00 PM		
1605047-01A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:18:00 PM		
1605047-02A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:20:00 PM		
1605047-04A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:22:00 PM		
1605047-05A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:24:00 PM		
1605047-06A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:26:00 PM		
1605047-07A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:28:00 PM		
1605047-08A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:30:00 PM		
1605047-09A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:33:00 PM		
1605047-10A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:34:00 PM		
CCV4-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 3:36:00 PM		
LCVL4-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 3:41:00 PM		
CCB4-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 3:43:00 PM		
MB-75135	5	ICPMS_TSDOD1	MBLK	75135	5/16/2016 3:45:00 PM		
LCS-75135	5	ICPMS_TSDOD1	LCS	75135	5/16/2016 3:47:00 PM		
LCSD-75135	5	ICPMS_TSDOD1	LCSD	75135	5/16/2016 3:49:00 PM		
1605098-41A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 3:53:00 PM		
1605098-41A SD	25	ICPMS_TSDOD1	SD	75135	5/16/2016 3:55:00 PM		
1605097-20A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 3:57:00 PM		
1605097-21A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 3:59:00 PM		
1605097-23A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:01:00 PM		
1605097-26A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:03:00 PM		
1605098-31A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:05:00 PM		
1605098-34A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:07:00 PM		
1605098-37A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:09:00 PM		
1605098-40A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:11:00 PM		
1605098-41A PDS	5	ICPMS_TSDOD1	PDS	75135	5/16/2016 4:15:00 PM		
1605098-41A MS	5	ICPMS_TSDOD1	MS	75135	5/16/2016 4:17:00 PM		
1605098-41A MSD	5	ICPMS_TSDOD1	MSD	75135	5/16/2016 4:19:00 PM		
CCV5-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 4:25:00 PM		
LCVL5-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 4:29:00 PM		
CCB5-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 4:31:00 PM		
MB-75099	5	ICPMS_TSDOD1	MBLK	75099	5/16/2016 4:33:00 PM		
LCS-75099	5	ICPMS_TSDOD1	LCS	75099	5/16/2016 4:36:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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-MS4_160516B **Run No.:** 85839

LCSD-75099	5	ICPMS_TSDOD1	LCSD	75099	5/16/2016 4:38:00 PM		
1605071-17A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:42:00 PM		
1605071-17A SD	25	ICPMS_TSDOD1	SD	75099	5/16/2016 4:44:00 PM		
1605071-12A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:46:00 PM		
1605071-13A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:48:00 PM		
1605071-14A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:50:00 PM		
1605071-15A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:52:00 PM		
1605071-16A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:54:00 PM		
1605071-18A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:56:00 PM		
1605071-19A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:58:00 PM		
1605071-20A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:00:00 PM		
1605071-21A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:02:00 PM		
1605071-17A PDS	5	ICPMS_TSDOD1	PDS	75099	5/16/2016 5:04:00 PM		
1605071-17A MS	5	ICPMS_TSDOD1	MS	75099	5/16/2016 5:06:00 PM		
1605071-17A MSD	5	ICPMS_TSDOD1	MSD	75099	5/16/2016 5:08:00 PM		
CCV6-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 5:10:00 PM		
LCVL6-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 5:14:00 PM		
CCB6-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 5:16:00 PM		
1605071-22A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:18:00 PM		
1605071-23A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:20:00 PM		
1605071-24A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:22:00 PM		
1605071-25A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:24:00 PM		
1605071-26A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:26:00 PM		
1605071-27A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:28:00 PM		
1605071-30A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:30:00 PM		
1605071-31A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:32:00 PM		
1605071-33A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:34:00 PM		
1605071-34A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:36:00 PM		
CCV7-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 5:38:00 PM		
LCVL7-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 5:42:00 PM		
CCB7-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 5:44:00 PM		
MB-75104	5	ICPMS_TSDOD1	MBLK	75104	5/16/2016 5:46:00 PM		
LCS-75104	5	ICPMS_TSDOD1	LCS	75104	5/16/2016 5:48:00 PM		
LCSD-75104	5	ICPMS_TSDOD1	LCSD	75104	5/16/2016 5:50:00 PM		
1605071-53A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 5:54:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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-MS4_160516B** **Run No.:** 85839

1605071-53A SD	25	ICPMS_TSDOD1	SD	75104	5/16/2016 5:56:00 PM		
1605071-37A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 5:59:00 PM		
1605071-40A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:01:00 PM		
1605071-41A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:03:00 PM		
1605071-42A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:05:00 PM		
1605071-43A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:07:00 PM		
1605071-44A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:09:00 PM		
1605071-45A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:11:00 PM		
1605071-46A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:13:00 PM		
1605071-47A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:15:00 PM		
1605071-53A PDS	5	ICPMS_TSDOD1	PDS	75104	5/16/2016 6:17:00 PM		
1605071-53A MS	5	ICPMS_TSDOD1	MS	75104	5/16/2016 6:19:00 PM		
1605071-53A MSD	5	ICPMS_TSDOD1	MSD	75104	5/16/2016 6:21:00 PM		
CCV8-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 6:22:00 PM		
LCVL8-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 6:27:00 PM		
CCB8-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 6:29:00 PM		
1605071-48A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:31:00 PM		
1605071-49A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:33:00 PM		
1605071-50A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:35:00 PM		
1605071-51A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:37:00 PM		
1605071-52A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:39:00 PM		
1605071-54A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:41:00 PM		
1605074-01A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:43:00 PM		
1605074-02A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:45:00 PM		
1605074-03A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:47:00 PM		
1605074-04A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:49:00 PM		
CCV9-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 6:51:00 PM		
LCVL9-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 6:55:00 PM		
CCB9-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 7:11:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
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

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160516.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	L2-160516	CAL ICPMS_TW	2102	
14	CalStd	L-160516	CAL ICPMS_TW	2103	
15	CalStd	10X-160516	CAL ICPMS_TW	2104	
16	CalStd	5X-160516	CAL ICPMS_TW	2105	
17	CalStd	2X-160516	CAL ICPMS_TW	2106	
18	CalStd	H-160516	CAL ICPMS_TW	2107	
19	CalStd	H2-160516	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			
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-160516	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160516	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-160516	ICV ICPMS_TW	2111	
29	ICB	ICB-160516	ICB ICPMS_TW	1101	
30	ICB	ICB-160516	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160516	LCVLICPMS_TW	2112	
32	ICB	ICB-160516	ICB ICPMS_TW	1102	
33	ICB	ICB-160516	ICB ICPMS_TW	1103	
34	PB	MB-75006	MBLKICPMS_TSDOD1	2201	
35	LCS_S	LCS-75006	LCS ICPMS_TSDOD1	2202	
36	LCS_S	LCSD-75006	LCSDICPMS_TSDOD1	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605034-09A	SAMPICPMS_TSDOD1	2204	
39	SD	1605034-09A SD	SD ICPMS_TSDOD1	2205	
40	Sample	1605034-01A	SAMPICPMS_TSDOD1	2206	

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	Sample	1605034-02A	SAMPICPMS_TSDOD1	2207	
42	Sample	1605034-03A	SAMPICPMS_TSDOD1	2208	
43	Sample	1605034-04A	SAMPICPMS_TSDOD1	2209	
44	Sample	1605034-05A	SAMPICPMS_TSDOD1	2210	
45	Sample	1605034-06A	SAMPICPMS_TSDOD1	2211	

Sample List

46	Sample	1605034-07A	SAMPICPMS_TSDOD1	2212
47	Sample	1605034-08A	SAMPICPMS_TSDOD1	2301
48	Sample	1605034-10A	SAMPICPMS_TSDOD1	2302
49	PDS	1605034-09A PDS	PDS ICPMS_TSDOD1	2303
50	MS_S	1605034-09A MS	MS ICPMS_TSDOD1	2304
51	MS_S	1605034-09A MSD	MSD ICPMS_TSDOD1	2305
52	CCV	CCV1-160516	CCV ICPMS_TW	1207
53	CCB	CCB1-160516	CCB ICPMS_TW	1102
54	LLCCV	LCVL1-160516	LCVLICPMS_TW	2112
55	CCB	CCB1-160516	CCB ICPMS_TW	1103
56	Sample	1605034-11A	SAMPICPMS_TSDOD1	2306
57	Sample	1605034-12A	SAMPICPMS_TSDOD1	2307
58	Sample	1605034-13A	SAMPICPMS_TSDOD1	2308
59	Sample	1605034-14A	SAMPICPMS_TSDOD1	2309
60	Sample	1605034-15A	SAMPICPMS_TSDOD1	2310

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	Sample	1605034-16A	SAMPICPMS_TSDOD1	2311	
62	Sample	1605034-17A	SAMPICPMS_TSDOD1	2312	
63	Sample	1605034-18A	SAMPICPMS_TSDOD1	2401	
64	Sample	1605034-19A	SAMPICPMS_TSDOD1	2402	
65	Sample	1605034-20A	SAMPICPMS_TSDOD1	2403	
66	CCV	CCV2-160516	CCV ICPMS_TW	1207	
67	CCB	CCB2-160516	CCB ICPMS_TW	1102	
68	LLCCV	LCVL2-160516	LCVLICPMS_TW	2112	
69	CCB	CCB2-160516	CCB ICPMS_TW	1103	
70	PB	MB-75009	MBLKICPMS_TSDOD1	3101	
71	LCS_S	LCS-75009	LCS ICPMS_TSDOD1	3102	
72	LCS_S	LCSD-75009	LCSDICPMS_TSDOD1	3103	
73	CCB	RINSE	CCB ICPMS_TW	1101	

Sample List

74	AllRef	1605047-03A	SAMPICPMS_TSDOD1	3104
75	SD	1605047-03A SD	SD ICPMS_TSDOD1	3105
76	Sample	1605034-21A	SAMPICPMS_TSDOD1	3106
77	Sample	1605034-22A	SAMPICPMS_TSDOD1	3107
78	Sample	1605034-23A	SAMPICPMS_TSDOD1	3108
79	Sample	1605034-24A	SAMPICPMS_TSDOD1	3109
80	Sample	1605034-25A	SAMPICPMS_TSDOD1	3110

#	Level	Dilution	Skip
61		5	
62		5	
63		5	
64		5	
65		5	
66			
67			
68			
69			
70		5	
71		5	
72		5	
73			
74		5	
75		25	
76		5	
77		5	
78		5	
79		5	
80		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	Sample	1605034-26A	SAMPICPMS_TSDOD1	3111	
82	Sample	1605034-27A	SAMPICPMS_TSDOD1	3112	
83	Sample	1605034-28A	SAMPICPMS_TSDOD1	3201	
84	Sample	1605034-29A	SAMPICPMS_TSDOD1	3202	
85	PDS	1605047-03A PDS	PDS ICPMS_TSDOD1	3203	
86	MS_S	1605047-03A MS	MS ICPMS_TSDOD1	3204	
87	MS_S	1605047-03A MSD	MSD ICPMS_TSDOD1	3205	
88	CCV	CCV3-160516	CCV ICPMS_TW	1207	
89	CCB	CCB3-160516	CCB ICPMS_TW	1102	
90	LLCCV	LCVL3-160516	LCVLICPMS_TW	2512	
91	CCB	CCB3-160516	CCB ICPMS_TW	1103	
92	Sample	1605034-30A	SAMPICPMS_TSDOD1	3206	
93	Sample	1605047-01A	SAMPICPMS_TSDOD1	3207	
94	Sample	1605047-02A	SAMPICPMS_TSDOD1	3208	
95	Sample	1605047-04A	SAMPICPMS_TSDOD1	3209	
96	Sample	1605047-05A	SAMPICPMS_TSDOD1	3210	
97	Sample	1605047-06A	SAMPICPMS_TSDOD1	3211	
98	Sample	1605047-07A	SAMPICPMS_TSDOD1	3212	
99	Sample	1605047-08A	SAMPICPMS_TSDOD1	3301	
100	Sample	1605047-09A	SAMPICPMS_TSDOD1	3302	

Sample List

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	Sample	1605047-10A	SAMPICPMS_TSDOD1	3303	
102	CCV	CCV4-160516	CCV ICPMS_TW	1207	
103	CCB	CCB4-160516	CCB ICPMS_TW	1102	
104	LLCCV	LCVL4-160516	LCVLICPMS_TW	2512	
105	CCB	CCB4-160516	CCB ICPMS_TW	1103	
106	PB	MB-75135	MBLKICPMS_TSDOD1	3309	
107	LCS_S	LCS-75135	LCS ICPMS_TSDOD1	3310	
108	LCS_S	LCSD-75135	LCSDICPMS_TSDOD1	3311	
109	CCB	RINSE	CCB ICPMS_TW	1101	
110	AllRef	1605098-41A	SAMPICPMS_TSDOD1	3312	
111	SD	1605098-41A SD	SD ICPMS_TSDOD1	3401	
112	Sample	1605097-20A	SAMPICPMS_TSDOD1	3402	
113	Sample	1605097-21A	SAMPICPMS_TSDOD1	3403	
114	Sample	1605097-23A	SAMPICPMS_TSDOD1	3404	
115	Sample	1605097-26A	SAMPICPMS_TSDOD1	3405	
116	Sample	1605098-31A	SAMPICPMS_TSDOD1	3406	
117	Sample	1605098-34A	SAMPICPMS_TSDOD1	3407	
118	Sample	1605098-37A	SAMPICPMS_TSDOD1	3408	
119	Sample	1605098-40A	SAMPICPMS_TSDOD1	3409	
120	Sample	1605030-02A	SAMP6020A_S	3304	

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

Sample List

108	5
109	
110	5
111	25
112	5
113	5
114	5
115	5
116	5
117	5
118	5
119	5
120	500

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	PDS	1605098-41A PDS	PDS ICPMS_TSDOD1	3410	
122	MS_S	1605098-41A MS	MS ICPMS_TSDOD1	3411	
123	MS_S	1605098-41A MSD	MSD ICPMS_TSDOD1	3412	
124	CCV	CCV5-160516	CCV ICPMS_TW	1207	
125	CCB	CCB5-160516	CCB ICPMS_TW	1102	
126	LLCCV	LCVL5-160516	LCVLICPMS_TW	2511	
127	CCB	CCB5-160516	CCB ICPMS_TW	1103	
128	PB	MB-75099	MBLKICPMS_TSDOD1	4101	
129	LCS_S	LCS-75099	LCS ICPMS_TSDOD1	4102	
130	LCS_S	LCSD-75099	LCSDICPMS_TSDOD1	4103	
131	CCB	RINSE	CCB ICPMS_TW	1101	
132	AllRef	1605071-17A	SAMPICPMS_TSDOD1	4104	
133	SD	1605071-17A SD	SD ICPMS_TSDOD1	4105	
134	Sample	1605071-12A	SAMPICPMS_TSDOD1	4106	
135	Sample	1605071-13A	SAMPICPMS_TSDOD1	4107	
136	Sample	1605071-14A	SAMPICPMS_TSDOD1	4108	
137	Sample	1605071-15A	SAMPICPMS_TSDOD1	4109	
138	Sample	1605071-16A	SAMPICPMS_TSDOD1	4110	
139	Sample	1605071-18A	SAMPICPMS_TSDOD1	4111	
140	Sample	1605071-19A	SAMPICPMS_TSDOD1	4112	

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

Sample List

136	5
137	5
138	5
139	5
140	5

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	Sample	1605071-20A	SAMPICPMS_TSDOD1	4201	
142	Sample	1605071-21A	SAMPICPMS_TSDOD1	4202	
143	PDS	1605071-17A PDS	PDS ICPMS_TSDOD1	4203	
144	MS_S	1605071-17A MS	MS ICPMS_TSDOD1	4204	
145	MS_S	1605071-17A MSD	MSD ICPMS_TSDOD1	4205	
146	CCV	CCV6-160516	CCV ICPMS_TW	1207	
147	CCB	CCB6-160516	CCB ICPMS_TW	1102	
148	LLCCV	LCVL6-160516	LCVLICPMS_TW	2511	
149	CCB	CCB6-160516	CCB ICPMS_TW	1103	
150	Sample	1605071-22A	SAMPICPMS_TSDOD1	4206	
151	Sample	1605071-23A	SAMPICPMS_TSDOD1	4207	
152	Sample	1605071-24A	SAMPICPMS_TSDOD1	4208	
153	Sample	1605071-25A	SAMPICPMS_TSDOD1	4209	
154	Sample	1605071-26A	SAMPICPMS_TSDOD1	4210	
155	Sample	1605071-27A	SAMPICPMS_TSDOD1	4211	
156	Sample	1605071-30A	SAMPICPMS_TSDOD1	4212	
157	Sample	1605071-31A	SAMPICPMS_TSDOD1	4301	
158	Sample	1605071-33A	SAMPICPMS_TSDOD1	4302	
159	Sample	1605071-34A	SAMPICPMS_TSDOD1	4303	
160	CCV	CCV7-160516	CCV ICPMS_TW	1207	

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
161	CCB	CCB7-160516	CCB ICPMS_TW	1102	

Sample List

162	LLCCV	LCVL7-160516	LCVLICPMS_TW	2510
163	CCB	CCB7-160516	CCB ICPMS_TW	1102
164	PB	MB-75104	MBLKICPMS_TSDOD1	4310
165	LCS_S	LCS-75104	LCS ICPMS_TSDOD1	4311
166	LCS_S	LCSD-75104	LCSDICPMS_TSDOD1	4312
167	CCB	RINSE	CCB ICPMS_TW	1101
168	AllRef	1605071-53A	SAMPICPMS_TSDOD1	4401
169	SD	1605071-53A SD	SD ICPMS_TSDOD1	4402
170	Sample	1605071-37A	SAMPICPMS_TSDOD1	4403
171	Sample	1605071-40A	SAMPICPMS_TSDOD1	4404
172	Sample	1605071-41A	SAMPICPMS_TSDOD1	4405
173	Sample	1605071-42A	SAMPICPMS_TSDOD1	4406
174	Sample	1605071-43A	SAMPICPMS_TSDOD1	4407
175	Sample	1605071-44A	SAMPICPMS_TSDOD1	4408
176	Sample	1605071-45A	SAMPICPMS_TSDOD1	4409
177	Sample	1605071-46A	SAMPICPMS_TSDOD1	4410
178	Sample	1605071-47A	SAMPICPMS_TSDOD1	4411
179	PDS	1605071-53A PDS	PDS ICPMS_TSDOD1	4412
180	MS_S	1605071-53A MS	MS ICPMS_TSDOD1	4501

#	Level	Dilution	Skip
161			
162			
163			
164		5	
165		5	
166		5	
167			
168		5	
169		25	
170		5	
171		5	
172		5	
173		5	
174		5	
175		5	
176		5	
177		5	
178		5	
179		5	
180		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
181	MS_S	1605071-53A MSD	MSD ICPMS_TSDOD1	4502	
182	CCV	CCV8-160516	CCV ICPMS_TW	1207	
183	CCB	CCB8-160516	CCB ICPMS_TW	1102	
184	LLCCV	LCVL8-160516	LCVLICPMS_TW	2510	
185	CCB	CCB8-160516	CCB ICPMS_TW	1103	
186	Sample	1605071-48A	SAMPICPMS_TSDOD1	4503	
187	Sample	1605071-49A	SAMPICPMS_TSDOD1	4504	
188	Sample	1605071-50A	SAMPICPMS_TSDOD1	4505	
189	Sample	1605071-51A	SAMPICPMS_TSDOD1	4506	

Sample List

190	Sample	1605071-52A	SAMPICPMS_TSDOD1	4507
191	Sample	1605071-54A	SAMPICPMS_TSDOD1	4508
192	Sample	1605074-01A	SAMPICPMS_TSDOD1	4509
193	Sample	1605074-02A	SAMPICPMS_TSDOD1	4510
194	Sample	1605074-03A	SAMPICPMS_TSDOD1	4511
195	Sample	1605074-04A	SAMPICPMS_TSDOD1	4512
196	CCV	CCV9-160516	CCV ICPMS_TW	1207
197	CCB	CCB9-160516	CCB ICPMS_TW	1102
198	LLCCV	LCVL9-160516	LCVLICPMS_TW	2511
199	CCB	CCB9-160516	CCB ICPMS_TW	1102
200	CCB	CCB9-160516	CCB ICPMS_TW	1102

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
201	CCB	CCB9-160516	CCB ICPMS_TW	1102	
202	CCB	CCB9-160516	CCB ICPMS_TW	1102	
203	CCB	CCB9-160516	CCB ICPMS_TW	1103	
204	CCB	CCB9-160516	CCB ICPMS_TW	1103	
205	CCB	CCB9-160516	CCB ICPMS_TW	1103	
206	CCB	CCB9-160516	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
201			
202			
203			
204			
205			
206			

Unknown Samples:

Sample List

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:41:32 AM**
Digestion:
Prep End Date:

Prep Batch **75099** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #4
Thermometer #71
Balance #30
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-12A	Soil		1.09	50	50.000	1 of 1	
1605071-13A	Soil		1.06	50	50.000	1 of 1	
1605071-14A	Soil		1.17	50	50.000	1 of 1	
1605071-15A	Soil		1.03	50	50.000	1 of 1	
1605071-16A	Soil		1.04	50	50.000	1 of 1	
1605071-17A	Soil		1.16	50	50.000	1 of 1	
1605071-18A	Soil		1.03	50	50.000	1 of 1	
1605071-19A	Soil		1.13	50	50.000	1 of 1	
1605071-20A	Soil		1.06	50	50.000	1 of 1	
1605071-21A	Soil		1.15	50	50.000	1 of 1	
1605071-22A	Soil		1.14	50	50.000	1 of 1	
1605071-23A	Soil		1.09	50	50.000	1 of 1	
1605071-24A	Soil		1.16	50	50.000	1 of 1	
1605071-25A	Soil		1.03	50	50.000	1 of 1	
1605071-26A	Soil		1.07	50	50.000	1 of 1	
1605071-27A	Soil		1.19	50	50.000	1 of 1	
1605071-30A	Soil		2.02	50	50.000	1 of 1	
proceed w/testing. V. high moisture see JD							
1605071-31A	Soil		1.03	50	50.000	1 of 1	
1605071-33A	Soil		1.17	50	50.000	1 of 1	
1605071-34A	Soil		1.03	50	50.000	1 of 1	
LCS-75099	Soil		1	50	50.000	of	
LCSD-75099	Soil		1	50	50.000	of	
MB-75099	Soil		1	50	50.000	of	
MS			1.19				
MSD			1.08				

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

11:52 - 12:02
12:08 - 14:08
14:55 - 16:55
17:12 - 17:27

REVIEWED BY
By Janice Whitt at 10:09:40 AM, 5/17/2016

5/12/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-04A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-05A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-09A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-10A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-14A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-15A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED BY
By Janice Whitt at 10:10:17 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605071-42A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-43A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-44A	Soil		0	0	#Num!	1	of	1	
1605071-45A	Soil		0	0	#Num!	1	of	1	
1605071-46A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-47A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-48A	Soil		0	0	#Num!	1	of	1	
1605071-49A	Soil		0	0	#Num!	1	of	1	
1605071-50A	Soil		0	0	#Num!	1	of	1	
1605071-51A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-52A	Soil		0	0	#Num!	1	of	1	
Sieved only no subsampling - hard clay									
1605071-53A	Soil		0	0	#Num!		of	3	
Extra sample was subsampled for MS/MSD									
1605071-54A	Soil		0	0	#Num!	1	of	1	

REVIEWED BY
By Janice Whitt at 10:10:21 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/7/2016 3:15:00 PM**
Digestion: **Start: 5/7/2016 3:30:00 PM / Stop: 5/9/2016 9:30:00 AM**
Prep End Date: **5/9/2016 11:00:00 AM**

Prep Batch **74999** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-16A	Soil		0	0	#Num!	1 of 1	
	Sample were sieved thru both sieves						
1605071-17A	Soil		0	0	#Num!	1 of 1	
	Sample were sieved thru both sieves						
1605071-18A	Soil		0	0	#Num!	1 of 1	
	Sample were sieved thru both sieves						

REVIEWED BY
By Janice Whitt at 10:10:25 AM, 5/17/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/11/2016	**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
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

					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**	5.0017	4.9917	**99.83**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		4.9993	4.9893	**99.79**		
3		4.9963	4.9863	**99.73**		
AVERAGE (MEAN)		**4.999**	**4.989**	**99.78**		**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**	0.2016	0.2012	**100.60**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		0.2015	0.2011	**100.55**		
3		0.2000	0.1996	**99.80**		
AVERAGE (MEAN)		**0.201**	**0.201**	**100.32**		**0.446**
						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)						

5/11/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 10:10:32 AM, 5/17/2016

Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:41:32 AM**
Digestion: **Start: 5/11/2016 11:52:00 AM / Stop: 5/11/2016 5:27:00 PM**
Prep End Date: **5/11/2016 5:49:23 PM**

Prep Batch **75099** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #4
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-12A	Soil		1.09	50	45.872	1 of 1	
1605071-13A	Soil		1.06	50	47.170	1 of 1	
1605071-14A	Soil		1.17	50	42.735	1 of 1	
1605071-15A	Soil		1.03	50	48.544	1 of 1	
1605071-16A	Soil		1.04	50	48.077	1 of 1	
1605071-17A	Soil		1.16	50	43.103	1 of 1	
1605071-17A MS	Soil		1.19	50	42.017	of	
1605071-17A MSD	Soil		1.08	50	46.296	of	
1605071-17A PDS	Soil		1.16	50	43.103	of	
1605071-17A SD	Soil		1.16	50	43.103	of	
1605071-18A	Soil		1.03	50	48.544	1 of 1	
1605071-19A	Soil		1.13	50	44.248	1 of 1	
1605071-20A	Soil		1.06	50	47.170	1 of 1	
1605071-21A	Soil		1.15	50	43.478	1 of 1	
1605071-22A	Soil		1.14	50	43.860	1 of 1	
1605071-23A	Soil		1.09	50	45.872	1 of 1	
1605071-24A	Soil		1.16	50	43.103	1 of 1	
1605071-25A	Soil		1.03	50	48.544	1 of 1	
1605071-26A	Soil		1.07	50	46.729	1 of 1	
1605071-27A	Soil		1.19	50	42.017	1 of 1	
1605071-30A	Soil		2.02	50	24.752	1 of 1	
	Sludgey sample, Used 2g instead of 1 g proceed w/testing. V. high moisture see JD						
1605071-31A	Soil		1.03	50	48.544	1 of 1	
1605071-33A	Soil		1.17	50	42.735	1 of 1	
1605071-34A	Soil		1.03	50	48.544	1 of 1	
LCS-75099	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

REVIEWED BY
By Janice Whitt at 10:10:36 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:41:32 AM**
Digestion: **Start: 5/11/2016 11:52:00 AM / Stop: 5/11/2016 5:27:00 PM**
Prep End Date: **5/11/2016 5:49:23 PM**

Prep Batch **75099** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #4
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
LCSD-75099	Soil		1	50	50.000	of	
MB-75099	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

REVIEWED BY
By Janice Whitt at 10:10:38 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 10:25:56 AM**
Digestion:
Prep End Date:

Prep Batch **75104** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke** Prep Factor Units: **mL/g**

Equipment List
Hot Block #4
Thermometer #71
Balance #30
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #		Cleanup
1605071-37A	Soil		1.15	50	50.000	1	of	1
1605071-40A	Soil		1.02 ~~1.18~~	50	50.000	1	of	1
1605071-41A	Soil		1.11 ~~1.0~~	50	50.000	1	of	1
1605071-42A	Soil		1.05	50	50.000	1	of	1
1605071-43A	Soil		1.05	50	50.000	1	of	1
1605071-44A	Soil		1.04	50	50.000	1	of	1
1605071-45A	Soil		1.02	50	50.000	1	of	1
1605071-46A	Soil		1.04	50	50.000	1	of	1
1605071-47A	Soil		1.05	50	50.000	1	of	1
1605071-48A	Soil		1.05	50	50.000	1	of	1
1605071-49A	Soil		1.03	50	50.000	1	of	1
1605071-50A	Soil		1.18	50	50.000	1	of	1
1605071-51A	Soil		1.03	50	50.000	1	of	1
1605071-52A	Soil		1.09	50	50.000	1	of	1
1605071-53A	Soil		1.05	50	50.000	3	of	3
1605071-53A MS	Soil		1.05	50	50.000	3	of	3
1605071-53A MSD	Soil		1.11	50	50.000	3	of	3
1605071-54A	Soil		1.03	50	50.000	1	of	1
1605074-01A	Soil		1.06	50	50.000	1	of	1
1605074-02A	Soil		1.03	50	50.000	1	of	1
1605074-03A	Soil		1.04	50	50.000	1	of	1
1605074-04A	Soil		1.18	50	50.000	1	of	1
LCS-75104	Soil		1	50	50.000		of	
LCSD-75104	Soil		1	50	50.000		of	
MB-75104	Soil		1	50	50.000		of	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

11:55-12:05
12:06-2:06
14:18-16:18
17:04-17:19

REVIEWED BY
By Janice Whitt at 10:11:44 AM, 5/17/2016

5/11/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-01A	Soil		0	0	#Num!	1 of 1	
1605071-02A	Soil		0	0	#Num!	1 of 1	
1605071-03A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-04A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-05A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-06A	Soil		0	0	#Num!	1 of 1	
1605071-07A	Soil		0	0	#Num!	1 of 1	
1605071-08A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-09A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-10A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-11A	Soil		0	0	#Num!	1 of 1	
1605071-12A	Soil		0	0	#Num!	1 of 1	
1605071-13A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-14A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-15A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-40A	Soil		0	0	#Num!	1 of 1	
1605071-41A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							

REVIEWED BY
By Janice Whitt at 10:11:48 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/6/2016 4:59:48 PM**
Digestion: **Start: 5/6/2016 5:30:00 PM / Stop: 5/9/2016 9:00:00 AM**
Prep End Date: **5/9/2016 5:00:00 PM**

Prep Batch **74988** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-42A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-43A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-44A	Soil		0	0	#Num!	1 of 1	
1605071-45A	Soil		0	0	#Num!	1 of 1	
1605071-46A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-47A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-48A	Soil		0	0	#Num!	1 of 1	
1605071-49A	Soil		0	0	#Num!	1 of 1	
1605071-50A	Soil		0	0	#Num!	1 of 1	
1605071-51A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-52A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605071-53A	Soil		0	0	#Num!	of 3	
Extra sample was subsampled for MS/MSD							
1605071-54A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 10:11:51 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 9:45:00 AM**
Digestion: **Start: 5/9/2016 11:00:00 AM / Stop: 5/10/2016 10:00:00 AM**
Prep End Date: **5/10/2016 7:00:00 PM**

Prep Batch **75016** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-01A	Soil		0	0	#Num!	1 of 1	
1605074-02A	Soil		0	0	#Num!	1 of 1	
1605074-03A	Soil		0	0	#Num!	1 of 1	
Sieved only no subdampling - hard clay							
1605074-04A	Soil		0	0	#Num!	1 of 1	
Sieved only no subdampling - hard clay							
1605074-05A	Soil		0	0	#Num!	1 of 1	
1605074-06A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605074-07A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605074-08A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605074-09A	Soil		0	0	#Num!	1 of 1	
1605074-10A	Soil		0	0	#Num!	1 of 1	
1605074-11A	Soil		0	0	#Num!	1 of 1	
Sieved only no sub sampling - hard clay							
1605074-12A	Soil		0	0	#Num!	1 of 1	
Sieved only no sub sampling - hard clay							
1605074-13A	Soil		0	0	#Num!	of 3	
Extra subsampled for MS/MSD							
1605074-14A	Soil		0	0	#Num!	1 of 1	
1605074-15A	Soil		0	0	#Num!	1 of 1	
1605074-16A	Soil		0	0	#Num!	1 of 1	
1605074-17A	Soil		0	0	#Num!	1 of 1	
1605074-18A	Soil		0	0	#Num!	1 of 1	
1605074-19A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 10:12:33 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 9:45:00 AM**
Digestion: **Start: 5/9/2016 11:00:00 AM / Stop: 5/10/2016 10:00:00 AM**
Prep End Date: **5/10/2016 7:00:00 PM**

Prep Batch **75016** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-20A	Soil		0	0	#Num!	1 of 1	
1605074-21A	Soil		0	0	#Num!	1 of 1	
1605074-22A	Soil		0	0	#Num!	1 of 1	
1605074-23A	Soil		0	0	#Num!	1 of 1	
1605074-24A	Soil		0	0	#Num!	1 of 1	
1605074-25A	Soil		0	0	#Num!	1 of 1	
1605074-26A	Soil		0	0	#Num!	of 3	
	Extra subsampled for MS/MSD						
1605074-27A	Soil		0	0	#Num!	1 of 1	
1605074-36A	Soil		0	0	#Num!	1 of 1	
1605074-37A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-38A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-39A	Soil		0	0	#Num!	1 of 1	
1605074-40A	Soil		0	0	#Num!	1 of 1	
1605074-41A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-42A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-43A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						
1605074-44A	Soil		0	0	#Num!	of 3	
	Extra subsampled for MS/MSD						
1605074-45A	Soil		0	0	#Num!	1 of 1	
	Sieved only no subsampling - hard clay						

REVIEWED BY
By Janice Whitt at 10:12:36 AM, 5/17/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/9/2016 9:45:00 AM**
Digestion: **Start: 5/9/2016 11:00:00 AM / Stop: 5/10/2016 10:00:00 AM**
Prep End Date: **5/10/2016 7:00:00 PM**

Prep Batch **75016** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-46A	Soil		0	0	#Num!	1 of 1	
Sieved only no subsampling - hard clay							
1605074-47A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 10:12:38 AM, 5/17/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/11/2016	**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
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

					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	5.0017	4.9917	99.83	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9993	4.9893	99.79		
3		4.9963	4.9863	99.73		
AVERAGE (MEAN)		**4.999**	**4.989**	**99.78**		**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	0.2016	0.2012	100.60	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2015	0.2011	100.55		
3		0.2000	0.1996	99.80		
AVERAGE (MEAN)		**0.201**	**0.201**	**100.32**		**0.446**
						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)						

5/11/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 10:12:46 AM, 5/17/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 10:25:56 AM**
Digestion: **Start: 5/11/2016 11:55:00 AM / Stop: 5/11/2016 5:19:00 PM**
Prep End Date: **5/11/2016 8:00:00 PM**

Prep Batch **75104** Prep Code: **3050_IDOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #4
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-37A	Soil		1.15	50	43.478	1 of 1	
1605071-40A	Soil		1.02	50	49.020	1 of 1	
1605071-41A	Soil		1.11	50	45.045	1 of 1	
1605071-42A	Soil		1.05	50	47.619	1 of 1	
1605071-43A	Soil		1.05	50	47.619	1 of 1	
1605071-44A	Soil		1.04	50	48.077	1 of 1	
1605071-45A	Soil		1.02	50	49.020	1 of 1	
1605071-46A	Soil		1.04	50	48.077	1 of 1	
1605071-47A	Soil		1.05	50	47.619	1 of 1	
1605071-48A	Soil		1.05	50	47.619	1 of 1	
1605071-49A	Soil		1.03	50	48.544	1 of 1	
1605071-50A	Soil		1.18	50	42.373	1 of 1	
1605071-51A	Soil		1.03	50	48.544	1 of 1	
1605071-52A	Soil		1.09	50	45.872	1 of 1	
1605071-53A	Soil		1.05	50	47.619	of 3	
1605071-53A MS	Soil		1.05	50	47.619	of	
1605071-53A MSD	Soil		1.11	50	45.045	of	
1605071-53A PDS	Soil		1.05	50	47.619	of	
1605071-53A SD	Soil		1.05	50	47.619	of	
1605071-54A	Soil		1.03	50	48.544	1 of 1	
1605074-01A	Soil		1.06	50	47.170	1 of 1	
1605074-02A	Soil		1.03	50	48.544	1 of 1	
1605074-03A	Soil		1.04	50	48.077	1 of 1	
1605074-04A	Soil		1.18	50	42.373	1 of 1	
LCS-75104	Soil		1	50	50.000	of	
LCSD-75104	Soil		1	50	50.000	of	
MB-75104	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
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

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-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

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By Janice Whitt at 10:13:00 AM, 5/17/2016

Calibration Summary Report

Date Acquired 5/16/2016 12:13
Data Batch 160516.b

Level	Calibration File Name
1	034CALB.d
2	035CALS.d
3	036CALS.d
4	037CALS.d
5	038CALS.d
6	039CALS.d
7	040CALS.d
8	041CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0013 * x + 2.1604E-004
Be	1.0000	y = 6.4330E-005 * x + 2.0153E-006
B	0.9999	y = 2.0450E-005 * x + 1.5046E-004
Na	1.0000	y = 7.6435E-004 * x + 0.0537
Mg	1.0000	y = 3.7787E-004 * x + 7.7363E-004
Al	0.9999	y = 1.3498E-004 * x + 1.9756E-004
K	1.0000	y = 3.8112E-004 * x + 0.0514
Ca	0.9999	y = 2.1721E-005 * x + 2.3138E-004
Ti	1.0000	y = 1.4560E-004 * x + 2.2346E-006
V	1.0000	y = 0.0050 * x + 0.0025
Cr	1.0000	y = 0.0060 * x + 0.0021
Mn	1.0000	y = 0.0032 * x + 9.1295E-004
Fe	1.0000	y = 0.0051 * x + 0.0175
Co	1.0000	y = 0.0129 * x + 1.7398E-004
Ni	1.0000	y = 0.0036 * x + 5.7511E-004
Cu	1.0000	y = 0.0098 * x + 0.0049
Zn	1.0000	y = 0.0016 * x + 4.3144E-004
Se	1.0000	y = 7.5403E-005 * x + 1.0251E-004
Sr	1.0000	y = 6.4423E-004 * x + 2.2509E-005
Mo	1.0000	y = 5.9258E-004 * x + 7.2626E-006
Ag	0.9999	y = 0.0019 * x + 1.4898E-005
Cd	1.0000	y = 2.6872E-004 * x + 1.5289E-006
Sn	1.0000	y = 5.5204E-004 * x + 1.8213E-004
Sb	0.9999	y = 8.5259E-004 * x + 3.1272E-005
Tl	1.0000	y = 0.0016 * x + 1.9351E-005
Ba	1.0000	y = 2.6911E-004 * x + 5.0734E-006
Pb	1.0000	y = 0.0022 * x + 3.1769E-004
Li	1.0000	y = 4.8609E-005 * x + 1.9222E-005

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Calibration Summary Report

Level 7 Cal

Ele	Conc	Calc	%Rec
As	500	494.73	99
Be	500	505.30	101
B	500	518.78	104
Na	10000	10141.06	101
Mg	10000	10196.11	102
Al	10000	10049.08	100
K	10000	10164.23	102
Ca	10000	9672.61	97
Ti	500	507.22	101
V	500	502.82	101
Cr	500	504.88	101
Mn	500	498.41	100
Fe	10000	10015.95	100
Co	500	501.56	100
Ni	500	502.25	100
Cu	500	503.81	101
Zn	500	497.18	99
Se	500	495.31	99
Sr	500	495.73	99
Mo	500	494.04	99
Ag	500	502.57	101
Cd	500	497.12	99
Sn	500	493.81	99
Sb	500	503.35	101
Tl	500	513.35	103
Ba	500	496.71	99
Pb	500	500.73	100

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	2001.70	100
Be	2000	1998.96	100
B	2000	1994.14	100
Na	25000	24916.54	100
Mg	25000	24905.02	100
K	25000	24930.40	100
Ca	25000	25173.08	99
Ti	2000	1998.19	100
V	2000	1999.64	100
Cr	2000	1999.12	100
Mn	2000	2001.04	100
Co	2000	1999.34	100
Ni	2000	1999.12	100
Cu	2000	1998.30	100
Zn	2000	2000.57	100
Se	2000	2001.36	100
Sr	2000	2002.63	100
Mo	2000	2003.15	100
Cd	2000	2001.51	100
Sn	2000	2002.77	100
Tl	2000	1996.39	100
Ba	2000	2002.28	100
Pb	2000	2000.05	100
Li	2000	1997.30	100

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Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
51	200	95	106.6	11.12
59	2000	1109	1037.2	4.91
89	2000	978	946.7	4.83
140	5000	2619	2627.2	3.15
205	5000	2855	2745.7	3.20
156/140	1	0.267 %	0.281 %	38.48
75	200	14	20.2	100.82
78	20	5	7.7	42.78
56	5000	2302	2186.5	4.18
31	200	94	119.5	15.15

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.53
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	6.3
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	Cell Exit	-60
Deflect	2.6		

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	2.36E+2	Pa	Carrier Gas(BP)	1.99E+2	kPa
Analyzer Press	2.11E-4	Pa	Reflected Power	2	W
Forward Power	1551	W			

Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1259	1214.6	2.40
59	2000	1799	1786.0	2.24
89	5000	2971	3021.6	3.65
140	5000	2768	2851.1	3.27
205	5000	1987	2069.0	3.42
156/140	2	1.265 %	1.084 %	10.85
78	5000	2298	2330.2	2.02
63	1000	644	644.6	3.48
75	10000	6167	6160.6	1.98

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.53
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	6.3
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	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	2.35E+2	Pa	Carrier Gas(BP)	2.01E+2	kPa
Analyzer Press	1.25E-4	Pa	Reflected Power	2	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	804620	0.70	5.00	
59	1068250	1.07	5.00	
115	1403611	0.41	5.00	
205	1211243	1.76	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	805420	812074	797893	800352	807359
59	1087360	1060308	1070307	1062123	1061152
115	1411650	1403412	1406438	1398545	1398009
205	1244073	1221795	1196407	1198551	1195389

Integration Time [sec] = 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	121133	7.05	6.9 - 7.1		0.789	0.850	
59	176131	58.90	58.9 - 59.1		0.762	0.850	
115	262817	114.95	114.9 - 115.1		0.726	0.850	
205	217175	205.00	204.9 - 205.1		0.820	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	0.53	L/min	Makeup/Dilution Gas	0.52	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	-90	V	Deflect	7.0	V
Omega Lens	6.3	V	Plate Bias	-60	V

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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	%			

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: BLANK STD 1
Data File: 034CALB.d
Acquired: 05/16/2016 12:13:29

========= Detector Parameters and P/A Factors =========
Discriminator: 4.5 mV
AnalogHV: 1760 V
PulseHV: 1210 V

Acquired: 05/16/2016 10:47:39

Mass[u]	Element	P/A Factor
6	Li	0.098496
9	Be	0.112338
23	Na	0.119180
24	Mg	0.123864
27	Al	0.128284
39	K	0.130182
45	Sc	0.131718
48		0.131992
51	V	0.133425
52	Cr	0.136299
55	Mn	0.138470
59	Co	0.141580
60	Ni	0.142019
63	Cu	0.145427
66	Zn	0.144313
72		0.143606
74	Ge	0.144250
75	As	0.143445
88	Sr	0.144615
89		0.143433
95		0.143749
97	Mo	0.143776
98	Mo	0.144291
99	[Mo]	0.145862
101		0.145734
105		0.148493
111	Cd	0.149753
114	Cd	0.150176
115	In	0.149972
118	Sn	0.149689
121		0.149797
123	Sb	0.149409
135	Ba	0.149385
138		0.150991
175		0.154667
193		0.155688
205	Tl	0.156379
206	[Pb]	0.156315
207	[Pb]	0.156903
208	Pb	0.157338
209	Bi	0.157512
232		0.157913
238	U	0.157505
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

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By Janice Whitt at 9:32:46 AM, 5/17/2016

Calibration Blank Report

Date Acquired	5/16/2016 12:13	Sample Name	BLANK STD 1
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	034CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	19	27.85
9	Be	45	2	50.00
11	B	45	149	19.04
23	Na	45	53132	1.44
24	Mg	45	766	2.40
27	Al	45	196	6.45
39	K	45	50902	0.38
44	Ca	45	229	21.81
47	Ti	45	2	173.21
51	V	45	2487	1.93
52	Cr	45	2071	4.20
55	Mn	45	903	3.52
56	Fe	45	17343	1.25
59	Co	72	129	26.04
60	Ni	72	426	16.10
63	Cu	72	3644	4.38
66	Zn	72	319	18.83
75	As	72	160	7.23
78	Se	72	76	16.17
88	Sr	115	148	9.12
95	Mo	115	48	38.42
107	Ag	115	98	18.78
111	Cd	115	10	57.72
118	Sn	115	1196	2.25
121	Sb	115	206	22.02
137	Ba	115	33	20.00
205	Tl	209	294	9.22
208	Pb	209	4836	1.04

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	989663	0.96
72	Ge	739879	0.79
115	In	6565136	0.89
209	Bi	15222533	1.19

Calibration Standard Report

Date Acquired	5/16/2016 12:15	Sample Name	L2-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	035CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	52	8.81
9	Be	45	59	10.58
11	B	45	124	19.00
23	Na	45	71682	0.85
24	Mg	45	8137	1.03
27	Al	45	2891	2.94
39	K	45	59356	0.32
44	Ca	45	756	8.57
47	Ti	45	128	26.26
51	V	45	7186	1.96
52	Cr	45	8019	2.41
55	Mn	45	3640	8.86
56	Fe	45	113349	1.91
59	Co	72	10004	3.73
60	Ni	72	3400	3.10
63	Cu	72	10884	1.65
66	Zn	72	1648	6.72
75	As	72	1181	3.38
78	Se	72	134	9.83
88	Sr	115	4270	4.86
95	Mo	115	3778	3.97
107	Ag	115	12176	1.65
111	Cd	115	1718	7.71
118	Sn	115	4740	1.89
121	Sb	115	5570	2.20
137	Ba	115	1688	3.37
205	Tl	209	24540	1.05
208	Pb	209	37281	1.63

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	969970	0.87	989663	98.01	70	120	
72	Ge	734187	0.45	739879	99.23	70	120	
115	In	6588367	0.10	6565136	100.35	70	120	
209	Bi	15295093	1.60	15222533	100.48	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:17	Sample Name	L-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	036CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	495	3.85
9	Be	45	597	8.29
11	B	45	312	5.05
23	Na	45	205126	0.48
24	Mg	45	74731	0.07
27	Al	45	26279	1.15
39	K	45	123721	0.29
44	Ca	45	4301	1.84
47	Ti	45	1460	1.95
51	V	45	50191	1.05
52	Cr	45	58887	0.52
55	Mn	45	31167	2.81
56	Fe	45	971108	0.61
59	Co	72	95222	0.74
60	Ni	72	26831	1.92
63	Cu	72	76207	0.55
66	Zn	72	12242	0.84
75	As	72	9915	1.71
78	Se	72	595	9.12
88	Sr	115	41031	1.31
95	Mo	115	36831	1.59
107	Ag	115	119481	0.70
111	Cd	115	17216	0.66
118	Sn	115	35887	2.89
121	Sb	115	54655	0.34
137	Ba	115	17381	2.11
205	Tl	209	240935	0.41
208	Pb	209	327437	0.60

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	959742	0.61	989663	96.98	70	120	
72	Ge	723998	0.63	739879	97.85	70	120	
115	In	6490295	1.02	6565136	98.86	70	120	
209	Bi	15205984	2.69	15222533	99.89	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:19	Sample Name	10X-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	037CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2322	3.95
9	Be	45	3052	2.16
11	B	45	1149	7.19
23	Na	45	799876	0.39
24	Mg	45	367858	0.41
27	Al	45	127462	0.27
39	K	45	418941	0.74
44	Ca	45	20262	1.18
47	Ti	45	7058	1.16
51	V	45	240041	1.06
52	Cr	45	290373	0.87
55	Mn	45	154609	0.91
56	Fe	45	4864100	0.46
59	Co	72	478327	0.93
60	Ni	72	131742	0.81
63	Cu	72	369411	0.32
66	Zn	72	59301	1.84
75	As	72	48628	0.99
78	Se	72	2822	3.23
88	Sr	115	204443	0.59
95	Mo	115	186130	1.18
107	Ag	115	606219	0.29
111	Cd	115	86359	0.73
118	Sn	115	177055	0.68
121	Sb	115	273825	0.97
137	Ba	115	85357	0.50
205	Tl	209	1200243	0.79
208	Pb	209	1625521	1.26

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	965684	0.40	989663	97.58	70	120	
72	Ge	726561	0.51	739879	98.20	70	120	
115	In	6502907	1.15	6565136	99.05	70	120	
209	Bi	15363317	2.30	15222533	100.92	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:21	Sample Name	5X-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	038CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4748	1.40
9	Be	45	6059	0.27
11	B	45	2143	2.91
23	Na	45	1559150	0.34
24	Mg	45	742202	0.21
27	Al	45	258296	0.93
39	K	45	795677	0.41
44	Ca	45	40346	1.20
47	Ti	45	13950	0.34
51	V	45	478438	0.52
52	Cr	45	574104	0.42
55	Mn	45	304849	0.39
56	Fe	45	9711093	0.83
59	Co	72	951253	0.55
60	Ni	72	262622	0.59
63	Cu	72	733309	0.46
66	Zn	72	117365	0.32
75	As	72	97474	0.40
78	Se	72	5569	2.50
88	Sr	115	412067	0.70
95	Mo	115	375370	0.89
107	Ag	115	1214271	0.47
111	Cd	115	174217	1.11
118	Sn	115	354830	0.90
121	Sb	115	554782	0.12
137	Ba	115	172424	0.56
205	Tl	209	2464090	0.70
208	Pb	209	3268962	0.35

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	970285	0.25	989663	98.04	70	120	
72	Ge	727408	0.46	739879	98.31	70	120	
115	In	6520475	2.66	6565136	99.32	70	120	
209	Bi	15160200	1.63	15222533	99.59	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:23	Sample Name	2X-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	039CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	11895	0.36
9	Be	45	15606	0.20
11	B	45	5304	5.31
23	Na	45	3863011	0.24
24	Mg	45	1867398	0.89
27	Al	45	646706	0.73
39	K	45	1910456	0.88
44	Ca	45	102550	1.48
47	Ti	45	35516	0.05
51	V	45	1206201	0.56
52	Cr	45	1444024	0.77
55	Mn	45	769961	0.65
56	Fe	45	24931975	0.46
59	Co	72	2390685	0.36
60	Ni	72	660422	0.83
63	Cu	72	1847014	0.29
66	Zn	72	294429	0.55
75	As	72	245969	0.54
78	Se	72	13903	1.73
88	Sr	115	1032756	0.51
95	Mo	115	948565	0.69
107	Ag	115	3067540	0.35
111	Cd	115	440590	0.22
118	Sn	115	895873	0.74
121	Sb	115	1395441	1.19
137	Ba	115	432794	1.07
205	Tl	209	6236297	0.22
208	Pb	209	8321908	0.74

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	973916	0.73	989663	98.41	70	120	
72	Ge	738284	1.03	739879	99.78	70	120	
115	In	6720201	0.86	6565136	102.36	70	120	
209	Bi	15434354	1.75	15222533	101.39	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:25	Sample Name	H-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	040CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	23890	0.39
9	Be	45	31279	0.04
11	B	45	10353	1.63
23	Na	45	7510621	3.10
24	Mg	45	3707935	0.17
27	Al	45	1305356	0.40
39	K	45	3776973	0.76
44	Ca	45	202385	1.53
47	Ti	45	71062	0.10
51	V	45	2413827	0.54
52	Cr	45	2904600	1.41
55	Mn	45	1540539	1.08
56	Fe	45	49403441	1.28
59	Co	72	4783151	0.37
60	Ni	72	1320488	0.64
63	Cu	72	3658397	1.04
66	Zn	72	585875	0.13
75	As	72	493223	0.26
78	Se	72	27720	0.17
88	Sr	115	2074048	0.70
95	Mo	115	1901227	0.86
107	Ag	115	6083712	0.42
111	Cd	115	867531	0.98
118	Sn	115	1771469	1.23
121	Sb	115	2787137	1.45
137	Ba	115	868070	0.81
205	Tl	209	12606041	2.70
208	Pb	209	16616909	1.05

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	962220	0.53	989663	97.23	70	120	
72	Ge	740203	0.39	739879	100.04	70	120	
115	In	6493983	0.74	6565136	98.92	70	120	
209	Bi	15306948	1.93	15222533	100.55	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:27	Sample Name	H2-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	041CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	94360	0.15
9	Be	45	124959	1.20
11	B	45	39777	1.09
23	Na	45	18560536	1.58
24	Mg	45	9144615	2.14
27	Al	45	2090	11.76
39	K	45	9282861	0.46
44	Ca	45	531593	1.29
47	Ti	45	282740	1.21
51	V	45	9688266	1.64
52	Cr	45	11609230	0.52
55	Mn	45	6243744	0.55
56	Fe	45	53024	13.58
59	Co	72	18953981	0.49
60	Ni	72	5223729	0.31
63	Cu	72	14414170	0.84
66	Zn	72	2342558	0.44
75	As	72	1983313	0.39
78	Se	72	111116	0.41
88	Sr	115	8400397	2.43
95	Mo	115	7728986	0.21
107	Ag	115	2097	23.47
111	Cd	115	3502037	0.15
118	Sn	115	7200028	0.67
121	Sb	115	4263	0.91
137	Ba	115	3508378	0.98
205	Tl	209	49941925	0.91
208	Pb	209	67594172	1.11

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	971821	1.15	989663	98.20	70	120	
72	Ge	735820	0.24	739879	99.45	70	120	
115	In	6511206	0.33	6565136	99.18	70	120	
209	Bi	15593242	1.38	15222533	102.44	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/16/2016 12:35	Sample Name	ICSA-160516
Data Batch	160516.b	Comment	ICSAICPMS_TW
Data File Name	045ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	0.070	6	72.6	1.2	0.8	
11	B	13.327	389	1.3	30	30	
51	V	-0.061	2029	8.2	10	10	
52	Cr	0.433	4304	0.4	8	5	
55	Mn	1.249	4525	1.7	8	10	
59	Co	0.564	5136	0.7	8	10	
60	Ni	0.462	1530	7.8	8	10	
63	Cu	0.750	8480	4.6	8	10	
66	Zn	1.702	2168	2.6	10	5	
75	As	0.707	807	6.2	4	5	
78	Se	0.297	86	2.0	2	5	
88	Sr	1.472	5996	1.7	10	10	
107	Ag	0.164	1976	2.6	0.8	2	
111	Cd	0.489	822	11.4	1.2	1	
118	Sn	0.633	3287	7.3	10	10	
121	Sb	0.403	2317	4.2	4	2.5	
137	Ba	0.344	602	2.6	8	10	
205	Tl	0.167	4113	7.2	4	1.5	
208	Pb	0.423	17708	3.8	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	919349	0.18	989663	92.90	70	120	
72	Ge	690788	0.75	739879	93.37	70	120	
115	In	6178274	2.21	6565136	94.11	70	120	
209	Bi	14330312	1.00	15222533	94.14	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/16/2016 12:37	Sample Name	ICSAB-160516
Data Batch	160516.b	Comment	ICSBICPMS_TW
Data File Name	046ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	40.920	188413	1.25	40	102.3	80	120	
52	Cr	45	21.538	119346	1.23	20	107.7	80	120	
55	Mn	45	19.546	58095	0.39	20	97.7	80	120	
59	Co	72	40.820	364572	0.76	40	102.0	80	120	
60	Ni	72	38.796	95861	0.69	40	97.0	80	120	
63	Cu	72	20.922	145497	1.14	20	104.6	80	120	
66	Zn	72	20.159	22525	1.25	20	100.8	80	120	
75	As	72	20.311	19101	0.64	20	101.6	80	120	
78	Se	72	19.952	1114	4.41	20	99.8	80	120	
107	Ag	115	18.823	217557	0.91	20	94.1	80	120	
111	Cd	115	10.001	16661	2.33	10	100.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	912523	0.80	989663	92.21	70	120	
72	Ge	692993	0.59	739879	93.66	70	120	
115	In	6198552	1.89	6565136	94.42	70	120	
209	Bi	14414928	2.43	15222533	94.69	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/16/2016 12:45	Sample Name	ICV-160516
Data Batch	160516.b	Comment	ICV ICPMS_TW
Data File Name	050_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	102.036	4901	1.27	100	102.0	90	110	
9	Be	45	101.265	6415	2.24	100	101.3	90	110	
11	B	45	105.632	2275	3.87	100	105.6	90	110	
23	Na	45	2641.859	2040670	0.44	2500	105.7	90	110	
24	Mg	45	2627.634	978183	0.43	2500	105.1	90	110	
27	Al	45	2529.069	336250	0.45	2500	101.2	90	110	
39	K	45	2571.354	1015339	0.69	2500	102.9	90	110	
44	Ca	45	2404.069	51631	0.85	2500	96.2	90	110	
47	Ti	45	100.717	14438	1.01	100	100.7	90	110	
51	V	45	102.938	507538	1.36	100	102.9	90	110	
52	Cr	45	108.084	637805	0.16	100	108.1	90	110	
55	Mn	45	100.675	319085	1.43	100	100.7	90	110	
56	Fe	45	2559.298	12927694	1.12	2500	102.4	90	110	
59	Co	72	105.570	1020966	0.69	100	105.6	90	110	
60	Ni	72	107.126	285930	1.50	100	107.1	90	110	
63	Cu	72	103.286	763431	0.92	100	103.3	90	110	
66	Zn	72	104.068	124607	2.02	100	104.1	90	110	
75	As	72	101.470	102703	0.07	100	101.5	90	110	
78	Se	72	101.426	5817	1.69	100	101.4	90	110	
88	Sr	115	100.132	432908	0.62	100	100.1	90	110	
95	Mo	115	97.187	386430	0.14	100	97.2	90	110	
107	Ag	115	97.927	1224850	0.49	100	97.9	90	110	
111	Cd	115	99.729	179816	0.44	100	99.7	90	110	
118	Sn	115	102.527	380996	1.21	100	102.5	90	110	
121	Sb	115	99.369	568617	0.55	100	99.4	90	110	
137	Ba	115	98.986	178765	1.21	100	99.0	90	110	
205	Tl	209	101.079	2558610	1.05	100	101.1	90	110	
208	Pb	209	101.129	3463213	1.15	100	101.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	984407	0.20	989663	99.47	70	120	
72	Ge	750542	0.33	739879	101.44	70	120	
115	In	6712010	2.48	6565136	102.24	70	120	
209	Bi	15780912	2.94	15222533	103.67	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 13:04	Sample Name	LCVL-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	053LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.085	497	6.39	10	100.8	70	130	
9	Be	45	1.110	72	10.47	1	111.0	70	130	
11	B	45	23.217	610	6.44	20	116.1	70	130	
23	Na	45	101.480	128091	0.99	100	101.5	70	130	
24	Mg	45	100.262	37729	0.40	100	100.3	70	130	
27	Al	45	100.461	13428	1.73	100	100.5	70	130	
39	K	45	103.524	88702	0.46	100	103.5	70	130	
44	Ca	45	102.198	2392	1.67	100	102.2	70	130	
47	Ti	45	4.941	704	5.44	5	98.8	70	130	
51	V	45	1.016	7394	1.69	1	101.6	70	130	
52	Cr	45	5.074	31630	0.88	5	101.5	70	130	
55	Mn	45	4.672	15531	2.01	5	93.4	70	130	
56	Fe	45	96.898	501663	1.07	100	96.9	70	130	
59	Co	72	5.113	49253	2.39	5	102.3	70	130	
60	Ni	72	5.281	14413	2.97	5	105.6	70	130	
63	Cu	72	5.054	40605	1.89	5	101.1	70	130	
66	Zn	72	5.152	6435	3.09	5	103.0	70	130	
75	As	72	4.955	5136	1.31	5	99.1	70	130	
78	Se	72	5.352	377	10.14	5	107.0	70	130	
88	Sr	115	4.896	21492	0.69	5	97.9	70	130	
95	Mo	115	4.707	18923	1.22	5	94.1	70	130	
107	Ag	115	1.880	23820	0.84	2	94.0	70	130	
111	Cd	115	0.943	1725	0.80	1	94.3	70	130	
118	Sn	115	4.941	19687	0.90	5	98.8	70	130	
121	Sb	115	1.895	11143	1.50	2	94.7	70	130	
137	Ba	115	4.844	8856	2.19	5	96.9	70	130	
205	Tl	209	0.990	24961	1.27	1	99.0	70	130	
208	Pb	209	0.965	37433	0.96	1	96.5	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	975960	0.75	989663	98.62	70	120	
72	Ge	745697	0.56	739879	100.79	70	120	
115	In	6766926	1.32	6565136	103.07	70	120	
209	Bi	15530111	0.87	15222533	102.02	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/16/2016 13:08	Sample Name	ICB-160516
Data Batch	160516.b	Comment	ICB ICPMS_TW
Data File Name	055_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.209	9	33.3	2	5	
9	Be	45	0.016	3	145.3	0.4	0.3	
11	B	45	0.800	166	4.2	10	10	
23	Na	45	-0.159	53162	0.6	50	100	
24	Mg	45	-1.218	311	2.2	50	100	
27	Al	45	0.038	201	20.1	50	10	
39	K	45	1.719	51697	1.1	50	100	
44	Ca	45	0.906	249	10.0	50	100	
47	Ti	45	-0.008	1	173.2	4	3	
51	V	45	-0.036	2316	8.1	4	3	
52	Cr	45	-0.016	1983	3.7	2	2	
55	Mn	45	-0.171	360	12.1	2	3	
56	Fe	45	-1.175	11419	2.5	50	50	
59	Co	72	-0.004	93	3.6	2	3	
60	Ni	72	0.008	453	3.7	2	3	
63	Cu	72	-0.129	2740	7.3	2	2	
66	Zn	72	0.047	379	9.2	4	2	
75	As	72	-0.007	154	16.5	2	2	
78	Se	72	0.011	77	18.9	1	2	
88	Sr	115	-0.008	116	28.9	4	3	
95	Mo	115	-0.003	36	37.9	2	2	
107	Ag	115	0.002	122	22.0	0.4	1	
111	Cd	115	-0.001	8	107.8	0.4	0.3	
118	Sn	115	-0.027	1132	6.9	4	3	
121	Sb	115	-0.005	180	38.3	2	0.8	
137	Ba	115	-0.007	22	48.2	2	3	
205	Tl	209	-0.004	194	12.9	2	0.5	
208	Pb	209	-0.030	3948	5.4	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	992459	0.15	989663	100.28	70	120	
72	Ge	749087	0.80	739879	101.24	70	120	
115	In	6765962	1.39	6565136	103.06	70	120	
209	Bi	15607134	1.04	15222533	102.53	70	120	

Method Blank Report

Date Acquired	5/16/16 1:10 PM	Sample Name	MB-75006
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	056_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	-0.146	12	50.00		
9	Be	45	0.005	2	65.47		
11	B	45	2.415	198	10.83		
23	Na	45	6.305	57904	1.24		
24	Mg	45	1.447	1307	7.45		
27	Al	45	6.560	1072	10.13		
39	K	45	4.983	52785	1.07		
44	Ca	45	25.949	787	4.64		
47	Ti	45	0.193	30	11.10		
51	V	45	0.012	2545	7.63		
52	Cr	45	-0.019	1957	3.40		
55	Mn	45	-0.169	366	12.04		
56	Fe	45	1.612	25517	1.62		
59	Co	72	-0.001	122	41.39		
60	Ni	72	0.896	2752	6.12		
63	Cu	72	0.027	3805	4.06		
66	Zn	72	2.641	3396	3.83		
75	As	72	0.006	164	15.30		
78	Se	72	0.019	76	11.54		
88	Sr	115	0.105	603	7.25		
95	Mo	115	0.015	107	29.81		
107	Ag	115	0.003	132	16.21		
111	Cd	115	0.001	11	45.82		
118	Sn	115	3.710	14888	0.24		
121	Sb	115	0.015	292	11.71		
137	Ba	115	0.033	93	14.29		
205	Tl	209	-0.003	228	16.18		
208	Pb	209	0.087	8113	4.64		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	989768	0.68	989663	100.01	70	120	
72	Ge	732862	0.79	739879	99.05	70	120	
115	In	6675589	0.28	6565136	101.68	70	120	
209	Bi	16015037	1.36	15222533	105.21	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 13:12	Sample Name	LCS-75006
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	057_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.944	9921	1.65	200	105.0	80	120	
9	Be	45	206.367	12884	1.01	200	103.2	80	120	
11	B	45	208.122	4276	1.34	200	104.1	80	120	
23	Na	45	5237.709	3936752	1.49	1000	523.8	80	120	Fail
24	Mg	45	5226.543	1917199	0.61	1000	522.7	80	120	Fail
27	Al	45	1023.887	134300	0.46	1000	102.4	80	120	
39	K	45	5185.325	1967489	1.09	1000	518.5	80	120	Fail
44	Ca	45	4923.988	104003	1.35	1000	492.4	80	120	Fail
47	Ti	45	207.009	29250	1.03	200	103.5	80	120	
51	V	45	208.631	1011485	0.38	200	104.3	80	120	
52	Cr	45	210.321	1221452	0.44	200	105.2	80	120	
55	Mn	45	204.962	639471	1.17	200	102.5	80	120	
56	Fe	45	1005.837	5018600	0.96	1000	100.6	80	120	
59	Co	72	212.928	2009387	0.97	200	106.5	80	120	
60	Ni	72	213.025	554460	0.43	200	106.5	80	120	
63	Cu	72	211.182	1519571	0.47	200	105.6	80	120	
66	Zn	72	209.961	245013	0.37	200	105.0	80	120	
75	As	72	206.420	203729	0.78	200	103.2	80	120	
78	Se	72	207.574	11540	0.76	200	103.8	80	120	
88	Sr	115	201.554	843090	0.77	200	100.8	80	120	
95	Mo	115	203.315	782237	0.32	200	101.7	80	120	
107	Ag	115	204.282	2472298	0.23	200	102.1	80	120	
111	Cd	115	206.011	359420	0.15	200	103.0	80	120	
118	Sn	115	211.760	760125	0.88	200	105.9	80	120	
121	Sb	115	203.526	1126727	0.71	200	101.8	80	120	
137	Ba	115	206.707	361137	1.07	200	103.4	80	120	
205	Tl	209	208.998	5189092	0.67	200	104.5	80	120	
208	Pb	209	205.479	6898435	1.16	200	102.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	970404	0.80	989663	98.05	70	120	
72	Ge	732468	0.57	739879	99.00	70	120	
115	In	6493298	1.62	6565136	98.91	70	120	
209	Bi	15481261	2.76	15222533	101.70	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 13:14	Sample Name	LCSD-75006
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	058_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.884	9790	1.78	200	103.9	80	120	
9	Be	45	209.962	13063	0.88	200	105.0	80	120	
11	B	45	208.625	4272	5.15	200	104.3	80	120	
23	Na	45	5183.054	3882782	0.22	1000	518.3	80	120	Fail
24	Mg	45	5157.745	1885329	0.26	1000	515.8	80	120	Fail
27	Al	45	1012.501	132349	0.21	1000	101.3	80	120	
39	K	45	5106.947	1931794	0.83	1000	510.7	80	120	Fail
44	Ca	45	4900.715	103151	1.63	1000	490.1	80	120	Fail
47	Ti	45	204.847	28844	1.06	200	102.4	80	120	
51	V	45	206.156	996055	1.12	200	103.1	80	120	
52	Cr	45	207.067	1198447	0.64	200	103.5	80	120	
55	Mn	45	202.790	630455	0.61	200	101.4	80	120	
56	Fe	45	998.242	4963385	0.31	1000	99.8	80	120	
59	Co	72	213.369	1984897	0.53	200	106.7	80	120	
60	Ni	72	214.072	549238	1.47	200	107.0	80	120	
63	Cu	72	210.965	1496329	0.84	200	105.5	80	120	
66	Zn	72	209.358	240821	0.60	200	104.7	80	120	
75	As	72	205.413	199838	0.76	200	102.7	80	120	
78	Se	72	205.781	11277	0.65	200	102.9	80	120	
88	Sr	115	197.382	832329	0.24	200	98.7	80	120	
95	Mo	115	198.127	768348	0.52	200	99.1	80	120	
107	Ag	115	201.339	2456251	0.68	200	100.7	80	120	
111	Cd	115	203.225	357380	0.59	200	101.6	80	120	
118	Sn	115	207.461	750676	0.31	200	103.7	80	120	
121	Sb	115	201.420	1124074	0.55	200	100.7	80	120	
137	Ba	115	201.315	354570	0.64	200	100.7	80	120	
205	Tl	209	209.481	5110641	1.07	200	104.7	80	120	
208	Pb	209	208.125	6864665	0.12	200	104.1	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	966996	0.53	989663	97.71	70	120	
72	Ge	722003	0.48	739879	97.58	70	120	
115	In	6545303	1.51	6565136	99.70	70	120	
209	Bi	15205868	0.85	15222533	99.89	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 13:20	Sample Name	1605034-09A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	061_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	26.640	1276	2.83	134.8	98.8	110	90	Good
9	Be	45	0.673	44	17.75	3.3	102.3	110	90	Good
11	B	45	35.106	843	2.05	175.1	100.3	110	90	Good
23	Na	45	1341.138	1047781	1.49	6535.8	102.6	110	90	Good
24	Mg	45	3494.518	1283260	1.37	16837.3	103.8	110	90	Good
27	Al	45	14690.969	1926174	0.39	73374.6	100.1	110	90	Good
39	K	45	3527.955	1355883	1.85	17339.4	101.7	110	90	Good
44	Ca	45	12320.196	260127	0.90	60377.4	102.0	110	90	Good
47	Ti	45	34.854	4931	3.30	169.9	102.5	110	90	Good
51	V	45	24.533	121203	0.96	120.9	101.5	110	90	Good
52	Cr	45	17.126	101420	1.31	83.9	102.1	110	90	Good
55	Mn	45	28.811	90727	2.44	139.3	103.4	110	90	Good
56	Fe	45	20147.777	100294176	1.66	98301.1	102.5	110	90	Good
59	Co	72	3.980	37400	1.12	19.4	102.8	110	90	Good
60	Ni	72	7.622	20089	0.89	37.0	103.1	110	90	Good
63	Cu	72	3.147	25995	1.12	15.5	101.6	110	90	Good
66	Zn	72	44.997	52356	1.83	213.7	105.3	110	90	Good
75	As	72	4.484	4546	2.63	22.1	101.5	110	90	Good
78	Se	72	1.288	145	16.44	4.8	132.8	110	90	
88	Sr	115	131.704	559348	0.67	658.1	100.1	110	90	Good
95	Mo	115	0.163	686	4.41	0.8	106.6	110	90	Good
107	Ag	115	0.015	281	20.96	0.0	213.5	110	90	
111	Cd	115	0.019	44	33.82	0.1	96.8	110	90	Good
118	Sn	115	0.928	4576	2.48	5.4	86.0	110	90	
121	Sb	115	0.052	497	12.54	0.2	141.5	110	90	
137	Ba	115	16.132	28651	2.10	81.5	99.0	110	90	Good
205	Tl	209	0.091	2566	0.20	0.4	107.4	110	90	Good
208	Pb	209	8.477	290720	0.93	42.2	100.5	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	971239	0.33	989663	98.14	70	120	
72	Ge	726881	0.26	739879	98.24	70	120	
115	In	6592914	2.11	6565136	100.42	70	120	
209	Bi	15555554	1.23	15222533	102.19	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 13:40	Sample Name	1605034-09A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	071_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	333.603	14929	0.57	134.8	200	99.4	75	125	
9	Be	45	199.550	11806	0.84	3.3	200	98.1	75	125	
11	B	45	363.902	6980	2.96	175.1	200	94.4	75	125	
23	Na	45	11259.262	7963257	2.07	6535.8	5000	94.5	75	125	
24	Mg	45	21484.494	7465063	3.08	16837.3	5000	92.9	75	125	
27	Al	45	76254.063	9464344	1.62	73374.6	5000	57.6	75	125	Fail
39	K	45	22399.065	7897508	0.83	17339.4	5000	101.2	75	125	
44	Ca	45	64626.998	1291046	0.41	60377.4	5000	85.0	75	125	
47	Ti	45	368.848	49389	1.00	169.9	200	99.5	75	125	
51	V	45	319.957	1468813	0.62	120.9	200	99.5	75	125	
52	Cr	45	284.913	1567370	0.63	83.9	200	100.5	75	125	
55	Mn	45	325.385	961526	1.10	139.3	200	93.0	75	125	
56	Fe	45	########	483426221	1.94	98301.1	5000	85.5	75	125	
59	Co	72	219.507	1933532	1.74	19.4	200	100.1	75	125	
60	Ni	72	231.557	562479	1.26	37.0	200	97.3	75	125	
63	Cu	72	207.702	1394917	0.67	15.5	200	96.1	75	125	
66	Zn	72	408.096	444204	0.95	213.7	200	97.2	75	125	
75	As	72	221.100	203668	1.34	22.1	200	99.5	75	125	
78	Se	72	198.308	10292	0.87	4.8	200	96.7	75	125	
88	Sr	115	864.726	3346085	1.40	658.1	200	103.3	75	125	
95	Mo	115	197.110	701583	0.78	0.8	200	98.2	75	125	
107	Ag	115	184.889	2070097	0.89	0.0	200	92.4	75	125	
111	Cd	115	192.671	310976	0.84	0.1	200	96.3	75	125	
118	Sn	115	212.209	704715	0.27	5.4	200	103.4	75	125	
121	Sb	115	199.393	1021239	0.53	0.2	200	99.6	75	125	
137	Ba	115	280.531	453461	0.67	81.5	200	99.5	75	125	
205	Tl	209	204.741	4567036	0.97	0.4	200	102.2	75	125	
208	Pb	209	245.105	7390663	0.39	42.2	200	101.5	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	919593	0.91	989663	92.92	70	120	
72	Ge	683645	1.04	739879	92.40	70	120	
115	In	6006664	0.89	6565136	91.49	70	120	
209	Bi	13902007	0.54	15222533	91.33	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 13:42	Sample Name	1605034-09A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	072_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	334.787	15092	0.78	134.8	200	100.0	80	120	
9	Be	45	196.459	11710	0.95	3.3	200	96.6	80	120	
11	B	45	364.078	7037	2.00	175.1	200	94.5	80	120	
23	Na	45	12070.592	8596574	0.79	6535.8	1000	553.5	80	120	Fail
24	Mg	45	22789.795	7977364	1.24	16837.3	1000	595.2	80	120	Fail
27	Al	45	85785.137	10726957	0.60	73374.6	1000	1241.1	80	120	Fail
39	K	45	22708.720	8065917	2.30	17339.4	1000	536.9	80	120	Fail
44	Ca	45	73115.949	1471358	0.30	60377.4	1000	1273.9	80	120	Fail
47	Ti	45	258.838	34916	2.92	169.9	200	44.5	80	120	Fail
51	V	45	334.371	1546245	1.11	120.9	200	106.7	80	120	
52	Cr	45	289.487	1604306	1.20	83.9	200	102.8	80	120	
55	Mn	45	329.353	980435	1.48	139.3	200	95.0	80	120	
56	Fe	45	########	534186859	2.86	98301.1	1000	1421.2	80	120	Fail
59	Co	72	220.444	1946431	1.24	19.4	200	100.5	80	120	
60	Ni	72	236.094	574920	1.17	37.0	200	99.6	80	120	
63	Cu	72	215.249	1449006	0.66	15.5	200	99.9	80	120	
66	Zn	72	431.091	470375	1.05	213.7	200	108.7	80	120	
75	As	72	224.408	207200	0.51	22.1	200	101.2	80	120	
78	Se	72	196.949	10247	0.74	4.8	200	96.1	80	120	
88	Sr	115	787.560	3061934	0.66	658.1	200	64.8	80	120	Fail
95	Mo	115	177.496	634779	0.35	0.8	200	88.4	80	120	
107	Ag	115	194.406	2187046	0.62	0.0	200	97.2	80	120	
111	Cd	115	196.122	318047	0.82	0.1	200	98.0	80	120	
118	Sn	115	202.110	674396	1.40	5.4	200	98.4	80	120	
121	Sb	115	59.744	307567	2.24	0.2	200	29.8	80	120	Fail
137	Ba	115	282.677	459086	1.14	81.5	200	100.6	80	120	
205	Tl	209	199.998	4584911	0.51	0.4	200	99.8	80	120	
208	Pb	209	243.308	7540652	0.99	42.2	200	100.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	926378	0.96	989663	93.61	70	120	
72	Ge	685316	0.91	739879	92.63	70	120	
115	In	6034722	0.26	6565136	91.92	70	120	
209	Bi	14293476	2.72	15222533	93.90	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 13:44	Sample Name	1605034-09A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	073_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	334.807	15319	0.79	134.8	200	100.0	80	120	
9	Be	45	197.628	11955	0.63	3.3	200	97.2	80	120	
11	B	45	367.083	7199	1.24	175.1	200	96.0	80	120	
23	Na	45	12120.945	8761353	2.21	6535.8	1000	558.5	80	120	Fail
24	Mg	45	22881.031	8129418	0.65	16837.3	1000	604.4	80	120	Fail
27	Al	45	81820.065	10384114	1.50	73374.6	1000	844.6	80	120	Fail
39	K	45	22745.606	8199060	2.36	17339.4	1000	540.6	80	120	Fail
44	Ca	45	64325.791	1313856	1.03	60377.4	1000	394.8	80	120	Fail
47	Ti	45	272.580	37316	2.10	169.9	200	51.3	80	120	Fail
51	V	45	327.263	1535923	0.43	120.9	200	103.2	80	120	
52	Cr	45	285.177	1603976	0.11	83.9	200	100.7	80	120	
55	Mn	45	335.991	1015037	0.17	139.3	200	98.3	80	120	
56	Fe	45	########	505742540	1.83	98301.1	1000	666.7	80	120	Fail
59	Co	72	220.595	1969623	1.18	19.4	200	100.6	80	120	
60	Ni	72	235.750	580505	0.47	37.0	200	99.4	80	120	
63	Cu	72	213.306	1452078	0.35	15.5	200	98.9	80	120	
66	Zn	72	419.979	463373	0.88	213.7	200	103.2	80	120	
75	As	72	220.613	205993	0.30	22.1	200	99.3	80	120	
78	Se	72	198.769	10457	1.41	4.8	200	97.0	80	120	
88	Sr	115	790.029	3117285	0.26	658.1	200	66.0	80	120	Fail
95	Mo	115	175.082	635454	0.42	0.8	200	87.2	80	120	
107	Ag	115	194.843	2224669	0.75	0.0	200	97.4	80	120	
111	Cd	115	196.720	323764	0.60	0.1	200	98.3	80	120	
118	Sn	115	199.467	675482	0.30	5.4	200	97.0	80	120	
121	Sb	115	57.570	300801	0.31	0.2	200	28.7	80	120	Fail
137	Ba	115	287.418	473748	0.86	81.5	200	103.0	80	120	
205	Tl	209	203.827	4601821	0.90	0.4	200	101.7	80	120	
208	Pb	209	249.705	7621002	1.25	42.2	200	103.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	940177	0.43	989663	95.00	70	120	
72	Ge	692978	0.20	739879	93.66	70	120	
115	In	6124954	1.14	6565136	93.30	70	120	
209	Bi	14071667	1.48	15222533	92.44	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 13:46	Sample Name	CCV1-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	074_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.695	9481	0.51	200	104.8	90	110	
9	Be	45	205.110	12253	0.74	200	102.6	90	110	
11	B	45	206.377	4057	4.27	200	103.2	90	110	
23	Na	45	5106.625	3673844	0.35	5000	102.1	90	110	
24	Mg	45	5020.981	1762261	0.22	5000	100.4	90	110	
27	Al	45	4809.347	602962	1.31	5000	96.2	90	110	
39	K	45	4998.473	1816524	0.30	5000	100.0	90	110	
44	Ca	45	4653.452	94065	1.15	5000	93.1	90	110	
47	Ti	45	200.562	27114	1.25	200	100.3	90	110	
51	V	45	199.852	927228	0.75	200	99.9	90	110	
52	Cr	45	202.006	1122662	0.98	200	101.0	90	110	
55	Mn	45	196.971	588019	0.76	200	98.5	90	110	
56	Fe	45	4984.138	23730162	0.88	5000	99.7	90	110	
59	Co	72	206.099	1856924	0.63	200	103.0	90	110	
60	Ni	72	207.112	514673	0.72	200	103.6	90	110	
63	Cu	72	206.916	1421556	0.21	200	103.5	90	110	
66	Zn	72	205.297	228724	0.68	200	102.6	90	110	
75	As	72	201.853	190213	0.43	200	100.9	90	110	
78	Se	72	198.619	10545	0.60	200	99.3	90	110	
88	Sr	115	192.983	791908	0.15	200	96.5	90	110	
95	Mo	115	195.082	736231	0.53	200	97.5	90	110	
107	Ag	115	201.631	2393789	0.25	200	100.8	90	110	
111	Cd	115	198.022	338891	0.76	200	99.0	90	110	
118	Sn	115	196.732	692801	0.28	200	98.4	90	110	
121	Sb	115	198.003	1075274	0.65	200	99.0	90	110	
137	Ba	115	194.735	333740	1.62	200	97.4	90	110	
205	Tl	209	201.942	4866803	0.48	200	101.0	90	110	
208	Pb	209	198.484	6466924	0.23	200	99.2	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	928507	0.89	989663	93.82	70	120	
72	Ge	699337	0.87	739879	94.52	70	120	
115	In	6368736	0.83	6565136	97.01	70	120	
209	Bi	15021348	1.41	15222533	98.68	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 13:54	Sample Name	LCVL1-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	076LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.263	471	7.65	10	102.6	70	130	
9	Be	45	1.052	63	9.12	1	105.2	70	130	
11	B	45	23.964	582	6.18	20	119.8	70	130	
23	Na	45	106.088	122505	0.07	100	106.1	70	130	
24	Mg	45	101.096	35425	2.20	100	101.1	70	130	
27	Al	45	100.459	12505	1.58	100	100.5	70	130	
39	K	45	95.468	79821	1.13	100	95.5	70	130	
44	Ca	45	102.467	2233	4.69	100	102.5	70	130	
47	Ti	45	5.686	754	0.92	5	113.7	70	130	
51	V	45	0.895	6337	2.56	1	89.5	70	130	
52	Cr	45	5.191	30094	1.68	5	103.8	70	130	
55	Mn	45	4.733	14641	0.97	5	94.7	70	130	
56	Fe	45	96.494	465380	0.29	100	96.5	70	130	
59	Co	72	5.193	46491	2.05	5	103.9	70	130	
60	Ni	72	5.211	13222	0.39	5	104.2	70	130	
63	Cu	72	5.077	37896	0.35	5	101.5	70	130	
66	Zn	72	5.065	5884	1.66	5	101.3	70	130	
75	As	72	4.981	4797	1.58	5	99.6	70	130	
78	Se	72	5.124	339	6.38	5	102.5	70	130	
88	Sr	115	4.889	19577	1.64	5	97.8	70	130	
95	Mo	115	4.784	17541	1.98	5	95.7	70	130	
107	Ag	115	1.925	22237	1.79	2	96.2	70	130	
111	Cd	115	0.948	1582	5.17	1	94.8	70	130	
118	Sn	115	4.834	17596	0.91	5	96.7	70	130	
121	Sb	115	1.958	10494	2.37	2	97.9	70	130	
137	Ba	115	4.925	8211	3.17	5	98.5	70	130	
205	Tl	209	1.037	23711	1.77	1	103.7	70	130	
208	Pb	209	1.008	35274	2.34	1	100.8	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	908967	0.56	989663	91.85	70	120	
72	Ge	693086	1.07	739879	93.68	70	120	
115	In	6172107	0.18	6565136	94.01	70	120	
209	Bi	14093720	2.54	15222533	92.58	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 13:58	Sample Name	CCB1-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	077_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.178	10	31.6	2	5	
9	Be	45	0.031	4	87.7	0.4	0.3	
11	B	45	2.793	190	29.3	10	10	
23	Na	45	5.850	53156	0.4	50	100	
24	Mg	45	-1.195	294	8.2	50	100	
27	Al	45	0.177	202	17.2	50	10	
39	K	45	-2.921	45993	0.6	50	100	
44	Ca	45	4.532	301	13.9	50	100	
47	Ti	45	0.018	4	43.4	4	3	
51	V	45	-0.137	1673	3.4	4	3	
52	Cr	45	0.000	1912	3.3	2	2	
55	Mn	45	-0.151	390	5.6	2	3	
56	Fe	45	-0.961	11519	2.0	50	50	
59	Co	72	-0.005	72	46.2	2	3	
60	Ni	72	0.019	447	18.7	2	3	
63	Cu	72	-0.092	2800	6.5	2	2	
66	Zn	72	0.080	389	12.5	4	2	
75	As	72	-0.039	114	6.0	2	2	
78	Se	72	0.347	90	7.0	1	2	
88	Sr	115	-0.002	132	11.4	4	3	
95	Mo	115	0.002	53	59.6	2	2	
107	Ag	115	0.008	183	4.8	0.4	1	
111	Cd	115	0.002	12	68.7	0.4	0.3	
118	Sn	115	-0.093	811	1.0	4	3	
121	Sb	115	0.029	349	19.0	2	0.8	
137	Ba	115	-0.007	20	66.7	2	3	
205	Tl	209	0.006	407	3.0	2	0.5	
208	Pb	209	-0.006	4324	2.7	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	913989	0.76	989663	92.35	70	120	
72	Ge	695826	1.03	739879	94.05	70	120	
115	In	6207349	1.28	6565136	94.55	70	120	
209	Bi	14220201	0.47	15222533	93.42	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 14:20	Sample Name	CCV2-160516
Data Batch	160516.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	213.033	9240	0.78	200	106.5	90	110	
9	Be	45	213.059	12210	1.37	200	106.5	90	110	
11	B	45	210.257	3965	5.16	200	105.1	90	110	
23	Na	45	5186.963	3578726	0.72	5000	103.7	90	110	
24	Mg	45	5136.646	1729446	1.20	5000	102.7	90	110	
27	Al	45	4901.582	589439	0.63	5000	98.0	90	110	
39	K	45	5108.327	1779741	0.55	5000	102.2	90	110	
44	Ca	45	4758.506	92256	0.35	5000	95.2	90	110	
47	Ti	45	202.045	26202	1.44	200	101.0	90	110	
51	V	45	203.964	907653	0.60	200	102.0	90	110	
52	Cr	45	206.157	1098834	0.46	200	103.1	90	110	
55	Mn	45	201.004	575528	0.37	200	100.5	90	110	
56	Fe	45	5062.950	23120077	1.09	5000	101.3	90	110	
59	Co	72	208.057	1823033	0.48	200	104.0	90	110	
60	Ni	72	207.396	501213	0.47	200	103.7	90	110	
63	Cu	72	208.061	1390045	0.62	200	104.0	90	110	
66	Zn	72	205.378	222535	0.99	200	102.7	90	110	
75	As	72	204.385	187302	0.95	200	102.2	90	110	
78	Se	72	199.465	10299	2.59	200	99.7	90	110	
88	Sr	115	193.617	766049	0.24	200	96.8	90	110	
95	Mo	115	196.104	713617	0.18	200	98.1	90	110	
107	Ag	115	202.307	2315877	0.31	200	101.2	90	110	
111	Cd	115	197.206	325392	0.77	200	98.6	90	110	
118	Sn	115	197.488	670571	1.04	200	98.7	90	110	
121	Sb	115	200.009	1047389	0.79	200	100.0	90	110	
137	Ba	115	194.789	321899	0.74	200	97.4	90	110	
205	Tl	209	202.318	4673824	0.52	200	101.2	90	110	
208	Pb	209	199.925	6244306	0.31	200	100.0	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	890725	1.58	989663	90.00	70	120	
72	Ge	680078	0.51	739879	91.92	70	120	
115	In	6141454	1.52	6565136	93.55	70	120	
209	Bi	14398494	0.91	15222533	94.59	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 14:25	Sample Name	LCVL2-160516
Data Batch	160516.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	10.684	508	6.14	10	106.8	70	130	
9	Be	45	0.913	57	12.86	1	91.3	70	130	
11	B	45	25.649	637	4.16	20	128.2	70	130	
23	Na	45	101.337	123703	0.30	100	101.3	70	130	
24	Mg	45	98.535	35850	0.56	100	98.5	70	130	
27	Al	45	95.191	12306	1.03	100	95.2	70	130	
39	K	45	94.245	82395	1.70	100	94.2	70	130	
44	Ca	45	96.283	2191	2.65	100	96.3	70	130	
47	Ti	45	4.772	658	11.27	5	95.4	70	130	
51	V	45	0.872	6468	3.31	1	87.2	70	130	
52	Cr	45	5.122	30844	1.45	5	102.4	70	130	
55	Mn	45	4.683	15045	2.31	5	93.7	70	130	
56	Fe	45	97.005	485419	0.45	100	97.0	70	130	
59	Co	72	5.216	48012	0.86	5	104.3	70	130	
60	Ni	72	5.377	14016	0.74	5	107.5	70	130	
63	Cu	72	5.035	38673	0.28	5	100.7	70	130	
66	Zn	72	5.111	6105	6.53	5	102.2	70	130	
75	As	72	5.104	5051	0.63	5	102.1	70	130	
78	Se	72	4.867	335	14.84	5	97.3	70	130	
88	Sr	115	4.930	20190	1.55	5	98.6	70	130	
95	Mo	115	4.782	17932	1.64	5	95.6	70	130	
107	Ag	115	1.968	23257	3.54	2	98.4	70	130	
111	Cd	115	0.982	1675	1.55	1	98.2	70	130	
118	Sn	115	4.833	17991	0.43	5	96.7	70	130	
121	Sb	115	1.965	10774	4.26	2	98.3	70	130	
137	Ba	115	4.941	8425	3.09	5	98.8	70	130	
205	Tl	209	0.968	23957	0.43	1	96.8	70	130	
208	Pb	209	0.937	35793	1.11	1	93.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	943274	0.57	989663	95.31	70	120	
72	Ge	712639	0.65	739879	96.32	70	120	
115	In	6312100	0.56	6565136	96.15	70	120	
209	Bi	15245130	2.67	15222533	100.15	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 14:30	Sample Name	CCB2-160516
Data Batch	160516.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	-0.129	12	50.7	2	5	
9	Be	45	0.019	3	33.3	0.4	0.3	
11	B	45	3.155	199	4.2	10	10	
23	Na	45	3.498	52147	2.0	50	100	
24	Mg	45	-1.081	338	21.7	50	100	
27	Al	45	0.164	203	13.4	50	10	
39	K	45	-4.378	46046	1.4	50	100	
44	Ca	45	1.363	241	22.1	50	100	
47	Ti	45	0.042	8	89.2	4	3	
51	V	45	-0.173	1527	5.6	4	3	
52	Cr	45	-0.004	1912	1.4	2	2	
55	Mn	45	-0.165	356	11.8	2	3	
56	Fe	45	-0.836	12254	2.8	50	50	
59	Co	72	-0.007	54	18.7	2	3	
60	Ni	72	0.009	424	9.6	2	3	
63	Cu	72	-0.108	2702	1.7	2	2	
66	Zn	72	0.029	333	16.7	4	2	
75	As	72	-0.046	108	7.9	2	2	
78	Se	72	0.271	86	9.2	1	2	
88	Sr	115	-0.003	128	13.4	4	3	
95	Mo	115	-0.002	39	47.2	2	2	
107	Ag	115	0.004	140	14.5	0.4	1	
111	Cd	115	0.004	16	24.8	0.4	0.3	
118	Sn	115	-0.139	660	3.6	4	3	
121	Sb	115	-0.001	189	24.3	2	0.8	
137	Ba	115	-0.008	18	43.3	2	3	
205	Tl	209	-0.001	274	7.9	2	0.5	
208	Pb	209	-0.045	3275	2.7	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	925238	0.43	989663	93.49	70	120	
72	Ge	698858	0.63	739879	94.46	70	120	
115	In	6255951	2.77	6565136	95.29	70	120	
209	Bi	14909903	2.36	15222533	97.95	70	120	

Method Blank Report

Date Acquired	5/16/16 2:32 PM	Sample Name	MB-75009
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	092_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.027	19	32.73		
9	Be	45	0.009	2	65.47		
11	B	45	2.637	186	23.92		
23	Na	45	6.956	53588	2.18		
24	Mg	45	2.038	1402	4.55		
27	Al	45	8.923	1273	3.40		
39	K	45	2.983	47748	0.98		
44	Ca	45	36.523	930	11.30		
47	Ti	45	0.153	22	31.22		
51	V	45	-0.142	1638	2.06		
52	Cr	45	-0.018	1805	8.99		
55	Mn	45	-0.072	620	3.88		
56	Fe	45	3.338	31454	2.81		
59	Co	72	-0.005	73	25.31		
60	Ni	72	0.023	453	5.15		
63	Cu	72	0.026	3572	4.89		
66	Zn	72	2.765	3328	3.78		
75	As	72	-0.042	110	16.39		
78	Se	72	0.144	78	17.13		
88	Sr	115	0.109	580	12.29		
95	Mo	115	0.009	80	4.16		
107	Ag	115	0.005	154	10.65		
111	Cd	115	-0.004	2	86.60		
118	Sn	115	3.533	13375	1.33		
121	Sb	115	0.026	336	8.45		
137	Ba	115	0.051	118	26.30		
205	Tl	209	-0.003	224	18.15		
208	Pb	209	0.049	6332	6.50		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	908247	0.34	989663	91.77	70	120	
72	Ge	688962	0.91	739879	93.12	70	120	
115	In	6273036	1.35	6565136	95.55	70	120	
209	Bi	14910407	0.24	15222533	97.95	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 14:34	Sample Name	LCS-75009
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	093_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	208.024	9142	1.19	200	104.0	80	120	
9	Be	45	205.622	11939	3.25	200	102.8	80	120	
11	B	45	194.547	3726	1.82	200	97.3	80	120	
23	Na	45	5164.230	3610071	0.08	1000	516.4	80	120	Fail
24	Mg	45	5067.667	1728543	1.12	1000	506.8	80	120	Fail
27	Al	45	983.135	119920	0.60	1000	98.3	80	120	
39	K	45	5059.248	1786212	0.29	1000	505.9	80	120	Fail
44	Ca	45	4753.182	93367	0.49	1000	475.3	80	120	Fail
47	Ti	45	200.060	26287	1.96	200	100.0	80	120	
51	V	45	203.459	917352	1.03	200	101.7	80	120	
52	Cr	45	204.354	1103705	0.95	200	102.2	80	120	
55	Mn	45	197.674	573523	1.48	200	98.8	80	120	
56	Fe	45	985.714	4573618	0.63	1000	98.6	80	120	
59	Co	72	208.060	1826727	0.33	200	104.0	80	120	
60	Ni	72	208.232	504243	0.33	200	104.1	80	120	
63	Cu	72	207.062	1386187	1.33	200	103.5	80	120	
66	Zn	72	205.376	222975	2.04	200	102.7	80	120	
75	As	72	200.553	184155	0.52	200	100.3	80	120	
78	Se	72	194.783	10078	0.11	200	97.4	80	120	
88	Sr	115	192.224	755668	0.80	200	96.1	80	120	
95	Mo	115	198.636	718181	0.25	200	99.3	80	120	
107	Ag	115	198.125	2253487	0.63	200	99.1	80	120	
111	Cd	115	198.571	325603	0.77	200	99.3	80	120	
118	Sn	115	200.894	677734	0.30	200	100.4	80	120	
121	Sb	115	195.706	1018319	0.64	200	97.9	80	120	
137	Ba	115	193.616	317914	0.78	200	96.8	80	120	
205	Tl	209	200.363	4622373	0.35	200	100.2	80	120	
208	Pb	209	198.232	6183218	0.67	200	99.1	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	902361	1.03	989663	91.18	70	120	
72	Ge	681425	0.16	739879	92.10	70	120	
115	In	6103148	2.16	6565136	92.96	70	120	
209	Bi	14379141	0.99	15222533	94.46	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 14:36	Sample Name	LCSD-75009
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	094_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.775	9357	0.60	200	106.9	80	120	
9	Be	45	209.701	12126	0.95	200	104.9	80	120	
11	B	45	207.676	3953	2.69	200	103.8	80	120	
23	Na	45	5184.619	3609957	0.78	1000	518.5	80	120	Fail
24	Mg	45	5093.188	1730354	1.10	1000	509.3	80	120	Fail
27	Al	45	993.991	120770	0.64	1000	99.4	80	120	
39	K	45	5114.530	1798199	0.45	1000	511.5	80	120	Fail
44	Ca	45	4805.621	94033	2.30	1000	480.6	80	120	Fail
47	Ti	45	204.026	26702	0.92	200	102.0	80	120	
51	V	45	207.397	931357	0.62	200	103.7	80	120	
52	Cr	45	208.941	1123987	0.60	200	104.5	80	120	
55	Mn	45	201.998	583733	0.85	200	101.0	80	120	
56	Fe	45	997.168	4608469	0.43	1000	99.7	80	120	
59	Co	72	212.817	1861920	0.25	200	106.4	80	120	
60	Ni	72	211.812	511122	0.96	200	105.9	80	120	
63	Cu	72	210.355	1403204	0.22	200	105.2	80	120	
66	Zn	72	209.372	226501	0.23	200	104.7	80	120	
75	As	72	205.183	187733	0.36	200	102.6	80	120	
78	Se	72	197.546	10184	0.69	200	98.8	80	120	
88	Sr	115	196.237	764524	0.11	200	98.1	80	120	
95	Mo	115	200.506	718468	1.30	200	100.3	80	120	
107	Ag	115	201.869	2275549	1.58	200	100.9	80	120	
111	Cd	115	201.161	326874	1.08	200	100.6	80	120	
118	Sn	115	206.658	690902	0.40	200	103.3	80	120	
121	Sb	115	198.886	1025421	0.45	200	99.4	80	120	
137	Ba	115	197.484	321364	0.37	200	98.7	80	120	
205	Tl	209	205.510	4676829	1.02	200	102.8	80	120	
208	Pb	209	204.328	6286160	0.22	200	102.2	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898812	0.74	989663	90.82	70	120	
72	Ge	679059	0.95	739879	91.78	70	120	
115	In	6046732	1.04	6565136	92.10	70	120	
209	Bi	14185433	1.91	15222533	93.19	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 14:42	Sample Name	1605047-03A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	097_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	13.410	616	3.67	68.1	98.4	110	90	Good
9	Be	45	0.680	42	16.50	3.0	112.5	110	90	
11	B	45	25.201	611	2.46	101.6	124.0	110	90	
23	Na	45	864.633	655835	0.43	4220.6	102.4	110	90	Good
24	Mg	45	2725.860	946078	0.37	13257.3	102.8	110	90	Good
27	Al	45	9615.652	1191431	0.81	47193.0	101.9	110	90	Good
39	K	45	2757.478	1011743	0.48	13489.0	102.2	110	90	Good
44	Ca	45	35496.402	707830	0.43	174560.5	101.7	110	90	Good
47	Ti	45	30.376	4062	1.93	144.6	105.0	110	90	Good
51	V	45	18.986	89161	0.42	94.5	100.4	110	90	Good
52	Cr	45	12.532	70643	0.57	62.5	100.2	110	90	Good
55	Mn	45	215.981	637257	0.32	1054.3	102.4	110	90	Good
56	Fe	45	13146.525	61841811	2.17	63421.0	103.6	110	90	Good
59	Co	72	5.251	46870	0.39	26.0	100.9	110	90	Good
60	Ni	72	7.315	18345	0.88	36.3	100.6	110	90	Good
63	Cu	72	1.542	13846	1.20	8.4	91.7	110	90	Good
66	Zn	72	27.250	30260	1.39	134.4	101.3	110	90	Good
75	As	72	3.586	3485	2.75	18.1	99.2	110	90	Good
78	Se	72	1.545	151	9.83	5.0	154.3	110	90	
88	Sr	115	80.592	325660	0.35	418.9	96.2	110	90	Good
95	Mo	115	0.394	1510	8.55	2.0	99.3	110	90	Good
107	Ag	115	0.016	277	9.10	0.0	199.4	110	90	
111	Cd	115	0.035	68	2.84	0.2	86.8	110	90	
118	Sn	115	0.674	3478	11.05	4.2	81.2	110	90	
121	Sb	115	0.036	387	13.47	0.2	89.2	110	90	
137	Ba	115	93.091	157093	0.43	473.7	98.3	110	90	Good
205	Tl	209	0.078	2115	1.50	0.4	106.4	110	90	Good
208	Pb	209	4.626	151787	0.51	23.5	98.5	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	917829	0.67	989663	92.74	70	120	
72	Ge	691021	0.38	739879	93.40	70	120	
115	In	6270566	1.51	6565136	95.51	70	120	
209	Bi	14670653	0.75	15222533	96.37	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 15:02	Sample Name	1605047-03A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	107_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	282.252	11626	1.83	68.1	200	107.1	75	125	
9	Be	45	212.962	11596	2.26	3.0	200	105.0	75	125	
11	B	45	320.548	5673	1.66	101.6	200	109.5	75	125	
23	Na	45	9315.548	6070779	1.11	4220.6	5000	101.9	75	125	
24	Mg	45	18371.461	5874203	1.70	13257.3	5000	102.3	75	125	
27	Al	45	53645.260	6128017	1.22	47193.0	5000	129.0	75	125	Fail
39	K	45	18732.800	6083848	1.27	13489.0	5000	104.9	75	125	
44	Ca	45	########	3388838	0.79	174560.5	5000	196.1	75	125	Fail
47	Ti	45	354.886	43727	0.95	144.6	200	105.1	75	125	
51	V	45	303.996	1284201	0.47	94.5	200	104.7	75	125	
52	Cr	45	273.854	1386360	1.01	62.5	200	105.7	75	125	
55	Mn	45	1296.284	3522368	0.76	1054.3	200	121.0	75	125	
56	Fe	45	71675.280	310799197	0.37	63421.0	5000	165.1	75	125	Fail
59	Co	72	237.740	1924720	1.05	26.0	200	105.9	75	125	
60	Ni	72	241.924	540132	1.04	36.3	200	102.8	75	125	
63	Cu	72	210.477	1299125	0.27	8.4	200	101.0	75	125	
66	Zn	72	341.710	341884	0.35	134.4	200	103.6	75	125	
75	As	72	224.272	189863	1.06	18.1	200	103.1	75	125	
78	Se	72	209.328	9983	2.44	5.0	200	102.2	75	125	
88	Sr	115	634.602	2295721	0.40	418.9	200	107.8	75	125	
95	Mo	115	206.122	685878	0.78	2.0	200	102.1	75	125	
107	Ag	115	190.222	1991138	0.45	0.0	200	95.1	75	125	
111	Cd	115	199.687	301306	1.30	0.2	200	99.7	75	125	
118	Sn	115	216.081	670802	0.86	4.2	200	106.0	75	125	
121	Sb	115	208.283	997303	0.51	0.2	200	104.0	75	125	
137	Ba	115	712.227	1076238	1.00	473.7	200	119.3	75	125	
205	Tl	209	204.644	4473080	0.77	0.4	200	102.1	75	125	
208	Pb	209	228.069	6738590	0.43	23.5	200	102.3	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	846267	1.45	989663	85.51	70	120	
72	Ge	628386	1.56	739879	84.93	70	120	
115	In	5615055	0.28	6565136	85.53	70	120	
209	Bi	13624114	1.72	15222533	89.50	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 15:04	Sample Name	1605047-03A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	108_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	281.458	11850	1.03	68.1	200	106.7	80	120	
9	Be	45	210.176	11697	1.50	3.0	200	103.6	80	120	
11	B	45	308.377	5585	4.63	101.6	200	103.4	80	120	
23	Na	45	9465.008	6304207	1.76	4220.6	1000	524.4	80	120	Fail
24	Mg	45	19328.400	6318243	1.87	13257.3	1000	607.1	80	120	Fail
27	Al	45	56169.246	6558457	1.73	47193.0	1000	897.6	80	120	Fail
39	K	45	19767.611	6560292	1.65	13489.0	1000	627.9	80	120	Fail
44	Ca	45	########	3605089	0.99	174560.5	1000	1731.9	80	120	Fail
47	Ti	45	311.679	39251	1.55	144.6	200	83.5	80	120	
51	V	45	310.840	1342239	0.49	94.5	200	108.2	80	120	
52	Cr	45	270.665	1400667	0.70	62.5	200	104.1	80	120	
55	Mn	45	1302.154	3616723	0.38	1054.3	200	123.9	80	120	Fail
56	Fe	45	70661.973	313189410	1.15	63421.0	1000	724.1	80	120	Fail
59	Co	72	229.945	1906373	0.56	26.0	200	102.0	80	120	
60	Ni	72	239.028	546515	0.54	36.3	200	101.3	80	120	
63	Cu	72	208.029	1315024	0.49	8.4	200	99.8	80	120	
66	Zn	72	340.197	348573	1.04	134.4	200	102.9	80	120	
75	As	72	219.918	190668	0.62	18.1	200	100.9	80	120	
78	Se	72	199.818	9761	1.95	5.0	200	97.4	80	120	
88	Sr	115	647.704	2373714	0.46	418.9	200	114.4	80	120	
95	Mo	115	192.975	650580	0.85	2.0	200	95.5	80	120	
107	Ag	115	198.544	2105668	1.02	0.0	200	99.3	80	120	
111	Cd	115	200.323	306243	1.74	0.2	200	100.1	80	120	
118	Sn	115	206.509	649526	0.95	4.2	200	101.2	80	120	
121	Sb	115	63.768	309417	0.79	0.2	200	31.8	80	120	Fail
137	Ba	115	674.685	1032828	1.11	473.7	200	100.5	80	120	
205	Tl	209	203.357	4496542	0.77	0.4	200	101.5	80	120	
208	Pb	209	224.379	6706910	0.44	23.5	200	100.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864954	0.67	989663	87.40	70	120	
72	Ge	643468	0.48	739879	86.97	70	120	
115	In	5689651	1.83	6565136	86.66	70	120	
209	Bi	13781458	1.35	15222533	90.53	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 15:06	Sample Name	1605047-03A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	109_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	293.951	12432	0.34	68.1	200	112.9	80	120	
9	Be	45	213.874	11957	0.77	3.0	200	105.4	80	120	
11	B	45	311.980	5674	0.79	101.6	200	105.2	80	120	
23	Na	45	9817.862	6567309	1.12	4220.6	1000	559.7	80	120	Fail
24	Mg	45	20331.783	6676917	2.89	13257.3	1000	707.4	80	120	Fail
27	Al	45	60908.582	7143914	0.71	47193.0	1000	1371.6	80	120	Fail
39	K	45	20149.595	6717039	0.72	13489.0	1000	666.1	80	120	Fail
44	Ca	45	########	3806997	0.91	174560.5	1000	2714.0	80	120	Fail
47	Ti	45	315.850	39962	1.61	144.6	200	85.6	80	120	
51	V	45	319.241	1384822	1.35	94.5	200	112.4	80	120	
52	Cr	45	276.258	1436103	0.60	62.5	200	106.9	80	120	
55	Mn	45	1262.937	3523882	0.64	1054.3	200	104.3	80	120	
56	Fe	45	76179.357	339178467	2.23	63421.0	1000	1275.8	80	120	Fail
59	Co	72	233.362	1966638	0.83	26.0	200	103.7	80	120	
60	Ni	72	241.608	561532	0.61	36.3	200	102.6	80	120	
63	Cu	72	208.702	1341099	0.98	8.4	200	100.1	80	120	
66	Zn	72	349.098	363628	0.50	134.4	200	107.3	80	120	
75	As	72	222.315	195933	1.31	18.1	200	102.1	80	120	
78	Se	72	197.588	9814	1.28	5.0	200	96.3	80	120	
88	Sr	115	670.708	2497394	1.21	418.9	200	125.9	80	120	Fail
95	Mo	115	193.859	663950	1.19	2.0	200	95.9	80	120	
107	Ag	115	197.129	2123802	0.49	0.0	200	98.5	80	120	
111	Cd	115	198.055	307585	0.29	0.2	200	98.9	80	120	
118	Sn	115	206.433	659642	0.61	4.2	200	101.1	80	120	
121	Sb	115	63.510	313124	0.95	0.2	200	31.7	80	120	Fail
137	Ba	115	722.393	1123557	0.98	473.7	200	124.3	80	120	Fail
205	Tl	209	205.472	4551958	0.59	0.4	200	102.6	80	120	
208	Pb	209	229.111	6861346	0.08	23.5	200	102.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	868908	0.67	989663	87.80	70	120	
72	Ge	654177	1.16	739879	88.42	70	120	
115	In	5779347	0.64	6565136	88.03	70	120	
209	Bi	13809348	1.67	15222533	90.72	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 15:08	Sample Name	CCV3-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	110_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	216.864	9324	1.06	200	108.4	90	110	
9	Be	45	214.637	12193	0.88	200	107.3	90	110	
11	B	45	211.711	3955	1.45	200	105.9	90	110	
23	Na	45	5181.433	3543946	0.85	5000	103.6	90	110	
24	Mg	45	5114.814	1707034	0.26	5000	102.3	90	110	
27	Al	45	4854.345	578666	0.40	5000	97.1	90	110	
39	K	45	5050.532	1744742	0.86	5000	101.0	90	110	
44	Ca	45	4764.941	91582	0.89	5000	95.3	90	110	
47	Ti	45	203.393	26148	1.76	200	101.7	90	110	
51	V	45	203.565	898018	0.72	200	101.8	90	110	
52	Cr	45	206.027	1088757	1.54	200	103.0	90	110	
55	Mn	45	199.041	564995	0.40	200	99.5	90	110	
56	Fe	45	4996.050	22620042	2.05	5000	99.9	90	110	
59	Co	72	207.892	1798397	0.90	200	103.9	90	110	
60	Ni	72	207.218	494403	0.60	200	103.6	90	110	
63	Cu	72	207.983	1371854	0.70	200	104.0	90	110	
66	Zn	72	203.785	217977	0.95	200	101.9	90	110	
75	As	72	204.118	184666	0.53	200	102.1	90	110	
78	Se	72	199.995	10193	1.33	200	100.0	90	110	
88	Sr	115	192.356	755939	0.94	200	96.2	90	110	
95	Mo	115	197.357	713336	0.47	200	98.7	90	110	
107	Ag	115	203.576	2314645	0.52	200	101.8	90	110	
111	Cd	115	198.099	324686	0.72	200	99.0	90	110	
118	Sn	115	195.109	658038	0.50	200	97.6	90	110	
121	Sb	115	198.275	1031237	1.25	200	99.1	90	110	
137	Ba	115	195.746	321320	0.61	200	97.9	90	110	
205	Tl	209	201.803	4656789	0.76	200	100.9	90	110	
208	Pb	209	200.216	6246472	0.59	200	100.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	882899	0.82	989663	89.21	70	120	
72	Ge	671409	0.78	739879	90.75	70	120	
115	In	6099239	0.39	6565136	92.90	70	120	
209	Bi	14383100	1.15	15222533	94.49	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 15:12	Sample Name	LCVL3-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	112LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.284	457	5.86	10	102.8	70	130	
9	Be	45	0.911	53	41.60	1	91.1	70	130	
11	B	45	29.694	667	16.26	20	148.5	70	130	Fail
23	Na	45	103.321	116708	0.27	100	103.3	70	130	
24	Mg	45	101.462	34409	1.30	100	101.5	70	130	
27	Al	45	98.606	11883	1.75	100	98.6	70	130	
39	K	45	104.646	80337	0.24	100	104.6	70	130	
44	Ca	45	99.546	2106	4.03	100	99.5	70	130	
47	Ti	45	5.398	693	3.47	5	108.0	70	130	
51	V	45	0.861	5988	3.42	1	86.1	70	130	
52	Cr	45	5.302	29712	0.98	5	106.0	70	130	
55	Mn	45	4.758	14243	0.41	5	95.2	70	130	
56	Fe	45	98.346	458768	0.53	100	98.3	70	130	
59	Co	72	5.210	45254	0.38	5	104.2	70	130	
60	Ni	72	5.377	13227	0.30	5	107.5	70	130	
63	Cu	72	5.109	36981	1.89	5	102.2	70	130	
66	Zn	72	5.187	5840	0.34	5	103.7	70	130	
75	As	72	5.099	4762	1.06	5	102.0	70	130	
78	Se	72	6.386	393	7.14	5	127.7	70	130	
88	Sr	115	4.855	19053	1.29	5	97.1	70	130	
95	Mo	115	4.783	17185	1.92	5	95.7	70	130	
107	Ag	115	1.977	22380	1.11	2	98.8	70	130	
111	Cd	115	0.987	1615	10.05	1	98.7	70	130	
118	Sn	115	4.940	17593	1.08	5	98.8	70	130	
121	Sb	115	2.047	10743	1.42	2	102.3	70	130	
137	Ba	115	4.909	8018	4.05	5	98.2	70	130	
205	Tl	209	1.070	24582	1.20	1	107.0	70	130	
208	Pb	209	0.994	34998	1.97	1	99.4	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	879743	0.17	989663	88.89	70	120	
72	Ge	672492	0.43	739879	90.89	70	120	
115	In	6048948	1.50	6565136	92.14	70	120	
209	Bi	14161166	1.15	15222533	93.03	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 15:14	Sample Name	CCB3-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	113_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.041	19	31.4	2	5	
9	Be	45	0.063	5	10.8	0.4	0.3	
11	B	45	6.906	257	11.2	10	10	
23	Na	45	2.473	48917	0.8	50	100	
24	Mg	45	-1.012	344	26.3	50	100	
27	Al	45	0.398	221	2.3	50	10	
39	K	45	2.272	46033	1.1	50	100	
44	Ca	45	3.876	278	11.8	50	100	
47	Ti	45	0.028	6	124.9	4	3	
51	V	45	-0.180	1421	9.2	4	3	
52	Cr	45	0.012	1907	5.2	2	2	
55	Mn	45	-0.134	424	8.4	2	3	
56	Fe	45	-0.438	13448	1.4	50	50	
59	Co	72	-0.001	104	9.2	2	3	
60	Ni	72	0.033	461	11.5	2	3	
63	Cu	72	-0.138	2379	6.0	2	2	
66	Zn	72	0.094	388	8.7	4	2	
75	As	72	-0.028	119	22.8	2	2	
78	Se	72	0.338	85	4.1	1	2	
88	Sr	115	0.005	159	21.5	4	3	
95	Mo	115	0.011	83	8.0	2	2	
107	Ag	115	0.012	226	4.7	0.4	1	
111	Cd	115	0.000	10	66.7	0.4	0.3	
118	Sn	115	-0.116	720	3.8	4	3	
121	Sb	115	0.023	312	20.2	2	0.8	
137	Ba	115	0.015	56	9.2	2	3	
205	Tl	209	0.034	1038	10.8	2	0.5	
208	Pb	209	-0.013	4114	3.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	880130	0.24	989663	88.93	70	120	
72	Ge	666505	0.25	739879	90.08	70	120	
115	In	6113700	2.32	6565136	93.12	70	120	
209	Bi	14165135	1.63	15222533	93.05	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 15:36	Sample Name	CCV4-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	124_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	224.410	9148	1.48	200	112.2	90	110	Fail
9	Be	45	220.810	11894	2.13	200	110.4	90	110	Fail
11	B	45	212.634	3766	0.57	200	106.3	90	110	
23	Na	45	5342.109	3463214	0.04	5000	106.8	90	110	
24	Mg	45	5267.668	1666938	0.68	5000	105.4	90	110	
27	Al	45	5001.773	565380	0.27	5000	100.0	90	110	
39	K	45	5193.221	1700014	0.33	5000	103.9	90	110	
44	Ca	45	4857.498	88528	1.18	5000	97.1	90	110	
47	Ti	45	205.408	25041	1.86	200	102.7	90	110	
51	V	45	209.520	876379	0.78	200	104.8	90	110	
52	Cr	45	210.707	1055728	0.34	200	105.4	90	110	
55	Mn	45	206.588	556043	0.76	200	103.3	90	110	
56	Fe	45	5210.511	22368586	2.60	5000	104.2	90	110	
59	Co	72	211.145	1778364	0.67	200	105.6	90	110	
60	Ni	72	209.121	485777	0.38	200	104.6	90	110	
63	Cu	72	209.794	1347254	0.53	200	104.9	90	110	
66	Zn	72	206.275	214830	0.52	200	103.1	90	110	
75	As	72	204.214	179879	0.25	200	102.1	90	110	
78	Se	72	201.271	9987	2.17	200	100.6	90	110	
88	Sr	115	194.821	736962	0.63	200	97.4	90	110	
95	Mo	115	199.494	693991	1.03	200	99.7	90	110	
107	Ag	115	205.509	2248881	0.40	200	102.8	90	110	
111	Cd	115	201.282	317525	0.45	200	100.6	90	110	
118	Sn	115	201.325	653580	1.29	200	100.7	90	110	
121	Sb	115	204.940	1025935	0.31	200	102.5	90	110	
137	Ba	115	201.758	318761	0.46	200	100.9	90	110	
205	Tl	209	205.312	4588353	0.03	200	102.7	90	110	
208	Pb	209	203.072	6135497	0.73	200	101.5	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	837252	1.41	989663	84.60	70	120	
72	Ge	653686	0.29	739879	88.35	70	120	
115	In	5871806	1.99	6565136	89.44	70	120	
209	Bi	13929813	1.34	15222533	91.51	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 15:41	Sample Name	LCVL4-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	126LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.374	502	9.57	10	113.7	70	130	
9	Be	45	1.008	59	22.89	1	100.8	70	130	
11	B	45	27.691	629	11.43	20	138.5	70	130	Fail
23	Na	45	101.963	115499	0.46	100	102.0	70	130	
24	Mg	45	100.373	33960	0.92	100	100.4	70	130	
27	Al	45	95.963	11540	2.07	100	96.0	70	130	
39	K	45	101.973	79237	0.32	100	102.0	70	130	
44	Ca	45	96.103	2035	1.02	100	96.1	70	130	
47	Ti	45	4.933	632	3.89	5	98.7	70	130	
51	V	45	0.865	5988	3.20	1	86.5	70	130	
52	Cr	45	5.198	29089	0.17	5	104.0	70	130	
55	Mn	45	4.802	14330	0.81	5	96.0	70	130	
56	Fe	45	98.288	457336	0.28	100	98.3	70	130	
59	Co	72	5.218	44802	0.75	5	104.4	70	130	
60	Ni	72	5.289	12868	1.09	5	105.8	70	130	
63	Cu	72	5.043	36126	0.63	5	100.9	70	130	
66	Zn	72	5.259	5850	2.54	5	105.2	70	130	
75	As	72	5.049	4663	2.16	5	101.0	70	130	
78	Se	72	5.656	352	3.23	5	113.1	70	130	
88	Sr	115	4.842	19027	2.14	5	96.8	70	130	
95	Mo	115	4.750	17094	1.79	5	95.0	70	130	
107	Ag	115	1.962	22254	1.53	2	98.1	70	130	
111	Cd	115	1.011	1655	4.04	1	101.1	70	130	
118	Sn	115	4.861	17352	3.40	5	97.2	70	130	
121	Sb	115	1.983	10434	1.22	2	99.2	70	130	
137	Ba	115	4.867	7966	3.12	5	97.3	70	130	
205	Tl	209	1.027	23862	1.70	1	102.7	70	130	
208	Pb	209	0.968	34594	0.27	1	96.8	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	877488	0.15	989663	88.67	70	120	
72	Ge	664769	0.40	739879	89.85	70	120	
115	In	6060456	2.56	6565136	92.31	70	120	
209	Bi	14322636	1.51	15222533	94.09	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 15:43	Sample Name	CCB4-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	127_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.218	26	12.2	2	5	
9	Be	45	-0.014	1	100.0	0.4	0.3	
11	B	45	7.323	264	16.0	10	10	
23	Na	45	0.413	47620	0.8	50	100	
24	Mg	45	-1.201	282	16.8	50	100	
27	Al	45	0.040	179	14.9	50	10	
39	K	45	7.200	47778	1.3	50	100	
44	Ca	45	1.169	227	21.5	50	100	
47	Ti	45	0.011	3	100.1	4	3	
51	V	45	-0.151	1550	2.6	4	3	
52	Cr	45	0.034	2026	4.7	2	2	
55	Mn	45	-0.178	301	10.3	2	3	
56	Fe	45	-0.294	14124	1.8	50	50	
59	Co	72	-0.003	92	16.7	2	3	
60	Ni	72	0.037	481	16.0	2	3	
63	Cu	72	-0.120	2550	3.6	2	2	
66	Zn	72	0.003	297	7.8	4	2	
75	As	72	-0.030	119	9.6	2	2	
78	Se	72	0.277	84	7.9	1	2	
88	Sr	115	0.005	159	34.6	4	3	
95	Mo	115	0.000	46	30.5	2	2	
107	Ag	115	0.005	148	31.1	0.4	1	
111	Cd	115	0.000	9	78.1	0.4	0.3	
118	Sn	115	-0.117	724	14.6	4	3	
121	Sb	115	0.019	293	18.8	2	0.8	
137	Ba	115	0.001	33	10.0	2	3	
205	Tl	209	0.013	578	10.2	2	0.5	
208	Pb	209	-0.027	3748	2.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	881830	1.06	989663	89.10	70	120	
72	Ge	680733	0.48	739879	92.01	70	120	
115	In	6172345	0.67	6565136	94.02	70	120	
209	Bi	14448499	0.64	15222533	94.92	70	120	

Method Blank Report

Date Acquired	5/16/16 3:45 PM	Sample Name	MB-75135
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	128_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.619	43	11.08		
9	Be	45	-0.013	1	100.00		
11	B	45	10.299	312	15.15		J
23	Na	45	734905.569	486094398	0.82		FAIL
24	Mg	45	1.740	1238	3.16		
27	Al	45	8.364	1148	13.30		
39	K	45	93.009	75173	1.14		FAIL
44	Ca	45	43.116	1010	5.83		
47	Ti	45	0.152	21	48.24		
51	V	45	-0.178	1409	10.30		
52	Cr	45	2.620	15352	2.37		J
55	Mn	45	0.453	2048	5.75		
56	Fe	45	15.607	84359	0.26		
59	Co	72	0.028	352	3.82		
60	Ni	72	5.062	12190	1.90		J
63	Cu	72	0.397	5793	3.74		
66	Zn	72	1.991	2366	2.61		
75	As	72	-0.015	128	12.00		
78	Se	72	0.467	91	9.83		
88	Sr	115	0.215	949	8.67		
95	Mo	115	0.072	294	12.21		
107	Ag	115	0.045	581	9.88		
111	Cd	115	0.001	11	91.66		
118	Sn	115	4.069	14302	0.93		J
121	Sb	115	0.017	271	24.97		
137	Ba	115	0.068	138	9.78		
205	Tl	209	0.005	353	8.17		
208	Pb	209	-0.001	4130	2.74		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	865387	1.61	989663	87.44	70	120	
72	Ge	657188	0.54	739879	88.82	70	120	
115	In	5890096	1.14	6565136	89.72	70	120	
209	Bi	13132845	0.29	15222533	86.27	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 15:47	Sample Name	LCS-75135
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	129_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	198.362	8604	0.75	200	99.2	80	120	
9	Be	45	197.528	11318	0.99	200	98.8	80	120	
11	B	45	201.122	3796	2.73	200	100.6	80	120	
23	Na	45	679309.210	462512604	1.88	1000	#####	80	120	Fail
24	Mg	45	4878.738	1642643	1.56	1000	487.9	80	120	Fail
27	Al	45	967.115	116443	1.24	1000	96.7	80	120	
39	K	45	5022.195	1750579	1.49	1000	502.2	80	120	Fail
44	Ca	45	4758.500	92260	1.46	1000	475.9	80	120	Fail
47	Ti	45	199.898	25923	0.88	200	99.9	80	120	
51	V	45	199.811	889145	0.31	200	99.9	80	120	
52	Cr	45	194.745	1038157	0.50	200	97.4	80	120	
55	Mn	45	190.016	544146	1.00	200	95.0	80	120	
56	Fe	45	953.343	4366605	1.24	1000	95.3	80	120	
59	Co	72	198.205	1704422	1.10	200	99.1	80	120	
60	Ni	72	197.795	469150	1.74	200	98.9	80	120	
63	Cu	72	193.731	1270485	0.92	200	96.9	80	120	
66	Zn	72	199.601	212251	0.20	200	99.8	80	120	
75	As	72	202.962	182533	0.69	200	101.5	80	120	
78	Se	72	200.786	10173	1.52	200	100.4	80	120	
88	Sr	115	191.774	741276	1.54	200	95.9	80	120	
95	Mo	115	195.792	696024	0.94	200	97.9	80	120	
107	Ag	115	188.937	2112785	0.42	200	94.5	80	120	
111	Cd	115	191.277	308338	0.59	200	95.6	80	120	
118	Sn	115	201.128	667107	0.57	200	100.6	80	120	
121	Sb	115	197.546	1010535	1.18	200	98.8	80	120	
137	Ba	115	195.823	316149	1.03	200	97.9	80	120	
205	Tl	209	195.168	4315424	0.69	200	97.6	80	120	
208	Pb	209	195.844	5854296	0.73	200	97.9	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	890635	1.23	989663	89.99	70	120	
72	Ge	667410	0.46	739879	90.21	70	120	
115	In	5998629	0.65	6565136	91.37	70	120	
209	Bi	13785028	2.56	15222533	90.56	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 15:49	Sample Name	LCSD-75135
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	130_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	183.483	7785	1.88	200	91.7	80	120	
9	Be	45	181.005	10143	2.46	200	90.5	80	120	
11	B	45	195.514	3614	3.37	200	97.8	80	120	
23	Na	45	670047.494	446099938	1.37	1000	#####	80	120	Fail
24	Mg	45	4951.178	1630126	1.34	1000	495.1	80	120	Fail
27	Al	45	989.925	116548	0.92	1000	99.0	80	120	
39	K	45	5160.438	1757736	1.41	1000	516.0	80	120	Fail
44	Ca	45	4814.865	91289	1.73	1000	481.5	80	120	Fail
47	Ti	45	184.650	23416	1.21	200	92.3	80	120	
51	V	45	186.649	812468	1.65	200	93.3	80	120	
52	Cr	45	182.647	952294	0.91	200	91.3	80	120	
55	Mn	45	175.236	490813	1.59	200	87.6	80	120	
56	Fe	45	964.517	4319874	1.26	1000	96.5	80	120	
59	Co	72	181.768	1537382	0.93	200	90.9	80	120	
60	Ni	72	182.449	425659	1.10	200	91.2	80	120	
63	Cu	72	181.484	1170785	0.95	200	90.7	80	120	
66	Zn	72	183.545	192000	1.59	200	91.8	80	120	
75	As	72	188.183	166468	0.96	200	94.1	80	120	
78	Se	72	181.114	9034	3.54	200	90.6	80	120	
88	Sr	115	181.458	678979	1.39	200	90.7	80	120	
95	Mo	115	183.680	632067	0.94	200	91.8	80	120	
107	Ag	115	193.727	2097189	1.51	200	96.9	80	120	
111	Cd	115	177.411	276833	0.97	200	88.7	80	120	
118	Sn	115	189.445	608347	1.12	200	94.7	80	120	
121	Sb	115	205.687	1018453	0.29	200	102.8	80	120	
137	Ba	115	181.803	284119	1.18	200	90.9	80	120	
205	Tl	209	184.139	3856669	0.36	200	92.1	80	120	
208	Pb	209	184.660	5229916	0.99	200	92.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870940	1.10	989663	88.00	70	120	
72	Ge	656446	1.08	739879	88.72	70	120	
115	In	5807204	1.47	6565136	88.46	70	120	
209	Bi	13059865	2.73	15222533	85.79	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 15:55	Sample Name	1605098-41A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	133_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	13.732	610	3.33	65.6	104.6	110	90	Good
9	Be	45	0.429	26	28.50	2.2	95.7	110	90	Good
11	B	45	18.748	474	7.04	87.3	107.4	110	90	Good
23	Na	45	153535.007	104303520	1.99	735299.9	104.4	110	90	Good
24	Mg	45	2252.734	756965	0.73	10867.0	103.7	110	90	Good
27	Al	45	11368.988	1363580	1.29	55771.4	101.9	110	90	Good
39	K	45	2502.022	892876	0.96	12204.8	102.5	110	90	Good
44	Ca	45	19456.488	375662	1.17	94381.5	103.1	110	90	Good
47	Ti	45	39.614	5126	2.25	195.1	101.5	110	90	Good
51	V	45	18.977	86269	0.78	92.8	102.2	110	90	Good
52	Cr	45	13.472	73380	1.17	66.4	101.4	110	90	Good
55	Mn	45	105.959	303045	0.56	510.4	103.8	110	90	Good
56	Fe	45	11930.117	54329471	1.26	57124.3	104.4	110	90	Good
59	Co	72	4.877	41927	0.33	23.5	103.7	110	90	Good
60	Ni	72	9.268	22284	2.63	44.7	103.6	110	90	Good
63	Cu	72	3.455	25807	2.17	16.7	103.3	110	90	Good
66	Zn	72	39.665	42289	1.13	189.0	104.9	110	90	Good
75	As	72	3.871	3613	0.56	19.1	101.5	110	90	Good
78	Se	72	1.465	142	10.02	5.1	143.1	110	90	
88	Sr	115	60.952	240478	0.97	311.0	98.0	110	90	Good
95	Mo	115	0.278	1054	4.02	1.4	97.5	110	90	Good
107	Ag	115	0.023	358	17.91	0.1	113.7	110	90	
111	Cd	115	0.077	136	5.12	0.4	100.8	110	90	Good
118	Sn	115	0.837	3944	1.26	4.9	86.1	110	90	
121	Sb	115	0.383	2190	7.71	2.0	95.1	110	90	Good
137	Ba	115	134.801	222052	1.12	683.2	98.7	110	90	Good
205	Tl	209	0.101	2568	5.13	0.5	103.3	110	90	Good
208	Pb	209	14.215	439648	0.21	71.2	99.8	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	888480	0.69	989663	89.78	70	120	
72	Ge	665520	1.04	739879	89.95	70	120	
115	In	6121311	1.28	6565136	93.24	70	120	
209	Bi	14122912	0.83	15222533	92.78	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 16:15	Sample Name	1605098-41A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	143_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	256.613	11136	0.48	65.6	200	95.5	75	125	
9	Be	45	198.218	11369	1.66	2.2	200	98.0	75	125	
11	B	45	280.582	5249	7.40	87.3	200	96.7	75	125	
23	Na	45	########	528983108	0.71	735299.9	5000	820.4	75	125	Fail
24	Mg	45	16616.877	5597919	1.96	10867.0	5000	115.0	75	125	
27	Al	45	64561.025	7768596	1.04	55771.4	5000	175.8	75	125	Fail
39	K	45	18033.773	6173158	2.61	12204.8	5000	116.6	75	125	
44	Ca	45	########	2031241	2.14	94381.5	5000	210.2	75	125	Fail
47	Ti	45	407.883	52938	1.61	195.1	200	106.4	75	125	
51	V	45	302.038	1344224	0.91	92.8	200	104.6	75	125	
52	Cr	45	269.474	1437179	0.94	66.4	200	101.5	75	125	
55	Mn	45	730.992	2092873	0.68	510.4	200	110.3	75	125	
56	Fe	45	63846.894	291653713	0.53	57124.3	5000	134.5	75	125	Fail
59	Co	72	229.911	1938411	1.01	23.5	200	103.2	75	125	
60	Ni	72	243.798	566856	0.97	44.7	200	99.5	75	125	
63	Cu	72	212.546	1366314	1.19	16.7	200	97.9	75	125	
66	Zn	72	399.528	416286	1.95	189.0	200	105.2	75	125	
75	As	72	230.685	203388	1.43	19.1	200	105.8	75	125	
78	Se	72	212.903	10572	0.56	5.1	200	103.9	75	125	
88	Sr	115	545.437	2013784	1.36	311.0	200	117.2	75	125	
95	Mo	115	207.217	703693	1.34	1.4	200	102.9	75	125	
107	Ag	115	185.792	1984767	1.52	0.1	200	92.8	75	125	
111	Cd	115	200.192	308302	0.28	0.4	200	99.9	75	125	
118	Sn	115	217.883	690368	0.50	4.9	200	106.5	75	125	
121	Sb	115	219.447	1072368	1.36	2.0	200	108.7	75	125	
137	Ba	115	935.547	1442775	1.83	683.2	200	126.2	75	125	Fail
205	Tl	209	205.746	4313643	1.08	0.5	200	102.6	75	125	
208	Pb	209	283.997	8048616	1.14	71.2	200	106.4	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	891413	0.77	989663	90.07	70	120	
72	Ge	654359	0.78	739879	88.44	70	120	
115	In	5731271	1.07	6565136	87.30	70	120	
209	Bi	13068234	1.17	15222533	85.85	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 16:17	Sample Name	1605098-41A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	144_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	254.204	10677	0.62	65.6	200	94.3	80	120	
9	Be	45	188.856	10483	1.46	2.2	200	93.3	80	120	
11	B	45	273.766	4961	3.56	87.3	200	93.2	80	120	
23	Na	45	########	443263387	1.01	735299.9	1000	#####	80	120	Fail
24	Mg	45	16140.179	5262475	1.30	10867.0	1000	527.3	80	120	Fail
27	Al	45	65308.102	7605936	1.16	55771.4	1000	953.7	80	120	Fail
39	K	45	18021.943	5970758	2.07	12204.8	1000	581.7	80	120	Fail
44	Ca	45	72937.999	1367071	1.19	94381.5	1000	#####	80	120	Fail
47	Ti	45	421.259	52920	1.60	195.1	200	113.1	80	120	
51	V	45	298.703	1286682	1.67	92.8	200	102.9	80	120	
52	Cr	45	257.379	1328553	1.27	66.4	200	95.5	80	120	
55	Mn	45	668.029	1851181	1.83	510.4	200	78.8	80	120	Fail
56	Fe	45	62302.156	275442585	1.69	57124.3	1000	517.8	80	120	Fail
59	Co	72	220.781	1787351	1.10	23.5	200	98.6	80	120	
60	Ni	72	236.550	528158	1.18	44.7	200	95.9	80	120	
63	Cu	72	209.289	1291978	1.22	16.7	200	96.3	80	120	
66	Zn	72	382.631	382814	0.71	189.0	200	96.8	80	120	
75	As	72	221.342	187411	1.49	19.1	200	101.1	80	120	
78	Se	72	203.777	9719	2.01	5.1	200	99.3	80	120	
88	Sr	115	485.758	1727743	0.87	311.0	200	87.4	80	120	
95	Mo	115	190.112	621994	1.73	1.4	200	94.3	80	120	
107	Ag	115	191.711	1973026	1.36	0.1	200	95.8	80	120	
111	Cd	115	194.408	288423	1.89	0.4	200	97.0	80	120	
118	Sn	115	204.909	625499	1.39	4.9	200	100.0	80	120	
121	Sb	115	68.660	323342	1.28	2.0	200	33.3	80	120	Fail
137	Ba	115	726.397	1079180	1.10	683.2	200	21.6	80	120	Fail
205	Tl	209	202.015	4080858	2.33	0.5	200	100.8	80	120	
208	Pb	209	262.652	7171405	1.65	71.2	200	95.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	862772	1.00	989663	87.18	70	120	
72	Ge	628395	1.53	739879	84.93	70	120	
115	In	5520546	0.68	6565136	84.09	70	120	
209	Bi	12591981	2.95	15222533	82.72	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 16:19	Sample Name	1605098-41A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	145_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	255.246	10865	1.98	65.6	200	94.8	80	120	
9	Be	45	190.808	10734	0.41	2.2	200	94.3	80	120	
11	B	45	293.327	5376	4.19	87.3	200	103.0	80	120	
23	Na	45	########	435652756	2.06	735299.9	1000	#####	80	120	Fail
24	Mg	45	16531.024	5462352	1.97	10867.0	1000	566.4	80	120	Fail
27	Al	45	65256.561	7701913	1.89	55771.4	1000	948.5	80	120	Fail
39	K	45	18310.868	6146779	1.38	12204.8	1000	610.6	80	120	Fail
44	Ca	45	95161.372	1807428	0.75	94381.5	1000	78.0	80	120	Fail
47	Ti	45	405.280	51595	0.82	195.1	200	105.1	80	120	
51	V	45	296.933	1296195	0.64	92.8	200	102.1	80	120	
52	Cr	45	258.645	1353051	0.66	66.4	200	96.1	80	120	
55	Mn	45	796.809	2237525	1.54	510.4	200	143.2	80	120	Fail
56	Fe	45	63861.319	286144140	2.28	57124.3	1000	673.7	80	120	Fail
59	Co	72	221.383	1831911	1.24	23.5	200	98.9	80	120	
60	Ni	72	241.232	550492	0.77	44.7	200	98.3	80	120	
63	Cu	72	209.235	1320141	0.99	16.7	200	96.3	80	120	
66	Zn	72	389.022	397817	1.32	189.0	200	100.0	80	120	
75	As	72	219.842	190245	1.11	19.1	200	100.4	80	120	
78	Se	72	201.744	9835	1.09	5.1	200	98.3	80	120	
88	Sr	115	530.621	1957423	0.58	311.0	200	109.8	80	120	
95	Mo	115	187.342	635679	0.55	1.4	200	93.0	80	120	
107	Ag	115	187.037	1996398	0.41	0.1	200	93.5	80	120	
111	Cd	115	192.011	295441	0.68	0.4	200	95.8	80	120	
118	Sn	115	200.532	634858	0.74	4.9	200	97.8	80	120	
121	Sb	115	62.566	305611	1.27	2.0	200	30.3	80	120	Fail
137	Ba	115	741.540	1142634	1.14	683.2	200	29.2	80	120	Fail
205	Tl	209	199.436	4203781	0.71	0.5	200	99.5	80	120	
208	Pb	209	259.312	7389600	0.40	71.2	200	94.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	874334	0.26	989663	88.35	70	120	
72	Ge	642228	0.62	739879	86.80	70	120	
115	In	5726650	1.46	6565136	87.23	70	120	
209	Bi	13144669	2.77	15222533	86.35	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 16:25	Sample Name	CCV5-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	146_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	206.323	9457	1.56	200	103.2	90	110	
9	Be	45	201.793	12219	1.03	200	100.9	90	110	
11	B	45	199.736	3986	4.71	200	99.9	90	110	
23	Na	45	5194.867	3787479	0.52	5000	103.9	90	110	
24	Mg	45	5035.842	1791603	0.36	5000	100.7	90	110	
27	Al	45	4892.202	621693	0.53	5000	97.8	90	110	
39	K	45	5097.711	1876924	0.39	5000	102.0	90	110	
44	Ca	45	4707.355	96450	1.70	5000	94.1	90	110	
47	Ti	45	198.296	27174	1.17	200	99.1	90	110	
51	V	45	202.995	954642	1.55	200	101.5	90	110	
52	Cr	45	204.436	1151646	1.23	200	102.2	90	110	
55	Mn	45	199.017	602232	0.90	200	99.5	90	110	
56	Fe	45	5006.943	24164590	1.11	5000	100.1	90	110	
59	Co	72	204.633	1895027	0.34	200	102.3	90	110	
60	Ni	72	204.929	523438	0.87	200	102.5	90	110	
63	Cu	72	204.331	1442904	1.15	200	102.2	90	110	
66	Zn	72	203.991	233596	0.50	200	102.0	90	110	
75	As	72	204.799	198340	0.59	200	102.4	90	110	
78	Se	72	201.947	11018	1.35	200	101.0	90	110	
88	Sr	115	192.449	816604	1.12	200	96.2	90	110	
95	Mo	115	191.230	746260	0.18	200	95.6	90	110	
107	Ag	115	197.611	2425915	0.25	200	98.8	90	110	
111	Cd	115	196.765	348225	0.80	200	98.4	90	110	
118	Sn	115	195.719	712818	1.83	200	97.9	90	110	
121	Sb	115	198.547	1114972	0.65	200	99.3	90	110	
137	Ba	115	195.085	345725	0.55	200	97.5	90	110	
205	Tl	209	196.802	4879191	0.89	200	98.4	90	110	
208	Pb	209	194.162	6508257	0.20	200	97.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	941156	0.45	989663	95.10	70	120	
72	Ge	718752	0.68	739879	97.14	70	120	
115	In	6586431	1.72	6565136	100.32	70	120	
209	Bi	15451891	0.40	15222533	101.51	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 16:29	Sample Name	LCVL5-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	148LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.164	511	8.30	10	111.6	70	130	
9	Be	45	1.182	71	24.44	1	118.2	70	130	
11	B	45	24.283	589	6.44	20	121.4	70	130	
23	Na	45	194.307	184043	0.99	100	194.3	70	130	Fail
24	Mg	45	101.507	35615	1.15	100	101.5	70	130	
27	Al	45	100.026	12468	1.60	100	100.0	70	130	
39	K	45	98.303	80915	0.97	100	98.3	70	130	
44	Ca	45	97.785	2144	2.59	100	97.8	70	130	
47	Ti	45	5.123	681	14.33	5	102.5	70	130	
51	V	45	0.866	6215	4.38	1	86.6	70	130	
52	Cr	45	5.192	30140	2.12	5	103.8	70	130	
55	Mn	45	4.706	14581	1.02	5	94.1	70	130	
56	Fe	45	97.048	468580	1.20	100	97.0	70	130	
59	Co	72	5.101	46233	0.45	5	102.0	70	130	
60	Ni	72	5.130	13184	1.41	5	102.6	70	130	
63	Cu	72	4.965	37595	0.43	5	99.3	70	130	
66	Zn	72	5.039	5929	1.87	5	100.8	70	130	
75	As	72	5.160	5026	1.50	5	103.2	70	130	
78	Se	72	5.547	365	11.38	5	110.9	70	130	
88	Sr	115	4.771	19965	0.60	5	95.4	70	130	
95	Mo	115	4.670	17893	2.01	5	93.4	70	130	
107	Ag	115	1.914	23111	2.39	2	95.7	70	130	
111	Cd	115	1.024	1785	5.62	1	102.4	70	130	
118	Sn	115	4.787	18217	1.29	5	95.7	70	130	
121	Sb	115	1.985	11114	1.51	2	99.2	70	130	
137	Ba	115	4.865	8476	0.79	5	97.3	70	130	
205	Tl	209	0.985	24064	1.38	1	98.5	70	130	
208	Pb	209	0.940	35435	0.67	1	94.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	910164	0.31	989663	91.97	70	120	
72	Ge	701664	1.19	739879	94.83	70	120	
115	In	6448967	0.50	6565136	98.23	70	120	
209	Bi	15047127	0.89	15222533	98.85	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 16:31	Sample Name	CCB5-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	149_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.406	35	15.9	2	5	
9	Be	45	0.003	2	132.3	0.4	0.3	
11	B	45	2.921	189	10.6	10	10	
23	Na	45	94.470	113138	0.2	50	100	FailSoil
24	Mg	45	-1.121	314	8.0	50	100	
27	Al	45	-0.236	149	7.9	50	10	
39	K	45	7.526	48801	0.7	50	100	
44	Ca	45	4.265	291	16.9	50	100	
47	Ti	45	-0.015	0	#DIV/0!	4	3	
51	V	45	-0.147	1600	7.5	4	3	
52	Cr	45	0.000	1882	5.1	2	2	
55	Mn	45	-0.175	317	2.8	2	3	
56	Fe	45	-0.720	12432	2.0	50	50	
59	Co	72	0.001	133	32.5	2	3	
60	Ni	72	0.034	482	4.9	2	3	
63	Cu	72	-0.094	2782	5.9	2	2	
66	Zn	72	0.148	463	8.8	4	2	
75	As	72	-0.038	114	11.7	2	2	
78	Se	72	0.213	82	22.7	1	2	
88	Sr	115	0.001	149	2.6	4	3	
95	Mo	115	0.007	72	21.3	2	2	
107	Ag	115	0.010	216	18.6	0.4	1	
111	Cd	115	0.003	14	48.0	0.4	0.3	
118	Sn	115	-0.080	874	5.4	4	3	
121	Sb	115	0.012	264	34.6	2	0.8	
137	Ba	115	0.008	46	30.5	2	3	
205	Tl	209	0.011	549	2.5	2	0.5	
208	Pb	209	-0.047	3159	4.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898656	0.09	989663	90.80	70	120	
72	Ge	694759	0.65	739879	93.90	70	120	
115	In	6347033	0.63	6565136	96.68	70	120	
209	Bi	14584411	0.90	15222533	95.81	70	120	

Method Blank Report

Date Acquired	5/16/16 4:33 PM	Sample Name	MB-75099
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	150_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.545	41	20.91		
9	Be	45	-0.020	1	86.60		
11	B	45	4.659	219	3.17		
23	Na	45	97.635	114280	0.75		FAIL
24	Mg	45	3.322	1807	5.10		
27	Al	45	8.779	1231	3.61		
39	K	45	6.840	48129	1.70		
44	Ca	45	123.383	2592	4.93		FAIL
47	Ti	45	0.174	24	68.62		
51	V	45	-0.122	1696	5.70		
52	Cr	45	0.227	3070	4.64		
55	Mn	45	0.024	880	5.34		
56	Fe	45	11.621	68647	0.97		
59	Co	72	0.004	152	11.02		
60	Ni	72	0.146	734	3.44		
63	Cu	72	0.076	3812	1.19		
66	Zn	72	4.223	4805	3.44		J
75	As	72	-0.016	131	6.29		
78	Se	72	0.408	90	7.13		
88	Sr	115	0.174	826	12.16		
95	Mo	115	0.016	102	27.74		
107	Ag	115	0.010	203	17.35		
111	Cd	115	0.001	11	148.01		
118	Sn	115	3.912	14367	1.96		
121	Sb	115	0.011	250	30.75		
137	Ba	115	0.056	123	22.12		
205	Tl	209	0.005	413	6.40		
208	Pb	209	0.005	4959	3.30		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	890707	1.02	989663	90.00	70	120	
72	Ge	672082	0.88	739879	90.84	70	120	
115	In	6136501	0.90	6565136	93.47	70	120	
209	Bi	15100168	1.28	15222533	99.20	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 16:36	Sample Name	LCS-75099
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	151_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	211.417	9070	1.58	200	105.7	80	120	
9	Be	45	206.616	11712	2.23	200	103.3	80	120	
11	B	45	209.458	3906	2.41	200	104.7	80	120	
23	Na	45	5216.669	3559748	0.48	1000	521.7	80	120	Fail
24	Mg	45	5032.793	1675945	0.86	1000	503.3	80	120	Fail
27	Al	45	992.967	118244	0.53	1000	99.3	80	120	
39	K	45	5065.025	1745729	0.15	1000	506.5	80	120	Fail
44	Ca	45	4738.137	90862	0.95	1000	473.8	80	120	Fail
47	Ti	45	200.775	25753	1.43	200	100.4	80	120	
51	V	45	202.937	893252	0.77	200	101.5	80	120	
52	Cr	45	202.975	1070242	1.15	200	101.5	80	120	
55	Mn	45	198.795	563039	0.59	200	99.4	80	120	
56	Fe	45	978.989	4434513	0.39	1000	97.9	80	120	
59	Co	72	205.339	1785326	1.04	200	102.7	80	120	
60	Ni	72	204.811	491138	0.26	200	102.4	80	120	
63	Cu	72	203.963	1352186	0.51	200	102.0	80	120	
66	Zn	72	201.647	216805	0.59	200	100.8	80	120	
75	As	72	201.727	183429	0.41	200	100.9	80	120	
78	Se	72	198.881	10189	0.98	200	99.4	80	120	
88	Sr	115	193.026	759204	1.01	200	96.5	80	120	
95	Mo	115	195.396	706820	0.94	200	97.7	80	120	
107	Ag	115	196.949	2241090	1.35	200	98.5	80	120	
111	Cd	115	196.589	322473	1.19	200	98.3	80	120	
118	Sn	115	203.437	686623	0.65	200	101.7	80	120	
121	Sb	115	198.244	1031908	1.48	200	99.1	80	120	
137	Ba	115	198.057	325371	0.96	200	99.0	80	120	
205	Tl	209	204.721	4686722	1.10	200	102.4	80	120	
208	Pb	209	200.685	6211983	0.79	200	100.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	880920	0.93	989663	89.01	70	120	
72	Ge	674825	0.74	739879	91.21	70	120	
115	In	6104033	0.35	6565136	92.98	70	120	
209	Bi	14271697	1.64	15222533	93.75	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 16:38	Sample Name	LCSD-75099
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	152_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	218.452	9280	0.17	200	109.2	80	120	
9	Be	45	210.604	11821	1.70	200	105.3	80	120	
11	B	45	211.020	3896	3.69	200	105.5	80	120	
23	Na	45	5320.224	3594373	0.28	1000	532.0	80	120	Fail
24	Mg	45	5177.795	1707513	0.81	1000	517.8	80	120	Fail
27	Al	45	1003.022	118285	0.41	1000	100.3	80	120	
39	K	45	5163.498	1761669	0.74	1000	516.3	80	120	Fail
44	Ca	45	4834.228	91805	1.62	1000	483.4	80	120	Fail
47	Ti	45	207.478	26355	1.98	200	103.7	80	120	
51	V	45	211.478	921732	0.45	200	105.7	80	120	
52	Cr	45	210.424	1098676	0.66	200	105.2	80	120	
55	Mn	45	205.083	575201	0.43	200	102.5	80	120	
56	Fe	45	1004.460	4505623	0.66	1000	100.4	80	120	
59	Co	72	209.572	1808551	0.32	200	104.8	80	120	
60	Ni	72	208.938	497291	1.17	200	104.5	80	120	
63	Cu	72	210.672	1386181	0.54	200	105.3	80	120	
66	Zn	72	209.169	223198	0.58	200	104.6	80	120	
75	As	72	205.081	185089	0.54	200	102.5	80	120	
78	Se	72	198.397	10088	2.47	200	99.2	80	120	
88	Sr	115	195.305	772806	0.53	200	97.7	80	120	
95	Mo	115	196.504	715150	1.11	200	98.3	80	120	
107	Ag	115	199.059	2278955	0.83	200	99.5	80	120	
111	Cd	115	201.106	331894	0.30	200	100.6	80	120	
118	Sn	115	207.469	704471	0.34	200	103.7	80	120	
121	Sb	115	200.288	1048884	0.28	200	100.1	80	120	
137	Ba	115	200.495	331372	0.23	200	100.2	80	120	
205	Tl	209	207.267	4756871	0.74	200	103.6	80	120	
208	Pb	209	203.447	6313124	0.87	200	101.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	872384	0.27	989663	88.15	70	120	
72	Ge	669778	0.37	739879	90.53	70	120	
115	In	6141658	1.07	6565136	93.55	70	120	
209	Bi	14305373	1.16	15222533	93.97	70	120	

Sample Report

Date Acquired	5/16/16 4:42 PM	Sample Name	1605071-17A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	154_ARF.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	52.005	2303	1.05	2000	>RL
9	Be	45	1.876	111	7.15	2000	>RL
11	B	45	60.958	1263	1.58	2000	>RL
23	Na	45	784.491	590768	1.12	25000	>RL
24	Mg	45	9739.186	3328627	0.19	25000	>RL
27	Al	45	47702.713	5822875	0.66	10000	OUTCAL
39	K	45	11378.337	3967939	1.11	25000	>RL
44	Ca	45	64190.317	1261062	0.70	25000	OUTCAL
47	Ti	45	363.545	47870	0.54	2000	>RL
51	V	45	80.076	363210	1.11	2000	>RL
52	Cr	45	46.901	255307	1.33	2000	>RL
55	Mn	45	604.129	1754833	0.39	2000	>RL
56	Fe	45	49589.416	229814666	1.54	10000	OUTCAL
59	Co	72	16.514	144753	0.80	2000	>RL
60	Ni	72	31.976	77575	1.64	2000	>RL
63	Cu	72	29.265	198324	0.54	2000	>RL
66	Zn	72	271.772	294263	1.20	2000	>RL
75	As	72	15.291	14143	0.41	2000	>RL
78	Se	72	3.747	262	11.19	2000	>RL
88	Sr	115	283.168	1128981	0.70	2000	>RL
95	Mo	115	1.520	5618	1.44	2000	
107	Ag	115	0.113	1392	4.12	500	
111	Cd	115	0.471	792	3.27	2000	>RL
118	Sn	115	5.099	18546	3.03	2000	>RL
121	Sb	115	1.541	8322	0.14	500	
137	Ba	115	440.618	733765	0.42	2000	>RL
205	Tl	209	0.506	12120	3.57	2000	
208	Pb	209	47.800	1515828	0.34	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	904372	1.22	989663	91.38	70	120	
72	Ge	679802	0.33	739879	91.88	70	120	
115	In	6188136	0.44	6565136	94.26	70	120	
209	Bi	14585670	0.91	15222533	95.82	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 16:44	Sample Name	1605071-17A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	155_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	10.644	493	1.33	52.0	102.3	110	90	Good
9	Be	45	0.380	24	31.92	1.9	101.4	110	90	Good
11	B	45	16.536	449	7.62	61.0	135.6	110	90	
23	Na	45	209.019	196095	0.29	784.5	133.2	110	90	
24	Mg	45	1999.766	694904	0.76	9739.2	102.7	110	90	Good
27	Al	45	9813.836	1217167	0.56	47702.7	102.9	110	90	Good
39	K	45	2321.700	860141	0.67	11378.3	102.0	110	90	Good
44	Ca	45	13060.789	260829	0.68	64190.3	101.7	110	90	Good
47	Ti	45	73.855	9881	1.87	363.5	101.6	110	90	Good
51	V	45	16.007	75604	0.97	80.1	99.9	110	90	Good
52	Cr	45	9.576	54484	1.61	46.9	102.1	110	90	Good
55	Mn	45	124.007	366588	0.11	604.1	102.6	110	90	Good
56	Fe	45	10236.620	48202027	1.06	49589.4	103.2	110	90	Good
59	Co	72	3.386	30289	1.22	16.5	102.5	110	90	Good
60	Ni	72	6.581	16557	1.07	32.0	102.9	110	90	Good
63	Cu	72	6.002	44084	1.39	29.3	102.5	110	90	Good
66	Zn	72	56.711	62701	0.85	271.8	104.3	110	90	Good
75	As	72	3.156	3088	1.26	15.3	103.2	110	90	Good
78	Se	72	0.926	119	12.77	3.7	123.6	110	90	
88	Sr	115	55.717	233086	1.27	283.2	98.4	110	90	Good
95	Mo	115	0.299	1197	3.64	1.5	98.3	110	90	Good
107	Ag	115	0.028	437	11.85	0.1	124.8	110	90	
111	Cd	115	0.093	173	30.22	0.5	99.3	110	90	Good
118	Sn	115	0.834	4170	3.85	5.1	81.8	110	90	
121	Sb	115	0.312	1928	5.18	1.5	101.2	110	90	Good
137	Ba	115	85.819	149905	0.66	440.6	97.4	110	90	Good
205	Tl	209	0.110	2994	1.93	0.5	109.1	110	90	Good
208	Pb	209	9.430	316254	0.56	47.8	98.6	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	918751	1.19	989663	92.83	70	120	
72	Ge	691568	0.91	739879	93.47	70	120	
115	In	6490438	1.19	6565136	98.86	70	120	
209	Bi	15236152	0.99	15222533	100.09	70	120	

Sample Report

Date Acquired	5/16/16 4:46 PM	Sample Name	1605071-12A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	156SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	55.896	2526	1.73	2000	>RL
9	Be	45	2.175	131	25.03	2000	>RL
11	B	45	86.656	1775	3.28	2000	>RL
23	Na	45	5900.116	4212532	0.87	25000	>RL
24	Mg	45	12168.432	4245142	0.42	25000	>RL
27	Al	45	57059.526	7109469	2.08	10000	OUTCAL
39	K	45	12185.859	4334474	0.48	25000	>RL
44	Ca	45	91426.356	1833302	0.24	25000	OUTCAL
47	Ti	45	358.003	48118	1.37	2000	>RL
51	V	45	96.091	444430	0.72	2000	>RL
52	Cr	45	55.006	305316	0.09	2000	>RL
55	Mn	45	571.429	1694350	0.88	2000	>RL
56	Fe	45	53983.177	255364639	0.98	10000	OUTCAL
59	Co	72	19.166	169914	1.46	2000	>RL
60	Ni	72	33.820	82967	0.24	2000	>RL
63	Cu	72	25.005	171879	0.54	2000	>RL
66	Zn	72	186.144	203947	0.73	2000	>RL
75	As	72	21.375	19938	0.23	2000	>RL
78	Se	72	4.628	310	1.42	2000	>RL
88	Sr	115	362.264	1465073	0.64	2000	>RL
95	Mo	115	1.874	7014	3.09	2000	
107	Ag	115	0.116	1446	2.70	500	
111	Cd	115	0.456	780	6.45	2000	>RL
118	Sn	115	4.903	18128	2.54	2000	>RL
121	Sb	115	1.600	8755	2.27	500	
137	Ba	115	561.838	949133	0.20	2000	>RL
205	Tl	209	0.554	13407	2.76	2000	
208	Pb	209	79.588	2551872	0.21	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	923090	0.42	989663	93.27	70	120	
72	Ge	687626	1.04	739879	92.94	70	120	
115	In	6279089	2.08	6565136	95.64	70	120	
209	Bi	14765832	1.10	15222533	97.00	70	120	

Sample Report

Date Acquired	5/16/16 4:48 PM	Sample Name	1605071-13A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	157SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	67.346	3023	1.53	2000	>RL
9	Be	45	2.711	162	5.49	2000	>RL
11	B	45	153.782	3026	3.44	2000	>RL
23	Na	45	14657.645	10335742	1.76	25000	>RL
24	Mg	45	17591.657	6104027	0.83	25000	>RL
27	Al	45	67980.948	8425321	1.94	10000	OUTCAL
39	K	45	13960.649	4932592	0.61	25000	>RL
44	Ca	45	55648.439	1110079	0.34	25000	OUTCAL
47	Ti	45	362.990	48530	1.96	2000	>RL
51	V	45	98.618	453625	0.52	2000	>RL
52	Cr	45	74.889	412775	0.71	2000	>RL
55	Mn	45	550.935	1624953	0.44	2000	>RL
56	Fe	45	56988.697	268149092	0.90	10000	OUTCAL
59	Co	72	19.682	175507	1.95	2000	>RL
60	Ni	72	41.487	102289	1.39	2000	>RL
63	Cu	72	22.684	157174	0.94	2000	>RL
66	Zn	72	183.444	202182	1.11	2000	>RL
75	As	72	18.068	16976	1.02	2000	>RL
78	Se	72	4.518	307	9.64	2000	>RL
88	Sr	115	318.803	1289423	0.90	2000	>RL
95	Mo	115	2.934	10960	1.75	2000	>RL
107	Ag	115	0.086	1098	10.18	500	
111	Cd	115	0.343	588	7.40	2000	
118	Sn	115	5.435	19979	2.12	2000	>RL
121	Sb	115	0.624	3538	4.54	500	
137	Ba	115	398.452	673154	1.38	2000	>RL
205	Tl	209	0.615	14804	1.33	2000	
208	Pb	209	43.837	1402560	0.65	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	918250	0.89	989663	92.78	70	120	
72	Ge	691680	0.38	739879	93.49	70	120	
115	In	6278423	1.24	6565136	95.63	70	120	
209	Bi	14711785	1.47	15222533	96.64	70	120	

Sample Report

Date Acquired	5/16/16 4:50 PM	Sample Name	1605071-14A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	158SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	82.444	3626	1.27	2000	>RL
9	Be	45	2.506	147	14.73	2000	>RL
11	B	45	201.605	3848	4.52	2000	>RL
23	Na	45	20836.518	14391374	1.46	25000	>RL
24	Mg	45	19398.077	6601961	2.09	25000	>RL
27	Al	45	72963.772	8870389	3.61	10000	OUTCAL
39	K	45	13538.029	4693100	1.08	25000	>RL
44	Ca	45	137616.781	2692200	0.66	25000	OUTCAL
47	Ti	45	415.342	54464	1.15	2000	>RL
51	V	45	120.491	543123	1.05	2000	>RL
52	Cr	45	108.751	587079	0.71	2000	>RL
55	Mn	45	477.910	1382654	0.65	2000	>RL
56	Fe	45	66575.012	307256477	0.70	10000	OUTCAL
59	Co	72	21.588	186789	1.41	2000	>RL
60	Ni	72	64.554	154231	0.88	2000	>RL
63	Cu	72	22.635	152191	1.62	2000	>RL
66	Zn	72	180.554	193104	0.96	2000	>RL
75	As	72	22.232	20235	1.47	2000	>RL
78	Se	72	4.736	309	11.20	2000	>RL
88	Sr	115	474.309	1883320	0.76	2000	>RL
95	Mo	115	6.017	22024	1.48	2000	>RL
107	Ag	115	0.101	1257	9.73	500	
111	Cd	115	0.393	661	1.27	2000	
118	Sn	115	5.746	20674	1.39	2000	>RL
121	Sb	115	0.849	4655	2.43	500	
137	Ba	115	513.280	851439	0.98	2000	>RL
205	Tl	209	0.610	14452	0.51	2000	
208	Pb	209	54.038	1701899	1.01	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	900591	0.31	989663	91.00	70	120	
72	Ge	671156	0.02	739879	90.71	70	120	
115	In	6165199	2.00	6565136	93.91	70	120	
209	Bi	14489557	0.52	15222533	95.18	70	120	

Sample Report

Date Acquired	5/16/16 4:52 PM	Sample Name	1605071-15A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	159SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	72.016	3006	3.53	2000	>RL
9	Be	45	2.296	128	19.26	2000	>RL
11	B	45	146.103	2679	1.56	2000	>RL
23	Na	45	9182.130	6038733	1.36	25000	>RL
24	Mg	45	11085.375	3576962	0.54	25000	>RL
27	Al	45	43186.377	4978513	2.86	10000	OUTCAL
39	K	45	7994.852	2645514	0.48	25000	>RL
44	Ca	45	254030.355	4711708	1.33	25000	OUTCAL
47	Ti	45	218.379	27149	1.35	2000	>RL
51	V	45	71.800	307724	1.24	2000	>RL
52	Cr	45	48.832	250911	1.02	2000	>RL
55	Mn	45	174.532	479219	0.85	2000	>RL
56	Fe	45	50129.329	219340329	0.47	10000	OUTCAL
59	Co	72	17.170	141513	1.31	2000	>RL
60	Ni	72	25.995	59370	1.18	2000	>RL
63	Cu	72	7.349	49187	1.61	2000	>RL
66	Zn	72	112.856	115055	0.88	2000	>RL
75	As	72	15.796	13732	0.49	2000	>RL
78	Se	72	2.817	201	14.38	2000	>RL
88	Sr	115	1105.591	4201002	1.01	2000	>RL
95	Mo	115	2.164	7604	2.93	2000	>RL
107	Ag	115	0.063	783	15.36	500	
111	Cd	115	0.090	151	6.74	2000	
118	Sn	115	5.039	17478	1.52	2000	>RL
121	Sb	115	0.128	828	3.47	500	
137	Ba	115	209.159	331997	1.38	2000	>RL
205	Tl	209	0.361	8272	0.82	2000	
208	Pb	209	18.504	558347	0.44	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	853889	1.34	989663	86.28	70	120	
72	Ge	639196	0.65	739879	86.39	70	120	
115	In	5899017	2.19	6565136	89.85	70	120	
209	Bi	13812330	1.41	15222533	90.74	70	120	

Sample Report

Date Acquired	5/16/16 4:54 PM	Sample Name	1605071-16A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	160SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	47.747	2010	3.52	2000	>RL
9	Be	45	1.970	111	11.30	2000	>RL
11	B	45	58.766	1162	11.38	2000	>RL
23	Na	45	755.510	542344	0.83	25000	>RL
24	Mg	45	8958.558	2909460	0.54	25000	>RL
27	Al	45	44481.496	5159583	0.68	10000	OUTCAL
39	K	45	10475.129	3474718	0.38	25000	>RL
44	Ca	45	65737.568	1227116	0.06	25000	OUTCAL
47	Ti	45	376.912	47156	1.21	2000	>RL
51	V	45	75.534	325672	0.72	2000	>RL
52	Cr	45	43.860	226991	0.35	2000	>RL
55	Mn	45	556.978	1537390	1.00	2000	>RL
56	Fe	45	46765.130	205936187	0.39	10000	OUTCAL
59	Co	72	15.223	126064	1.35	2000	>RL
60	Ni	72	29.829	68383	0.42	2000	>RL
63	Cu	72	26.264	168457	1.92	2000	>RL
66	Zn	72	252.622	258392	0.51	2000	>RL
75	As	72	14.442	12625	0.37	2000	>RL
78	Se	72	3.450	233	14.62	2000	>RL
88	Sr	115	273.225	1033536	0.43	2000	>RL
95	Mo	115	1.597	5597	2.50	2000	
107	Ag	115	0.120	1405	4.87	500	
111	Cd	115	0.436	697	8.16	2000	>RL
118	Sn	115	4.770	16535	3.59	2000	>RL
121	Sb	115	1.550	7944	3.73	500	
137	Ba	115	388.792	614293	0.50	2000	>RL
205	Tl	209	0.429	9929	2.53	2000	
208	Pb	209	42.759	1303726	0.07	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	859311	0.86	989663	86.83	70	120	
72	Ge	642184	1.04	739879	86.80	70	120	
115	In	5871913	1.37	6565136	89.44	70	120	
209	Bi	14017894	0.51	15222533	92.09	70	120	

Sample Report

Date Acquired	5/16/16 4:56 PM	Sample Name	1605071-18A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	161SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	44.718	1883	1.89	2000	>RL
9	Be	45	1.784	100	10.66	2000	>RL
11	B	45	54.196	1081	8.73	2000	>RL
23	Na	45	699.632	505398	0.91	25000	>RL
24	Mg	45	9000.994	2921840	1.15	25000	>RL
27	Al	45	43359.321	5026798	0.52	10000	OUTCAL
39	K	45	10469.334	3471146	0.68	25000	>RL
44	Ca	45	57130.633	1065968	0.11	25000	OUTCAL
47	Ti	45	339.383	42443	1.46	2000	>RL
51	V	45	73.027	314769	0.92	2000	>RL
52	Cr	45	42.280	218772	0.79	2000	>RL
55	Mn	45	540.806	1492022	1.22	2000	>RL
56	Fe	45	43245.059	190331135	2.28	10000	OUTCAL
59	Co	72	14.457	121174	0.78	2000	>RL
60	Ni	72	28.009	65011	1.34	2000	>RL
63	Cu	72	25.625	166440	0.69	2000	>RL
66	Zn	72	237.187	245578	0.91	2000	>RL
75	As	72	14.401	12743	0.57	2000	>RL
78	Se	72	3.653	246	5.92	2000	>RL
88	Sr	115	254.657	976630	0.50	2000	>RL
95	Mo	115	1.249	4450	1.54	2000	
107	Ag	115	0.087	1051	8.58	500	
111	Cd	115	0.424	687	0.97	2000	>RL
118	Sn	115	5.381	18766	1.27	2000	>RL
121	Sb	115	1.281	6684	3.76	500	
137	Ba	115	407.144	652220	0.68	2000	>RL
205	Tl	209	0.413	9541	0.36	2000	
208	Pb	209	46.013	1398946	0.71	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	858864	0.37	989663	86.78	70	120	
72	Ge	650022	1.15	739879	87.86	70	120	
115	In	5953441	1.65	6565136	90.68	70	120	
209	Bi	13983471	1.45	15222533	91.86	70	120	

Sample Report

Date Acquired	5/16/16 4:58 PM	Sample Name	1605071-19A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	162SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	68.374	2880	2.93	2000	>RL
9	Be	45	2.671	150	16.49	2000	>RL
11	B	45	69.608	1356	6.68	2000	>RL
23	Na	45	878.236	624670	1.10	25000	>RL
24	Mg	45	11544.267	3759388	0.79	25000	>RL
27	Al	45	67858.668	7892352	1.19	10000	OUTCAL
39	K	45	13449.905	4461382	0.80	25000	>RL
44	Ca	45	55930.358	1047014	1.11	25000	OUTCAL
47	Ti	45	749.500	94037	1.56	2000	>RL
51	V	45	107.903	465597	1.16	2000	>RL
52	Cr	45	60.557	313584	0.53	2000	>RL
55	Mn	45	503.018	1392356	0.94	2000	>RL
56	Fe	45	73130.221	322952174	0.99	10000	OUTCAL
59	Co	72	24.181	201567	1.01	2000	>RL
60	Ni	72	36.571	84340	1.12	2000	>RL
63	Cu	72	31.339	201797	1.10	2000	>RL
66	Zn	72	225.373	232163	0.09	2000	>RL
75	As	72	21.201	18599	0.50	2000	>RL
78	Se	72	5.520	335	4.24	2000	>RL
88	Sr	115	270.648	1027908	0.72	2000	>RL
95	Mo	115	1.293	4561	4.85	2000	
107	Ag	115	0.092	1093	12.74	500	
111	Cd	115	0.453	726	1.48	2000	>RL
118	Sn	115	6.008	20629	3.16	2000	>RL
121	Sb	115	1.022	5318	0.76	500	
137	Ba	115	410.850	651837	1.83	2000	>RL
205	Tl	209	0.522	11906	2.54	2000	
208	Pb	209	55.566	1678031	0.32	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861771	1.17	989663	87.08	70	120	
72	Ge	646654	0.59	739879	87.40	70	120	
115	In	5895865	2.14	6565136	89.81	70	120	
209	Bi	13895066	0.64	15222533	91.28	70	120	

Sample Report

Date Acquired	5/16/16 5:00 PM	Sample Name	1605071-20A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	163SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	50.681	2153	4.20	2000	>RL
9	Be	45	2.920	165	0.93	2000	>RL
11	B	45	54.252	1093	7.66	2000	>RL
23	Na	45	944.501	672742	0.17	25000	>RL
24	Mg	45	8965.348	2939097	0.55	25000	>RL
27	Al	45	59582.007	6975726	0.54	10000	OUTCAL
39	K	45	11887.175	3974136	0.61	25000	>RL
44	Ca	45	78289.471	1475129	0.41	25000	OUTCAL
47	Ti	45	294.748	37226	0.18	2000	>RL
51	V	45	90.042	391437	0.40	2000	>RL
52	Cr	45	53.170	277353	1.34	2000	>RL
55	Mn	45	2846.469	7927194	0.54	2000	OUTCAL
56	Fe	45	53035.277	235751635	0.79	10000	OUTCAL
59	Co	72	26.068	217816	0.68	2000	>RL
60	Ni	72	49.783	114960	0.41	2000	>RL
63	Cu	72	30.264	195453	0.79	2000	>RL
66	Zn	72	323.899	334348	0.84	2000	>RL
75	As	72	19.834	17451	0.61	2000	>RL
78	Se	72	4.839	303	5.52	2000	>RL
88	Sr	115	188.088	726756	0.23	2000	>RL
95	Mo	115	2.120	7579	2.34	2000	>RL
107	Ag	115	0.143	1685	2.69	500	
111	Cd	115	1.584	2564	5.25	2000	>RL
118	Sn	115	5.463	19177	1.71	2000	>RL
121	Sb	115	1.573	8231	1.14	500	
137	Ba	115	1140.477	1840480	0.55	2000	>RL
205	Tl	209	0.600	13668	1.59	2000	
208	Pb	209	69.691	2108211	0.05	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	867442	1.14	989663	87.65	70	120	
72	Ge	648214	0.34	739879	87.61	70	120	
115	In	5997786	1.72	6565136	91.36	70	120	
209	Bi	13926747	0.88	15222533	91.49	70	120	

Sample Report

Date Acquired	5/16/16 5:02 PM	Sample Name	1605071-21A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	164SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	85.678	3779	1.77	2000	>RL
9	Be	45	3.412	200	4.27	2000	>RL
11	B	45	105.608	2086	5.36	2000	>RL
23	Na	45	1223.575	893183	0.41	25000	>RL
24	Mg	45	18053.437	6162504	1.51	25000	>RL
27	Al	45	85085.416	10373834	1.86	10000	OUTCAL
39	K	45	16634.481	5772147	0.58	25000	>RL
44	Ca	45	66457.223	1303985	0.70	25000	OUTCAL
47	Ti	45	224.157	29478	1.69	2000	>RL
51	V	45	131.026	592097	0.26	2000	>RL
52	Cr	45	75.953	411775	0.50	2000	>RL
55	Mn	45	691.727	2006636	0.09	2000	>RL
56	Fe	45	67585.257	312812485	1.16	10000	OUTCAL
59	Co	72	31.832	271897	0.50	2000	>RL
60	Ni	72	46.551	109929	1.07	2000	>RL
63	Cu	72	38.346	252325	1.12	2000	>RL
66	Zn	72	332.278	350633	1.06	2000	>RL
75	As	72	24.191	21727	0.87	2000	>RL
78	Se	72	6.403	388	5.57	2000	>RL
88	Sr	115	372.222	1467283	0.28	2000	>RL
95	Mo	115	1.944	7091	0.70	2000	
107	Ag	115	0.150	1802	7.01	500	
111	Cd	115	0.800	1323	5.11	2000	>RL
118	Sn	115	6.227	22142	2.13	2000	>RL
121	Sb	115	3.050	16102	1.44	500	>RL
137	Ba	115	641.497	1056196	0.32	2000	>RL
205	Tl	209	0.699	16298	1.34	2000	
208	Pb	209	124.301	3856043	0.30	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	903229	1.01	989663	91.27	70	120	
72	Ge	662725	0.81	739879	89.57	70	120	
115	In	6119362	1.68	6565136	93.21	70	120	
209	Bi	14294316	0.56	15222533	93.90	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 17:04	Sample Name	1605071-17A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	165_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	247.200	10816	1.06	52.0	200	97.6	75	125	
9	Be	45	201.085	11627	1.56	1.9	200	99.6	75	125	
11	B	45	260.938	4931	1.67	61.0	200	100.0	75	125	
23	Na	45	5691.224	3957682	0.25	784.5	5000	98.1	75	125	
24	Mg	45	14724.088	5001014	1.43	9739.2	5000	99.7	75	125	
27	Al	45	52838.696	6409687	1.93	47702.7	5000	102.7	75	125	
39	K	45	16274.772	5620821	1.18	11378.3	5000	97.9	75	125	
44	Ca	45	68260.052	1332674	0.72	64190.3	5000	81.4	75	125	
47	Ti	45	553.090	72373	1.07	363.5	200	94.8	75	125	
51	V	45	276.843	1242357	0.98	80.1	200	98.4	75	125	
52	Cr	45	245.300	1319097	0.74	46.9	200	99.2	75	125	
55	Mn	45	786.718	2270785	0.23	604.1	200	91.3	75	125	
56	Fe	45	53618.491	246945012	0.33	49589.4	5000	80.6	75	125	
59	Co	72	217.711	1882782	0.89	16.5	200	100.6	75	125	
60	Ni	72	227.089	541640	0.92	32.0	200	97.6	75	125	
63	Cu	72	221.704	1461757	0.72	29.3	200	96.2	75	125	
66	Zn	72	464.756	496641	0.12	271.8	200	96.5	75	125	
75	As	72	213.879	193445	1.44	15.3	200	99.3	75	125	
78	Se	72	196.894	10033	1.20	3.7	200	96.6	75	125	
88	Sr	115	465.379	1862168	0.98	283.2	200	91.1	75	125	
95	Mo	115	185.975	684465	0.53	1.5	200	92.2	75	125	
107	Ag	115	175.247	2029028	0.89	0.1	200	87.6	75	125	
111	Cd	115	183.985	307061	0.35	0.5	200	91.8	75	125	
118	Sn	115	201.479	691897	0.29	5.1	200	98.2	75	125	
121	Sb	115	195.454	1035088	0.54	1.5	200	97.0	75	125	
137	Ba	115	621.791	1039225	0.11	440.6	200	90.6	75	125	
205	Tl	209	195.396	4520825	0.47	0.5	200	97.4	75	125	
208	Pb	209	241.036	7539582	0.33	47.8	200	96.6	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898721	0.50	989663	90.81	70	120	
72	Ge	671245	0.93	739879	90.72	70	120	
115	In	6210825	0.96	6565136	94.60	70	120	
209	Bi	14426342	2.48	15222533	94.77	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 17:06	Sample Name	1605071-17A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	166_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	259.919	11261	0.27	52.0	200	104.0	80	120	
9	Be	45	205.351	11758	0.77	1.9	200	101.7	80	120	
11	B	45	264.827	4954	3.62	61.0	200	101.9	80	120	
23	Na	45	5809.770	3999911	0.80	784.5	1000	502.5	80	120	Fail
24	Mg	45	15702.101	5281388	2.15	9739.2	1000	596.3	80	120	Fail
27	Al	45	56480.714	6784995	1.73	47702.7	1000	877.8	80	120	Fail
39	K	45	17651.641	6032955	0.80	11378.3	1000	627.3	80	120	Fail
44	Ca	45	74337.558	1437204	0.75	64190.3	1000	1014.7	80	120	Fail
47	Ti	45	616.579	79899	1.04	363.5	200	126.5	80	120	Fail
51	V	45	288.140	1280393	0.96	80.1	200	104.0	80	120	
52	Cr	45	251.182	1337574	0.62	46.9	200	102.1	80	120	
55	Mn	45	857.618	2451308	0.48	604.1	200	126.7	80	120	Fail
56	Fe	45	53563.507	244289599	0.26	49589.4	1000	397.4	80	120	Fail
59	Co	72	221.300	1904045	0.96	16.5	200	102.4	80	120	
60	Ni	72	236.366	560880	1.04	32.0	200	102.2	80	120	
63	Cu	72	230.447	1511523	0.24	29.3	200	100.6	80	120	
66	Zn	72	494.493	525728	0.14	271.8	200	111.4	80	120	
75	As	72	216.185	194542	1.08	15.3	200	100.4	80	120	
78	Se	72	198.317	10055	1.11	3.7	200	97.3	80	120	
88	Sr	115	511.202	1986730	0.56	283.2	200	114.0	80	120	
95	Mo	115	184.004	657776	0.73	1.5	200	91.2	80	120	
107	Ag	115	191.184	2149938	0.67	0.1	200	95.5	80	120	
111	Cd	115	193.934	314409	1.29	0.5	200	96.7	80	120	
118	Sn	115	199.653	665913	0.28	5.1	200	97.3	80	120	
121	Sb	115	62.302	320538	0.84	1.5	200	30.4	80	120	Fail
137	Ba	115	651.855	1058110	0.32	440.6	200	105.6	80	120	
205	Tl	209	196.854	4554672	0.54	0.5	200	98.2	80	120	
208	Pb	209	245.079	7665397	0.43	47.8	200	98.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	889967	0.37	989663	89.93	70	120	
72	Ge	667863	1.10	739879	90.27	70	120	
115	In	6034223	2.49	6565136	91.91	70	120	
209	Bi	14421481	1.04	15222533	94.74	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 17:08	Sample Name	1605071-17A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	167_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	267.374	11574	0.76	52.0	200	107.7	80	120	
9	Be	45	214.885	12295	0.67	1.9	200	106.5	80	120	
11	B	45	261.468	4887	3.98	61.0	200	100.3	80	120	
23	Na	45	5834.218	4013119	0.78	784.5	1000	505.0	80	120	Fail
24	Mg	45	15041.203	5054659	0.58	9739.2	1000	530.2	80	120	Fail
27	Al	45	52391.073	6288694	0.74	47702.7	1000	468.8	80	120	Fail
39	K	45	17092.843	5838489	2.44	11378.3	1000	571.5	80	120	Fail
44	Ca	45	69132.409	1335607	1.23	64190.3	1000	494.2	80	120	Fail
47	Ti	45	604.194	78237	0.96	363.5	200	120.3	80	120	Fail
51	V	45	287.227	1275272	0.44	80.1	200	103.6	80	120	
52	Cr	45	254.161	1352350	0.43	46.9	200	103.6	80	120	
55	Mn	45	802.887	2293341	1.12	604.1	200	99.4	80	120	
56	Fe	45	50659.655	230907360	1.85	49589.4	1000	107.0	80	120	
59	Co	72	225.222	1934550	0.59	16.5	200	104.4	80	120	
60	Ni	72	238.956	566054	0.32	32.0	200	103.5	80	120	
63	Cu	72	236.095	1545826	0.93	29.3	200	103.4	80	120	
66	Zn	72	478.406	507761	0.23	271.8	200	103.3	80	120	
75	As	72	220.736	198292	1.08	15.3	200	102.7	80	120	
78	Se	72	206.160	10432	0.24	3.7	200	101.2	80	120	
88	Sr	115	484.923	1912374	0.52	283.2	200	100.9	80	120	
95	Mo	115	186.415	676222	0.61	1.5	200	92.4	80	120	
107	Ag	115	191.941	2190250	0.78	0.1	200	95.9	80	120	
111	Cd	115	197.494	324862	0.61	0.5	200	98.5	80	120	
118	Sn	115	201.437	681793	0.55	5.1	200	98.2	80	120	
121	Sb	115	61.972	323605	0.25	1.5	200	30.2	80	120	Fail
137	Ba	115	626.837	1032576	1.08	440.6	200	93.1	80	120	
205	Tl	209	203.906	4723800	1.16	0.5	200	101.7	80	120	
208	Pb	209	246.677	7725494	0.58	47.8	200	99.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	889383	1.43	989663	89.87	70	120	
72	Ge	666687	0.57	739879	90.11	70	120	
115	In	6121127	0.48	6565136	93.24	70	120	
209	Bi	14439468	0.76	15222533	94.86	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 17:10	Sample Name	CCV6-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	168_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.408	9181	1.38	200	106.7	90	110	
9	Be	45	209.990	11935	0.20	200	105.0	90	110	
11	B	45	213.840	3996	0.84	200	106.9	90	110	
23	Na	45	5171.083	3539097	0.44	5000	103.4	90	110	
24	Mg	45	5086.882	1698736	0.49	5000	101.7	90	110	
27	Al	45	4842.871	577658	0.77	5000	96.9	90	110	
39	K	45	5045.732	1744250	0.57	5000	100.9	90	110	
44	Ca	45	4718.312	90740	1.17	5000	94.4	90	110	
47	Ti	45	200.612	25805	0.82	200	100.3	90	110	
51	V	45	201.521	889543	0.73	200	100.8	90	110	
52	Cr	45	203.307	1074995	0.58	200	101.7	90	110	
55	Mn	45	198.168	562858	1.38	200	99.1	90	110	
56	Fe	45	5027.582	22774697	1.66	5000	100.6	90	110	
59	Co	72	208.093	1786647	0.63	200	104.0	90	110	
60	Ni	72	207.703	491836	0.30	200	103.9	90	110	
63	Cu	72	209.231	1369624	0.46	200	104.6	90	110	
66	Zn	72	206.124	218823	0.46	200	103.1	90	110	
75	As	72	205.667	184669	0.58	200	102.8	90	110	
78	Se	72	202.565	10246	1.71	200	101.3	90	110	
88	Sr	115	189.324	757736	0.18	200	94.7	90	110	
95	Mo	115	192.790	709739	0.87	200	96.4	90	110	
107	Ag	115	198.503	2298708	1.16	200	99.3	90	110	
111	Cd	115	193.880	323642	0.69	200	96.9	90	110	
118	Sn	115	194.979	669765	1.08	200	97.5	90	110	
121	Sb	115	196.776	1042390	0.76	200	98.4	90	110	
137	Ba	115	194.044	324379	0.70	200	97.0	90	110	
205	Tl	209	199.953	4622761	0.61	200	100.0	90	110	
208	Pb	209	199.348	6230635	0.30	200	99.7	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	883401	0.02	989663	89.26	70	120	
72	Ge	666377	0.90	739879	90.07	70	120	
115	In	6213763	2.37	6565136	94.65	70	120	
209	Bi	14408785	0.75	15222533	94.65	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 17:14	Sample Name	LCVL6-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	170LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.588	503	7.46	10	115.9	70	130	
9	Be	45	1.211	69	16.71	1	121.1	70	130	
11	B	45	23.866	551	8.26	20	119.3	70	130	
23	Na	45	147.871	143854	0.30	100	147.9	70	130	Fail
24	Mg	45	100.455	33419	2.27	100	100.5	70	130	
27	Al	45	95.751	11322	3.30	100	95.8	70	130	
39	K	45	99.537	77117	0.07	100	99.5	70	130	
44	Ca	45	101.553	2103	9.19	100	101.6	70	130	
47	Ti	45	5.098	642	9.81	5	102.0	70	130	
51	V	45	0.829	5732	5.08	1	82.9	70	130	
52	Cr	45	5.265	28950	0.91	5	105.3	70	130	
55	Mn	45	4.732	13897	2.00	5	94.6	70	130	
56	Fe	45	97.688	447073	0.50	100	97.7	70	130	
59	Co	72	5.197	44135	0.84	5	103.9	70	130	
60	Ni	72	5.183	12477	0.63	5	103.7	70	130	
63	Cu	72	5.007	35499	1.88	5	100.1	70	130	
66	Zn	72	5.313	5841	4.84	5	106.3	70	130	
75	As	72	5.103	4660	1.42	5	102.1	70	130	
78	Se	72	5.529	342	0.72	5	110.6	70	130	
88	Sr	115	4.865	19052	1.73	5	97.3	70	130	
95	Mo	115	4.802	17216	1.23	5	96.0	70	130	
107	Ag	115	1.889	21347	1.23	2	94.5	70	130	
111	Cd	115	1.007	1642	8.09	1	100.7	70	130	
118	Sn	115	4.920	17492	1.45	5	98.4	70	130	
121	Sb	115	1.994	10448	0.24	2	99.7	70	130	
137	Ba	115	4.812	7845	1.44	5	96.2	70	130	
205	Tl	209	1.077	24577	1.17	1	107.7	70	130	
208	Pb	209	0.940	33131	0.60	1	94.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	862900	0.58	989663	87.19	70	120	
72	Ge	657469	0.73	739879	88.86	70	120	
115	In	6035394	0.32	6565136	91.93	70	120	
209	Bi	14076246	2.11	15222533	92.47	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 17:16	Sample Name	CCB6-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	171_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.442	35	14.5	2	5	
9	Be	45	0.023	3	0.0	0.4	0.3	
11	B	45	1.888	161	10.2	10	10	
23	Na	45	50.705	78783	1.0	50	100	FailSoil
24	Mg	45	-1.015	332	19.0	50	100	
27	Al	45	0.219	193	27.1	50	10	
39	K	45	7.289	46205	0.6	50	100	
44	Ca	45	2.941	251	14.3	50	100	
47	Ti	45	0.056	9	21.6	4	3	
51	V	45	-0.149	1507	2.9	4	3	
52	Cr	45	-0.011	1725	3.4	2	2	
55	Mn	45	-0.154	358	20.1	2	3	
56	Fe	45	-0.338	13462	3.4	50	50	
59	Co	72	0.000	118	18.8	2	3	
60	Ni	72	0.071	540	3.4	2	3	
63	Cu	72	-0.181	2059	0.2	2	2	
66	Zn	72	0.170	459	16.8	4	2	
75	As	72	-0.012	130	15.8	2	2	
78	Se	72	0.088	71	20.7	1	2	
88	Sr	115	-0.005	113	15.6	4	3	
95	Mo	115	0.005	60	33.8	2	2	
107	Ag	115	0.011	204	19.7	0.4	1	
111	Cd	115	0.001	10	33.3	0.4	0.3	
118	Sn	115	-0.122	672	0.8	4	3	
121	Sb	115	0.017	267	17.7	2	0.8	
137	Ba	115	0.013	50	40.5	2	3	
205	Tl	209	0.044	1247	11.2	2	0.5	
208	Pb	209	-0.054	2775	5.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	852332	1.06	989663	86.12	70	120	
72	Ge	653355	0.84	739879	88.31	70	120	
115	In	5871850	2.36	6565136	89.44	70	120	
209	Bi	13867207	0.86	15222533	91.10	70	120	

Sample Report

Date Acquired	5/16/16 5:18 PM	Sample Name	1605071-22A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	172SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	46.398	1953	1.32	2000	>RL
9	Be	45	2.098	118	14.15	2000	>RL
11	B	45	80.412	1541	4.56	2000	>RL
23	Na	45	1059.429	741304	1.12	25000	>RL
24	Mg	45	12538.838	4068311	1.04	25000	>RL
27	Al	45	53420.627	6190732	1.73	10000	OUTCAL
39	K	45	12195.342	4034561	0.47	25000	>RL
44	Ca	45	72432.062	1350906	0.28	25000	OUTCAL
47	Ti	45	238.194	29777	0.77	2000	>RL
51	V	45	79.268	341363	0.36	2000	>RL
52	Cr	45	52.064	268879	0.63	2000	>RL
55	Mn	45	673.982	1858525	0.07	2000	>RL
56	Fe	45	53784.653	236633813	0.92	10000	OUTCAL
59	Co	72	20.447	167893	0.29	2000	>RL
60	Ni	72	30.383	69078	0.69	2000	>RL
63	Cu	72	27.898	177282	0.86	2000	>RL
66	Zn	72	311.102	315553	0.66	2000	>RL
75	As	72	23.537	20323	1.76	2000	>RL
78	Se	72	4.623	287	11.90	2000	>RL
88	Sr	115	317.111	1174747	0.60	2000	>RL
95	Mo	115	3.589	12271	1.28	2000	>RL
107	Ag	115	0.176	1975	5.62	500	
111	Cd	115	0.589	920	8.49	2000	>RL
118	Sn	115	5.507	18528	0.38	2000	>RL
121	Sb	115	2.298	11446	3.51	500	>RL
137	Ba	115	330.243	511028	0.79	2000	>RL
205	Tl	209	0.566	12696	1.79	2000	
208	Pb	209	57.428	1707096	0.42	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	858542	0.53	989663	86.75	70	120	
72	Ge	636926	0.87	739879	86.09	70	120	
115	In	5751255	1.87	6565136	87.60	70	120	
209	Bi	13680398	1.34	15222533	89.87	70	120	

Sample Report

Date Acquired	5/16/16 5:20 PM	Sample Name	1605071-23A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	173SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	47.496	2023	2.55	2000	>RL
9	Be	45	2.282	129	4.91	2000	>RL
11	B	45	71.058	1393	2.36	2000	>RL
23	Na	45	1447.996	1008233	0.27	25000	>RL
24	Mg	45	11412.572	3747457	0.32	25000	>RL
27	Al	45	55072.196	6458660	0.45	10000	OUTCAL
39	K	45	13018.501	4355420	0.75	25000	>RL
44	Ca	45	52772.369	996105	0.57	25000	OUTCAL
47	Ti	45	251.035	31758	1.04	2000	>RL
51	V	45	79.449	346235	0.75	2000	>RL
52	Cr	45	52.144	272517	0.98	2000	>RL
55	Mn	45	671.258	1873182	0.61	2000	>RL
56	Fe	45	51841.052	230819520	1.35	10000	OUTCAL
59	Co	72	20.424	170652	0.39	2000	>RL
60	Ni	72	33.153	76668	1.19	2000	>RL
63	Cu	72	39.065	251322	0.48	2000	>RL
66	Zn	72	296.659	306202	0.09	2000	>RL
75	As	72	18.259	16073	1.58	2000	>RL
78	Se	72	4.772	300	8.37	2000	>RL
88	Sr	115	263.327	1009494	0.57	2000	>RL
95	Mo	115	2.462	8720	5.79	2000	>RL
107	Ag	115	0.178	2062	4.53	500	
111	Cd	115	0.592	957	7.20	2000	>RL
118	Sn	115	5.964	20674	1.11	2000	>RL
121	Sb	115	2.456	12644	1.31	500	>RL
137	Ba	115	389.300	623380	0.34	2000	>RL
205	Tl	209	0.560	12983	1.43	2000	
208	Pb	209	94.278	2896021	0.98	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	868850	0.79	989663	87.79	70	120	
72	Ge	648109	0.32	739879	87.60	70	120	
115	In	5951085	1.49	6565136	90.65	70	120	
209	Bi	14149752	0.63	15222533	92.95	70	120	

Sample Report

Date Acquired	5/16/16 5:22 PM	Sample Name	1605071-24A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	174SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	62.029	2663	0.68	2000	>RL
9	Be	45	2.200	126	14.44	2000	>RL
11	B	45	70.469	1397	1.72	2000	>RL
23	Na	45	985.169	707947	0.38	25000	>RL
24	Mg	45	11316.222	3753249	0.44	25000	>RL
27	Al	45	52767.555	6250910	0.16	10000	OUTCAL
39	K	45	11466.389	3880248	0.82	25000	>RL
44	Ca	45	59651.839	1137260	0.15	25000	OUTCAL
47	Ti	45	434.079	55466	0.87	2000	>RL
51	V	45	89.625	394232	0.59	2000	>RL
52	Cr	45	52.352	276354	0.56	2000	>RL
55	Mn	45	751.192	2117319	0.44	2000	>RL
56	Fe	45	59441.802	267328994	1.33	10000	OUTCAL
59	Co	72	20.759	177337	0.43	2000	>RL
60	Ni	72	37.246	88022	1.22	2000	>RL
63	Cu	72	35.650	234788	1.23	2000	>RL
66	Zn	72	268.091	282944	0.58	2000	>RL
75	As	72	17.879	16095	0.75	2000	>RL
78	Se	72	4.678	302	13.89	2000	>RL
88	Sr	115	365.534	1410403	0.82	2000	>RL
95	Mo	115	1.752	6261	2.22	2000	
107	Ag	115	0.151	1770	1.36	500	
111	Cd	115	0.879	1423	4.00	2000	>RL
118	Sn	115	5.398	18941	2.99	2000	>RL
121	Sb	115	2.023	10517	2.58	500	>RL
137	Ba	115	398.936	642901	0.22	2000	>RL
205	Tl	209	0.537	12618	1.84	2000	
208	Pb	209	54.334	1692569	0.30	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	877577	0.10	989663	88.67	70	120	
72	Ge	662653	1.01	739879	89.56	70	120	
115	In	5989305	1.68	6565136	91.23	70	120	
209	Bi	14332192	0.44	15222533	94.15	70	120	

Sample Report

Date Acquired	5/16/16 5:24 PM	Sample Name	1605071-25A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	175SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	55.018	2405	2.08	2000	>RL
9	Be	45	2.330	136	8.54	2000	>RL
11	B	45	52.992	1102	7.78	2000	>RL
23	Na	45	787.184	585190	0.57	25000	>RL
24	Mg	45	9014.198	3042195	1.01	25000	>RL
27	Al	45	53368.985	6433351	3.34	10000	OUTCAL
39	K	45	11164.450	3845392	1.18	25000	>RL
44	Ca	45	59520.903	1154601	0.93	25000	OUTCAL
47	Ti	45	422.826	54974	0.71	2000	>RL
51	V	45	88.540	396296	0.62	2000	>RL
52	Cr	45	49.067	263656	0.35	2000	>RL
55	Mn	45	617.007	1769592	0.83	2000	>RL
56	Fe	45	62215.579	284691624	1.21	10000	OUTCAL
59	Co	72	18.417	158965	0.92	2000	>RL
60	Ni	72	34.522	82451	0.09	2000	>RL
63	Cu	72	23.889	160039	0.61	2000	>RL
66	Zn	72	186.900	199379	0.13	2000	>RL
75	As	72	17.973	16345	0.78	2000	>RL
78	Se	72	3.981	270	11.66	2000	>RL
88	Sr	115	261.137	1017349	0.40	2000	>RL
95	Mo	115	1.580	5706	2.86	2000	
107	Ag	115	0.097	1183	7.85	500	
111	Cd	115	0.462	760	3.82	2000	>RL
118	Sn	115	4.923	17531	1.68	2000	>RL
121	Sb	115	1.518	8017	2.43	500	
137	Ba	115	356.587	580299	0.87	2000	>RL
205	Tl	209	0.505	12072	1.01	2000	
208	Pb	209	49.720	1572359	0.87	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	892920	0.56	989663	90.22	70	120	
72	Ge	669473	0.26	739879	90.48	70	120	
115	In	6047035	1.00	6565136	92.11	70	120	
209	Bi	14545936	0.90	15222533	95.56	70	120	

Sample Report

Date Acquired	5/16/16 5:26 PM	Sample Name	1605071-26A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	176SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	44.982	1935	3.68	2000	>RL
9	Be	45	2.119	121	1.90	2000	>RL
11	B	45	47.891	991	4.78	2000	>RL
23	Na	45	1066.160	761975	0.23	25000	>RL
24	Mg	45	11598.034	3845211	0.41	25000	>RL
27	Al	45	43263.213	5123098	0.77	10000	OUTCAL
39	K	45	9330.918	3164765	0.33	25000	>RL
44	Ca	45	127561.867	2430813	1.29	25000	OUTCAL
47	Ti	45	860.347	109890	0.08	2000	>RL
51	V	45	93.104	409295	1.01	2000	>RL
52	Cr	45	41.084	217185	1.21	2000	>RL
55	Mn	45	669.639	1886816	0.89	2000	>RL
56	Fe	45	46638.491	209680281	4.08	10000	OUTCAL
59	Co	72	15.877	134637	2.01	2000	>RL
60	Ni	72	29.580	69450	1.34	2000	>RL
63	Cu	72	35.933	234814	0.29	2000	>RL
66	Zn	72	219.235	229674	0.48	2000	>RL
75	As	72	18.212	16266	0.62	2000	>RL
78	Se	72	3.621	247	8.94	2000	>RL
88	Sr	115	427.096	1654719	0.19	2000	>RL
95	Mo	115	1.510	5424	1.98	2000	
107	Ag	115	0.125	1488	4.01	500	
111	Cd	115	0.503	821	10.37	2000	>RL
118	Sn	115	4.834	17142	1.60	2000	>RL
121	Sb	115	1.385	7290	0.58	500	
137	Ba	115	759.689	1229393	0.83	2000	>RL
205	Tl	209	0.531	12364	0.79	2000	
208	Pb	209	46.371	1430004	0.29	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	877237	0.30	989663	88.64	70	120	
72	Ge	657602	0.73	739879	88.88	70	120	
115	In	6013530	0.50	6565136	91.60	70	120	
209	Bi	14181768	0.32	15222533	93.16	70	120	

Sample Report

Date Acquired	5/16/16 5:28 PM	Sample Name	1605071-27A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	177SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	58.806	2550	2.27	2000	>RL
9	Be	45	2.583	149	12.25	2000	>RL
11	B	45	67.645	1359	6.50	2000	>RL
23	Na	45	1707.373	1203782	0.92	25000	>RL
24	Mg	45	18375.320	6152291	0.35	25000	>RL
27	Al	45	61081.663	7304867	2.25	10000	OUTCAL
39	K	45	12217.447	4170903	0.98	25000	>RL
44	Ca	45	254844.939	4904343	0.56	25000	OUTCAL
47	Ti	45	1144.141	147591	0.94	2000	>RL
51	V	45	132.122	585659	0.38	2000	>RL
52	Cr	45	58.738	312792	0.88	2000	>RL
55	Mn	45	1070.042	3044459	1.43	2000	>RL
56	Fe	45	61559.785	279494309	1.57	10000	OUTCAL
59	Co	72	22.662	189979	0.36	2000	>RL
60	Ni	72	45.693	105890	0.86	2000	>RL
63	Cu	72	37.160	240024	0.74	2000	>RL
66	Zn	72	219.853	227765	0.96	2000	>RL
75	As	72	23.166	20425	0.94	2000	>RL
78	Se	72	5.315	327	11.23	2000	>RL
88	Sr	115	816.959	3137572	0.28	2000	>RL
95	Mo	115	2.114	7510	2.23	2000	>RL
107	Ag	115	0.123	1452	0.66	500	
111	Cd	115	0.757	1221	1.10	2000	>RL
118	Sn	115	5.141	18001	3.71	2000	>RL
121	Sb	115	2.023	10470	1.44	500	>RL
137	Ba	115	749.575	1202485	0.34	2000	>RL
205	Tl	209	0.806	18499	1.12	2000	
208	Pb	209	42.052	1289426	0.30	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	885960	0.16	989663	89.52	70	120	
72	Ge	650328	0.71	739879	87.90	70	120	
115	In	5961611	0.96	6565136	90.81	70	120	
209	Bi	14096869	0.80	15222533	92.61	70	120	

Sample Report

Date Acquired	5/16/16 5:30 PM	Sample Name	1605071-30A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	178SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	77.187	3322	2.14	2000	>RL
9	Be	45	3.621	207	15.93	2000	>RL
11	B	45	72.340	1436	3.17	2000	>RL
23	Na	45	2095.926	1458444	0.44	25000	>RL
24	Mg	45	22720.036	7563130	1.18	25000	>RL
27	Al	45	78963.929	9388400	2.46	10000	OUTCAL
39	K	45	16045.472	5431959	1.27	25000	>RL
44	Ca	45	311721.938	5964283	0.62	25000	OUTCAL
47	Ti	45	1411.896	181081	1.34	2000	>RL
51	V	45	166.951	735199	0.47	2000	>RL
52	Cr	45	73.193	387081	1.36	2000	>RL
55	Mn	45	1353.082	3827410	0.56	2000	>RL
56	Fe	45	76512.836	345373444	2.06	10000	OUTCAL
59	Co	72	28.397	235927	0.85	2000	>RL
60	Ni	72	55.489	127371	1.25	2000	>RL
63	Cu	72	49.088	313256	0.70	2000	>RL
66	Zn	72	280.912	288378	1.13	2000	>RL
75	As	72	27.560	24058	0.75	2000	>RL
78	Se	72	6.844	399	5.42	2000	>RL
88	Sr	115	1022.475	3884784	0.25	2000	>RL
95	Mo	115	2.682	9414	2.57	2000	>RL
107	Ag	115	0.166	1916	5.79	500	
111	Cd	115	0.905	1443	2.34	2000	>RL
118	Sn	115	6.056	20794	2.98	2000	>RL
121	Sb	115	2.496	12738	2.29	500	>RL
137	Ba	115	984.849	1563096	0.80	2000	>RL
205	Tl	209	1.051	23666	0.10	2000	
208	Pb	209	56.240	1695803	0.44	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	880854	0.34	989663	89.01	70	120	
72	Ge	644563	0.40	739879	87.12	70	120	
115	In	5897925	1.10	6565136	89.84	70	120	
209	Bi	13878663	2.13	15222533	91.17	70	120	

Sample Report

Date Acquired	5/16/16 5:32 PM	Sample Name	1605071-31A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	179SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	46.339	1967	2.49	2000	>RL
9	Be	45	2.034	115	6.09	2000	>RL
11	B	45	51.101	1036	3.13	2000	>RL
23	Na	45	356.341	282400	1.53	25000	>RL
24	Mg	45	9970.176	3263635	1.09	25000	>RL
27	Al	45	45927.427	5370112	2.09	10000	OUTCAL
39	K	45	12410.115	4140793	0.52	25000	>RL
44	Ca	45	84809.021	1595691	0.70	25000	OUTCAL
47	Ti	45	381.570	48114	1.94	2000	>RL
51	V	45	81.814	355360	1.17	2000	>RL
52	Cr	45	50.540	263357	0.93	2000	>RL
55	Mn	45	510.987	1421617	0.94	2000	>RL
56	Fe	45	46390.533	205902498	0.62	10000	OUTCAL
59	Co	72	17.529	146498	1.12	2000	>RL
60	Ni	72	30.889	71461	0.40	2000	>RL
63	Cu	72	17.617	115096	0.39	2000	>RL
66	Zn	72	150.445	155446	2.11	2000	>RL
75	As	72	17.481	15396	1.56	2000	>RL
78	Se	72	3.743	249	6.15	2000	>RL
88	Sr	115	285.432	1089296	0.91	2000	>RL
95	Mo	115	1.109	3936	5.56	2000	
107	Ag	115	0.095	1134	4.79	500	
111	Cd	115	0.410	661	8.68	2000	>RL
118	Sn	115	4.323	15213	2.46	2000	>RL
121	Sb	115	2.787	14261	0.88	500	>RL
137	Ba	115	386.745	616462	0.43	2000	>RL
205	Tl	209	0.439	10194	2.79	2000	
208	Pb	209	37.482	1149789	0.61	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	866138	0.98	989663	87.52	70	120	
72	Ge	648179	1.01	739879	87.61	70	120	
115	In	5923089	0.83	6565136	90.22	70	120	
209	Bi	14096880	1.24	15222533	92.61	70	120	

Sample Report

Date Acquired	5/16/16 5:34 PM	Sample Name	1605071-33A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	180SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	63.770	2665	4.65	2000	>RL
9	Be	45	2.734	152	8.40	2000	>RL
11	B	45	85.171	1617	3.20	2000	>RL
23	Na	45	337.036	265929	1.06	25000	>RL
24	Mg	45	13034.630	4208227	0.77	25000	>RL
27	Al	45	64239.533	7407583	1.00	10000	OUTCAL
39	K	45	19120.677	6268284	2.55	25000	>RL
44	Ca	45	79923.737	1483221	0.45	25000	OUTCAL
47	Ti	45	277.124	34475	1.98	2000	>RL
51	V	45	101.696	435139	1.06	2000	>RL
52	Cr	45	74.024	379613	2.30	2000	>RL
55	Mn	45	590.907	1621414	0.70	2000	>RL
56	Fe	45	61882.423	270903634	1.06	10000	OUTCAL
59	Co	72	23.256	192058	0.46	2000	>RL
60	Ni	72	38.019	86849	1.91	2000	>RL
63	Cu	72	27.343	174825	0.63	2000	>RL
66	Zn	72	313.332	319658	1.04	2000	>RL
75	As	72	21.698	18853	1.15	2000	>RL
78	Se	72	5.367	325	4.54	2000	>RL
88	Sr	115	249.265	934743	0.31	2000	>RL
95	Mo	115	1.441	5010	4.77	2000	
107	Ag	115	0.201	2268	1.33	500	
111	Cd	115	0.952	1497	5.49	2000	>RL
118	Sn	115	5.358	18274	0.90	2000	>RL
121	Sb	115	3.748	18781	1.26	500	>RL
137	Ba	115	650.027	1018034	1.03	2000	>RL
205	Tl	209	0.539	12409	1.77	2000	
208	Pb	209	114.749	3493053	0.27	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	854312	0.90	989663	86.32	70	120	
72	Ge	640626	0.63	739879	86.59	70	120	
115	In	5820962	1.67	6565136	88.66	70	120	
209	Bi	14025128	0.45	15222533	92.13	70	120	

Sample Report

Date Acquired	5/16/16 5:36 PM	Sample Name	1605071-34A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	181SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	75.688	3125	1.14	2000	>RL
9	Be	45	2.765	152	1.32	2000	>RL
11	B	45	105.864	1957	4.71	2000	>RL
23	Na	45	606.114	436846	0.79	25000	>RL
24	Mg	45	15555.218	4967500	1.57	25000	>RL
27	Al	45	73901.252	8429947	2.55	10000	OUTCAL
39	K	45	15145.940	4921065	0.17	25000	>RL
44	Ca	45	98268.824	1803882	1.49	25000	OUTCAL
47	Ti	45	225.562	27753	1.80	2000	>RL
51	V	45	117.737	498004	0.92	2000	>RL
52	Cr	45	66.880	339444	0.48	2000	>RL
55	Mn	45	545.954	1481920	0.63	2000	>RL
56	Fe	45	63578.604	275311829	1.53	10000	OUTCAL
59	Co	72	24.216	197220	0.94	2000	>RL
60	Ni	72	44.026	99127	1.95	2000	>RL
63	Cu	72	23.730	150052	0.39	2000	>RL
66	Zn	72	243.888	245449	0.29	2000	>RL
75	As	72	21.158	18135	1.85	2000	>RL
78	Se	72	5.220	313	4.32	2000	>RL
88	Sr	115	466.094	1688273	0.74	2000	>RL
95	Mo	115	1.284	4317	7.38	2000	
107	Ag	115	0.128	1426	5.66	500	
111	Cd	115	0.497	760	4.02	2000	>RL
118	Sn	115	5.484	18042	3.43	2000	>RL
121	Sb	115	1.844	9013	1.23	500	
137	Ba	115	921.111	1393583	0.54	2000	>RL
205	Tl	209	0.569	12671	0.73	2000	
208	Pb	209	46.466	1372696	0.07	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	845002	0.55	989663	85.38	70	120	
72	Ge	631820	0.64	739879	85.40	70	120	
115	In	5622050	0.72	6565136	85.63	70	120	
209	Bi	13591352	2.56	15222533	89.28	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 17:38	Sample Name	CCV7-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	182_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	216.848	8948	0.27	200	108.4	90	110	
9	Be	45	210.738	11489	2.67	200	105.4	90	110	
11	B	45	209.770	3763	4.04	200	104.9	90	110	
23	Na	45	5239.304	3439015	1.19	5000	104.8	90	110	
24	Mg	45	5123.893	1641326	0.85	5000	102.5	90	110	
27	Al	45	5004.156	572553	0.80	5000	100.1	90	110	
39	K	45	5155.804	1708647	0.71	5000	103.1	90	110	
44	Ca	45	4888.281	90169	1.01	5000	97.8	90	110	
47	Ti	45	197.926	24421	1.17	200	99.0	90	110	
51	V	45	202.794	858621	0.50	200	101.4	90	110	
52	Cr	45	202.971	1029441	0.11	200	101.5	90	110	
55	Mn	45	198.523	540873	1.33	200	99.3	90	110	
56	Fe	45	5066.456	22014587	0.27	5000	101.3	90	110	
59	Co	72	203.517	1709552	0.13	200	101.8	90	110	
60	Ni	72	202.583	469370	0.32	200	101.3	90	110	
63	Cu	72	203.016	1300410	1.01	200	101.5	90	110	
66	Zn	72	202.687	210560	1.04	200	101.3	90	110	
75	As	72	203.221	178552	1.23	200	101.6	90	110	
78	Se	72	200.940	9946	1.59	200	100.5	90	110	
88	Sr	115	191.847	735348	0.49	200	95.9	90	110	
95	Mo	115	192.891	680000	0.37	200	96.4	90	110	
107	Ag	115	198.078	2196549	0.80	200	99.0	90	110	
111	Cd	115	195.089	311857	0.78	200	97.5	90	110	
118	Sn	115	194.926	641184	0.80	200	97.5	90	110	
121	Sb	115	198.600	1007405	1.03	200	99.3	90	110	
137	Ba	115	197.372	315985	0.91	200	98.7	90	110	
205	Tl	209	196.484	4428415	0.55	200	98.2	90	110	
208	Pb	209	195.125	5945664	0.41	200	97.6	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	847374	0.44	989663	85.62	70	120	
72	Ge	652051	1.49	739879	88.13	70	120	
115	In	5948718	0.47	6565136	90.61	70	120	
209	Bi	14047653	0.98	15222533	92.28	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 17:42	Sample Name	LCVL7-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	184LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.735	472	4.98	10	107.3	70	130	
9	Be	45	1.168	67	14.65	1	116.8	70	130	
11	B	45	25.393	584	9.75	20	127.0	70	130	
23	Na	45	132.710	135333	0.65	100	132.7	70	130	Fail
24	Mg	45	100.664	33859	0.52	100	100.7	70	130	
27	Al	45	101.267	12097	3.16	100	101.3	70	130	
39	K	45	100.626	78326	1.12	100	100.6	70	130	
44	Ca	45	102.547	2145	2.76	100	102.5	70	130	
47	Ti	45	5.249	669	7.63	5	105.0	70	130	
51	V	45	0.920	6193	3.31	1	92.0	70	130	
52	Cr	45	5.136	28600	0.48	5	102.7	70	130	
55	Mn	45	4.819	14294	2.98	5	96.4	70	130	
56	Fe	45	101.912	470909	1.83	100	101.9	70	130	
59	Co	72	5.213	44755	0.50	5	104.3	70	130	
60	Ni	72	5.215	12690	1.30	5	104.3	70	130	
63	Cu	72	5.038	36090	1.00	5	100.8	70	130	
66	Zn	72	5.321	5913	1.25	5	106.4	70	130	
75	As	72	5.070	4680	1.77	5	101.4	70	130	
78	Se	72	4.843	311	5.91	5	96.9	70	130	
88	Sr	115	4.752	19127	1.78	5	95.0	70	130	
95	Mo	115	4.718	17387	1.36	5	94.4	70	130	
107	Ag	115	1.928	22382	1.43	2	96.4	70	130	
111	Cd	115	0.935	1569	4.12	1	93.5	70	130	
118	Sn	115	4.792	17536	1.00	5	95.8	70	130	
121	Sb	115	1.933	10418	2.17	2	96.7	70	130	
137	Ba	115	4.859	8143	2.71	5	97.2	70	130	
205	Tl	209	1.004	23695	0.69	1	100.4	70	130	
208	Pb	209	0.919	33561	1.82	1	91.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	872405	0.53	989663	88.15	70	120	
72	Ge	664615	0.55	739879	89.83	70	120	
115	In	6203310	1.23	6565136	94.49	70	120	
209	Bi	14532820	1.06	15222533	95.47	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 17:44	Sample Name	CCB7-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	185_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.284	29	25.7	2	5	
9	Be	45	0.017	3	142.0	0.4	0.3	
11	B	45	5.548	229	12.4	10	10	
23	Na	45	31.448	67435	0.8	50	100	
24	Mg	45	-0.640	461	17.2	50	100	
27	Al	45	1.859	389	15.9	50	10	
39	K	45	2.600	45489	1.5	50	100	
44	Ca	45	2.613	250	9.3	50	100	
47	Ti	45	0.029	6	69.3	4	3	
51	V	45	-0.105	1728	5.6	4	3	
52	Cr	45	-0.004	1793	4.2	2	2	
55	Mn	45	-0.145	387	17.7	2	3	
56	Fe	45	1.218	20605	18.0	50	50	
59	Co	72	0.007	178	24.9	2	3	
60	Ni	72	-0.009	361	11.7	2	3	
63	Cu	72	-0.181	2093	7.1	2	2	
66	Zn	72	-0.011	276	18.1	4	2	
75	As	72	-0.005	139	5.7	2	2	
78	Se	72	0.230	80	9.2	1	2	
88	Sr	115	0.009	172	25.8	4	3	
95	Mo	115	0.015	99	13.6	2	2	
107	Ag	115	0.011	217	7.1	0.4	1	
111	Cd	115	0.008	22	60.6	0.4	0.3	
118	Sn	115	-0.101	777	6.0	4	3	
121	Sb	115	0.022	308	26.9	2	0.8	
137	Ba	115	0.044	104	29.7	2	3	
205	Tl	209	0.029	932	15.5	2	0.5	
208	Pb	209	-0.062	2598	8.1	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	867642	0.63	989663	87.67	70	120	
72	Ge	664975	0.97	739879	89.88	70	120	
115	In	6146026	0.40	6565136	93.62	70	120	
209	Bi	14268893	2.38	15222533	93.74	70	120	

Method Blank Report

Date Acquired	5/16/16 5:46 PM	Sample Name	MB-75104
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	186_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.159	24	11.02		
9	Be	45	0.016	3	141.97		
11	B	45	6.222	248	13.20		
23	Na	45	39.858	75037	0.96		
24	Mg	45	2.766	1622	5.80		
27	Al	45	7.875	1123	10.44		
39	K	45	8.803	48852	0.86		
44	Ca	45	39.260	967	3.41		
47	Ti	45	0.267	37	15.75		
51	V	45	-0.152	1563	6.34		
52	Cr	45	-0.004	1842	6.31		
55	Mn	45	-0.148	390	8.15		
56	Fe	45	3.701	32534	3.67		
59	Co	72	0.002	132	5.82		
60	Ni	72	0.033	468	9.46		
63	Cu	72	-0.081	2794	7.24		
66	Zn	72	2.585	3074	4.46		
75	As	72	-0.035	114	16.90		
78	Se	72	0.031	71	15.23		
88	Sr	115	0.116	623	12.05		
95	Mo	115	0.026	143	26.82		
107	Ag	115	0.007	179	16.91		
111	Cd	115	0.002	13	0.00		
118	Sn	115	3.494	13551	4.51		
121	Sb	115	0.009	252	28.23		
137	Ba	115	0.056	130	26.77		
205	Tl	209	0.014	640	9.04		
208	Pb	209	-0.040	3500	1.03		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	891697	0.83	989663	90.10	70	120	
72	Ge	676387	0.23	739879	91.42	70	120	
115	In	6417437	1.76	6565136	97.75	70	120	
209	Bi	15159244	0.36	15222533	99.58	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 17:48	Sample Name	LCS-75104
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	187_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	217.307	9304	2.17	200	108.7	80	120	
9	Be	45	211.209	11948	0.37	200	105.6	80	120	
11	B	45	212.171	3947	1.85	200	106.1	80	120	
23	Na	45	5186.769	3533063	1.13	1000	518.7	80	120	Fail
24	Mg	45	5074.940	1686759	0.46	1000	507.5	80	120	Fail
27	Al	45	982.133	116730	0.66	1000	98.2	80	120	
39	K	45	5102.024	1754985	1.20	1000	510.2	80	120	Fail
44	Ca	45	4796.504	91807	0.70	1000	479.7	80	120	Fail
47	Ti	45	202.170	25884	2.64	200	101.1	80	120	
51	V	45	206.829	908606	0.67	200	103.4	80	120	
52	Cr	45	209.381	1101893	1.32	200	104.7	80	120	
55	Mn	45	202.060	571185	0.05	200	101.0	80	120	
56	Fe	45	994.334	4495360	0.17	1000	99.4	80	120	
59	Co	72	207.600	1802640	0.78	200	103.8	80	120	
60	Ni	72	208.276	498798	0.29	200	104.1	80	120	
63	Cu	72	206.224	1365382	0.45	200	103.1	80	120	
66	Zn	72	204.721	219813	0.56	200	102.4	80	120	
75	As	72	204.335	185560	0.09	200	102.2	80	120	
78	Se	72	199.405	10202	2.02	200	99.7	80	120	
88	Sr	115	193.308	765214	0.58	200	96.7	80	120	
95	Mo	115	196.878	716794	0.47	200	98.4	80	120	
107	Ag	115	197.715	2264311	0.24	200	98.9	80	120	
111	Cd	115	196.096	323738	0.59	200	98.0	80	120	
118	Sn	115	201.661	685012	0.46	200	100.8	80	120	
121	Sb	115	196.868	1031342	0.30	200	98.4	80	120	
137	Ba	115	197.246	326103	0.77	200	98.6	80	120	
205	Tl	209	200.742	4673451	0.37	200	100.4	80	120	
208	Pb	209	199.049	6265029	0.46	200	99.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	879268	0.83	989663	88.85	70	120	
72	Ge	673931	0.26	739879	91.09	70	120	
115	In	6144786	1.91	6565136	93.60	70	120	
209	Bi	14509519	0.36	15222533	95.32	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 17:50	Sample Name	LCSD-75104
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	188_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	216.426	9354	1.13	200	108.2	80	120	
9	Be	45	212.684	12142	0.97	200	106.3	80	120	
11	B	45	212.325	3988	4.41	200	106.2	80	120	
23	Na	45	5194.382	3571044	0.53	1000	519.4	80	120	Fail
24	Mg	45	5110.510	1714436	0.64	1000	511.1	80	120	Fail
27	Al	45	979.320	117482	0.26	1000	97.9	80	120	
39	K	45	5080.396	1763607	0.78	1000	508.0	80	120	Fail
44	Ca	45	4739.837	91581	1.88	1000	474.0	80	120	Fail
47	Ti	45	199.433	25770	1.59	200	99.7	80	120	
51	V	45	205.748	912093	1.03	200	102.9	80	120	
52	Cr	45	206.480	1096723	0.66	200	103.2	80	120	
55	Mn	45	199.979	570579	0.47	200	100.0	80	120	
56	Fe	45	999.344	4560486	1.26	1000	99.9	80	120	
59	Co	72	210.802	1817306	0.87	200	105.4	80	120	
60	Ni	72	208.925	496761	0.22	200	104.5	80	120	
63	Cu	72	207.598	1364596	0.16	200	103.8	80	120	
66	Zn	72	206.258	219874	0.99	200	103.1	80	120	
75	As	72	205.548	185321	0.79	200	102.8	80	120	
78	Se	72	196.657	9990	0.84	200	98.3	80	120	
88	Sr	115	191.400	760364	0.45	200	95.7	80	120	
95	Mo	115	194.808	711841	0.48	200	97.4	80	120	
107	Ag	115	196.119	2254545	0.90	200	98.1	80	120	
111	Cd	115	197.057	326540	0.57	200	98.5	80	120	
118	Sn	115	202.138	689326	1.71	200	101.1	80	120	
121	Sb	115	197.646	1039393	1.00	200	98.8	80	120	
137	Ba	115	197.200	327227	0.21	200	98.6	80	120	
205	Tl	209	200.607	4691591	1.48	200	100.3	80	120	
208	Pb	209	199.945	6321709	0.55	200	100.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	887672	2.27	989663	89.69	70	120	
72	Ge	669090	0.15	739879	90.43	70	120	
115	In	6169843	3.20	6565136	93.98	70	120	
209	Bi	14575012	0.59	15222533	95.75	70	120	

Sample Report

Date Acquired	5/16/16 5:54 PM	Sample Name	1605071-53A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	190_ARF.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	98.884	4077	2.78	2000	>RL
9	Be	45	3.795	208	1.92	2000	>RL
11	B	45	176.976	3186	7.64	2000	>RL
23	Na	45	10853.793	7055686	2.30	25000	>RL
24	Mg	45	17593.295	5617747	0.61	25000	>RL
27	Al	45	59013.567	6730693	0.30	10000	OUTCAL
39	K	45	20156.446	6533587	2.73	25000	>RL
44	Ca	45	125427.850	2302175	0.97	25000	OUTCAL
47	Ti	45	359.551	44236	0.58	2000	>RL
51	V	45	88.137	373298	0.32	2000	>RL
52	Cr	45	73.015	370395	0.15	2000	>RL
55	Mn	45	389.380	1057060	0.40	2000	>RL
56	Fe	45	90986.666	393940331	1.55	10000	OUTCAL
59	Co	72	29.236	237965	1.86	2000	>RL
60	Ni	72	36.495	82202	0.70	2000	>RL
63	Cu	72	5.540	37402	1.65	2000	>RL
66	Zn	72	195.835	197054	0.33	2000	>RL
75	As	72	17.689	15177	0.63	2000	>RL
78	Se	72	5.393	322	7.66	2000	>RL
88	Sr	115	499.262	1808116	0.52	2000	>RL
95	Mo	115	1.397	4693	3.32	2000	
107	Ag	115	0.061	724	26.93	500	
111	Cd	115	0.151	237	2.82	2000	
118	Sn	115	5.054	16708	1.02	2000	>RL
121	Sb	115	0.192	1094	14.15	500	
137	Ba	115	135.008	204254	0.72	2000	>RL
205	Tl	209	0.424	9701	3.84	2000	
208	Pb	209	17.543	531403	0.31	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	844954	0.60	989663	85.38	70	120	
72	Ge	631530	0.53	739879	85.36	70	120	
115	In	5621147	0.14	6565136	85.62	70	120	
209	Bi	13860434	1.33	15222533	91.05	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 17:56	Sample Name	1605071-53A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	191_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	20.183	865	3.69	98.9	102.1	110	90	Good
9	Be	45	0.758	44	28.48	3.8	99.9	110	90	Good
11	B	45	38.615	812	9.25	177.0	109.1	110	90	Good
23	Na	45	2179.930	1487065	0.77	10853.8	100.4	110	90	Good
24	Mg	45	3538.431	1156768	1.42	17593.3	100.6	110	90	Good
27	Al	45	11876.356	1386222	0.65	59013.6	100.6	110	90	Good
39	K	45	4083.408	1389954	0.43	20156.4	101.3	110	90	Good
44	Ca	45	25548.076	479976	0.66	125427.9	101.8	110	90	Good
47	Ti	45	73.435	9246	0.43	359.6	102.1	110	90	Good
51	V	45	17.472	77464	0.54	88.1	99.1	110	90	Good
52	Cr	45	14.728	77896	0.88	73.0	100.9	110	90	Good
55	Mn	45	79.829	222393	1.36	389.4	102.5	110	90	Good
56	Fe	45	19080.842	84548612	0.25	90986.7	104.9	110	90	Good
59	Co	72	6.078	51050	1.18	29.2	103.9	110	90	Good
60	Ni	72	7.488	17670	0.81	36.5	102.6	110	90	Good
63	Cu	72	1.143	10487	2.59	5.5	103.1	110	90	Good
66	Zn	72	40.643	42350	1.90	195.8	103.8	110	90	Good
75	As	72	3.585	3281	2.26	17.7	101.3	110	90	Good
78	Se	72	1.180	125	13.73	5.4	109.4	110	90	Good
88	Sr	115	96.724	378414	0.70	499.3	96.9	110	90	Good
95	Mo	115	0.266	1002	7.94	1.4	95.4	110	90	Good
107	Ag	115	0.023	348	23.01	0.1	186.0	110	90	
111	Cd	115	0.034	64	31.18	0.2	112.0	110	90	
118	Sn	115	0.798	3779	3.89	5.1	78.9	110	90	
121	Sb	115	0.050	451	21.24	0.2	131.7	110	90	
137	Ba	115	26.183	42802	1.88	135.0	97.0	110	90	Good
205	Tl	209	0.117	2970	10.41	0.4	137.7	110	90	
208	Pb	209	3.448	111947	1.57	17.5	98.3	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864639	1.16	989663	87.37	70	120	
72	Ge	650517	0.67	739879	87.92	70	120	
115	In	6070614	0.34	6565136	92.47	70	120	
209	Bi	14367769	1.01	15222533	94.38	70	120	

Sample Report

Date Acquired	5/16/16 5:59 PM	Sample Name	1605071-37A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	192SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	78.747	3237	1.63	2000	>RL
9	Be	45	3.165	173	5.51	2000	>RL
11	B	45	91.836	1707	11.64	2000	>RL
23	Na	45	710.933	502519	0.70	25000	>RL
24	Mg	45	14695.902	4674448	1.14	25000	>RL
27	Al	45	71283.021	8096982	3.20	10000	OUTCAL
39	K	45	15050.618	4870831	1.15	25000	>RL
44	Ca	45	150746.349	2756075	0.74	25000	OUTCAL
47	Ti	45	218.303	26757	1.74	2000	>RL
51	V	45	120.471	507482	0.74	2000	>RL
52	Cr	45	64.374	325502	0.95	2000	>RL
55	Mn	45	669.674	1810351	0.29	2000	>RL
56	Fe	45	68489.296	295336130	2.52	10000	OUTCAL
59	Co	72	28.688	231614	0.30	2000	>RL
60	Ni	72	45.646	101883	0.62	2000	>RL
63	Cu	72	22.158	139102	0.24	2000	>RL
66	Zn	72	247.537	246972	0.58	2000	>RL
75	As	72	26.241	22267	1.10	2000	>RL
78	Se	72	5.354	317	7.10	2000	>RL
88	Sr	115	428.805	1541261	0.32	2000	>RL
95	Mo	115	1.330	4437	4.07	2000	
107	Ag	115	0.091	1031	8.43	500	
111	Cd	115	0.699	1056	2.03	2000	>RL
118	Sn	115	4.456	14741	1.25	2000	>RL
121	Sb	115	3.076	14804	1.26	500	>RL
137	Ba	115	868.740	1304298	0.35	2000	>RL
205	Tl	209	0.647	14287	2.41	2000	
208	Pb	209	52.209	1533241	0.37	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	841719	1.25	989663	85.05	70	120	
72	Ge	626382	0.65	739879	84.66	70	120	
115	In	5579294	1.16	6565136	84.98	70	120	
209	Bi	13510359	0.85	15222533	88.75	70	120	

Sample Report

Date Acquired	5/16/16 6:01 PM	Sample Name	1605071-40A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	193SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	59.578	2510	0.88	2000	>RL
9	Be	45	2.875	161	8.81	2000	>RL
11	B	45	76.262	1472	5.02	2000	>RL
23	Na	45	1110.107	776750	0.35	25000	>RL
24	Mg	45	13528.341	4401768	0.85	25000	>RL
27	Al	45	71772.272	8341124	1.48	10000	OUTCAL
39	K	45	16756.911	5542731	1.54	25000	>RL
44	Ca	45	31323.183	585954	0.50	25000	OUTCAL
47	Ti	45	298.831	37462	1.27	2000	>RL
51	V	45	101.953	439668	0.51	2000	>RL
52	Cr	45	65.040	336389	0.60	2000	>RL
55	Mn	45	552.660	1528422	0.68	2000	>RL
56	Fe	45	63593.209	280572113	1.61	10000	OUTCAL
59	Co	72	22.236	185734	1.75	2000	>RL
60	Ni	72	37.621	86920	1.16	2000	>RL
63	Cu	72	34.169	220152	0.81	2000	>RL
66	Zn	72	254.535	262673	1.54	2000	>RL
75	As	72	31.821	27897	0.49	2000	>RL
78	Se	72	5.236	322	2.28	2000	>RL
88	Sr	115	257.481	995965	0.57	2000	>RL
95	Mo	115	1.674	6000	1.85	2000	
107	Ag	115	0.161	1887	0.64	500	
111	Cd	115	0.562	916	12.33	2000	>RL
118	Sn	115	4.416	15730	1.38	2000	>RL
121	Sb	115	4.091	21125	1.03	500	>RL
137	Ba	115	411.612	664999	0.29	2000	>RL
205	Tl	209	0.596	13855	1.91	2000	
208	Pb	209	180.740	5569399	0.69	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	860949	0.17	989663	86.99	70	120	
72	Ge	647913	1.03	739879	87.57	70	120	
115	In	6003404	0.48	6565136	91.44	70	120	
209	Bi	14203852	0.58	15222533	93.31	70	120	

Sample Report

Date Acquired	5/16/16 6:03 PM	Sample Name	1605071-41A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	194SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	83.174	3581	0.88	2000	>RL
9	Be	45	3.235	185	5.97	2000	>RL
11	B	45	114.808	2202	3.27	2000	>RL
23	Na	45	4122.549	2825411	0.22	25000	>RL
24	Mg	45	17236.369	5743438	1.51	25000	>RL
27	Al	45	89186.883	10611159	2.47	10000	OUTCAL
39	K	45	18983.970	6423293	1.68	25000	>RL
44	Ca	45	68927.506	1320234	0.95	25000	OUTCAL
47	Ti	45	433.671	55664	1.44	2000	>RL
51	V	45	125.888	555441	1.42	2000	>RL
52	Cr	45	80.619	426535	0.45	2000	>RL
55	Mn	45	569.344	1612416	0.57	2000	>RL
56	Fe	45	80816.341	365169168	2.03	10000	OUTCAL
59	Co	72	27.305	229973	1.25	2000	>RL
60	Ni	72	49.640	115541	1.11	2000	>RL
63	Cu	72	20.343	133478	0.34	2000	>RL
66	Zn	72	214.902	223706	1.13	2000	>RL
75	As	72	22.911	20294	1.19	2000	>RL
78	Se	72	5.701	348	4.64	2000	>RL
88	Sr	115	353.754	1357883	0.92	2000	>RL
95	Mo	115	2.037	7237	3.77	2000	>RL
107	Ag	115	0.100	1196	0.90	500	
111	Cd	115	0.425	690	3.35	2000	>RL
118	Sn	115	4.620	16284	2.03	2000	>RL
121	Sb	115	0.670	3593	3.77	500	
137	Ba	115	450.457	722349	0.32	2000	>RL
205	Tl	209	0.678	15628	1.45	2000	
208	Pb	209	33.931	1042343	0.21	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	881770	1.67	989663	89.10	70	120	
72	Ge	653411	1.22	739879	88.31	70	120	
115	In	5960309	2.18	6565136	90.79	70	120	
209	Bi	14117230	2.75	15222533	92.74	70	120	

Sample Report

Date Acquired	5/16/16 6:05 PM	Sample Name	1605071-42A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	195SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	85.974	3616	1.86	2000	>RL
9	Be	45	2.839	159	7.09	2000	>RL
11	B	45	162.016	2983	4.34	2000	>RL
23	Na	45	18722.307	12371114	0.38	25000	>RL
24	Mg	45	17823.392	5801340	0.96	25000	>RL
27	Al	45	70423.659	8186867	1.13	10000	OUTCAL
39	K	45	15329.990	5076516	2.29	25000	>RL
44	Ca	45	168958.404	3160869	0.90	25000	OUTCAL
47	Ti	45	443.723	55646	0.48	2000	>RL
51	V	45	112.329	484392	0.90	2000	>RL
52	Cr	45	85.659	442601	1.01	2000	>RL
55	Mn	45	403.370	1116170	0.55	2000	>RL
56	Fe	45	70359.205	310533348	0.47	10000	OUTCAL
59	Co	72	24.600	204390	0.67	2000	>RL
60	Ni	72	51.825	118980	0.65	2000	>RL
63	Cu	72	14.124	92392	1.26	2000	>RL
66	Zn	72	175.048	179794	0.70	2000	>RL
75	As	72	19.140	16749	0.68	2000	>RL
78	Se	72	4.807	300	4.36	2000	>RL
88	Sr	115	509.803	1946626	0.77	2000	>RL
95	Mo	115	2.454	8657	3.20	2000	>RL
107	Ag	115	0.057	720	8.19	500	
111	Cd	115	0.385	623	9.76	2000	
118	Sn	115	4.387	15432	0.63	2000	>RL
121	Sb	115	0.241	1405	1.54	500	
137	Ba	115	944.236	1505566	0.89	2000	>RL
205	Tl	209	0.512	11719	2.63	2000	
208	Pb	209	23.994	729643	0.12	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861297	0.76	989663	87.03	70	120	
72	Ge	644544	0.71	739879	87.11	70	120	
115	In	5930869	3.51	6565136	90.34	70	120	
209	Bi	13947958	2.25	15222533	91.63	70	120	

Sample Report

Date Acquired	5/16/16 6:07 PM	Sample Name	1605071-43A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	196SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	94.766	4066	0.38	2000	>RL
9	Be	45	3.316	189	4.24	2000	>RL
11	B	45	183.357	3428	1.40	2000	>RL
23	Na	45	12409.649	8385450	1.94	25000	>RL
24	Mg	45	17635.797	5857944	0.73	25000	>RL
27	Al	45	58403.901	6928542	2.66	10000	OUTCAL
39	K	45	20706.493	6981520	0.89	25000	>RL
44	Ca	45	71917.256	1373279	0.45	25000	OUTCAL
47	Ti	45	367.086	46985	1.20	2000	>RL
51	V	45	87.793	386840	0.58	2000	>RL
52	Cr	45	73.731	389074	0.22	2000	>RL
55	Mn	45	317.574	896983	1.03	2000	>RL
56	Fe	45	94943.035	427639681	1.06	10000	OUTCAL
59	Co	72	26.474	223696	1.20	2000	>RL
60	Ni	72	37.604	87902	1.09	2000	>RL
63	Cu	72	6.045	42061	2.32	2000	>RL
66	Zn	72	192.335	200887	0.73	2000	>RL
75	As	72	17.295	15406	1.26	2000	>RL
78	Se	72	5.464	337	4.80	2000	>RL
88	Sr	115	320.176	1238333	0.10	2000	>RL
95	Mo	115	1.206	4334	1.36	2000	
107	Ag	115	0.032	447	12.01	500	
111	Cd	115	0.101	172	7.82	2000	
118	Sn	115	4.799	16997	0.29	2000	>RL
121	Sb	115	0.093	662	9.57	500	
137	Ba	115	142.679	230518	0.77	2000	>RL
205	Tl	209	0.346	8227	1.73	2000	
208	Pb	209	18.775	586759	0.47	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	879025	0.91	989663	88.82	70	120	
72	Ge	655508	0.26	739879	88.60	70	120	
115	In	6003038	0.66	6565136	91.44	70	120	
209	Bi	14305961	0.38	15222533	93.98	70	120	

Sample Report

Date Acquired	5/16/16 6:09 PM	Sample Name	1605071-44A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	197SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	89.869	3841	0.90	2000	>RL
9	Be	45	3.698	210	5.77	2000	>RL
11	B	45	168.317	3145	9.61	2000	>RL
23	Na	45	7689.204	5192410	1.39	25000	>RL
24	Mg	45	15805.708	5229611	0.83	25000	>RL
27	Al	45	53914.046	6371624	1.38	10000	OUTCAL
39	K	45	20230.289	6795457	1.10	25000	>RL
44	Ca	45	89942.122	1710599	0.75	25000	OUTCAL
47	Ti	45	333.967	42576	1.54	2000	>RL
51	V	45	78.538	344918	0.87	2000	>RL
52	Cr	45	70.811	372261	0.62	2000	>RL
55	Mn	45	361.945	1018206	1.64	2000	>RL
56	Fe	45	89475.920	401439344	1.34	10000	OUTCAL
59	Co	72	39.210	332527	0.89	2000	>RL
60	Ni	72	40.441	94874	1.07	2000	>RL
63	Cu	72	4.022	29176	1.06	2000	>RL
66	Zn	72	200.354	210053	0.52	2000	>RL
75	As	72	15.878	14209	1.29	2000	>RL
78	Se	72	5.504	341	4.47	2000	>RL
88	Sr	115	4520.225	17633500	1.14	2000	OUTCAL
95	Mo	115	1.335	4836	2.15	2000	
107	Ag	115	0.025	368	3.18	500	
111	Cd	115	0.085	148	11.36	2000	
118	Sn	115	4.185	15094	1.91	2000	>RL
121	Sb	115	0.060	497	1.16	500	
137	Ba	115	141.243	230189	0.11	2000	>RL
205	Tl	209	0.284	6728	2.64	2000	
208	Pb	209	15.818	490476	0.48	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	875514	0.40	989663	88.47	70	120	
72	Ge	658040	0.73	739879	88.94	70	120	
115	In	6055464	0.68	6565136	92.24	70	120	
209	Bi	14175836	1.78	15222533	93.12	70	120	

Sample Report

Date Acquired	5/16/16 6:11 PM	Sample Name	1605071-45A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	198SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	64.223	2870	1.85	2000	>RL
9	Be	45	3.126	186	6.73	2000	>RL
11	B	45	91.849	1855	7.19	2000	>RL
23	Na	45	1359.110	998492	0.69	25000	>RL
24	Mg	45	14881.583	5140334	2.08	25000	>RL
27	Al	45	78199.164	9646148	1.56	10000	OUTCAL
39	K	45	18376.177	6447608	0.59	25000	>RL
44	Ca	45	28315.202	562291	0.36	25000	OUTCAL
47	Ti	45	327.488	43576	1.52	2000	>RL
51	V	45	112.405	514301	0.85	2000	>RL
52	Cr	45	71.979	394959	0.29	2000	>RL
55	Mn	45	653.933	1919513	0.53	2000	>RL
56	Fe	45	69726.823	326552671	0.66	10000	OUTCAL
59	Co	72	24.146	211237	1.00	2000	>RL
60	Ni	72	42.216	102115	0.23	2000	>RL
63	Cu	72	45.391	305243	1.18	2000	>RL
66	Zn	72	315.433	340878	0.77	2000	>RL
75	As	72	36.683	33663	0.35	2000	>RL
78	Se	72	5.874	370	9.04	2000	>RL
88	Sr	115	307.943	1235814	0.56	2000	>RL
95	Mo	115	2.086	7744	4.18	2000	>RL
107	Ag	115	0.218	2626	12.36	500	
111	Cd	115	0.709	1196	4.53	2000	>RL
118	Sn	115	5.387	19657	1.69	2000	>RL
121	Sb	115	4.887	26147	1.31	500	>RL
137	Ba	115	451.446	756707	1.56	2000	>RL
205	Tl	209	0.698	16777	0.76	2000	
208	Pb	209	209.887	6702511	0.67	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	913934	0.80	989663	92.35	70	120	
72	Ge	678671	1.29	739879	91.73	70	120	
115	In	6228709	0.36	6565136	94.88	70	120	
209	Bi	14723263	1.68	15222533	96.72	70	120	

Sample Report

Date Acquired	5/16/16 6:13 PM	Sample Name	1605071-46A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	199SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	68.609	3090	4.55	2000	>RL
9	Be	45	3.348	200	7.27	2000	>RL
11	B	45	87.069	1779	2.50	2000	>RL
23	Na	45	3161.337	2275478	0.72	25000	>RL
24	Mg	45	14946.060	5203740	1.59	25000	>RL
27	Al	45	79686.045	9909122	0.56	10000	OUTCAL
39	K	45	17870.109	6321452	0.87	25000	>RL
44	Ca	45	45788.629	916421	0.77	25000	OUTCAL
47	Ti	45	373.386	50084	0.55	2000	>RL
51	V	45	115.069	530684	1.00	2000	>RL
52	Cr	45	69.156	382596	1.29	2000	>RL
55	Mn	45	551.764	1632772	0.47	2000	>RL
56	Fe	45	74161.890	350124768	1.70	10000	OUTCAL
59	Co	72	24.712	216951	0.54	2000	>RL
60	Ni	72	41.783	101434	0.72	2000	>RL
63	Cu	72	22.372	152685	0.72	2000	>RL
66	Zn	72	194.169	210711	0.42	2000	>RL
75	As	72	30.235	27873	0.31	2000	>RL
78	Se	72	5.539	354	1.36	2000	>RL
88	Sr	115	311.378	1264291	0.09	2000	>RL
95	Mo	115	1.366	5141	5.44	2000	
107	Ag	115	0.098	1242	3.11	500	
111	Cd	115	0.363	624	4.45	2000	
118	Sn	115	4.381	16393	1.60	2000	>RL
121	Sb	115	1.068	5933	2.48	500	
137	Ba	115	352.885	598513	0.19	2000	>RL
205	Tl	209	0.614	14589	2.10	2000	
208	Pb	209	36.986	1168659	0.33	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	921234	0.71	989663	93.09	70	120	
72	Ge	681101	0.98	739879	92.06	70	120	
115	In	6305184	2.78	6565136	96.04	70	120	
209	Bi	14519737	0.72	15222533	95.38	70	120	

Sample Report

Date Acquired	5/16/16 6:15 PM	Sample Name	1605071-47A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	200SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	87.320	3765	2.90	2000	>RL
9	Be	45	3.061	176	5.38	2000	>RL
11	B	45	165.158	3115	2.63	2000	>RL
23	Na	45	14229.638	9651329	0.88	25000	>RL
24	Mg	45	17723.532	5914078	0.42	25000	>RL
27	Al	45	71016.095	8464422	2.97	10000	OUTCAL
39	K	45	15619.138	5301518	0.70	25000	>RL
44	Ca	45	177043.155	3395794	0.82	25000	OUTCAL
47	Ti	45	460.002	59140	0.53	2000	>RL
51	V	45	112.162	495831	0.64	2000	>RL
52	Cr	45	97.080	514018	0.64	2000	>RL
55	Mn	45	433.407	1229469	0.52	2000	>RL
56	Fe	45	70261.209	317935267	0.83	10000	OUTCAL
59	Co	72	26.138	220561	0.89	2000	>RL
60	Ni	72	57.085	133068	0.67	2000	>RL
63	Cu	72	16.805	111036	0.35	2000	>RL
66	Zn	72	178.328	186028	1.11	2000	>RL
75	As	72	19.173	17040	0.75	2000	>RL
78	Se	72	5.275	327	3.13	2000	>RL
88	Sr	115	503.741	1957904	0.17	2000	>RL
95	Mo	115	4.462	15993	1.81	2000	>RL
107	Ag	115	0.061	781	6.06	500	
111	Cd	115	0.371	610	7.23	2000	
118	Sn	115	5.933	20858	2.54	2000	>RL
121	Sb	115	0.240	1422	6.55	500	
137	Ba	115	669.179	1086391	0.61	2000	>RL
205	Tl	209	0.502	11764	2.71	2000	
208	Pb	209	25.549	794505	0.96	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	883003	0.82	989663	89.22	70	120	
72	Ge	654618	0.23	739879	88.48	70	120	
115	In	6032721	0.31	6565136	91.89	70	120	
209	Bi	14264535	1.04	15222533	93.71	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 18:17	Sample Name	1605071-53A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	201_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	299.530	12602	1.66	98.9	200	100.3	75	125	
9	Be	45	205.480	11427	1.26	3.8	200	100.8	75	125	
11	B	45	381.572	6875	0.38	177.0	200	102.3	75	125	
23	Na	45	15731.814	10440065	1.58	10853.8	5000	97.6	75	125	
24	Mg	45	22867.217	7469823	2.53	17593.3	5000	105.5	75	125	
27	Al	45	64658.101	7543925	1.12	59013.6	5000	112.9	75	125	
39	K	45	25711.946	8514482	0.22	20156.4	5000	111.1	75	125	
44	Ca	45	########	2446259	0.46	125427.9	5000	97.1	75	125	
47	Ti	45	557.449	70151	2.14	359.6	200	98.9	75	125	
51	V	45	288.642	1245711	0.55	88.1	200	100.3	75	125	
52	Cr	45	274.616	1420132	0.75	73.0	200	100.8	75	125	
55	Mn	45	575.449	1597709	0.40	389.4	200	93.0	75	125	
56	Fe	45	97102.927	430087547	1.29	90986.7	5000	122.3	75	125	
59	Co	72	228.797	1895552	0.56	29.2	200	99.8	75	125	
60	Ni	72	231.028	527844	0.52	36.5	200	97.3	75	125	
63	Cu	72	195.540	1235329	0.74	5.5	200	95.0	75	125	
66	Zn	72	388.674	397934	0.44	195.8	200	96.4	75	125	
75	As	72	217.689	188613	0.76	17.7	200	100.0	75	125	
78	Se	72	201.489	9835	1.03	5.4	200	98.0	75	125	
88	Sr	115	687.559	2602796	0.41	499.3	200	94.1	75	125	
95	Mo	115	192.436	669975	1.11	1.4	200	95.5	75	125	
107	Ag	115	176.982	1938519	0.78	0.1	200	88.5	75	125	
111	Cd	115	187.555	296143	0.83	0.2	200	93.7	75	125	
118	Sn	115	204.809	665385	0.52	5.1	200	99.9	75	125	
121	Sb	115	191.198	958126	0.20	0.2	200	95.5	75	125	
137	Ba	115	330.052	522018	0.49	135.0	200	97.5	75	125	
205	Tl	209	194.627	4378810	0.79	0.4	200	97.1	75	125	
208	Pb	209	209.523	6372901	0.88	17.5	200	96.0	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864374	0.64	989663	87.34	70	120	
72	Ge	643068	1.44	739879	86.92	70	120	
115	In	5880658	3.30	6565136	89.57	70	120	
209	Bi	14021642	0.43	15222533	92.11	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 18:19	Sample Name	1605071-53A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	202_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	308.595	12613	0.92	98.9	200	104.9	80	120	
9	Be	45	209.250	11306	0.87	3.8	200	102.7	80	120	
11	B	45	374.255	6554	1.62	177.0	200	98.6	80	120	
23	Na	45	15939.921	10276454	1.36	10853.8	1000	508.6	80	120	Fail
24	Mg	45	23014.948	7304144	1.86	17593.3	1000	542.2	80	120	Fail
27	Al	45	66648.950	7555516	2.01	59013.6	1000	763.5	80	120	Fail
39	K	45	25651.305	8252989	0.71	20156.4	1000	549.5	80	120	Fail
44	Ca	45	########	2320114	1.02	125427.9	1000	175.7	80	120	Fail
47	Ti	45	563.962	68956	0.49	359.6	200	102.2	80	120	
51	V	45	293.770	1231755	1.25	88.1	200	102.8	80	120	
52	Cr	45	274.475	1379018	1.11	73.0	200	100.7	80	120	
55	Mn	45	594.926	1604792	1.10	389.4	200	102.8	80	120	
56	Fe	45	95000.102	408813904	1.30	90986.7	1000	401.3	80	120	Fail
59	Co	72	229.114	1855863	1.71	29.2	200	99.9	80	120	
60	Ni	72	235.680	526494	1.03	36.5	200	99.6	80	120	
63	Cu	72	201.361	1243805	0.55	5.5	200	97.9	80	120	
66	Zn	72	399.014	399440	1.56	195.8	200	101.6	80	120	
75	As	72	219.944	186316	0.25	17.7	200	101.1	80	120	
78	Se	72	200.431	9566	0.26	5.4	200	97.5	80	120	
88	Sr	115	706.068	2577754	0.26	499.3	200	103.4	80	120	
95	Mo	115	187.664	630247	0.52	1.4	200	93.1	80	120	
107	Ag	115	192.357	2032087	0.56	0.1	200	96.1	80	120	
111	Cd	115	195.392	297553	0.85	0.2	200	97.6	80	120	
118	Sn	115	202.004	632934	0.66	5.1	200	98.5	80	120	
121	Sb	115	64.760	313042	0.79	0.2	200	32.3	80	120	Fail
137	Ba	115	429.321	654808	1.16	135.0	200	147.2	80	120	Fail
205	Tl	209	195.267	4334928	1.25	0.4	200	97.4	80	120	
208	Pb	209	211.624	6351126	0.89	17.5	200	97.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	839765	0.62	989663	84.85	70	120	
72	Ge	628707	0.64	739879	84.97	70	120	
115	In	5667651	1.50	6565136	86.33	70	120	
209	Bi	13837731	1.29	15222533	90.90	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 18:21	Sample Name	1605071-53A MSD
Data Batch	160516.b	Comment	MSD 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	312.784	12601	0.80	98.9	200	107.0	80	120	
9	Be	45	205.879	10964	1.59	3.8	200	101.0	80	120	
11	B	45	389.221	6713	2.10	177.0	200	106.1	80	120	
23	Na	45	16296.448	10354763	1.38	10853.8	1000	544.3	80	120	Fail
24	Mg	45	23416.729	7324631	0.73	17593.3	1000	582.3	80	120	Fail
27	Al	45	66515.586	7431867	2.24	59013.6	1000	750.2	80	120	Fail
39	K	45	26303.800	8340229	1.42	20156.4	1000	614.7	80	120	Fail
44	Ca	45	########	2382698	0.24	125427.9	1000	709.3	80	120	Fail
47	Ti	45	550.353	66328	0.42	359.6	200	95.4	80	120	
51	V	45	291.860	1206166	0.78	88.1	200	101.9	80	120	
52	Cr	45	276.385	1368636	0.25	73.0	200	101.7	80	120	
55	Mn	45	603.095	1603413	0.39	389.4	200	106.9	80	120	
56	Fe	45	98689.312	418598792	1.03	90986.7	1000	770.3	80	120	Fail
59	Co	72	229.105	1825824	0.60	29.2	200	99.9	80	120	
60	Ni	72	236.759	520351	0.58	36.5	200	100.1	80	120	
63	Cu	72	201.871	1226801	0.87	5.5	200	98.2	80	120	
66	Zn	72	401.478	395393	0.72	195.8	200	102.8	80	120	
75	As	72	219.113	182613	0.12	17.7	200	100.7	80	120	
78	Se	72	200.156	9399	2.64	5.4	200	97.4	80	120	
88	Sr	115	692.136	2500189	1.14	499.3	200	96.4	80	120	
95	Mo	115	187.886	624354	0.02	1.4	200	93.2	80	120	
107	Ag	115	191.984	2006779	0.73	0.1	200	96.0	80	120	
111	Cd	115	191.752	288897	1.07	0.2	200	95.8	80	120	
118	Sn	115	201.590	625024	0.19	5.1	200	98.3	80	120	
121	Sb	115	65.168	311734	0.39	0.2	200	32.5	80	120	Fail
137	Ba	115	351.108	529883	0.52	135.0	200	108.0	80	120	
205	Tl	209	198.799	4289995	1.11	0.4	200	99.2	80	120	
208	Pb	209	213.166	6218209	0.73	17.5	200	97.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	827709	0.36	989663	83.64	70	120	
72	Ge	618540	0.50	739879	83.60	70	120	
115	In	5609453	2.38	6565136	85.44	70	120	
209	Bi	13452531	2.44	15222533	88.37	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 18:22	Sample Name	CCV8-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	204_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	217.071	8691	1.98	200	108.5	90	110	
9	Be	45	209.591	11086	0.59	200	104.8	90	110	
11	B	45	217.666	3784	4.20	200	108.8	90	110	
23	Na	45	5138.682	3273142	0.83	5000	102.8	90	110	
24	Mg	45	5094.892	1583302	0.76	5000	101.9	90	110	
27	Al	45	4949.710	549432	1.01	5000	99.0	90	110	
39	K	45	5067.389	1629970	0.95	5000	101.3	90	110	
44	Ca	45	4809.238	86073	1.65	5000	96.2	90	110	
47	Ti	45	202.801	24274	2.43	200	101.4	90	110	
51	V	45	203.029	833961	0.84	200	101.5	90	110	
52	Cr	45	203.781	1002690	0.81	200	101.9	90	110	
55	Mn	45	200.190	529115	1.02	200	100.1	90	110	
56	Fe	45	5203.833	21934996	2.16	5000	104.1	90	110	
59	Co	72	205.681	1676341	0.68	200	102.8	90	110	
60	Ni	72	204.373	459404	0.46	200	102.2	90	110	
63	Cu	72	205.669	1278115	0.49	200	102.8	90	110	
66	Zn	72	203.898	205488	0.61	200	101.9	90	110	
75	As	72	204.425	174242	0.24	200	102.2	90	110	
78	Se	72	199.208	9566	2.02	200	99.6	90	110	
88	Sr	115	191.552	720339	1.21	200	95.8	90	110	
95	Mo	115	192.399	665494	1.01	200	96.2	90	110	
107	Ag	115	198.179	2156401	0.68	200	99.1	90	110	
111	Cd	115	194.119	304492	0.48	200	97.1	90	110	
118	Sn	115	195.223	630237	0.46	200	97.6	90	110	
121	Sb	115	199.385	992480	0.39	200	99.7	90	110	
137	Ba	115	197.076	309611	0.96	200	98.5	90	110	
205	Tl	209	194.374	4391033	0.40	200	97.2	90	110	
208	Pb	209	193.592	5912909	0.27	200	96.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	822124	0.71	989663	83.07	70	120	
72	Ge	632554	0.47	739879	85.49	70	120	
115	In	5841340	3.11	6565136	88.98	70	120	
209	Bi	14080226	0.99	15222533	92.50	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 18:27	Sample Name	LCVL8-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	206LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.521	491	5.81	10	115.2	70	130	
9	Be	45	1.258	70	14.03	1	125.8	70	130	
11	B	45	29.502	639	4.85	20	147.5	70	130	Fail
23	Na	45	124.345	126077	2.38	100	124.3	70	130	
24	Mg	45	113.461	37009	7.99	100	113.5	70	130	
27	Al	45	140.685	16278	18.19	100	140.7	70	130	Fail
39	K	45	104.872	77480	2.08	100	104.9	70	130	
44	Ca	45	162.410	3190	21.96	100	162.4	70	130	Fail
47	Ti	45	5.521	683	2.97	5	110.4	70	130	
51	V	45	0.993	6328	8.96	1	99.3	70	130	
52	Cr	45	5.331	28773	0.10	5	106.6	70	130	
55	Mn	45	5.285	15158	2.92	5	105.7	70	130	
56	Fe	45	156.792	696607	20.79	100	156.8	70	130	Fail
59	Co	72	5.257	44412	2.08	5	105.1	70	130	
60	Ni	72	5.329	12752	0.48	5	106.6	70	130	
63	Cu	72	4.989	35204	1.26	5	99.8	70	130	
66	Zn	72	5.375	5877	4.72	5	107.5	70	130	
75	As	72	5.060	4598	3.88	5	101.2	70	130	
78	Se	72	5.407	334	6.57	5	108.1	70	130	
88	Sr	115	5.213	20409	4.20	5	104.3	70	130	
95	Mo	115	4.799	17210	0.05	5	96.0	70	130	
107	Ag	115	2.006	22664	0.95	2	100.3	70	130	
111	Cd	115	1.126	1836	5.35	1	112.6	70	130	
118	Sn	115	4.917	17485	1.48	5	98.3	70	130	
121	Sb	115	2.115	11077	4.55	2	105.8	70	130	
137	Ba	115	5.039	8217	3.61	5	100.8	70	130	
205	Tl	209	1.139	26973	4.27	1	113.9	70	130	
208	Pb	209	1.012	36688	6.02	1	101.2	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	847606	0.79	989663	85.65	70	120	
72	Ge	654071	0.41	739879	88.40	70	120	
115	In	6036873	1.64	6565136	91.95	70	120	
209	Bi	14617183	1.77	15222533	96.02	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 18:29	Sample Name	CCB8-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	207_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.494	37	29.2	2	5	
9	Be	45	0.146	10	47.8	0.4	0.3	
11	B	45	9.616	294	8.3	10	10	
23	Na	45	25.846	62342	1.4	50	100	
24	Mg	45	5.066	2275	65.7	50	100	
27	Al	45	21.968	2680	57.0	50	10	FailAq
39	K	45	8.951	46562	0.7	50	100	
44	Ca	45	33.489	812	59.2	50	100	
47	Ti	45	0.192	26	49.4	4	3	
51	V	45	-0.075	1816	21.0	4	3	
52	Cr	45	0.093	2249	15.8	2	2	
55	Mn	45	0.028	851	35.9	2	3	
56	Fe	45	29.671	143637	58.9	50	50	
59	Co	72	0.069	698	43.1	2	3	
60	Ni	72	0.174	786	18.9	2	3	
63	Cu	72	-0.141	2330	10.6	2	2	
66	Zn	72	0.316	614	8.2	4	2	
75	As	72	0.022	162	11.2	2	2	
78	Se	72	0.142	75	5.7	1	2	
88	Sr	115	0.224	1007	61.7	4	3	
95	Mo	115	0.077	319	65.6	2	2	
107	Ag	115	0.045	598	54.9	0.4	1	
111	Cd	115	0.060	107	43.0	0.4	0.3	
118	Sn	115	-0.038	972	19.2	4	3	
121	Sb	115	0.145	936	37.3	2	0.8	
137	Ba	115	0.117	220	63.7	2	3	
205	Tl	209	0.109	2824	27.2	2	0.5	
208	Pb	209	-0.006	4431	22.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	849034	1.40	989663	85.79	70	120	
72	Ge	658317	0.65	739879	88.98	70	120	
115	In	6023431	0.85	6565136	91.75	70	120	
209	Bi	14490985	1.44	15222533	95.19	70	120	

Sample Report

Date Acquired	5/16/16 6:31 PM	Sample Name	1605071-48A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	208SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	100.849	4237	1.43	2000	>RL
9	Be	45	3.246	182	12.72	2000	>RL
11	B	45	185.144	3389	2.36	2000	>RL
23	Na	45	13234.222	8755648	1.02	25000	>RL
24	Mg	45	17939.328	5836730	1.47	25000	>RL
27	Al	45	61340.552	7129334	0.42	10000	OUTCAL
39	K	45	20019.755	6613073	1.49	25000	>RL
44	Ca	45	131395.524	2457519	0.30	25000	OUTCAL
47	Ti	45	354.049	44389	1.26	2000	>RL
51	V	45	93.966	405413	1.25	2000	>RL
52	Cr	45	75.311	389243	0.90	2000	>RL
55	Mn	45	343.284	949733	0.96	2000	>RL
56	Fe	45	90361.233	398716029	1.40	10000	OUTCAL
59	Co	72	29.848	248128	1.22	2000	>RL
60	Ni	72	38.860	89360	0.60	2000	>RL
63	Cu	72	6.964	47195	1.93	2000	>RL
66	Zn	72	191.044	196315	0.47	2000	>RL
75	As	72	18.283	16015	0.94	2000	>RL
78	Se	72	5.539	335	10.15	2000	>RL
88	Sr	115	530.666	2029236	1.03	2000	>RL
95	Mo	115	1.356	4812	0.94	2000	
107	Ag	115	0.037	497	2.68	500	
111	Cd	115	0.153	253	14.83	2000	
118	Sn	115	4.425	15580	0.73	2000	>RL
121	Sb	115	0.196	1178	8.50	500	
137	Ba	115	208.793	333509	0.32	2000	>RL
205	Tl	209	0.422	9780	1.70	2000	
208	Pb	209	18.983	582289	0.86	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861047	0.94	989663	87.00	70	120	
72	Ge	644933	1.04	739879	87.17	70	120	
115	In	5935499	1.02	6565136	90.41	70	120	
209	Bi	14048776	2.47	15222533	92.29	70	120	

Sample Report

Date Acquired	5/16/16 6:33 PM	Sample Name	1605071-49A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	209SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	88.025	3701	1.65	2000	>RL
9	Be	45	3.325	186	9.51	2000	>RL
11	B	45	174.779	3208	0.67	2000	>RL
23	Na	45	7595.338	5045916	1.37	25000	>RL
24	Mg	45	15316.759	4985957	1.24	25000	>RL
27	Al	45	51280.673	5962607	1.35	10000	OUTCAL
39	K	45	19509.843	6448774	0.59	25000	>RL
44	Ca	45	86308.321	1614956	1.05	25000	OUTCAL
47	Ti	45	294.097	36886	1.23	2000	>RL
51	V	45	75.562	326560	0.79	2000	>RL
52	Cr	45	68.747	355598	0.21	2000	>RL
55	Mn	45	312.982	866258	0.41	2000	>RL
56	Fe	45	87745.906	387240749	2.32	10000	OUTCAL
59	Co	72	24.272	203413	0.70	2000	>RL
60	Ni	72	37.443	86813	0.63	2000	>RL
63	Cu	72	3.911	28120	1.21	2000	>RL
66	Zn	72	193.900	200865	0.97	2000	>RL
75	As	72	15.431	13648	0.92	2000	>RL
78	Se	72	5.167	320	2.48	2000	>RL
88	Sr	115	329.429	1265689	0.74	2000	>RL
95	Mo	115	1.461	5205	2.32	2000	
107	Ag	115	0.054	686	24.77	500	
111	Cd	115	0.144	239	31.74	2000	
118	Sn	115	4.423	15649	2.11	2000	>RL
121	Sb	115	0.161	1003	21.60	500	
137	Ba	115	65.809	105634	1.07	2000	>RL
205	Tl	209	0.322	7681	5.15	2000	
208	Pb	209	15.799	494921	0.51	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861361	1.16	989663	87.04	70	120	
72	Ge	650138	0.60	739879	87.87	70	120	
115	In	5963958	1.08	6565136	90.84	70	120	
209	Bi	14324086	2.22	15222533	94.10	70	120	

Sample Report

Date Acquired	5/16/16 6:35 PM	Sample Name	1605071-50A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	210SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	69.962	3079	2.36	2000	>RL
9	Be	45	3.206	187	14.43	2000	>RL
11	B	45	95.006	1885	1.07	2000	>RL
23	Na	45	1331.339	964401	0.78	25000	>RL
24	Mg	45	15809.406	5378579	1.27	25000	>RL
27	Al	45	88418.514	10743514	1.37	10000	OUTCAL
39	K	45	20472.938	7071174	2.59	25000	>RL
44	Ca	45	28717.989	561726	0.33	25000	OUTCAL
47	Ti	45	345.382	45272	0.97	2000	>RL
51	V	45	122.087	550057	0.10	2000	>RL
52	Cr	45	81.922	442547	0.61	2000	>RL
55	Mn	45	690.969	1997872	0.08	2000	>RL
56	Fe	45	75425.807	347953986	1.51	10000	OUTCAL
59	Co	72	27.320	234522	0.51	2000	>RL
60	Ni	72	45.910	108947	0.92	2000	>RL
63	Cu	72	46.719	308197	0.82	2000	>RL
66	Zn	72	315.433	334521	1.10	2000	>RL
75	As	72	41.744	37574	0.86	2000	>RL
78	Se	72	5.843	362	9.65	2000	>RL
88	Sr	115	295.747	1169003	0.45	2000	>RL
95	Mo	115	2.474	9036	3.17	2000	>RL
107	Ag	115	0.193	2294	7.93	500	
111	Cd	115	0.694	1152	6.23	2000	>RL
118	Sn	115	8.887	31214	0.91	2000	>RL
121	Sb	115	4.935	26006	1.72	500	>RL
137	Ba	115	441.602	729057	0.63	2000	>RL
205	Tl	209	0.786	18401	3.49	2000	
208	Pb	209	249.347	7773839	0.42	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	900254	0.86	989663	90.97	70	120	
72	Ge	665977	0.53	739879	90.01	70	120	
115	In	6135048	0.81	6565136	93.45	70	120	
209	Bi	14377409	2.07	15222533	94.45	70	120	

Sample Report

Date Acquired	5/16/16 6:37 PM	Sample Name	1605071-51A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	211SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	69.124	3046	1.29	2000	>RL
9	Be	45	3.072	180	11.07	2000	>RL
11	B	45	95.200	1890	4.21	2000	>RL
23	Na	45	4042.532	2833175	0.22	25000	>RL
24	Mg	45	14805.950	5043023	1.81	25000	>RL
27	Al	45	78926.361	9601958	0.62	10000	OUTCAL
39	K	45	17325.120	5996943	2.18	25000	>RL
44	Ca	45	47784.842	935636	0.23	25000	OUTCAL
47	Ti	45	381.837	50107	0.25	2000	>RL
51	V	45	111.383	502594	1.13	2000	>RL
52	Cr	45	70.937	383872	1.74	2000	>RL
55	Mn	45	512.660	1484215	0.42	2000	>RL
56	Fe	45	70887.146	327387391	1.24	10000	OUTCAL
59	Co	72	24.356	210949	0.27	2000	>RL
60	Ni	72	41.913	100377	1.35	2000	>RL
63	Cu	72	19.467	131487	0.88	2000	>RL
66	Zn	72	191.040	204521	0.28	2000	>RL
75	As	72	22.561	20555	0.67	2000	>RL
78	Se	72	4.968	321	12.20	2000	>RL
88	Sr	115	288.255	1136020	0.44	2000	>RL
95	Mo	115	2.016	7352	2.25	2000	>RL
107	Ag	115	0.110	1346	15.77	500	
111	Cd	115	0.348	582	9.13	2000	
118	Sn	115	4.896	17647	0.93	2000	>RL
121	Sb	115	0.708	3885	7.74	500	
137	Ba	115	366.124	602672	0.23	2000	>RL
205	Tl	209	0.650	15242	4.87	2000	
208	Pb	209	31.324	979458	0.60	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	901265	0.44	989663	91.07	70	120	
72	Ge	671885	0.61	739879	90.81	70	120	
115	In	6117151	1.15	6565136	93.18	70	120	
209	Bi	14358486	1.05	15222533	94.32	70	120	

Sample Report

Date Acquired	5/16/16 6:39 PM	Sample Name	1605071-52A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	212SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	91.822	3883	1.17	2000	>RL
9	Be	45	3.157	178	6.07	2000	>RL
11	B	45	168.233	3110	4.18	2000	>RL
23	Na	45	18509.916	12301648	1.44	25000	>RL
24	Mg	45	18946.477	6202244	2.09	25000	>RL
27	Al	45	72820.020	8515145	2.21	10000	OUTCAL
39	K	45	15795.759	5259453	0.91	25000	>RL
44	Ca	45	195546.143	3679425	0.17	25000	OUTCAL
47	Ti	45	468.832	59133	1.60	2000	>RL
51	V	45	120.974	524490	0.64	2000	>RL
52	Cr	45	83.484	433910	0.48	2000	>RL
55	Mn	45	409.769	1140395	0.65	2000	>RL
56	Fe	45	76047.255	337579418	0.14	10000	OUTCAL
59	Co	72	25.526	212382	0.69	2000	>RL
60	Ni	72	50.107	115212	1.57	2000	>RL
63	Cu	72	15.415	100688	0.57	2000	>RL
66	Zn	72	186.627	191944	0.92	2000	>RL
75	As	72	21.572	18887	2.34	2000	>RL
78	Se	72	5.137	316	8.74	2000	>RL
88	Sr	115	583.328	2204614	0.44	2000	>RL
95	Mo	115	2.364	8259	2.95	2000	>RL
107	Ag	115	0.050	631	11.08	500	
111	Cd	115	0.376	601	4.45	2000	
118	Sn	115	4.868	16832	1.30	2000	>RL
121	Sb	115	0.309	1723	9.99	500	
137	Ba	115	941.325	1485676	1.62	2000	>RL
205	Tl	209	0.530	12152	4.92	2000	
208	Pb	209	27.899	850167	0.75	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	866238	0.39	989663	87.53	70	120	
72	Ge	645447	0.08	739879	87.24	70	120	
115	In	5870179	3.04	6565136	89.41	70	120	
209	Bi	13984165	0.39	15222533	91.86	70	120	

Sample Report

Date Acquired	5/16/16 6:41 PM	Sample Name	1605071-54A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	213SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	85.602	3668	1.82	2000	>RL
9	Be	45	3.347	191	13.98	2000	>RL
11	B	45	173.963	3254	0.31	2000	>RL
23	Na	45	7701.116	5212167	0.85	25000	>RL
24	Mg	45	15872.382	5263434	0.92	25000	>RL
27	Al	45	53038.492	6282133	1.39	10000	OUTCAL
39	K	45	20235.515	6812199	2.10	25000	>RL
44	Ca	45	65280.534	1244400	0.45	25000	OUTCAL
47	Ti	45	309.384	39529	0.16	2000	>RL
51	V	45	77.229	339973	0.26	2000	>RL
52	Cr	45	71.527	376850	1.02	2000	>RL
55	Mn	45	329.980	930408	0.94	2000	>RL
56	Fe	45	93799.454	421788143	1.95	10000	OUTCAL
59	Co	72	27.797	235996	1.19	2000	>RL
60	Ni	72	39.719	93268	0.10	2000	>RL
63	Cu	72	3.833	27986	1.60	2000	>RL
66	Zn	72	204.313	214393	0.66	2000	>RL
75	As	72	15.495	13883	0.71	2000	>RL
78	Se	72	5.498	341	1.96	2000	>RL
88	Sr	115	268.654	1045723	0.58	2000	>RL
95	Mo	115	1.443	5210	6.03	2000	
107	Ag	115	0.035	486	17.65	500	
111	Cd	115	0.081	141	16.76	2000	
118	Sn	115	4.306	15459	2.58	2000	>RL
121	Sb	115	0.093	667	18.03	500	
137	Ba	115	78.783	128093	1.46	2000	>RL
205	Tl	209	0.257	6249	4.29	2000	
208	Pb	209	15.733	498599	0.30	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	877475	0.22	989663	88.66	70	120	
72	Ge	658651	0.96	739879	89.02	70	120	
115	In	6041965	1.39	6565136	92.03	70	120	
209	Bi	14485598	0.41	15222533	95.16	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 18:51	Sample Name	CCV9-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	218_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.687	8601	1.68	200	106.8	90	110	
9	Be	45	210.421	11188	1.47	200	105.2	90	110	
11	B	45	221.927	3875	1.45	200	111.0	90	110	Fail
23	Na	45	5078.194	3252299	0.32	5000	101.6	90	110	
24	Mg	45	5012.323	1565994	0.39	5000	100.2	90	110	
27	Al	45	4899.318	546714	1.00	5000	98.0	90	110	
39	K	45	5071.714	1639996	0.43	5000	101.4	90	110	
44	Ca	45	4834.518	86981	0.63	5000	96.7	90	110	
47	Ti	45	199.759	24039	1.15	200	99.9	90	110	
51	V	45	203.382	839924	0.81	200	101.7	90	110	
52	Cr	45	203.141	1004906	0.43	200	101.6	90	110	
55	Mn	45	197.856	525743	0.71	200	98.9	90	110	
56	Fe	45	5087.905	21562741	0.26	5000	101.8	90	110	
59	Co	72	206.484	1677647	0.83	200	103.2	90	110	
60	Ni	72	204.471	458192	0.91	200	102.2	90	110	
63	Cu	72	205.512	1273165	0.51	200	102.8	90	110	
66	Zn	72	203.486	204438	0.21	200	101.7	90	110	
75	As	72	204.877	174084	0.19	200	102.4	90	110	
78	Se	72	200.033	9576	0.84	200	100.0	90	110	
88	Sr	115	189.674	720787	1.13	200	94.8	90	110	
95	Mo	115	190.352	665218	0.42	200	95.2	90	110	
107	Ag	115	195.760	2151943	0.31	200	97.9	90	110	
111	Cd	115	191.441	303397	0.64	200	95.7	90	110	
118	Sn	115	192.350	627291	0.66	200	96.2	90	110	
121	Sb	115	195.566	983471	0.43	200	97.8	90	110	
137	Ba	115	195.752	310670	0.16	200	97.9	90	110	
205	Tl	209	195.609	4391889	0.58	200	97.8	90	110	
208	Pb	209	193.568	5876364	0.63	200	96.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	826513	0.88	989663	83.51	70	120	
72	Ge	630588	0.45	739879	85.23	70	120	
115	In	5898037	1.62	6565136	89.84	70	120	
209	Bi	13995254	1.38	15222533	91.94	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 18:55	Sample Name	LCVL9-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	220LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.985	465	2.27	10	109.9	70	130	
9	Be	45	1.146	64	7.75	1	114.6	70	130	
11	B	45	25.219	560	6.44	20	126.1	70	130	
23	Na	45	114.350	118595	1.84	100	114.4	70	130	
24	Mg	45	100.628	32613	2.30	100	100.6	70	130	
27	Al	45	97.887	11273	1.62	100	97.9	70	130	
39	K	45	100.969	75584	1.65	100	101.0	70	130	
44	Ca	45	102.701	2070	5.20	100	102.7	70	130	
47	Ti	45	4.724	580	7.34	5	94.5	70	130	
51	V	45	0.864	5730	1.43	1	86.4	70	130	
52	Cr	45	5.144	27595	0.32	5	102.9	70	130	
55	Mn	45	4.733	13541	1.92	5	94.7	70	130	
56	Fe	45	98.886	440677	0.92	100	98.9	70	130	
59	Co	72	5.131	42820	1.16	5	102.6	70	130	
60	Ni	72	5.150	12187	1.96	5	103.0	70	130	
63	Cu	72	4.877	34066	2.03	5	97.5	70	130	
66	Zn	72	4.988	5407	0.16	5	99.8	70	130	
75	As	72	5.006	4495	2.84	5	100.1	70	130	
78	Se	72	5.181	319	14.40	5	103.6	70	130	
88	Sr	115	4.796	18654	1.59	5	95.9	70	130	
95	Mo	115	4.789	17056	1.01	5	95.8	70	130	
107	Ag	115	1.910	21434	1.26	2	95.5	70	130	
111	Cd	115	0.912	1478	10.96	1	91.2	70	130	
118	Sn	115	4.624	16394	2.04	5	92.5	70	130	
121	Sb	115	1.984	10328	3.20	2	99.2	70	130	
137	Ba	115	4.890	7918	1.52	5	97.8	70	130	
205	Tl	209	1.010	23545	1.60	1	101.0	70	130	
208	Pb	209	0.921	33200	0.96	1	92.1	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	840578	0.23	989663	84.94	70	120	
72	Ge	646097	0.65	739879	87.32	70	120	
115	In	5994768	0.82	6565136	91.31	70	120	
209	Bi	14351976	0.52	15222533	94.28	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 19:11	Sample Name	CCB9-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	228_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.216	24	8.6	2	5	
9	Be	45	0.013	2	173.2	0.4	0.3	
11	B	45	2.796	170	2.0	10	10	
23	Na	45	14.825	53228	0.6	50	100	
24	Mg	45	1.497	1097	48.4	50	100	
27	Al	45	11.145	1393	46.9	50	10	FailAq
39	K	45	8.291	44695	0.7	50	100	
44	Ca	45	15.708	468	40.4	50	100	
47	Ti	45	0.087	12	31.5	4	3	
51	V	45	-0.134	1511	1.3	4	3	
52	Cr	45	0.010	1762	7.4	2	2	
55	Mn	45	-0.085	524	26.1	2	3	
56	Fe	45	11.572	62879	50.0	50	50	
59	Co	72	0.003	133	52.0	2	3	
60	Ni	72	0.072	526	8.3	2	3	
63	Cu	72	-0.232	1680	2.7	2	2	
66	Zn	72	0.173	448	1.9	4	2	
75	As	72	-0.044	99	14.0	2	2	
78	Se	72	0.207	75	0.8	1	2	
88	Sr	115	0.065	376	53.3	4	3	
95	Mo	115	0.013	87	16.8	2	2	
107	Ag	115	0.009	182	29.4	0.4	1	
111	Cd	115	0.009	23	14.3	0.4	0.3	
118	Sn	115	-0.187	462	8.1	4	3	
121	Sb	115	0.008	223	19.6	2	0.8	
137	Ba	115	0.068	137	51.9	2	3	
205	Tl	209	0.010	499	7.0	2	0.5	
208	Pb	209	-0.078	2105	12.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	818678	0.55	989663	82.72	70	120	
72	Ge	633690	0.50	739879	85.65	70	120	
115	In	5856719	0.63	6565136	89.21	70	120	
209	Bi	14267833	1.92	15222533	93.73	70	120	

ICP-MS4_160520C
For

DHL Work Order
1605071

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%)	BIAS MEAN CRITERIA (± 2%)	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	

Sample Report

Date Acquired	5/20/16 1:40 PM	Sample Name	1605071-28A
Data Batch	160520.b	Comment	SAMPICPMS_TWDOD
Data File Name	079_WS.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	-0.037	12	43.99	2000	
9	Be	45	0.016	5	98.97	2000	
11	B	45	45.197	1038	8.34	2000	>RL
23	Na	45	211.400	195113	1.35	25000	>RL
24	Mg	45	11.364	5153	3.05	25000	
27	Al	45	70.238	9695	1.47	10000	>RL
39	K	45	56.081	66058	0.76	25000	
44	Ca	45	181.518	3957	4.79	25000	>RL
47	Ti	45	0.182	28	36.66	2000	
51	V	45	0.163	3508	0.05	2000	
52	Cr	45	1.087	7203	3.89	2000	
55	Mn	45	0.690	2227	2.35	2000	
56	Fe	45	37.531	190078	0.14	10000	
59	Co	72	0.023	330	17.50	2000	
60	Ni	72	1.627	4628	3.40	2000	
63	Cu	72	0.596	6590	2.93	2000	
66	Zn	72	5.921	7267	1.38	2000	>RL
75	As	72	0.026	160	2.48	2000	
78	Se	72	0.124	76	13.52	2000	
88	Sr	115	1.003	4516	2.20	2000	
95	Mo	115	2.179	8870	1.26	2000	J
107	Ag	115	0.008	151	8.92	500	
111	Cd	115	0.003	17	39.99	2000	
118	Sn	115	0.121	919	3.58	2000	
121	Sb	115	0.028	313	25.09	500	
137	Ba	115	0.372	747	7.18	2000	
205	Tl	209	0.002	93	30.52	2000	
208	Pb	209	0.100	4187	0.37	2000	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	903777	0.69	900744	100.34	70	120	
72	Ge	700912	0.29	691836	101.31	70	120	
115	In	6691207	0.96	6634288	100.86	70	120	
209	Bi	16406658	0.62	16365010	100.25	70	120	

Sample Report

Date Acquired	5/20/16 1:42 PM	Sample Name	1605071-29A
Data Batch	160520.b	Comment	SAMPICPMS_TWDOD
Data File Name	080_WS.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.095	18	6.54	2000	
9	Be	45	0.062	7	56.77	2000	
11	B	45	52.885	1187	10.40	2000	>RL
23	Na	45	530.049	425323	0.20	25000	>RL
24	Mg	45	47.548	18333	1.02	25000	
27	Al	45	101.970	13733	2.22	10000	>RL
39	K	45	46.482	61727	0.44	25000	
44	Ca	45	387.874	8089	1.88	25000	>RL
47	Ti	45	0.272	40	44.09	2000	
51	V	45	0.234	3793	4.60	2000	
52	Cr	45	1.434	9074	2.62	2000	
55	Mn	45	1.213	3779	1.42	2000	
56	Fe	45	69.102	339455	0.46	10000	J
59	Co	72	0.036	447	5.63	2000	
60	Ni	72	1.352	3844	3.19	2000	
63	Cu	72	0.376	4927	2.05	2000	
66	Zn	72	3.969	4864	2.99	2000	J
75	As	72	0.039	170	12.35	2000	
78	Se	72	0.036	70	11.42	2000	
88	Sr	115	3.740	15989	1.05	2000	J
95	Mo	115	3.041	12168	4.07	2000	J
107	Ag	115	0.005	119	4.28	500	
111	Cd	115	0.002	13	43.30	2000	
118	Sn	115	0.082	749	7.37	2000	
121	Sb	115	0.024	283	15.43	500	
137	Ba	115	0.668	1302	2.05	2000	
205	Tl	209	0.001	70	14.29	2000	
208	Pb	209	0.075	3162	2.21	2000	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	891238	1.02	900744	98.94	70	120	
72	Ge	687696	0.95	691836	99.40	70	120	
115	In	6587711	1.71	6634288	99.30	70	120	
209	Bi	16072195	0.40	16365010	98.21	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	

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_160523F
For

DHL Work Order
1605071

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_160523F 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: Date of Completion: 05/24/2016

Second-Level Review: Date Stamp: 05/24/2016

REVIEWED/APPROVED

By Sherri Herschmann at 11:37:09 AM, 5/24/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160523F** **Run No.:** 85956

Analytical Run Date: 5/23/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:41:00 AM		
L2-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:43:00 AM		
L-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:45:00 AM		
10X-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:47:00 AM		
5X-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:49:00 AM		
2X-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:51:00 AM		
H-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:53:00 AM		
H2-160523	1	ICPMS_TWDOD	CAL	R85956	5/23/2016 10:55:00 AM		
ICSA-160523	1	ICPMS_TWDOD	ICSA	R85956	5/23/2016 11:03:00 AM		
ICSAB-160523	1	ICPMS_TWDOD	ICSB	R85956	5/23/2016 11:05:00 AM		
ICV-160523	1	ICPMS_TWDOD	ICV	R85956	5/23/2016 11:13:00 AM		
LCVL-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 11:22:00 AM		
ICB-160523	1	ICPMS_TWDOD	ICB	R85956	5/23/2016 11:30:00 AM		
CCV4-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 3:32:00 PM		
LCVL4-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 3:42:00 PM		
CCB4-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 3:45:00 PM		
MB-75166	5	ICPMS_TSDOD1	MBLK	75166	5/23/2016 3:47:00 PM		
LCS-75166	5	ICPMS_TSDOD1	LCS	75166	5/23/2016 3:49:00 PM		
LCSD-75166	5	ICPMS_TSDOD1	LCSD	75166	5/23/2016 3:51:00 PM		
1605096-14A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 3:55:00 PM		
1605096-14A SD	25	ICPMS_TSDOD1	SD	75166	5/23/2016 3:57:00 PM		
1605074-40A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 3:59:00 PM		
1605074-41A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:01:00 PM		
1605096-01A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:03:00 PM		
1605096-02A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:05:00 PM		
1605096-03A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:07:00 PM		
1605096-04A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:09:00 PM		
1605096-05A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:11:00 PM		
1605096-06A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:13:00 PM		
1605096-07A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:15:00 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

REVIEWED/APPROVED

By Sherri Herschmann at 11:37:25 AM, 5/24/2016

Run ID: **ICP-MS4_160523F** **Run No.:** 85956

1605096-14A PDS	5	ICPMS_TSDOD1	PDS	75166	5/23/2016 4:17:00 PM		
1605096-14A MS	5	ICPMS_TSDOD1	MS	75166	5/23/2016 4:19:00 PM		
1605096-14A MSD	5	ICPMS_TSDOD1	MSD	75166	5/23/2016 4:21:00 PM		
CCV5-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 4:23:00 PM		
LCVL5-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 4:27:00 PM		
CCB5-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 4:29:00 PM		
1605096-08A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:31:00 PM		
1605096-09A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:33:00 PM		
1605096-10A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:35:00 PM		
1605096-11A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:37:00 PM		
1605096-12A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:39:00 PM		
1605096-13A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:41:00 PM		
1605096-15A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:43:00 PM		
1605096-16A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:45:00 PM		
1605096-17A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:47:00 PM		
1605096-18A	5	ICPMS_TSDOD1	SAMP	75166	5/23/2016 4:49:00 PM		
CCV6-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 4:51:00 PM		
LCVL6-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 4:55:00 PM		
CCB6-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 4:57:00 PM		
MB-75237	5	ICPMS_TSDOD1	MBLK	75237	5/23/2016 5:00:00 PM		
LCS-75237	5	ICPMS_TSDOD1	LCS	75237	5/23/2016 5:02:00 PM		
LCSD-75237	5	ICPMS_TSDOD1	LCSD	75237	5/23/2016 5:04:00 PM		
1605121-01A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:08:00 PM		
1605121-01A SD	25	ICPMS_TSDOD1	SD	75237	5/23/2016 5:10:00 PM		
1605098-30A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:12:00 PM		
1605098-35A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:14:00 PM		
1605098-38A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:16:00 PM		
1605121-02A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:18:00 PM		
1605121-03A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:20:00 PM		
1605121-04A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:22:00 PM		
1605121-05A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:24:00 PM		
1605121-06A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:26:00 PM		
1605121-07A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:28:00 PM		
1605121-01A PDS	5	ICPMS_TSDOD1	PDS	75237	5/23/2016 5:30:00 PM		
1605121-01A MS	5	ICPMS_TSDOD1	MS	75237	5/23/2016 5:32:00 PM		S-flag Pb- Low

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_160523F** **Run No.:** 85956

1605121-01A MSD	5	ICPMS_TSDOD1	MSD	75237	5/23/2016 5:34:00 PM		S-flag Pb- High; R-flag Pb; Rerunning to verify per JD; Data accepted
CCV7-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 5:36:00 PM		
LCVL7-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 5:40:00 PM		
CCB7-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 5:42:00 PM		
1605121-08A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:44:00 PM		
1605121-09A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:46:00 PM		
1605121-10A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:48:00 PM		
1605121-11A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:50:00 PM		
1605121-12A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:52:00 PM		
1605121-13A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:54:00 PM		
1605121-14A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:56:00 PM		
1605121-15A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 5:58:00 PM		
1605121-16A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 6:00:00 PM		
1605121-17A	5	ICPMS_TSDOD1	SAMP	75237	5/23/2016 6:02:00 PM		
CCV8-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 6:04:00 PM		
LCVL8-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 6:08:00 PM		
CCB8-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 6:10:00 PM		
MB-75236	5	ICPMS_TSDOD1	MBLK	75236	5/23/2016 6:12:00 PM		
LCS-75236	5	ICPMS_TSDOD1	LCS	75236	5/23/2016 6:14:00 PM		
LCSD-75236	5	ICPMS_TSDOD1	LCSD	75236	5/23/2016 6:16:00 PM		
1605098-17A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:20:00 PM		
1605098-17A SD	25	ICPMS_TSDOD1	SD	75236	5/23/2016 6:22:00 PM		
1605071-32A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:24:00 PM		
1605071-38A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:26:00 PM		
1605098-12A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:28:00 PM		
1605098-13A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:30:00 PM		
1605098-14A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:32:00 PM		
1605098-15A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:34:00 PM		
1605098-16A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:36:00 PM		
1605098-18A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:38:00 PM		
1605098-19A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:40:00 PM		
1605098-17A PDS	5	ICPMS_TSDOD1	PDS	75236	5/23/2016 6:42:00 PM		
1605098-17A MS	5	ICPMS_TSDOD1	MS	75236	5/23/2016 6:44:00 PM		
1605098-17A MSD	5	ICPMS_TSDOD1	MSD	75236	5/23/2016 6:46:00 PM		
CCV9-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 6:48:00 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

DHL Analytical, Inc.

Run ID: **ICP-MS4_160523F** **Run No.:** 85956

LCVL9-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 6:52:00 PM		
CCB9-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 6:54:00 PM		
1605098-20A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:56:00 PM		
1605098-21A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 6:58:00 PM		
1605098-22A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:00:00 PM		
1605098-23A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:02:00 PM		
1605098-24A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:04:00 PM		
1605098-25A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:06:00 PM		
1605098-26A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:08:00 PM		
1605098-27A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:10:00 PM		
1605098-28A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:12:00 PM		
1605098-29A	5	ICPMS_TSDOD1	SAMP	75236	5/23/2016 7:14:00 PM		
CCV10-160523	1	ICPMS_TWDOD	CCV	R85956	5/23/2016 7:16:00 PM		
LCVL10-160523	1	ICPMS_TWDOD	LCVL	R85956	5/23/2016 7:20:00 PM		
CCB10-160523	1	ICPMS_TWDOD	CCB	R85956	5/23/2016 7:22:00 PM		

REVIEWED/APPROVED

By Sherri Herschmann at 11:46:09 AM, 5/24/2016

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-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\160523.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	L2-160523	CAL ICPMS_TW	2102	
14	CalStd	L-160523	CAL ICPMS_TW	2103	
15	CalStd	10X-160523	CAL ICPMS_TW	2104	
16	CalStd	5X-160523	CAL ICPMS_TW	2105	
17	CalStd	2X-160523	CAL ICPMS_TW	2106	
18	CalStd	H-160523	CAL ICPMS_TW	2107	
19	CalStd	H2-160523	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-160523	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160523	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-160523	ICV ICPMS_TW	2111	
29	ICB	BLANK	CCB ICPMS_TW	1102	
30	ICB	BLANK	CCB ICPMS_TW	1103	
31	LLICV	LCVL-160523	LCVLICPMS_TW	2112	
32	ICB	ICB-160523	ICB ICPMS_TW	1102	
33	ICB	ICB-160523	ICB ICPMS_TW	1103	
34	PB_W	MB-75178	MBLKICPMS_TW	2201	
35	LCS_W	LCS-75178	LCS ICPMS_TW	2202	
36	LCS_W	LCSD-75178	LCSDICPMS_TW	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605153-03A	SAMPICPMS_TW	2204	
39	SD	1605153-03A SD	SD ICPMS_TW	2205	
40	SAMP_W	1605152-01C	SAMPICPMS_TW	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		100	
39		500	
40		10	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	SAMP_W	1605162-01A	SAMP200.8	2210	
42	SAMP_W	1605149-04A	SAMPICPMS_TW	2211	
43	SAMP_W	1605149-08A	SAMPICPMS_TW	2212	
44	PDS	1605153-03A PDS	PDS ICPMS_TW	2207	
45	MS_W	1605153-03A MS	MS ICPMS_TW	2208	

Sample List

46	MS_W	1605153-03A MSD	MSD ICPMS_TW	2209
47	CCB	RINSE	CCB ICPMS_TW	1101
48	CCB	RINSE	CCB ICPMS_TW	1102
49	CCB	RINSE	CCB ICPMS_TW	1103
50	SAMP_W	1605149-04A	SAMPICPMS_TW	2211
51	CCV	CCV1-160523	CCV ICPMS_TW	1207
52	CCB	CCB1-160523	CCB ICPMS_TW	1102
53	LLCCV	LCVL1-160523	LCVLICPMS_TW	2112
54	CCB	CCB1-160523	CCB ICPMS_TW	1103
55	SAMP_W	1605149-04A	SAMPICPMS_TW	2504
56	PB	MB-75261	MBLK6020A_S	2301
57	LCS_S	LCS-75261	LCS 6020A_S	2302
58	LCS_S	LCSD-75261	LCSD6020A_S	2303
59	CCB	RINSE	CCB ICPMS_TW	1101
60	AllRef	1605185-01A	SAMP6020A_S	2304

#	Level	Dilution	Skip
41		10	
42		1	
43		1	
44		100	
45		100	
46		100	
47			
48			
49			
50		1	
51			
52			
53			
54			
55		1	
56		5	Skip
57		5	Skip
58		5	Skip
59			Skip
60		5	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	SD	1605185-01A SD	SD 6020A_S	2305	
62	Sample	1605191-01D	SAMP6020A_S	2306	
63	Sample	1605191-02D	SAMP6020A_S	2307	
64	Sample	1605191-03D	SAMP6020A_S	2308	
65	Sample	1605191-04D	SAMP6020A_S	2309	
66	Sample	1605191-05D	SAMP6020A_S	2310	
67	Sample	1605191-06D	SAMP6020A_S	2311	
68	Sample	1605185-02A	SAMP6020A_S	2312	
69	Sample	1605185-03A	SAMP6020A_S	2401	
70	Sample	1605185-04A	SAMP6020A_S	2402	
71	PDS	1605185-01A PDS	PDS 6020A_S	2403	
72	MS_S	1605185-01A MS	MS 6020A_S	2404	
73	MS_S	1605185-01A MSD	MSD 6020A_S	2405	

Sample List

74	CCV	CCV2-160523	CCV ICPMS_TW	1207
75	CCB	CCB2-160523	CCB ICPMS_TW	1102
76	LLCCV	LCVL2-160523	LCVLICPMS_TW	2112
77	CCB	CCB2-160523	CCB ICPMS_TW	1103
78	Sample	1605187-01A	SAMPICPMS_TS	2406
79	Sample	1605187-02A	SAMPICPMS_TS	2407
80	Sample	1605187-03A	SAMPICPMS_TS	2408

#	Level	Dilution	Skip
61		25	Skip
62		5	Skip
63		5	Skip
64		5	Skip
65		5	Skip
66		5	Skip
67		5	Skip
68		5	Skip
69		5	Skip
70		5	Skip
71		5	Skip
72		5	Skip
73		5	Skip
74			Skip
75			Skip
76			Skip
77			Skip
78		5	Skip
79		5	Skip
80		5	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	Sample	1605187-04A	SAMPICPMS_TS	2409	
82	Sample	1605187-05A	SAMPICPMS_TS	2410	
83	Sample	1605187-06A	SAMPICPMS_TS	2411	
84	Sample	1605187-07A	SAMPICPMS_TS	2412	
85	Sample	1605187-08A	SAMPICPMS_TS	2501	
86	Sample	1605187-09A	SAMPICPMS_TS	2502	
87	Sample	1605187-10A	SAMPICPMS_TS	2503	
88	CCV	CCV3-160523	CCV ICPMS_TW	1207	
89	CCB	CCB3-160523	CCB ICPMS_TW	1102	
90	LLCCV	LCVL3-160523	LCVLICPMS_TW	2512	
91	CCB	CCB3-160523	CCB ICPMS_TW	1103	
92	PB	MB-75256	MBLKICPMS_TS	3101	
93	LCS_S	LCS-75256	LCS ICPMS_TS	3102	
94	LCS_S	LCSD-75256	LCSDICPMS_TS	3103	
95	CCB	RINSE	CCB ICPMS_TW	1101	
96	AllRef	1605186-02A	SAMPICPMS_TS	3104	
97	SD	1605186-02A SD	SD ICPMS_TS	3105	
98	Sample	1605186-01A	SAMPICPMS_TS	3106	
99	PDS	1605186-02A PDS	PDS ICPMS_TS	3107	
100	MS_S	1605186-02A MS	MS ICPMS_TS	3108	

Sample List

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	MS_S	1605186-02A MSD	MSD ICPMS_TS	3109	
102	CCV	CCV4-160523	CCV ICPMS_TW	1207	
103	CCB	CCB4-160523	CCB ICPMS_TW	1102	
104	LLCCV	LCVL4-160523	LCVLICPMS_TW	2512	
105	CCB	CCB4-160523	CCB ICPMS_TW	1103	
106	PB	MB-62609	MBLKICPMS_TSDOD	3401	
107	Sample	PAINT CHIPS AW-13	SAMPICPMS_TSDOD	3402	
108	LCS_S	LCS-62609	LCS ICPMS_TSDOD	3403	
109	LCS_S	LCSD-62609	LCSDICPMS_TSDOD	3404	
110	CCB	RINSE	CCB ICPMS_TW	1101	
111	AllRef	1403264-10A	SAMPICPMS_TSDOD	3405	
112	SD	1403264-10A SD	SD ICPMS_TSDOD	3406	
113	Sample	1403263-08A	SAMPICPMS_TSDOD	3407	
114	Sample	1403263-09A	SAMPICPMS_TSDOD	3408	
115	Sample	1403264-01A	SAMPICPMS_TSDOD	3409	
116	Sample	1403264-02A	SAMPICPMS_TSDOD	3410	
117	Sample	1403264-03A	SAMPICPMS_TSDOD	3411	
118	Sample	1403264-04A	SAMPICPMS_TSDOD	3412	
119	Sample	1403264-05A	SAMPICPMS_TSDOD	3501	
120	Sample	1403264-06A	SAMPICPMS_TSDOD	3502	

#	Level	Dilution	Skip
101		5	Skip
102			Skip
103			Skip
104			Skip
105			Skip
106		5	Skip
107		50	Skip

Sample List

108	5	Skip
109	5	Skip
110		Skip
111	5	Skip
112	25	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	1403264-07A	SAMPICPMS_TSDOD	3503	
122	PDS	1403264-10A PDS	PDS ICPMS_TSDOD	3504	
123	MS_S	1403264-10A MS	MS ICPMS_TSDOD	3505	
124	MS_S	1403264-10A MSD	MSD ICPMS_TSDOD	3506	
125	CCV	CCV5-140402	CCV ICPMS_TW	1207	
126	CCB	CCB5-140402	CCB ICPMS_TW	1102	
127	LLCCV	LCVL5-140402	LCVLICPMS_TW	2511	
128	CCB	CCB5-140402	CCB ICPMS_TW	1103	
129	Sample	1403264-08A	SAMPICPMS_TSDOD	3507	
130	Sample	1403264-09A	SAMPICPMS_TSDOD	3508	
131	Sample	1403264-11A	SAMPICPMS_TSDOD	3509	
132	Sample	1403264-12A	SAMPICPMS_TSDOD	3510	
133	Sample	1403264-13A	SAMPICPMS_TSDOD	3511	
134	Sample	1403264-14A	SAMPICPMS_TSDOD	3512	
135	Sample	1403264-15A	SAMPICPMS_TSDOD	3310	
136	Sample	1403264-16A	SAMPICPMS_TSDOD	3311	
137	Sample	1403264-17A	SAMPICPMS_TSDOD	3312	
138	Sample	1403264-12A	SAMPICPMS_TSDOD	3510	
139	CCV	CCV6-140402	CCV ICPMS_TW	1207	
140	CCB	CCB6-140402	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
121		5	Skip
122		5	Skip
123		5	Skip
124		5	Skip
125			Skip
126			Skip
127			Skip
128			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		Skip
140		Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	LLCCV	LCVL6-140402	LCVLICPMS_TW	2511	
142	CCB	CCB6-140402	CCB ICPMS_TW	1103	
143	CCB	CCB6-140402	CCB ICPMS_TW	1102	
144	CCB	CCB6-140402	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
141			Skip
142			Skip
143			Skip
144			Skip

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160523.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	L2-160523	CAL ICPMS_TW	2102	
14	CalStd	L-160523	CAL ICPMS_TW	2103	
15	CalStd	10X-160523	CAL ICPMS_TW	2104	
16	CalStd	5X-160523	CAL ICPMS_TW	2105	
17	CalStd	2X-160523	CAL ICPMS_TW	2106	
18	CalStd	H-160523	CAL ICPMS_TW	2107	
19	CalStd	H2-160523	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-160523	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160523	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-160523	ICV ICPMS_TW	2111	
29	ICB	BLANK	CCB ICPMS_TW	1102	
30	ICB	BLANK	CCB ICPMS_TW	1103	
31	LLICV	LCVL-160523	LCVLICPMS_TW	2112	
32	ICB	ICB-160523	ICB ICPMS_TW	1102	
33	ICB	ICB-160523	ICB ICPMS_TW	1103	
34	PB_W	MB-75178	MBLKICPMS_TW	2201	
35	LCS_W	LCS-75178	LCS ICPMS_TW	2202	
36	LCS_W	LCSD-75178	LCSDICPMS_TW	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605153-03A	SAMPICPMS_TW	2204	
39	SD	1605153-03A SD	SD ICPMS_TW	2205	
40	SAMP_W	1605152-01C	SAMPICPMS_TW	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		100	Skip
39		500	Skip
40		10	Skip

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	SAMP_W	1605162-01A	SAMP200.8	2210	
42	SAMP_W	1605149-04A	SAMPICPMS_TW	2211	
43	SAMP_W	1605149-08A	SAMPICPMS_TW	2212	
44	PDS	1605153-03A PDS	PDS ICPMS_TW	2207	
45	MS_W	1605153-03A MS	MS ICPMS_TW	2208	

Sample List

46	MS_W	1605153-03A MSD	MSD ICPMS_TW	2209
47	CCB	RINSE	CCB ICPMS_TW	1101
48	CCB	RINSE	CCB ICPMS_TW	1102
49	CCB	RINSE	CCB ICPMS_TW	1103
50	SAMP_W	1605149-04A	SAMPICPMS_TW	2211
51	CCV	CCV1-160523	CCV ICPMS_TW	1207
52	CCB	CCB1-160523	CCB ICPMS_TW	1102
53	LLCCV	LCVL1-160523	LCVLICPMS_TW	2112
54	CCB	CCB1-160523	CCB ICPMS_TW	1103
55	SAMP_W	1605149-04A	SAMPICPMS_TW	2504
56	PB	MB-75261	MBLK6020A_S	2301
57	LCS_S	LCS-75261	LCS 6020A_S	2302
58	LCS_S	LCSD-75261	LCSD6020A_S	2303
59	CCB	RINSE	CCB ICPMS_TW	1101
60	AllRef	1605185-01A	SAMP6020A_S	2304

#	Level	Dilution	Skip
41		10	Skip
42		1	Skip
43		1	Skip
44		100	Skip
45		100	Skip
46		100	Skip
47			Skip
48			Skip
49			Skip
50		1	Skip
51			Skip
52			Skip
53			Skip
54			Skip
55		1	Skip
56		5	
57		5	
58		5	
59			
60		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	SD	1605185-01A SD	SD 6020A_S	2305	
62	Sample	1605191-01D	SAMP6020A_S	2306	
63	Sample	1605191-02D	SAMP6020A_S	2307	
64	Sample	1605191-03D	SAMP6020A_S	2308	
65	Sample	1605191-04D	SAMP6020A_S	2309	
66	Sample	1605191-05D	SAMP6020A_S	2310	
67	Sample	1605191-06D	SAMP6020A_S	2311	
68	Sample	1605185-02A	SAMP6020A_S	2312	
69	Sample	1605185-03A	SAMP6020A_S	2401	
70	Sample	1605185-04A	SAMP6020A_S	2402	
71	PDS	1605185-01A PDS	PDS 6020A_S	2403	
72	MS_S	1605185-01A MS	MS 6020A_S	2404	
73	MS_S	1605185-01A MSD	MSD 6020A_S	2405	

Sample List

74	CCV	CCV2-160523	CCV ICPMS_TW	1207
75	CCB	CCB2-160523	CCB ICPMS_TW	1102
76	CCB	CCB2-160523	CCB ICPMS_TW	1103
77	LLCCV	LCVL2-160523	LCVLICPMS_TW	2112
78	CCB	CCB2-160523	CCB ICPMS_TW	1103
79	Sample	1605187-01A	SAMPICPMS_TS	2406
80	Sample	1605187-02A	SAMPICPMS_TS	2407

#	Level	Dilution	Skip
61		25	
62		5	
63		5	
64		5	
65		5	
66		5	
67		5	
68		5	
69		5	
70		5	
71		5	
72		5	
73		5	
74			
75			
76			
77			
78			
79		5	
80		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	Sample	1605187-03A	SAMPICPMS_TS	2408	
82	Sample	1605187-04A	SAMPICPMS_TS	2409	
83	Sample	1605187-05A	SAMPICPMS_TS	2410	
84	Sample	1605187-06A	SAMPICPMS_TS	2411	
85	Sample	1605187-07A	SAMPICPMS_TS	2412	
86	Sample	1605187-08A	SAMPICPMS_TS	2501	
87	Sample	1605187-09A	SAMPICPMS_TS	2502	
88	Sample	1605187-10A	SAMPICPMS_TS	2503	
89	CCV	CCV3-160523	CCV ICPMS_TW	1207	
90	CCB	CCB3-160523	CCB ICPMS_TW	1102	
91	CCB	CCB3-160523	CCB ICPMS_TW	1102	
92	CCB	CCB3-160523	CCB ICPMS_TW	1103	
93	CCB	CCB3-160523	CCB ICPMS_TW	1103	
94	CCB	CCB3-160523	CCB ICPMS_TW	1103	
95	LLCCV	LCVL3-160523	LCVLICPMS_TW	2512	
96	CCB	CCB3-160523	CCB ICPMS_TW	1103	
97	PB	MB-75256	MBLKICPMS_TS	3101	
98	LCS_S	LCS-75256	LCS ICPMS_TS	3102	
99	LCS_S	LCSD-75256	LCSDICPMS_TS	3103	
100	CCB	RINSE	CCB ICPMS_TW	1101	

Sample List

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	PB	MB-75256	MBLKICPMS_TS	3101	
102	LCS_S	LCS-75256	LCS ICPMS_TS	3102	
103	LCS_S	LCSD-75256	LCSDICPMS_TS	3103	
104	CCB	RINSE	CCB ICPMS_TW	1101	
105	AllRef	1605186-02A	SAMPICPMS_TS	3104	
106	SD	1605186-02A SD	SD ICPMS_TS	3105	
107	Sample	1605186-01A	SAMPICPMS_TS	3106	
108	PDS	1605186-02A PDS	PDS ICPMS_TS	3107	
109	MS_S	1605186-02A MS	MS ICPMS_TS	3108	
110	MS_S	1605186-02A MSD	MSD ICPMS_TS	3109	
111	CCB	CCB4-160523	CCB ICPMS_TW	1102	
112	AllRef	1605186-02A	SAMPICPMS_TS	3501	
113	SD	1605186-02A SD	SD ICPMS_TS	3502	
114	Sample	1605186-01A	SAMPICPMS_TS	3503	
115	PDS	1605186-02A PDS	PDS ICPMS_TS	3504	
116	MS_S	1605186-02A MS	MS ICPMS_TS	3505	
117	MS_S	1605186-02A MSD	MSD ICPMS_TS	3506	
118	SAMP_W	1605152-01C	SAMPICPMS_TW	3507	
119	SAMP_W	1605152-01C	SAMPICPMS_TW	3508	
120	CCB	CCB4-160523	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
101		5	
102		5	
103		5	
104			
105		5000	
106		25000	
107		5000	

Sample List

108	5000
109	5000
110	5000
111	
112	50
113	250
114	50
115	50
116	50
117	50
118	10
119	1
120	

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	CCB	CCB4-160523	CCB ICPMS_TW	1103	
122	PB_W	MB-75255	MBLKTCLP_MET	4101	
123	PB_W	MB-75242-TCLP	MBLKTCLP_MET	4102	
124	LCS_W	LCS-75255	LCS TCLP_MET	4103	
125	LCS_W	LCSD-75255	LCSDTCLP_MET	4104	
126	CCB	RINSE	CCB ICPMS_TW	1101	
127	AllRef	1605186-01A	SAMPTCLP_MET	4105	
128	SD	1605186-01A SD	SD TCLP_MET	4106	
129	SAMP_W	1605186-02A	SAMPTCLP_MET	4107	
130	PDS	1605186-01A PDS	PDS TCLP_MET	4108	
131	MS_W	1605186-01A MS	MS TCLP_MET	4109	
132	MS_W	1605186-01A MSD	MSD TCLP_MET	4110	
133	CCB	CCB4-160523	CCB ICPMS_TW	1102	
134	CCB	CCB4-160523	CCB ICPMS_TW	1103	
135	CCB	CCB4-160523	CCB ICPMS_TW	1103	
136	CCV	CCV4-160523	CCV ICPMS_TW	1207	
137	CCB	CCB4-160523	CCB ICPMS_TW	1102	
138	CCB	CCB4-160523	CCB ICPMS_TW	1103	
139	LLCCV	LCVL4-160523	LCVLICPMS_TW	2512	
140	CCB	CCB4-160523	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
121			
122		1	
123		1	
124		1	
125		1	
126			
127		5	
128		25	
129		5	
130		5	
131		5	
132		5	
133			
134			
135			

Sample List

136
137
138
139
140

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	PB	MB-75166	MBLKICPMS_TSDOD1	3201	
142	LCS_S	LCS-75166	LCS ICPMS_TSDOD1	3202	
143	LCS_S	LCSD-75166	LCSDICPMS_TSDOD1	3203	
144	CCB	RINSE	CCB ICPMS_TW	1101	
145	AllRef	1605096-14A	SAMPICPMS_TSDOD1	3204	
146	SD	1605096-14A SD	SD ICPMS_TSDOD1	3205	
147	Sample	1605074-40A	SAMPICPMS_TSDOD1	3206	
148	Sample	1605074-41A	SAMPICPMS_TSDOD1	3207	
149	Sample	1605096-01A	SAMPICPMS_TSDOD1	3208	
150	Sample	1605096-02A	SAMPICPMS_TSDOD1	3209	
151	Sample	1605096-03A	SAMPICPMS_TSDOD1	3210	
152	Sample	1605096-04A	SAMPICPMS_TSDOD1	3211	
153	Sample	1605096-05A	SAMPICPMS_TSDOD1	3212	
154	Sample	1605096-06A	SAMPICPMS_TSDOD1	3301	
155	Sample	1605096-07A	SAMPICPMS_TSDOD1	3302	
156	PDS	1605096-14A PDS	PDS ICPMS_TSDOD1	3303	
157	MS_S	1605096-14A MS	MS ICPMS_TSDOD1	3304	
158	MS_S	1605096-14A MSD	MSD ICPMS_TSDOD1	3305	
159	CCV	CCV5-160523	CCV ICPMS_TW	1207	
160	CCB	CCB5-160523	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
141		5	
142		5	
143		5	
144			
145		5	
146		25	
147		5	
148		5	
149		5	
150		5	
151		5	
152		5	
153		5	
154		5	
155		5	
156		5	
157		5	
158		5	
159			
160			

#	Sample Type	Sample Name	Comment	Vial#	File Name
161	LLCCV	LCVL5-160523	LCVLICPMS_TW	2511	

Sample List

162	CCB	CCB5-160523	CCB ICPMS_TW	1103
163	Sample	1605096-08A	SAMPICPMS_TSDOD1	3306
164	Sample	1605096-09A	SAMPICPMS_TSDOD1	3307
165	Sample	1605096-10A	SAMPICPMS_TSDOD1	3308
166	Sample	1605096-11A	SAMPICPMS_TSDOD1	3309
167	Sample	1605096-12A	SAMPICPMS_TSDOD1	3310
168	Sample	1605096-13A	SAMPICPMS_TSDOD1	3311
169	Sample	1605096-15A	SAMPICPMS_TSDOD1	3312
170	Sample	1605096-16A	SAMPICPMS_TSDOD1	3401
171	Sample	1605096-17A	SAMPICPMS_TSDOD1	3402
172	Sample	1605096-18A	SAMPICPMS_TSDOD1	3403
173	CCV	CCV6-160523	CCV ICPMS_TW	1207
174	CCB	CCB6-160523	CCB ICPMS_TW	1102
175	LLCCV	LCVL6-160523	LCVLICPMS_TW	2511
176	CCB	CCB6-160523	CCB ICPMS_TW	1103
177	PB	MB-75237	MBLKICPMS_TSDOD1	4101
178	LCS_S	LCS-75237	LCS ICPMS_TSDOD1	4102
179	LCS_S	LCSD-75237	LCSDICPMS_TSDOD1	4103
180	CCB	RINSE	CCB ICPMS_TW	1101

#	Level	Dilution	Skip
161			
162			
163		5	
164		5	
165		5	
166		5	
167		5	
168		5	
169		5	
170		5	
171		5	
172		5	
173			
174			
175			
176			
177		5	
178		5	
179		5	
180			

#	Sample Type	Sample Name	Comment	Vial#	File Name
181	AllRef	1605121-01A	SAMPICPMS_TSDOD1	4104	
182	SD	1605121-01A SD	SD ICPMS_TSDOD1	4105	
183	Sample	1605098-30A	SAMPICPMS_TSDOD1	4106	
184	Sample	1605098-35A	SAMPICPMS_TSDOD1	4107	
185	Sample	1605098-38A	SAMPICPMS_TSDOD1	4108	
186	Sample	1605121-02A	SAMPICPMS_TSDOD1	4109	
187	Sample	1605121-03A	SAMPICPMS_TSDOD1	4110	
188	Sample	1605121-04A	SAMPICPMS_TSDOD1	4111	
189	Sample	1605121-05A	SAMPICPMS_TSDOD1	4112	

Sample List

190	Sample	1605121-06A	SAMPICPMS_TSDOD1	4201
191	Sample	1605121-07A	SAMPICPMS_TSDOD1	4202
192	PDS	1605121-01A PDS	PDS ICPMS_TSDOD1	4203
193	MS_S	1605121-01A MS	MS ICPMS_TSDOD1	4204
194	MS_S	1605121-01A MSD	MSD ICPMS_TSDOD1	4205
195	CCV	CCV7-160523	CCV ICPMS_TW	1207
196	CCB	CCB7-160523	CCB ICPMS_TW	1102
197	LLCCV	LCVL7-160523	LCVLICPMS_TW	2511
198	CCB	CCB7-160523	CCB ICPMS_TW	1103
199	Sample	1605121-08A	SAMPICPMS_TSDOD1	4206
200	Sample	1605121-09A	SAMPICPMS_TSDOD1	4207

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

#	Sample Type	Sample Name	Comment	Vial#	File Name
201	Sample	1605121-10A	SAMPICPMS_TSDOD1	4208	
202	Sample	1605121-11A	SAMPICPMS_TSDOD1	4209	
203	Sample	1605121-12A	SAMPICPMS_TSDOD1	4210	
204	Sample	1605121-13A	SAMPICPMS_TSDOD1	4211	
205	Sample	1605121-14A	SAMPICPMS_TSDOD1	4212	
206	Sample	1605121-15A	SAMPICPMS_TSDOD1	4301	
207	Sample	1605121-16A	SAMPICPMS_TSDOD1	4302	
208	Sample	1605121-17A	SAMPICPMS_TSDOD1	4303	
209	CCV	CCV8-160523	CCV ICPMS_TW	1207	
210	CCB	CCB8-160523	CCB ICPMS_TW	1102	
211	LLCCV	LCVL8-160523	LCVLICPMS_TW	2510	
212	CCB	CCB8-160523	CCB ICPMS_TW	1103	
213	PB	MB-75236	MBLKICPMS_TSDOD1	4310	
214	LCS_S	LCS-75236	LCS ICPMS_TSDOD1	4311	
215	LCS_S	LCSD-75236	LCSDICPMS_TSDOD1	4312	
216	CCB	RINSE	CCB ICPMS_TW	1101	
217	AllRef	1605098-17A	SAMPICPMS_TSDOD1	4401	

Sample List

218	SD	1605098-17A SD	SD ICPMS_TSDOD1	4402
219	Sample	1605071-32A	SAMPICPMS_TSDOD1	4403
220	Sample	1605071-38A	SAMPICPMS_TSDOD1	4404

#	Level	Dilution	Skip
201		5	
202		5	
203		5	
204		5	
205		5	
206		5	
207		5	
208		5	
209			
210			
211			
212			
213		5	
214		5	
215		5	
216			
217		5	
218		25	
219		5	
220		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
221	Sample	1605098-12A	SAMPICPMS_TSDOD1	4405	
222	Sample	1605098-13A	SAMPICPMS_TSDOD1	4406	
223	Sample	1605098-14A	SAMPICPMS_TSDOD1	4407	
224	Sample	1605098-15A	SAMPICPMS_TSDOD1	4408	
225	Sample	1605098-16A	SAMPICPMS_TSDOD1	4409	
226	Sample	1605098-18A	SAMPICPMS_TSDOD1	4410	
227	Sample	1605098-19A	SAMPICPMS_TSDOD1	4411	
228	PDS	1605098-17A PDS	PDS ICPMS_TSDOD1	4412	
229	MS_S	1605098-17A MS	MS ICPMS_TSDOD1	4501	
230	MS_S	1605098-17A MSD	MSD ICPMS_TSDOD1	4502	
231	CCV	CCV9-160523	CCV ICPMS_TW	1207	
232	CCB	CCB9-160523	CCB ICPMS_TW	1102	
233	LLCCV	LCVL9-160523	LCVLICPMS_TW	2510	
234	CCB	CCB9-160523	CCB ICPMS_TW	1103	
235	Sample	1605098-20A	SAMPICPMS_TSDOD1	4503	
236	Sample	1605098-21A	SAMPICPMS_TSDOD1	4504	
237	Sample	1605098-22A	SAMPICPMS_TSDOD1	4505	
238	Sample	1605098-23A	SAMPICPMS_TSDOD1	4506	
239	Sample	1605098-24A	SAMPICPMS_TSDOD1	4507	
240	Sample	1605098-25A	SAMPICPMS_TSDOD1	4508	

#	Level	Dilution	Skip
221		5	
222		5	
223		5	

Sample List

224	5
225	5
226	5
227	5
228	5
229	5
230	5
231	
232	
233	
234	
235	5
236	5
237	5
238	5
239	5
240	5

#	Sample Type	Sample Name	Comment	Vial#	File Name
241	Sample	1605098-26A	SAMPICPMS_TSDOD1	4509	
242	Sample	1605098-27A	SAMPICPMS_TSDOD1	4510	
243	Sample	1605098-28A	SAMPICPMS_TSDOD1	4511	
244	Sample	1605098-29A	SAMPICPMS_TSDOD1	4512	
245	CCV	CCV10-160523	CCV ICPMS_TW	1207	
246	CCB	CCB10-160523	CCB ICPMS_TW	1102	
247	LLCCV	LCVL10-160523	LCVLICPMS_TW	2509	
248	CCB	CCB10-160523	CCB ICPMS_TW	1102	
249	AllRef	1605186-01A	SAMPTCLP_MET	3404	
250	SD	1605186-01A SD	SD TCLP_MET	3405	
251	SAMP_W	1605186-02A	SAMPTCLP_MET	3406	
252	PDS	1605186-01A PDS	PDS TCLP_MET	3407	
253	MS_W	1605186-01A MS	MS TCLP_MET	3408	
254	MS_W	1605186-01A MSD	MSD TCLP_MET	3409	
255	CCV	CCV11-160523	CCV ICPMS_TW	1207	
256	CCB	CCB11-160523	CCB ICPMS_TW	1102	
257	LLCCV	LCVL11-160523	LCVLICPMS_TW	2509	
258	CCB	CCB11-160523	CCB ICPMS_TW	1102	
259	CCB	CCB11-160523	CCB ICPMS_TW	1102	
260	CCB	CCB11-160523	CCB ICPMS_TW	1102	

#	Level	Dilution	Skip
241		5	
242		5	
243		5	
244		5	
245			
246			
247			
248			
249		1	
250		5	
251		1	

Sample List

252	1
253	1
254	1
255	
256	
257	
258	
259	
260	

#	Sample Type	Sample Name	Comment	Vial#	File Name
261	CCB	CCB11-160523	CCB ICPMS_TW	1103	
262	CCB	CCB11-160523	CCB ICPMS_TW	1103	
263	CCB	CCB11-160523	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
261			
262			
263			

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 10:08:03 AM**
Digestion:
Prep End Date:

Prep Batch **75236** 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
1605071-32A	Soil		1.11	50	50.000	1 of 1	
1605071-38A	Soil		1.15	50	50.000	1 of 1	
1605098-12A	Soil		1.14	50	50.000	1 of 1	
1605098-13A	Soil		1.02	50	50.000	1 of 1	
1605098-14A	Soil		1.11	50	50.000	1 of 1	
1605098-15A	Soil		1.04	50	50.000	1 of 1	
1605098-16A	Soil		1.16	50	50.000	1 of 1	
1605098-17A	Soil		1.08	50	50.000	1 of 1	
1605098-17AMS	Soil		1.12	50	50.000	of	
1605098-17AMSD	Soil		1.16	50	50.000	of	
1605098-18A	Soil		1.07	50	50.000	1 of 1	
1605098-19A	Soil		1.12	50	50.000	1 of 1	
1605098-20A	Soil		1.10	50	50.000	1 of 1	
1605098-21A	Soil		1.15	50	50.000	1 of 1	
1605098-22A	Soil		1.17	50	50.000	1 of 1	
1605098-23A	Soil		1.19	50	50.000	1 of 1	
1605098-24A	Soil		1.05	50	50.000	1 of 1	
1605098-25A	Soil		1.01	50	50.000	1 of 1	
1605098-26A	Soil		1.16	50	50.000	1 of 1	
1605098-27A	Soil		1.15	50	50.000	1 of 1	
1605098-28A	Soil		1.17	50	50.000	1 of 1	
1605098-29A	Soil		1.14	50	50.000	1 of 1	
LCS-75236	Soil		1	50	50.000	of	
LCSD-75236	Soil		1	50	50.000	of	
MB-75236	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

05-20-16

REVIEWED/APPROVED
By Sherri Herschmann at 11:58:19 AM, 5/24/2016

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	

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%)	BIAS MEAN CRITERIA (± 2%)	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

05/24/2016

Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 10:08:03 AM**
Digestion: **Start: 5/19/2016 12:28:00 PM / Stop: 5/19/2016 5:48:00 PM**
Prep End Date: **5/20/2016 8:43:53 AM**

Prep Batch **75236** 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
1605071-32A	Soil		1.11	50	45.045	1 of 1	
1605071-38A	Soil		1.15	50	43.478	1 of 1	
1605098-12A	Soil		1.14	50	43.860	1 of 1	
1605098-13A	Soil		1.02	50	49.020	1 of 1	
1605098-14A	Soil		1.11	50	45.045	1 of 1	
1605098-15A	Soil		1.04	50	48.077	1 of 1	
1605098-16A	Soil		1.16	50	43.103	1 of 1	
1605098-17A	Soil		1.08	50	46.296	1 of 1	
1605098-17A MS	Soil		1.12	50	44.643	of	
1605098-17A MSD	Soil		1.16	50	43.103	of	
1605098-17A PDS	Soil		1.08	50	46.296	of	
1605098-17A SD	Soil		1.08	50	46.296	of	
1605098-18A	Soil		1.07	50	46.729	1 of 1	
1605098-19A	Soil		1.12	50	44.643	1 of 1	
1605098-20A	Soil		1.1	50	45.455	1 of 1	
1605098-21A	Soil		1.15	50	43.478	1 of 1	
1605098-22A	Soil		1.17	50	42.735	1 of 1	
1605098-23A	Soil		1.19	50	42.017	1 of 1	
1605098-24A	Soil		1.05	50	47.619	1 of 1	
1605098-25A	Soil		1.01	50	49.505	1 of 1	
1605098-26A	Soil		1.16	50	43.103	1 of 1	
1605098-27A	Soil		1.15	50	43.478	1 of 1	
1605098-28A	Soil		1.17	50	42.735	1 of 1	
1605098-29A	Soil		1.14	50	43.860	1 of 1	
LCS-75236	Soil		1	50	50.000	of	
LCSD-75236	Soil		1	50	50.000	of	
MB-75236	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 12:00:59 PM, 5/24/2016

Calibration Summary Report

Date Acquired 5/23/2016 10:41
Data Batch 160523.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 + 2.8167E-004
Be	1.0000	y = 5.9114E-005 * x + 2.9353E-006
B	1.0000	y = 2.1736E-005 * x + 1.9548E-004
Na	0.9999	y = 8.0916E-004 * x + 0.0378
Mg	1.0000	y = 4.0716E-004 * x + 0.0022
Al	1.0000	y = 1.5051E-004 * x + 0.0025
K	0.9999	y = 4.1449E-004 * x + 0.0614
Ca	1.0000	y = 2.2383E-005 * x + 0.0011
Ti	1.0000	y = 1.5574E-004 * x + 2.4626E-006
V	1.0000	y = 0.0050 * x + 0.0047
Cr	1.0000	y = 0.0060 * x + 0.0013
Mn	1.0000	y = 0.0034 * x + 2.3576E-004
Fe	1.0000	y = 0.0051 * x + 0.0128
Co	1.0000	y = 0.0130 * x + 1.6569E-004
Ni	1.0000	y = 0.0034 * x + 0.0012
Cu	1.0000	y = 0.0094 * x + 0.0023
Zn	1.0000	y = 0.0016 * x + 5.3931E-004
Se	1.0000	y = 8.2217E-005 * x + 1.3839E-004
Sr	0.9999	y = 6.9275E-004 * x + 1.7507E-004
Mo	1.0000	y = 5.7772E-004 * x + 5.8427E-006
Ag	0.9999	y = 0.0018 * x + 5.0866E-006
Cd	1.0000	y = 2.7114E-004 * x + 5.3819E-007
Sn	1.0000	y = 5.7939E-004 * x + 8.1217E-005
Sb	1.0000	y = 9.0284E-004 * x + 2.1461E-005
Tl	1.0000	y = 0.0017 * x + 3.0027E-006
Ba	1.0000	y = 2.8780E-004 * x + 1.4284E-005
Pb	1.0000	y = 0.0023 * x + 4.2707E-005
Li	1.0000	y = 4.4727E-005 * x + 1.5412E-005

REVIEWED BY
By Janice Whitt at 1:09:12 PM, 5/23/2016

Calibration Summary Report

Level 7 Cal

Ele	Conc	Calc	%Rec
As	500	501.58	100
Be	500	509.04	102
B	500	503.43	101
Na	10000	10289.89	103
Mg	10000	10177.23	102
Al	10000	9993.09	100
K	10000	10214.27	102
Ca	10000	9855.94	99
Ti	500	493.20	99
V	500	509.55	102
Cr	500	505.18	101
Mn	500	501.60	100
Fe	10000	9960.71	100
Co	500	504.63	101
Ni	500	509.37	102
Cu	500	516.68	103
Zn	500	510.66	102
Se	500	504.06	101
Sr	500	480.45	96
Mo	500	489.49	98
Ag	500	497.86	100
Cd	500	490.04	98
Sn	500	493.35	99
Sb	500	498.86	100
Tl	500	499.66	100
Ba	500	492.56	99
Pb	500	491.91	98

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	1999.84	100
Be	2000	1997.32	100
B	2000	1999.79	100
Na	25000	24864.22	101
Mg	25000	24911.90	100
K	25000	24898.11	100
Ca	25000	25076.46	100
Ti	2000	2002.16	100
V	2000	1997.60	100
Cr	2000	1998.52	100
Mn	2000	1999.70	100
Co	2000	1998.85	100
Ni	2000	1997.15	100
Cu	2000	1994.95	100
Zn	2000	1996.85	100
Se	2000	1998.41	100
Sr	2000	2005.86	100
Mo	2000	2002.88	100
Cd	2000	2002.48	100
Sn	2000	2001.85	100
Tl	2000	2000.08	100
Ba	2000	2002.16	100
Pb	2000	2002.50	100
Li	2000	1996.24	100

REVIEWED BY
By Janice Whitt at 1:09:17 PM, 5/23/2016

Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
51	200	139	151.8	8.48
59	2000	1016	977.5	3.51
89	2000	1005	1008.6	5.33
140	5000	2643	2653.6	4.28
205	5000	2588	2500.5	3.98
156/140	1	0.416 %	0.361 %	49.12
75	20	8	6.0	47.51
78	20	9	8.9	46.87
56	5000	3619	3697.9	2.82
31	500	218	204.4	11.07

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.53
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	6.5
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	Cell Exit	-60
Deflect	1.8		

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	2.23E+2	Pa	Carrier Gas(BP)	2.57E+2	kPa
Analyzer Press	2.02E-4	Pa	Reflected Power	1	W
Forward Power	1550	W			

Current Signal

Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1195	1175.5	3.25
59	2000	1443	1519.8	4.94
89	5000	2607	2765.2	3.91
140	5000	2677	2830.2	3.92
205	5000	1806	1915.5	4.14
156/140	2	1.233 %	1.130 %	16.46
78	5000	2299	2307.8	2.34
63	500	249	246.4	8.79
75	10000	6159	6248.2	1.25

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.53
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	6.5
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	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	2.22E+2	Pa	Carrier Gas(BP)	2.56E+2	kPa
Analyzer Press	1.15E-4	Pa	Reflected Power	1	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	679972	0.31	5.00	
59	866598	0.70	5.00	
115	1209526	0.83	5.00	
205	1027821	1.04	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	678094	677691	680079	681628	682370
59	868590	856230	870874	866547	870748
115	1195979	1206736	1215765	1222350	1206798
205	1040280	1013800	1027603	1021630	1035791

Integration Time [sec] = 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	103908	7.05	6.9 - 7.1		0.803	0.850	
59	144998	58.90	58.9 - 59.1		0.763	0.850	
115	234368	114.95	114.9 - 115.1		0.680	0.850	
205	201934	205.05	204.9 - 205.1		0.762	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	0.53	L/min	Makeup/Dilution Gas	0.52	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	-90	V	Deflect	7.0	V
Omega Lens	6.5	V	Plate Bias	-60	V

REVIEWED BY
By Janice Whitt at 1:09:24 PM, 5/23/2016

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	%			

P/A Factor Tuning Report

========== Current Sample ==========
Sample Name: CCB1-160523
Data File: 052_CCB.d
Acquired: 05/23/2016 12:15:32

========= Detector Parameters and P/A Factors =========
Discriminator: 4.5 mV
AnalogHV: 1761 V
PulseHV: 1217 V

Acquired: 05/23/2016 10:07:12

Mass[u]	Element	P/A Factor
6	Li	0.097837
9	Be	0.111012
23	Na	0.119192
24	Mg	0.123724
27	Al	0.128077
39	K	0.129771
45	Sc	0.130862
48		0.132135
51	V	0.130933
52	Cr	0.136231
55	Mn	0.137648
59	Co	0.141543
60	Ni	0.142563
63	Cu	0.144932
66	Zn	0.144574
72		0.143658
74	Ge	0.143964
75	As	0.142622
88	Sr	0.143956
89		0.143507
95		0.143591
97	Mo	0.143375
98	Mo	0.143813
99	[Mo]	0.145738
101		0.146466
105		0.148942
111	Cd	0.150174
114	Cd	0.149276
115	In	0.149915
118	Sn	0.149082
121		0.149568
123	Sb	0.149873
135	Ba	0.152643
138		0.150322
175		0.154881
193		0.155592
205	Tl	0.157007
206	[Pb]	0.157788
207	[Pb]	0.157904
208	Pb	0.157038
209	Bi	0.156907
232		0.157055
238	U	0.157339
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 1:09:27 PM, 5/23/2016

Calibration Blank Report

Date Acquired	5/23/2016 10:41	Sample Name	BLANK STD 1
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	012CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	14	55.79
9	Be	45	3	57.28
11	B	45	177	6.54
23	Na	45	34139	1.60
24	Mg	45	1980	4.08
27	Al	45	2288	3.85
39	K	45	55476	1.42
44	Ca	45	961	7.56
47	Ti	45	2	86.60
51	V	45	4266	2.62
52	Cr	45	1141	7.79
55	Mn	45	213	11.80
56	Fe	45	11561	2.68
59	Co	72	112	20.22
60	Ni	72	821	7.77
63	Cu	72	1579	1.41
66	Zn	72	366	16.95
75	As	72	191	9.42
78	Se	72	94	12.11
88	Sr	115	1100	1.05
95	Mo	115	37	45.45
107	Ag	115	32	56.98
111	Cd	115	3	100.05
118	Sn	115	510	3.92
121	Sb	115	134	16.51
137	Ba	115	90	18.52
205	Tl	209	42	27.72
208	Pb	209	600	8.94

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	904202	1.28
72	Ge	677615	0.38
115	In	6287303	2.85
209	Bi	14081817	3.17

Calibration Standard Report

Date Acquired	5/23/2016 10:43	Sample Name	L2-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	013CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	54	30.93
9	Be	45	59	24.19
11	B	45	218	11.69
23	Na	45	49106	0.27
24	Mg	45	9386	3.13
27	Al	45	4806	2.74
39	K	45	62560	0.51
44	Ca	45	1323	4.63
47	Ti	45	147	13.82
51	V	45	8479	3.30
52	Cr	45	6574	2.86
55	Mn	45	3288	2.00
56	Fe	45	102248	1.34
59	Co	72	8973	2.16
60	Ni	72	3143	6.28
63	Cu	72	8237	2.17
66	Zn	72	1521	7.87
75	As	72	1135	3.69
78	Se	72	145	17.13
88	Sr	115	5162	3.36
95	Mo	115	3446	4.72
107	Ag	115	11258	2.34
111	Cd	115	1519	7.20
118	Sn	115	3828	0.96
121	Sb	115	5552	2.01
137	Ba	115	1890	3.23
205	Tl	209	22877	0.82
208	Pb	209	31445	1.13

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	900571	0.45	904202	99.60	70	120	
72	Ge	670627	1.48	677615	98.97	70	120	
115	In	6190956	0.22	6287303	98.47	70	120	
209	Bi	13796768	1.16	14081817	97.98	70	120	

Calibration Standard Report

Date Acquired	5/23/2016 10:45	Sample Name	L-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	014CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	422	6.67
9	Be	45	513	4.28
11	B	45	314	7.81
23	Na	45	179567	0.71
24	Mg	45	75498	0.67
27	Al	45	28659	1.69
39	K	45	129305	0.51
44	Ca	45	4762	0.26
47	Ti	45	1509	5.75
51	V	45	48612	0.96
52	Cr	45	54862	0.14
55	Mn	45	30512	2.78
56	Fe	45	906138	0.11
59	Co	72	86261	0.31
60	Ni	72	24301	0.57
63	Cu	72	65859	0.98
66	Zn	72	11289	1.37
75	As	72	9325	1.65
78	Se	72	634	3.42
88	Sr	115	41872	0.51
95	Mo	115	34142	1.36
107	Ag	115	110269	0.50
111	Cd	115	16671	1.71
118	Sn	115	35109	1.10
121	Sb	115	54278	1.52
137	Ba	115	17059	2.93
205	Tl	209	230034	0.72
208	Pb	209	309141	0.69

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	904779	0.88	904202	100.06	70	120	
72	Ge	670882	0.39	677615	99.01	70	120	
115	In	6230915	0.35	6287303	99.10	70	120	
209	Bi	13793986	0.79	14081817	97.96	70	120	

Calibration Standard Report

Date Acquired	5/23/2016 10:47	Sample Name	10X-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	015CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	1995	3.01
9	Be	45	2601	0.94
11	B	45	1111	3.78
23	Na	45	767294	0.52
24	Mg	45	369675	1.08
27	Al	45	137134	0.22
39	K	45	428254	0.61
44	Ca	45	20275	2.18
47	Ti	45	6760	3.23
51	V	45	227873	1.94
52	Cr	45	268227	0.39
55	Mn	45	151812	0.06
56	Fe	45	4554936	0.43
59	Co	72	437181	0.92
60	Ni	72	119086	0.70
63	Cu	72	322274	0.51
66	Zn	72	55804	0.51
75	As	72	46279	0.92
78	Se	72	2853	2.51
88	Sr	115	205994	0.17
95	Mo	115	174091	0.88
107	Ag	115	553943	0.92
111	Cd	115	82554	0.32
118	Sn	115	174025	0.99
121	Sb	115	274641	0.79
137	Ba	115	85763	0.27
205	Tl	209	1162224	0.27
208	Pb	209	1552470	0.96

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	888520	1.86	904202	98.27	70	120	
72	Ge	663382	1.33	677615	97.90	70	120	
115	In	6119290	1.44	6287303	97.33	70	120	
209	Bi	13721704	3.04	14081817	97.44	70	120	

Calibration Standard Report

Date Acquired	5/23/2016 10:49	Sample Name	5X-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	016CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4022	2.28
9	Be	45	5208	1.03
11	B	45	2090	6.59
23	Na	45	1482695	0.22
24	Mg	45	731448	0.66
27	Al	45	268102	0.93
39	K	45	800264	0.09
44	Ca	45	39793	0.32
47	Ti	45	13629	2.19
51	V	45	450460	0.19
52	Cr	45	529709	0.67
55	Mn	45	301095	0.26
56	Fe	45	9087517	1.57
59	Co	72	867230	0.62
60	Ni	72	232640	0.43
63	Cu	72	637526	0.42
66	Zn	72	111543	1.58
75	As	72	91397	0.61
78	Se	72	5646	0.25
88	Sr	115	405534	0.98
95	Mo	115	344042	1.66
107	Ag	115	1104806	0.81
111	Cd	115	163760	1.13
118	Sn	115	348511	0.44
121	Sb	115	546794	0.64
137	Ba	115	171815	0.48
205	Tl	209	2336598	0.56
208	Pb	209	3097207	0.33

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	879951	0.58	904202	97.32	70	120	
72	Ge	661139	0.69	677615	97.57	70	120	
115	In	6149856	1.42	6287303	97.81	70	120	
209	Bi	13593824	2.28	14081817	96.53	70	120	

Calibration Standard Report

Date Acquired	5/23/2016 10:51	Sample Name	2X-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	017CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	10158	2.48
9	Be	45	13366	1.11
11	B	45	4926	3.90
23	Na	45	3700424	0.50
24	Mg	45	1842485	0.20
27	Al	45	674718	1.07
39	K	45	1925190	0.56
44	Ca	45	99227	1.57
47	Ti	45	34276	0.98
51	V	45	1126479	0.23
52	Cr	45	1337611	0.46
55	Mn	45	751245	0.54
56	Fe	45	22912045	0.43
59	Co	72	2147838	0.23
60	Ni	72	579579	1.00
63	Cu	72	1589846	0.57
66	Zn	72	273371	0.47
75	As	72	229135	0.29
78	Se	72	13921	2.74
88	Sr	115	1027359	0.51
95	Mo	115	872922	0.12
107	Ag	115	2766127	0.67
111	Cd	115	411961	0.87
118	Sn	115	876724	0.39
121	Sb	115	1383479	0.63
137	Ba	115	434262	0.39
205	Tl	209	5947641	0.36
208	Pb	209	7903967	0.16

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	891953	0.79	904202	98.65	70	120	
72	Ge	663268	0.23	677615	97.88	70	120	
115	In	6058043	1.31	6287303	96.35	70	120	
209	Bi	13829886	0.53	14081817	98.21	70	120	

Calibration Standard Report

Date Acquired	5/23/2016 10:53	Sample Name	H-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	018CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	20339	0.70
9	Be	45	26681	0.80
11	B	45	9875	3.47
23	Na	45	7415179	1.62
24	Mg	45	3675807	0.05
27	Al	45	1335716	1.13
39	K	45	3808036	0.76
44	Ca	45	196537	0.82
47	Ti	45	68103	0.69
51	V	45	2279167	0.43
52	Cr	45	2673841	0.59
55	Mn	45	1505829	0.41
56	Fe	45	44791023	1.36
59	Co	72	4333632	0.07
60	Ni	72	1162385	0.75
63	Cu	72	3202470	0.85
66	Zn	72	551113	0.61
75	As	72	461164	0.32
78	Se	72	27499	1.50
88	Sr	115	2071588	0.38
95	Mo	115	1759082	0.34
107	Ag	115	5562354	1.28
111	Cd	115	826540	0.24
118	Sn	115	1778907	1.25
121	Sb	115	2802214	1.01
137	Ba	115	881929	0.21
205	Tl	209	11933830	1.10
208	Pb	209	15814357	0.88

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	886620	0.63	904202	98.06	70	120	
72	Ge	661371	0.53	677615	97.60	70	120	
115	In	6222293	2.02	6287303	98.97	70	120	
209	Bi	13894584	1.34	14081817	98.67	70	120	

Calibration Standard Report

Date Acquired	5/23/2016 10:55	Sample Name	H2-160523
Data Batch	160523.b	Comment	CAL ICPMS_TW
Data File Name	019CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	79991	0.83
9	Be	45	105763	0.57
11	B	45	39112	1.45
23	Na	45	18057534	3.58
24	Mg	45	9088289	1.47
27	Al	45	1269	16.03
39	K	45	9298592	1.18
44	Ca	45	503718	0.10
47	Ti	45	279312	0.68
51	V	45	9015007	1.15
52	Cr	45	10684407	2.93
55	Mn	45	6064120	1.50
56	Fe	45	35308	20.24
59	Co	72	17361777	1.84
60	Ni	72	4607152	1.02
63	Cu	72	12501757	0.38
66	Zn	72	2178676	0.19
75	As	72	1859138	0.52
78	Se	72	110000	0.32
88	Sr	115	8401070	0.86
95	Mo	115	6994842	0.76
107	Ag	115	2126	23.63
111	Cd	115	3282273	1.18
118	Sn	115	7011933	0.68
121	Sb	115	4685	3.78
137	Ba	115	3483257	0.41
205	Tl	209	47207017	0.33
208	Pb	209	63612418	1.06

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	895774	0.77	904202	99.07	70	120	
72	Ge	668943	0.70	677615	98.72	70	120	
115	In	6045106	0.72	6287303	96.15	70	120	
209	Bi	13730344	1.07	14081817	97.50	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/23/2016 11:03	Sample Name	ICSA-160523
Data Batch	160523.b	Comment	ICSAICPMS_TW
Data File Name	023ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	0.149	10	10.0	1.2	0.8	
11	B	11.290	376	17.9	30	30	
51	V	-0.180	3253	2.5	10	10	
52	Cr	0.410	3167	4.0	8	5	
55	Mn	1.407	4265	3.6	8	10	
59	Co	0.554	4687	1.5	8	10	
60	Ni	0.586	2057	3.0	8	10	
63	Cu	0.967	7251	2.3	8	10	
66	Zn	1.505	1906	6.7	10	5	
75	As	0.715	812	3.7	4	5	
78	Se	0.189	98	21.9	2	5	
88	Sr	1.411	6641	3.1	10	10	
107	Ag	0.156	1640	6.2	0.8	2	
111	Cd	0.568	891	4.2	1.2	1	
118	Sn	1.490	5444	3.5	10	10	
121	Sb	0.409	2254	3.4	4	2.5	
137	Ba	0.358	677	12.8	8	10	
205	Tl	0.053	1181	6.8	4	1.5	
208	Pb	0.115	3836	3.0	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	853276	1.55	904202	94.37	70	120	
72	Ge	636672	0.65	677615	93.96	70	120	
115	In	5764026	0.57	6287303	91.68	70	120	
209	Bi	12438504	1.71	14081817	88.33	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/23/2016 11:05	Sample Name	ICSAB-160523
Data Batch	160523.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	40.430	177045	0.63	40	101.1	80	120	
52	Cr	45	21.277	108980	0.68	20	106.4	80	120	
55	Mn	45	19.721	56943	0.66	20	98.6	80	120	
59	Co	72	39.986	330797	0.91	40	100.0	80	120	
60	Ni	72	38.440	85195	0.48	40	96.1	80	120	
63	Cu	72	21.070	127190	0.48	20	105.3	80	120	
66	Zn	72	20.526	21663	1.72	20	102.6	80	120	
75	As	72	20.358	18198	0.82	20	101.8	80	120	
78	Se	72	19.723	1121	6.78	20	98.6	80	120	
107	Ag	115	19.288	197546	1.17	20	96.4	80	120	
111	Cd	115	10.185	15746	3.02	10	101.9	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	849875	0.06	904202	93.99	70	120	
72	Ge	636925	0.26	677615	94.00	70	120	
115	In	5701078	0.43	6287303	90.68	70	120	
209	Bi	12549877	1.59	14081817	89.12	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/23/2016 11:13	Sample Name	ICV-160523
Data Batch	160523.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	100.423	4248	0.95	100	100.4	90	110	
9	Be	45	101.646	5667	0.58	100	101.6	90	110	
11	B	45	104.978	2336	4.70	100	105.0	90	110	
23	Na	45	2586.060	2008198	0.89	2500	103.4	90	110	
24	Mg	45	2562.125	985387	0.56	2500	102.5	90	110	
27	Al	45	2504.172	357686	0.60	2500	100.2	90	110	
39	K	45	2581.178	1066381	0.58	2500	103.2	90	110	
44	Ca	45	2372.478	51065	1.75	2500	94.9	90	110	
47	Ti	45	101.067	14843	3.44	100	101.1	90	110	
51	V	45	101.914	488235	1.04	100	101.9	90	110	
52	Cr	45	105.134	592568	0.63	100	105.1	90	110	
55	Mn	45	99.716	318433	0.67	100	99.7	90	110	
56	Fe	45	2559.322	12244428	2.69	2500	102.4	90	110	
59	Co	72	102.839	935257	0.89	100	102.8	90	110	
60	Ni	72	103.357	250435	1.06	100	103.4	90	110	
63	Cu	72	103.718	682030	0.10	100	103.7	90	110	
66	Zn	72	102.929	117929	0.21	100	102.9	90	110	
75	As	72	101.739	99208	0.58	100	101.7	90	110	
78	Se	72	102.180	5980	1.29	100	102.2	90	110	
88	Sr	115	97.362	445614	0.82	100	97.4	90	110	
95	Mo	115	96.288	366620	0.97	100	96.3	90	110	
107	Ag	115	97.154	1150101	0.40	100	97.2	90	110	
111	Cd	115	97.549	174298	0.87	100	97.5	90	110	
118	Sn	115	100.644	384806	0.52	100	100.6	90	110	
121	Sb	115	97.820	582167	0.42	100	97.8	90	110	
137	Ba	115	96.935	183943	0.07	100	96.9	90	110	
205	Tl	209	99.429	2451582	0.42	100	99.4	90	110	
208	Pb	209	99.012	3286154	0.32	100	99.0	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	942688	0.94	904202	104.26	70	120	
72	Ge	700315	0.23	677615	103.35	70	120	
115	In	6591165	1.48	6287303	104.83	70	120	
209	Bi	14342513	0.82	14081817	101.85	70	120	

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	

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	

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	

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	

Sample Report

Date Acquired	5/23/16 6:24 PM	Sample Name	1605071-32A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	219SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	46.284	1932	2.18	2000	>RL
9	Be	45	2.226	125	7.62	2000	>RL
11	B	45	56.494	1319	2.49	2000	>RL
23	Na	45	1142.103	891298	1.25	25000	>RL
24	Mg	45	10420.790	3933589	0.54	25000	>RL
27	Al	45	50271.287	7013473	0.90	10000	OUTCAL
39	K	45	12633.866	4909164	0.70	25000	>RL
44	Ca	45	95617.263	1984096	0.05	25000	OUTCAL
47	Ti	45	295.538	42650	0.94	2000	>RL
51	V	45	79.085	373400	0.86	2000	>RL
52	Cr	45	59.668	331102	0.74	2000	>RL
55	Mn	45	462.114	1449894	0.24	2000	>RL
56	Fe	45	50717.393	238320568	1.34	10000	OUTCAL
59	Co	72	16.548	144330	0.46	2000	>RL
60	Ni	72	31.359	73390	1.07	2000	>RL
63	Cu	72	17.517	111698	0.66	2000	>RL
66	Zn	72	158.881	174271	1.01	2000	>RL
75	As	72	18.578	17517	0.52	2000	>RL
78	Se	72	3.681	296	8.70	2000	>RL
88	Sr	115	376.149	1655413	0.82	2000	>RL
95	Mo	115	1.750	6455	1.50	2000	
107	Ag	115	0.110	1290	2.72	500	
111	Cd	115	0.447	773	0.43	2000	>RL
118	Sn	115	5.024	18996	1.11	2000	>RL
121	Sb	115	2.354	13625	3.51	500	>RL
137	Ba	115	447.288	817246	1.06	2000	>RL
205	Tl	209	0.400	9469	2.88	2000	
208	Pb	209	65.027	2062582	0.60	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	926607	0.10	904202	102.48	70	120	
72	Ge	671207	0.23	677615	99.05	70	120	
115	In	6349128	1.43	6287303	100.98	70	120	
209	Bi	13705846	1.29	14081817	97.33	70	120	

Sample Report

Date Acquired	5/23/16 6:26 PM	Sample Name	1605071-38A
Data Batch	160523.b	Comment	SAMPICPMS_TSDOD1
Data File Name	220SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	83.171	3468	2.59	2000	>RL
9	Be	45	2.647	148	3.10	2000	>RL
11	B	45	165.396	3519	4.02	2000	>RL
23	Na	45	5675.488	4298818	0.31	25000	>RL
24	Mg	45	13221.305	4999969	1.24	25000	>RL
27	Al	45	77846.670	10880545	0.99	10000	OUTCAL
39	K	45	17398.228	6752349	1.59	25000	>RL
44	Ca	45	234376.390	4871518	1.23	25000	OUTCAL
47	Ti	45	165.249	23897	1.81	2000	>RL
51	V	45	122.841	578722	0.16	2000	>RL
52	Cr	45	61.405	341382	0.11	2000	>RL
55	Mn	45	261.176	821168	0.93	2000	>RL
56	Fe	45	59741.281	281270024	2.40	10000	OUTCAL
59	Co	72	24.343	210321	1.30	2000	>RL
60	Ni	72	44.773	103480	0.75	2000	>RL
63	Cu	72	19.326	121942	0.52	2000	>RL
66	Zn	72	195.219	212083	0.55	2000	>RL
75	As	72	22.148	20656	0.81	2000	>RL
78	Se	72	4.330	329	5.22	2000	>RL
88	Sr	115	1476.591	6417674	0.90	2000	>RL
95	Mo	115	1.330	4860	2.43	2000	
107	Ag	115	0.085	987	2.36	500	
111	Cd	115	0.245	420	20.25	2000	
118	Sn	115	4.800	17953	1.34	2000	>RL
121	Sb	115	0.645	3788	1.96	500	
137	Ba	115	1515.262	2735759	0.17	2000	>RL
205	Tl	209	0.379	8985	1.40	2000	
208	Pb	209	43.719	1390366	0.34	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	928444	0.32	904202	102.68	70	120	
72	Ge	665048	0.26	677615	98.15	70	120	
115	In	6275917	2.63	6287303	99.82	70	120	
209	Bi	13739110	0.21	14081817	97.57	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	

Pmoist
For

DHL Work Order
1605071

PMOIST_160510A
For

DHL Work Order
1605071

DHL Analytical, Inc.

Run ID: **PMOIST_160510A** **Run No.:** 85742

Analytical Run Date: 5/10/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605037-01A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-02A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-03A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-04A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-05A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-06A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-07A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605037-08A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605038-01C	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605047-36A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605047-37A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605047-39A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605047-42A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605047-45A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605047-46A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605048-01E	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605048-02E	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605071-31A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605071-33A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605071-34A	1	PMOIST	SAMP	75073	5/11/2016 9:30:00 AM		
1605071-34A-DUP	1	PMOIST	DUP	75073	5/11/2016 9:30:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 2:56:58 PM, 5/11/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 12:16:24 PM**
Digestion: **Start: 5/10/2016 3:47:00 PM / Stop: 5/11/2016 9:30:00 AM**
Prep End Date: **5/11/2016 2:33:31 PM**

Prep Batch **75073** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605037-01A	Soil		10	10	1.000	1 of 1	
1605037-02A	Soil		10	10	1.000	1 of 1	
1605037-03A	Soil		10	10	1.000	1 of 1	
1605037-04A	Soil		10	10	1.000	1 of 1	
1605037-05A	Soil		10	10	1.000	1 of 1	
1605037-06A	Soil		10	10	1.000	1 of 1	
1605037-07A	Soil		10	10	1.000	1 of 1	
1605037-08A	Soil		10	10	1.000	1 of 1	
1605038-01C	Soil		10	10	1.000	1 of 1	
1605047-36A	Soil		10	10	1.000	1 of 1	
1605047-37A	Soil		10	10	1.000	1 of 1	
1605047-39A	Soil		10	10	1.000	1 of 1	
1605047-42A	Soil		10	10	1.000	1 of 1	
1605047-45A	Solid		10	10	1.000	1 of 1	
talk to JD before prep. PAH warning !!!							
1605047-46A	Solid		10	10	1.000	1 of 1	
talk to JD before prep PAH warning !!!							
1605048-01E	Soil		10	10	1.000	1 of 1	
1605048-02E	Soil		10	10	1.000	1 of 1	
1605071-31A	Soil		10	10	1.000	1 of 1	
1605071-33A	Soil		10	10	1.000	1 of 1	
1605071-34A	Soil		10	10	1.000	1 of 1	
1605071-34A-DUP	Soil		10	10	1.000	of	

REVIEWED/APPROVED

By Sherri Herschmann at 2:57:06 PM, 5/11/2016

Percent Moisture - Bench Sheet

Enter ALL weights into the DHL LIMS - Single Analyte Worksheet

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight

[(Final Weight - 2nd Weight1) / (Final Weight1)] x 100%

RUN ID:	160510 PMOIST A				
Date Started:	05/10/2016	Date Ended:	05/11/16	Date Ended:	
Time Started:	15:47	Time Ended:	09:30	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer #	81	2nd Weighing - if 1st dry is <12 hrs	
		Correction Factor	0.0		
Initial Temperature	108.0°C	Final Temperature	107.9		

Sample ID	Tare Wt (g)	Tare + Sample (g)	Final Wt (g)	2nd Weight	<0.1% (Y/N)
Sample ID					
1605037-01A	1.01	13.25	10.79		
1605037-02A	1.01	12.67	9.86		
1605037-03A	0.98	13.66	10.74		
1605037-04A	1.07	13.22	10.59		
1605037-05A	1.01	12.06	9.43		
1605037-06A	1.00	12.82	10.39		
1605037-07A	0.99	13.02	10.74		
1605037-08A	0.99	13.08	11.13		
1605038-01C	0.99	13.96	11.15		
1605047-36A	1.00	12.69	11.43		
1605047-37A	0.99	12.99	11.62		
1605047-39A	1.00	13.67	9.85		
1605047-42A	0.99	15.76	14.09		
1605047-45A	0.99	12.22	12.15		
1605047-46A	1.01	12.37	12.30		
1605048-01E	0.99	13.22	11.32		
1605048-02E	1.02	11.37	9.93		
1605071-31A	0.99	13.71	11.95		
1605071-33A	1.01	13.48	11.62		
1605071-34A	1.02	13.24	12.18		
1605071-34A DUP	0.99	13.28	12.22		

Data Folder Contents	Review Items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	X
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below:	X	

Analyst: WBoden Date: 05/11/16

Second-Level Review: Sherri Herschmann Date: 05/11/2016

REVIEWED/APPROVED

By Sherri Herschmann at 2:57:11 PM, 5/11/2016

F:\IC\Pmoist\PMOIST 2016\160510 PMOIST

PMOIST_160510B
For

DHL Work Order
1605071

DHL Analytical, Inc.

Run ID: **PMOIST_160510B** **Run No.:** 85746

Analytical Run Date: 5/10/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605071-19A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-20A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-21A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-22A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-23A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-24A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-25A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-26A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-27A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605071-30A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605074-28A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605074-29A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605074-30A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605074-31A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605074-32A	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605090-01C	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605090-02C	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605090-03C	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605090-04C	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605090-05C	1	PMOIST	SAMP	75081	5/11/2016 9:30:00 AM		
1605090-05C-DUP	1	PMOIST	DUP	75081	5/11/2016 9:30:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 2:35:58 PM, 5/11/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 3:13:31 PM**
Digestion: **Start: 5/10/2016 4:45:00 PM / Stop: 5/11/2016 9:30:00 AM**
Prep End Date: **5/11/2016 1:41:13 PM**

Prep Batch **75081** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-19A	Soil		10	10	1.000	1 of 1	
1605071-20A	Soil		10	10	1.000	1 of 1	
1605071-21A	Soil		10	10	1.000	1 of 1	
1605071-22A	Soil		10	10	1.000	1 of 1	
1605071-23A	Soil		10	10	1.000	1 of 1	
1605071-24A	Soil		10	10	1.000	1 of 1	
1605071-25A	Soil		10	10	1.000	1 of 1	
1605071-26A	Soil		10	10	1.000	1 of 1	
1605071-27A	Soil		10	10	1.000	1 of 1	
1605071-30A	Soil		10	10	1.000	1 of 1	
proceed w/testing. V. high moisture see JD							
1605074-28A	Soil		10	10	1.000	1 of 1	
1605074-29A	Soil		10	10	1.000	1 of 1	
1605074-30A	Soil		10	10	1.000	1 of 1	
1605074-31A	Soil		10	10	1.000	1 of 1	
1605074-32A	Soil		10	10	1.000	1 of 1	
1605090-01C	Soil		10	10	1.000	1 of 1	
1605090-02C	Soil		10	10	1.000	1 of 1	
1605090-03C	Soil		10	10	1.000	1 of 1	
1605090-04C	Soil		10	10	1.000	1 of 1	
1605090-05C	Soil		10	10	1.000	1 of 1	
1605090-05C-DUP	Soil		10	10	1.000	of	

REVIEWED/APPROVED

By Sherri Herschmann at 2:36:07 PM, 5/11/2016

Percent Moisture - Bench Sheet

Enter ALL weights into the DHL LIMS - Single Analyte Worksheet

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight

[(Final Weight - 2nd Weight) / (Final Weight)] x 100%

RUN ID:	160510 PMOIST B				
Date Started:	05/10/16	Date Ended:	05/11/16	Date Ended:	
Time Started:	16:45	Time Ended:	09:30	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer #	81	2nd Weighing - if 1st dry is <12 hrs	
		Correction Factor	0.0		
Initial Temperature	106.9	Final Temperature	107.9		

Sample ID	Tare Wt (g)	Tare + Sample (g)	Final Wt (g)	2nd Weight	<0.1% (Y/N)
Sample ID					
1605071-19A	0.99	13.12	10.51		
1605071-20A	1.01	13.38	10.99		
1605071-21A	1.02	12.73	10.46		
1605071-22A	1.01	13.08	10.16		
1605071-23A	1.01	13.79	11.29		
1605071-24A	1.00	12.67	11.03		
1605071-25A	1.01	12.94	11.39		
1605071-26A	1.02	13.55	11.68		
1605071-27A	1.02	12.46	11.18		
1605071-30A	1.02	13.19	9.36		
1605074-28A	1.01	12.77	9.91		
1605074-29A	1.01	12.12	9.68		
1605074-30A	1.01	12.76	9.56		
1605074-31A	1.02	12.29	9.33		
1605074-32A	1.02	12.85	10.79		
1605090-01C	1.00	13.53	12.50		
1605090-02C	1.00	12.35	10.97		
1605090-03C	1.00	12.38	10.91		
1605090-04C	1.01	13.26	11.88		
1605090-05C	1.02	13.02	12.14		
1605090-05C DUP	1.02	13.02	12.06		

Data Folder Contents	Review items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	X
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below:	X	

Analyst: WBeagle Date: 5/11/16

Second-Level Review: Sherri Herschmann Date: 05/11/2016

REVIEWED/APPROVED

By Sherri Herschmann at 2:36:16 PM, 5/11/2016

F:\IC\Pmoist\PMOIST 2016\160510 PMOIST B

PMOIST_160511A
For

DHL Work Order
1605071

Percent Moisture - Bench Sheet

Enter ALL weights into the DHL LIMS - Single Analyte Worksheet

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight

[(Final Weight - 2nd Weight) / (Final Weight)] x 100%

RUN ID:	160511 PMOIST A				
Date Started:	05/11/2016	Date Ended:	05/12/16	Date Ended:	
Time Started:	16:26	Time Ended:	09:55	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer #	81	2nd Weighing - if 1st dry is <12 hrs	
		Correction Factor	0.0		
Initial Temperature	107.7°C	Final Temperature	108.1		

Sample ID	Tare Wt (g)	Tare + Sample (g)	Final Wt (g)	2nd Weight	<0.1% (Y/N)
&SampID					
1605071-37A	1.01	13.33	12.45		DNR
1605072-04A	1.05	13.08	8.87		
1605072-05A	0.98	13.96	11.94		
1605072-06A	1.00	14.04	11.72		
1605072-07A	1.01	13.72	11.88		
1605072-08A	1.02	14.22	12.25		
1605090-06C	1.02	13.37	12.20		
1605090-07C	1.00	14.19	12.49		
1605090-08C	1.01	12.54	11.77		
1605090-09C	1.04	12.59	11.50		
1605090-10C	1.01	14.09	12.61		
1605090-11C	1.01	13.30	12.12		
1605090-12C	1.01	14.37	13.51		
1605090-13C	1.03	12.79	11.64		
1605090-14C	1.02	13.80	13.30		
1605092-01C	0.99	16.46	3.17		
1605097-16A	1.01	13.53	10.75		DNR
1605097-17A	1.01	12.76			DNR
1605097-18A	1.01	13.40	12.18		DNR
1605097-19A	1.02	13.56	12.43		DNR
1605097-17A DUP	1.00	12.13	10.95		

Broken Jar

DOD - Will Redo

Mostly water

Sample Spilled

DOD - Will Redo

Data Folder Contents	Review Items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	x
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below: DUP not reported since parent sample was spilled.	X	

QA APPROVED
By John DuPont at 9:27:21 AM, 5/13/2016

Analyst: [signature] Date: 05/12/16

Second-Level Review: Janice Whitt Date: 5/12/2016

F:\IC\Pmoist\PMOIST 2016\160511 PMOIST A

REVIEWED BY
By Janice Whitt at 5:34:32 PM, 5/12/2016

DHL Analytical, Inc.

Run ID: **PMOIST_160511A** **Run No.:** 85780

Analytical Run Date: 5/11/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605071-37A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-04A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-05A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-06A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-07A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-08A	1	PMOIST	SAMP	75102	5/11/2016		
1605090-06C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-07C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-08C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-09C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-10C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-11C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-12C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-13C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-14C	1	PMOIST	SAMP	75102	5/11/2016		
1605092-01C	1	PMOIST	SAMP	75102	5/11/2016		
1605097-16A	1	PMOIST	SAMP	75102	5/11/2016		
1605097-18A	1	PMOIST	SAMP	75102	5/11/2016		
1605097-19A	1	PMOIST	SAMP	75102	5/11/2016		
1605097-17A-DUP	1	PMOIST	DUP	75102	5/11/2016		

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:59:13 AM**
Digestion: **Start: 5/11/2016 4:26:00 PM / Stop: 5/12/2016 9:55:00 AM**
Prep End Date: **5/12/2016 1:26:29 PM**

Prep Batch **75102** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-37A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						
1605072-04A	Sediment		10	10	1.000	1 of 1	
	Broken Sample Jar						
1605072-05A	Sediment		10	10	1.000	1 of 1	
1605072-06A	Sediment		10	10	1.000	1 of 1	
1605072-07A	Sediment		10	10	1.000	1 of 1	
1605072-08A	Sediment		10	10	1.000	1 of 1	
1605090-06C	Soil		10	10	1.000	1 of 1	
1605090-07C	Soil		10	10	1.000	1 of 1	
1605090-08C	Soil		10	10	1.000	1 of 1	
1605090-09C	Soil		10	10	1.000	1 of 1	
1605090-10C	Soil		10	10	1.000	1 of 1	
1605090-11C	Soil		10	10	1.000	1 of 1	
1605090-12C	Soil		10	10	1.000	1 of 1	
1605090-13C	Soil		10	10	1.000	1 of 1	
1605090-14C	Soil		10	10	1.000	1 of 1	
1605092-01C	Sludge		10	10	1.000	1 of 1	
	Mostly Water Mix sample well before prep						
1605097-16A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						
1605097-17A-DUP	Soil		10	10	1.000	of	
	Parent Sample Spilled						
1605097-18A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						

REVIEWED BY
By Janice Whitt at 5:07:47 PM, 5/12/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:59:13 AM**
Digestion: **Start: 5/11/2016 4:26:00 PM / Stop: 5/12/2016 9:55:00 AM**
Prep End Date: **5/12/2016 1:26:29 PM**

Prep Batch **75102** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-19A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						

REVIEWED BY
By Janice Whitt at 5:07:49 PM, 5/12/2016

PMOIST_160512A
For

DHL Work Order
1605071

DHL Analytical, Inc.

Run ID: **PMOIST_160512A** **Run No.:** 85807

Analytical Run Date: 5/12/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605071-37A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-16A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-17A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-18A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-19A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-20A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-21A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-23A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-26A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-31A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-34A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-37A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-40A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-41A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605099-01C	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605130-01C	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605133-04B	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605133-05B	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-40A DUP	1	PMOIST	SAMP DUP	75130	5/13/2016 12:52:20 PM		

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:47 PM, 5/13/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 10:04:47 AM**
Digestion: **Start: 5/12/2016 5:47:00 PM / Stop: 5/13/2016 8:51:00 AM**
Prep End Date: **5/13/2016 12:52:20 PM**

Prep Batch **75130** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-37A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-16A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-17A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-18A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-19A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-20A	Soil		10	10	1.000	1 of 1	
1605097-21A	Soil		10	10	1.000	1 of 1	
1605097-23A	Soil		10	10	1.000	1 of 1	
1605097-26A	Soil		10	10	1.000	1 of 1	
1605098-31A	Soil		10	10	1.000	1 of 1	
1605098-34A	Soil		10	10	1.000	1 of 1	
1605098-37A	Soil		10	10	1.000	1 of 1	
1605098-40A	Soil		10	10	1.000	1 of 1	
1605098-40A DUP	Soil		10	10	1.000	of	
1605098-41A	Soil		10	10	1.000	1 of 1	
1605099-01C	Sludge		10	10	1.000	of 2	
1605130-01C	Soil		10	10	1.000	1 of 1	
1605133-04B	Soil		10	10	1.000	1 of 1	
1605133-05B	Soil		10	10	1.000	1 of 1	

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:50 PM, 5/13/2016

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C
Constant Weight is achieved if 2nd weight is <0.1% of 1st weight [(Final Weight - 2nd Weight) / (Final Weight)] x 100%

RUN ID:	160512 PMOIST A				
Date Started:	05/12/2016	Date Ended:	05/13/16	Date Ended:	
Time Started:	17:47	Time Ended:	08:51	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer # Correction Factor	81 0.0	2nd Weighing - if 1st dry is <12 hrs	
Initial Temperature	107.4°C	Final Temperature	107.5		
Sample ID	**Tare Wt (g)**	**Tare + Sample (g)**	**Final Wt (g)**	**2nd Weight**	**<0.1% (Y/N)**
SampID					
1605071-37A	1.04	12.94	12.00		
1605097-16A	1.01	12.41	10.18		
1605097-17A	0.99	12.16	10.98		
1605097-18A	0.99	12.94	12.14		
1605097-19A	1.02	12.52	11.52		
1605097-20A	1.02	12.11	10.67		
1605097-21A	1.03	13.29	11.81		
1605097-23A	1.00	12.58	10.88		
1605097-26A	1.03	13.20	11.25		
1605098-31A	1.05	12.70	11.34		
1605098-34A	1.01	12.45	11.52		
1605098-37A	1.02	12.91	11.81		
1605098-40A	1.07	13.63	12.65		
1605098-41A	1.0	12.94	11.83		
1605099-01C	1.00	12.66	4.11		
1605130-01C	0.99	13.67	10.25		
1605133-04B	1.01	13.95	10.83		
1605133-05B	1.01	13.16	10.07		
160 5098-40 DUP	0.99	12.87	11.99		

Data Folder Contents	Review Items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	X
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below:	X	

Analyst: [signature] Date: 05/13/16

05/13/2016

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:55 PM, 5/13/2016

PMOIST_160519A
For

DHL Work Order
1605071

DHL Analytical, Inc.

Run ID: **PMOIST_160519A** **Run No.:** 85919

Analytical Run Date: 5/19/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605071-32A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605071-38A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605098-35A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605098-38A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605144-17A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605144-18A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605144-19A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605144-20A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605144-21A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605148-01A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605185-01A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605185-02A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605185-03A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605185-04A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605185-05A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605187-01A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605187-02A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605187-03A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605187-04A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605187-05A	1	PMOIST	SAMP	75243	5/20/2016 9:12:00 AM		
1605187-01A DUP	1	PMOIST	DUP	75243	5/20/2016 9:12:00 AM		

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 2:01:48 PM**
Digestion: **Start: 5/19/2016 4:51:00 PM / Stop: 5/20/2016 9:12:00 AM**
Prep End Date: **5/20/2016 10:30:00 AM**

Prep Batch **75243** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605071-32A	Soil		10	10	1.000	1	of	1	
1605071-38A	Soil		10	10	1.000	1	of	1	
1605098-35A	Soil		10	10	1.000	1	of	1	
1605098-38A	Soil		10	10	1.000	1	of	1	
1605144-17A	Soil		10	10	1.000	1	of	1	
1605144-18A	Soil		10	10	1.000	1	of	1	
1605144-19A	Soil		10	10	1.000	1	of	1	
1605144-20A	Soil		10	10	1.000	1	of	1	
1605144-21A	Soil		10	10	1.000	1	of	1	
1605148-01A	Soil		10	10	1.000	1	of	1	
1605185-01A	Soil		10	10	1.000		of	2	
1605185-02A	Soil		10	10	1.000		of	2	
1605185-03A	Soil		10	10	1.000		of	2	
1605185-04A	Soil		10	10	1.000		of	2	
1605185-05A	Soil		10	10	1.000		of	2	
1605187-01A	Soil		10	10	1.000	1	of	1	
1605187-01A DUP	Soil		10	10	1.000		of		
1605187-02A	Soil		10	10	1.000	1	of	1	
1605187-03A	Soil		10	10	1.000	1	of	1	
1605187-04A	Soil		10	10	1.000	1	of	1	
1605187-05A	Soil		10	10	1.000	1	of	1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 2:01:48 PM**
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Balance #20
Thermometer # 81

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1605071-32A	Soil		10	10	1.000	1	of	1	
1605071-38A	Soil		10	10	1.000	1	of	1	
1605098-35A	Soil		10	10	1.000	1	of	1	
1605098-38A	Soil		10	10	1.000	1	of	1	
1605144-17A	Soil		10	10	1.000	1	of	1	
1605144-18A	Soil		10	10	1.000	1	of	1	
1605144-19A	Soil		10	10	1.000	1	of	1	
1605144-20A	Soil		10	10	1.000	1	of	1	
1605144-21A	Soil		10	10	1.000	1	of	1	
1605148-01A	Soil		10	10	1.000	1	of	1	
1605185-01A	Soil		10	10	1.000		of	2	
1605185-02A	Soil		10	10	1.000		of	2	
1605185-03A	Soil		10	10	1.000		of	2	
1605185-04A	Soil		10	10	1.000		of	2	
1605185-05A	Soil		10	10	1.000		of	2	
1605187-01A	Soil		10	10	1.000	1	of	1	
1605187-01A DUP	Soil		10	10	1.000		of		
1605187-02A	Soil		10	10	1.000	1	of	1	
1605187-03A	Soil		10	10	1.000	1	of	1	
1605187-04A	Soil		10	10	1.000	1	of	1	
1605187-05A	Soil		10	10	1.000	1	of	1	

REVIEWED BY
By Janice Whitt at 4:09:41 PM, 5/20/2016

Percent Moisture - Bench Sheet

Enter ALL weights into the DHL LIMS - Single Analyte Worksheet

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight

[(Final Weight - 2nd Weight!) / (Final Weight!)] x 100%

RUN ID:	160519 PMOIST A				
Date Started:	05/19/2016	Date Ended:	05-20-16	Date Ended:	
Time Started:	16:51	Time Ended:	09:12	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer #	81	2nd Weighing - if 1st dry is <12 hrs	
		Correction Factor	0.0		
Initial Temperature	107.9°C	Final Temperature	107.8°C		

Sample ID	Tare Wt (g)	Tare + Sample (g)	Final Wt (g)	2nd Weight	<0.1% (Y/N)
SampID					
1605071-32A	1.01	12.55	9.12		
1605071-38A	0.98	13.25	11.70		
1605098-35A	1.03	12.36	11.60		
1605098-38A	1.01	12.01	10.95		
1605144-17A	0.99	12.80	10.36		
1605144-18A	1.02	12.46	10.34		
1605144-19A	1.02	12.69	12.09		
1605144-20A	1.02	12.37	9.88		
1605144-21A	1.02	12.40	10.06		
1605148-01A	1.01	12.54	10.04		
1605185-01A	1.02	13.23	10.53		
1605185-02A	1.01	12.44	9.86		
1605185-03A	1.02	13.00	10.55		
1605185-04A	0.99	13.33	10.70		
1605185-05A	1.00	13.32	10.57		
1605187-01A	1.00	13.44	13.06		
1605187-02A	1.00	12.23	11.98		
1605187-03A	1.01	13.00	12.75		
1605187-04A	1.02	12.58	12.36		
1605187-05A	1.01	12.39	12.16		
1605187-01A DUP	1.02	13.69	13.30		

Data Folder Contents	Review Items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	x
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below:	X	

Analyst: WBelyn 05-20-16 Date:

Second-Level Review: Janice Whitt Date: 5/20/2016

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REVIEWED BY
By Janice Whitt at 4:13:23 PM, 5/20/2016

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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

№ 71111

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.Ankenberger@arcadis.com

DATE: May 6, 2016 PAGE 1 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605074
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 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 ☐ T PHOS, AMMONIA ☐	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-DU084(0-2)-A	01	5-6-16	1017	S	Bag	1				X						X						X								
SGR-DU084(2-4)-A	02	5-6-16	1020	S	Bag	1				X						X						X								
SGR-DU084(4-6)-A	03	5-6-16	1023	S	Bag	1				X						X						X								
SGR-DU084(6-8)-A	04	5-6-16	1027	S	Bag	1				X						X						X								
~~SGR-DU084(8-10)-A~~		~~5-6-16~~		~~S~~	~~Bag~~	~~1~~				~~X~~						~~X~~						~~X~~								GF
SGR-DU084(0-2)-B	05	5-6-16	1031	S	Bag	1				X						X						X								
SGR-DU084(2-4)-B	06	5-6-16	1042	S	Bag	1				X						X						X								
SGR-DU084(4-6)-B	07	5-6-16	1044	S	Bag	1				X						X						X								
SGR-DU084(6-8)-B	08	5-6-16	1047	S	Bag	1				X						X						X								
~~SGR-DU084(8-10)-B~~		~~5-6-16~~		~~S~~	~~Bag~~	~~1~~				~~X~~						~~X~~						~~X~~								GF
SGR-DU084(0-2)-C	09	5-6-16	1050	S	Bag	1				X						X						X								
SGR-DU084(2-4)-C	10	5-6-16	1052	S	Bag	1				X						X						X								
SGR-DU084(4-6)-C	11	5-6-16	1055	S	Bag	1				X						X						X								
SGR-DU084(6-8)-C	12	5-6-16	1058	S	Bag	1				X						X						X								
~~SGR-DU084(8-10)-C~~		~~5-6-16~~		~~S~~	~~Bag~~	~~1~~				~~X~~						~~X~~						~~X~~								GF

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-6-16 / 1800	FedEx
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
FedEx	5/7/16 10:00	[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: 2.0 | 1.6 | 1.2 / 1.3 | 0.2 | 0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL
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Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 71112

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 6, 2015 PAGE 2 OF 4
PO #: 04285021.0000.00044 DHL WORK ORDER #: 1L005074
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285021.0000.00044 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 2008 ☐ 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-DU044(0-2)-A	13	5-6-16	1353	S	Bag	1				X					X					X								
SGR-DU044(2-4)-A	14	5-6-16	1355	S	Bag	1				X					X					X								
SGR-DU044(4-6)-A	15	5-6-16	1357	S	Bag	1				X					X					X								
SGR-DU044(6-8)-A	16	5-6-16	1400	S	Bag	1				X					X					X								
SGR-DU044(8-10)-A	17	5-6-16	1401	S	Bag	1				X					X					X								
SGR-DU044(0-2)-B	18	5-6-16	1408	S	Bag	1				X					X					X								
SGR-DU044(2-4)-B	19	5-6-16	1410	S	Bag	1				X					X					X								
SGR-DU044(4-6)-B	20	5-6-16	1412	S	Bag	1				X					X					X								
SGR-DU044(6-8)-B	21	5-6-16	1415	S	Bag	1				X					X					X								
SGR-DU044(8-10)-B	22	5-6-16	1416	S	Bag	1				X					X					X								
SGR-DU044(0-2)-C	23	5-6-16	1418	S	Bag	1				X					X					X								
SGR-DU044(2-4)-C	24	5-6-16	1420	S	Bag	1				X					X					X								
SGR-DU044(4-6)-C	25	5-6-16	1423	S	Bag	1				X					X					X								
SGR-DU044(6-8)-C	26	5-6-16	1425	S	Bag	1				X					X					X								
SGR-DU044(8-10)-C	27	5-6-16	1430	S	Bag	1				X					X					X								

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[signature]	5-6-16/1800	FedEx
FedEx	5/7/16 10:00	[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: 20 1.6/1.2 13 10.2/0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL
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Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 71113

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 6, 2016 PAGE 3 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605074
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	HNO3	H2SO4 ☐ 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 2008 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ 1640	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-DU151-STRAT 1	28	5-6-16	1205	S	4oz Jar	1				X						X						X									
SGR-DU151-STRAT 2	29	5-6-16	1210	S	4oz Jar	1				X						X						X									
SGR-DU151-STRAT 3	30	5-6-16	1215	S	4oz Jar	1				X						X						X									
SGR-DU151-STRAT 4	31	5-6-16	1220	S	4oz Jar	1				X						X						X									
DUP02(20160506)	32	5-6-16	1230	S	4oz Jar	1				X						X						X									
EB06(20160506)	33	5-6-16	1050	W	Glass/Poly	2		X		X						X						X									
EB07(20160506)	34	5-6-16	1435	W	Glass/Poly	2		X		X						X						X									
EB08(20160506)	35	5-6-16	1700	W	Glass/Poly	2		X		X						X						X									

RELINQUISHED BY: (Signature) DATE/TIME 5-6-16/1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) FedEx DATE/TIME 5/7/16 10:00 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: 2.0 | 1.6 | 1.2 / 1.3 | 0.2 | 0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL
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Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70080

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill, Ste 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 6, 2016 PAGE 4 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605074
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	HNO3	H2SO4 ☐ 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 ☐ Cr, Pb ☐	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-DU082(0-2)-A	36	5-6-16	1611	S	Bag	1				X						X						X								
SGR-DU082(2-4)-A	37	5-6-16	1612	S	Bag	1				X						X						X								
SGR-DU082(4-6)-A	38	5-6-16	1614	S	Bag	1				X						X						X								
SGR-DU082(6-8)-A	39	5-6-16	1616	S	Bag	1				X						X						X								
SGR-DU082(0-2)-B	40	5-6-16	1621	S	Bag	1				X						X						X								
SGR-DU082(2-4)-B	41	5-6-16	1622	S	Bag	1				X						X						X								
SGR-DU082(4-6)-B	42	5-6-16	1624	S	Bag	1				X						X						X								
SGR-DU082(6-8)-B	43	5-6-16	1626	S	Bag	1				X						X						X								
SGR-DU082(0-2)-C	44	5-6-16	1629	S	Bag	1				X						X						X								
SGR-DU082(2-4)-C	45	5-6-16	1630	S	Bag	1				X						X						X								
SGR-DU082(4-6)-C	46	5-6-16	1631	S	Bag	1				X						X						X								
SGR-DU082(6-8)-C	47	5-6-16	1632	S	Bag	1				X						X						X								

RELINQUISHED BY: (Signature) DATE/TIME 5-6-16/1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) DATE/TIME 5-7-16 10:00 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: 2.0 1.6 1.2 1.3 1.0 2.1 0.5 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL Analytical, Inc.

Date: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-01
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:17 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	14.2 JH	0.0943	0.283	0.142		mg/Kg-dry	5	05/16/16 06:43 PM
IS: Bismuth	92.2	0	30-120	0		%REC	5	05/16/16 06:43 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[a]anthracene	0.118	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[a]pyrene	0.142	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[b]fluoranthene	0.142	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[e]pyrene	0.110	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[g,h,i]perylene	0.109	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[j]fluoranthene	0.0748	0.0497	0.0993	0.0745	JN	mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[k]fluoranthene	0.0715	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 05:13 PM
Chrysene	0.141	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Fluoranthene	0.226	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Indeno[1,2,3-cd]pyrene	0.0872	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 05:13 PM
Phenanthrene	0.0867	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 05:13 PM
Pyrene	0.195	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
IS: Acenaphthene-d10	66.8	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Chrysene-d12	75.4	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Perylene-d12	74.1	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Phenanthrene-d10	75.3	0	50-200	0		%REC	10	05/15/16 05:13 PM
Surr: 2-Fluorobiphenyl	85.6	0	46-115	0		%REC	10	05/15/16 05:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-01
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:17 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	74.1	0	58-133	0		%REC	10	05/15/16 05:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-02
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:20 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **RO**
Lead	55.9	JH	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 06:45 PM
IS: Bismuth	92.6		0	30-120	0		%REC	5	05/16/16 06:45 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.150		0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Acenaphthylene	0.150		0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Anthracene	0.150		0.100	0.200	0.150	J	mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[a]anthracene	0.579		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[a]pyrene	0.610		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[b]fluoranthene	0.591		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[e]pyrene	0.468		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[g,h,i]perylene	0.439		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[j]fluoranthene	0.321		0.100	0.200	0.150	N	mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[k]fluoranthene	0.309		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Chrysene	0.647		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Dibenz[a,h]anthracene	0.150		0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Fluoranthene	1.22		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Fluorene	0.150		0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Indeno[1,2,3-cd]pyrene	0.340		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Phenanthrene	0.619		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Pyrene	0.974		0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
IS: Acenaphthene-d10	73.9		0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Chrysene-d12	78.2		0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Naphthalene-d8	114		0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Perylene-d12	77.2		0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Phenanthrene-d10	74.7		0	50-200	0		%REC	20	05/15/16 05:53 PM
Surr: 2-Fluorobiphenyl	78.9		0	46-115	0		%REC	20	05/15/16 05:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-02
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:20 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.2	0	58-133	0		%REC	20	05/15/16 05:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-03
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:23 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	15.1 JH	0.0962	0.288	0.144		mg/Kg-dry	5	05/16/16 06:47 PM
IS: Bismuth	90.2	0	30-120	0		%REC	5	05/16/16 06:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[a]anthracene	0.130	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[a]pyrene	0.195	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[b]fluoranthene	0.189	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[e]pyrene	0.152	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[g,h,i]perylene	0.160	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[j]fluoranthene	0.0941	0.0500	0.0999	0.0749	JN	mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[k]fluoranthene	0.0912	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/15/16 06:32 PM
Chrysene	0.165	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Dibenz[a,h]anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Fluoranthene	0.214	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Indeno[1,2,3-cd]pyrene	0.120	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Phenanthrene	0.0748	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/15/16 06:32 PM
Pyrene	0.196	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
IS: Acenaphthene-d10	72.3	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Chrysene-d12	81.3	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Naphthalene-d8	117	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Perylene-d12	79.1	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Phenanthrene-d10	81.6	0	50-200	0		%REC	10	05/15/16 06:32 PM
Surr: 2-Fluorobiphenyl	77.8	0	46-115	0		%REC	10	05/15/16 06:32 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-03
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:23 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	66.1	0	58-133	0		%REC	10	05/15/16 06:32 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-04
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:27 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.34 JH	0.0847	0.254	0.127		mg/Kg-dry	5	05/16/16 06:49 PM
IS: Bismuth	89.1	0	30-120	0		%REC	5	05/16/16 06:49 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Acenaphthylene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Anthracene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[a]anthracene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[a]pyrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[b]fluoranthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[e]pyrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[g,h,i]perylene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[j]fluoranthene	0.0725	0.0483	0.0966	0.0725	NU	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[k]fluoranthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Chrysene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Dibenz[a,h]anthracene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Fluoranthene	0.0539	0.0483	0.0966	0.0725	J	mg/Kg-dry	10	05/15/16 07:12 PM
Fluorene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Indeno[1,2,3-cd]pyrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Phenanthrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Pyrene	0.0495	0.0483	0.0966	0.0725	J	mg/Kg-dry	10	05/15/16 07:12 PM
IS: Acenaphthene-d10	76.2	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Chrysene-d12	84.1	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Naphthalene-d8	121	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Perylene-d12	83.5	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Phenanthrene-d10	83.5	0	50-200	0		%REC	10	05/15/16 07:12 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/15/16 07:12 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-04
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:27 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	65.4	0	58-133	0		%REC	10	05/15/16 07:12 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-05
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:31 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	18.0 JH	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 04:54 PM
IS: Bismuth	82.8	0	30-120	0		%REC	5	05/18/16 04:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[a]anthracene	0.277	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[a]pyrene	0.352	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[b]fluoranthene	0.358	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[e]pyrene	0.289	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[g,h,i]perylene	0.276	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[j]fluoranthene	0.183	0.0497	0.0993	0.0745	N	mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[k]fluoranthene	0.181	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Chrysene	0.343	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Dibenz[a,h]anthracene	0.0592	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 07:52 PM
Fluoranthene	0.459	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Indeno[1,2,3-cd]pyrene	0.212	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Phenanthrene	0.144	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Pyrene	0.409	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
IS: Acenaphthene-d10	76.6	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Chrysene-d12	83.8	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Naphthalene-d8	125	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Phenanthrene-d10	82.3	0	50-200	0		%REC	10	05/15/16 07:52 PM
Surr: 2-Fluorobiphenyl	78.4	0	46-115	0		%REC	10	05/15/16 07:52 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-05
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:31 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	66.8	0	58-133	0		%REC	10	05/15/16 07:52 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-06
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:42 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	27.9	JH	0.0909	0.273	0.136		mg/Kg-dry	5	05/18/16 05:00 PM
IS: Bismuth	82.6		0	30-120	0		%REC	5	05/18/16 05:00 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Acenaphthylene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Anthracene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[a]anthracene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[a]pyrene	0.627		0.493	0.985	0.739	J	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[b]fluoranthene	0.589		0.493	0.985	0.739	J	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[e]pyrene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[g,h,i]perylene	0.523		0.493	0.985	0.739	J	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[j]fluoranthene	0.739		0.493	0.985	0.739	NU	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[k]fluoranthene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Chrysene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Dibenz[a,h]anthracene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Fluoranthene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Fluorene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Indeno[1,2,3-cd]pyrene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Phenanthrene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Pyrene	0.739		0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
IS: Acenaphthene-d10	79.2		0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Chrysene-d12	85.9		0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Naphthalene-d8	126		0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Perylene-d12	86.4		0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Phenanthrene-d10	82.4		0	50-200	0		%REC	100	05/15/16 08:33 PM
Surr: 2-Fluorobiphenyl	80.1		0	46-115	0		%REC	100	05/15/16 08:33 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-06
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:42 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	71.3	0	58-133	0		%REC	100	05/15/16 08:33 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-07
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:44 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	39.5	JH	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 05:06 PM
IS: Bismuth	82.3		0	30-120	0		%REC	5	05/18/16 05:06 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746		0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/17/16 02:00 AM
Acenaphthylene	0.0746		0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/17/16 02:00 AM
Anthracene	0.0521		0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[a]anthracene	0.284		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[a]pyrene	0.366		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[b]fluoranthene	0.345		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[e]pyrene	0.276		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[g,h,i]perylene	0.325		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[j]fluoranthene	0.212		0.0498	0.0995	0.0746	N	mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[k]fluoranthene	0.215		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Chrysene	0.357		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Dibenz[a,h]anthracene	0.112		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Fluoranthene	0.407		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Fluorene	0.0746		0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/17/16 02:00 AM
Indeno[1,2,3-cd]pyrene	0.274		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Phenanthrene	0.194		0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Pyrene	0.334	D	0.0995	0.199	0.149		mg/Kg-dry	20	05/16/16 01:07 AM
IS: Acenaphthene-d10	116		0	50-200	0		%REC	10	05/17/16 02:00 AM
IS: Acenaphthene-d10	80.6		0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Chrysene-d12	79.4		0	50-200	0		%REC	10	05/17/16 02:00 AM
IS: Chrysene-d12	87.7		0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Naphthalene-d8	127		0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Naphthalene-d8	100		0	50-200	0		%REC	10	05/17/16 02:00 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-07
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:44 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
IS: Perylene-d12	89.2	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/17/16 02:00 AM
IS: Phenanthrene-d10	87.0	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Phenanthrene-d10	88.7	0	50-200	0		%REC	10	05/17/16 02:00 AM
Surr: 2-Fluorobiphenyl	89.4	0	46-115	0		%REC	10	05/17/16 02:00 AM
Surr: 2-Fluorobiphenyl	76.0	0	46-115	0		%REC	20	05/16/16 01:07 AM
Surr: 4-Terphenyl-d14	79.0	0	58-133	0		%REC	10	05/17/16 02:00 AM
Surr: 4-Terphenyl-d14	62.7	0	58-133	0		%REC	20	05/16/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-08
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:47 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.35 JH	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 05:12 PM
IS: Bismuth	78.1	0	30-120	0		%REC	5	05/18/16 05:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Acenaphthylene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[a]anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[a]pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[b]fluoranthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[e]pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[g,h,i]perylene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[j]fluoranthene	0.0728	0.0485	0.0971	0.0728	NU	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[k]fluoranthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Chrysene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Dibenz[a,h]anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Fluoranthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Fluorene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Indeno[1,2,3-cd]pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/17/16 02:37 AM
Phenanthrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
IS: Acenaphthene-d10	120	0	50-200	0		%REC	10	05/17/16 02:37 AM
IS: Acenaphthene-d10	79.9	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Chrysene-d12	88.3	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/17/16 02:37 AM
IS: Naphthalene-d8	127	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/17/16 02:37 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-08
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:47 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	90.4	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Perylene-d12	87.5	0	50-200	0		%REC	10	05/17/16 02:37 AM
IS: Phenanthrene-d10	84.9	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Phenanthrene-d10	90.3	0	50-200	0		%REC	10	05/17/16 02:37 AM
Surr: 2-Fluorobiphenyl	70.5	0	46-115	0		%REC	10	05/16/16 01:47 AM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/17/16 02:37 AM
Surr: 4-Terphenyl-d14	62.8	0	58-133	0		%REC	10	05/16/16 01:47 AM
Surr: 4-Terphenyl-d14	75.7	0	58-133	0		%REC	10	05/17/16 02:37 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-09
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:50 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	55.1 JH	0.0893	0.268	0.134		mg/Kg-dry	5	05/18/16 05:17 PM
IS: Bismuth	78.1	0	30-120	0		%REC	5	05/18/16 05:17 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[a]anthracene	0.299	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[a]pyrene	0.351	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[b]fluoranthene	0.338	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[e]pyrene	0.277	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[g,h,i]perylene	0.262	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[j]fluoranthene	0.183	0.0498	0.0995	0.0746	N	mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[k]fluoranthene	0.174	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Chrysene	0.358	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Dibenz[a,h]anthracene	0.0552	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 02:27 AM
Fluoranthene	0.566	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Indeno[1,2,3-cd]pyrene	0.332	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 03:14 AM
Phenanthrene	0.224	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Pyrene	0.478	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
IS: Acenaphthene-d10	118	0	50-200	0		%REC	10	05/17/16 03:14 AM
IS: Acenaphthene-d10	81.3	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Chrysene-d12	89.9	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Chrysene-d12	78.4	0	50-200	0		%REC	10	05/17/16 03:14 AM
IS: Naphthalene-d8	133	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/17/16 03:14 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-09
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:50 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	91.9	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Perylene-d12	83.8	0	50-200	0		%REC	10	05/17/16 03:14 AM
IS: Phenanthrene-d10	86.1	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Phenanthrene-d10	88.9	0	50-200	0		%REC	10	05/17/16 03:14 AM
Surr: 2-Fluorobiphenyl	71.8	0	46-115	0		%REC	10	05/16/16 02:27 AM
Surr: 2-Fluorobiphenyl	88.4	0	46-115	0		%REC	10	05/17/16 03:14 AM
Surr: 4-Terphenyl-d14	62.9	0	58-133	0		%REC	10	05/16/16 02:27 AM
Surr: 4-Terphenyl-d14	79.5	0	58-133	0		%REC	10	05/17/16 03:14 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-10
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:52 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	92.3 JH	0.0990	0.297	0.149		mg/Kg-dry	5	05/18/16 05:23 PM
IS: Bismuth	80.3	0	30-120	0		%REC	5	05/18/16 05:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.150	0.0999	0.200	0.150	U	mg/Kg-dry	20	05/17/16 03:50 AM
Acenaphthylene	0.150	0.0999	0.200	0.150	U	mg/Kg-dry	20	05/17/16 03:50 AM
Anthracene	0.176	0.0999	0.200	0.150	J	mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[a]anthracene	0.749	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[a]pyrene	0.882	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[b]fluoranthene	0.776	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[e]pyrene	0.623	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[g,h,i]perylene	0.704	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[j]fluoranthene	0.458	0.0999	0.200	0.150	N	mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[k]fluoranthene	0.448	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Chrysene	0.888	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Dibenz[a,h]anthracene	0.203	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Fluoranthene	1.24	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Fluorene	0.150	0.0999	0.200	0.150	U	mg/Kg-dry	20	05/17/16 03:50 AM
Indeno[1,2,3-cd]pyrene	0.591	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Phenanthrene	0.789	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Pyrene	1.12 D	0.250	0.500	0.375		mg/Kg-dry	50	05/16/16 03:08 AM
IS: Acenaphthene-d10	140	0	50-200	0		%REC	20	05/17/16 03:50 AM
IS: Acenaphthene-d10	80.2	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Chrysene-d12	85.9	0	50-200	0		%REC	20	05/17/16 03:50 AM
IS: Chrysene-d12	89.5	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Naphthalene-d8	128	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Naphthalene-d8	116	0	50-200	0		%REC	20	05/17/16 03:50 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-10
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:52 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
IS: Perylene-d12	90.2	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Perylene-d12	93.8	0	50-200	0		%REC	20	05/17/16 03:50 AM
IS: Phenanthrene-d10	82.8	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Phenanthrene-d10	101	0	50-200	0		%REC	20	05/17/16 03:50 AM
Surr: 2-Fluorobiphenyl	82.5	0	46-115	0		%REC	20	05/17/16 03:50 AM
Surr: 2-Fluorobiphenyl	69.6	0	46-115	0		%REC	50	05/16/16 03:08 AM
Surr: 4-Terphenyl-d14	74.6	0	58-133	0		%REC	20	05/17/16 03:50 AM
Surr: 4-Terphenyl-d14	64.2	0	58-133	0		%REC	50	05/16/16 03:08 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605074-11
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:55 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	36.2 JH	0.0870	0.261	0.130		mg/Kg-dry	5	05/18/16 05:29 PM
IS: Bismuth	78.7	0	30-120	0		%REC	5	05/18/16 05:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/17/16 04:28 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/17/16 04:28 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[a]anthracene	0.0983	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[a]pyrene	0.138	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[b]fluoranthene	0.131	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[e]pyrene	0.108	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[g,h,i]perylene	0.137	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[j]fluoranthene	0.0785	0.0498	0.0996	0.0747	JN	mg/Kg-dry	10	05/17/16 04:28 AM
Benzo[k]fluoranthene	0.0820	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/17/16 04:28 AM
Chrysene	0.125	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/17/16 04:28 AM
Fluoranthene	0.133	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/17/16 04:28 AM
Indeno[1,2,3-cd]pyrene	0.111	0.0498	0.0996	0.0747		mg/Kg-dry	10	05/17/16 04:28 AM
Phenanthrene	0.0604	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/17/16 04:28 AM
Pyrene	0.127 D	0.0996	0.199	0.149	J	mg/Kg-dry	20	05/16/16 03:48 AM
IS: Acenaphthene-d10	129	0	50-200	0		%REC	10	05/17/16 04:28 AM
IS: Acenaphthene-d10	79.1	0	50-200	0		%REC	20	05/16/16 03:48 AM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/17/16 04:28 AM
IS: Chrysene-d12	84.3	0	50-200	0		%REC	20	05/16/16 03:48 AM
IS: Naphthalene-d8	127	0	50-200	0		%REC	20	05/16/16 03:48 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/17/16 04:28 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605074-11
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:55 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
IS: Perylene-d12	86.5	0	50-200	0		%REC	20	05/16/16 03:48 AM
IS: Perylene-d12	88.9	0	50-200	0		%REC	10	05/17/16 04:28 AM
IS: Phenanthrene-d10	81.9	0	50-200	0		%REC	20	05/16/16 03:48 AM
IS: Phenanthrene-d10	92.2	0	50-200	0		%REC	10	05/17/16 04:28 AM
Surr: 2-Fluorobiphenyl	88.9	0	46-115	0		%REC	10	05/17/16 04:28 AM
Surr: 2-Fluorobiphenyl	77.1	0	46-115	0		%REC	20	05/16/16 03:48 AM
Surr: 4-Terphenyl-d14	78.2	0	58-133	0		%REC	10	05/17/16 04:28 AM
Surr: 4-Terphenyl-d14	66.1	0	58-133	0		%REC	20	05/16/16 03:48 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605074-12
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:58 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.66 JH	0.0935	0.280	0.140		mg/Kg-dry	5	05/18/16 05:35 PM
IS: Bismuth	78.0	0	30-120	0		%REC	5	05/18/16 05:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Acenaphthylene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Anthracene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[a]anthracene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[a]pyrene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[b]fluoranthene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[e]pyrene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[g,h,i]perylene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[j]fluoranthene	0.0691	0.0461	0.0922	0.0691	NU	mg/Kg-dry	10	05/16/16 04:28 AM
Benzo[k]fluoranthene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Chrysene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Dibenz[a,h]anthracene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Fluoranthene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Fluorene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Indeno[1,2,3-cd]pyrene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/17/16 05:05 AM
Phenanthrene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
Pyrene	0.0691	0.0461	0.0922	0.0691	U	mg/Kg-dry	10	05/16/16 04:28 AM
IS: Acenaphthene-d10	131	0	50-200	0		%REC	10	05/17/16 05:05 AM
IS: Acenaphthene-d10	79.3	0	50-200	0		%REC	10	05/16/16 04:28 AM
IS: Chrysene-d12	87.9	0	50-200	0		%REC	10	05/16/16 04:28 AM
IS: Chrysene-d12	80.0	0	50-200	0		%REC	10	05/17/16 05:05 AM
IS: Naphthalene-d8	126	0	50-200	0		%REC	10	05/16/16 04:28 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/17/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605074-12
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:58 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	91.2	0	50-200	0		%REC	10	05/16/16 04:28 AM
IS: Perylene-d12	88.1	0	50-200	0		%REC	10	05/17/16 05:05 AM
IS: Phenanthrene-d10	85.7	0	50-200	0		%REC	10	05/16/16 04:28 AM
IS: Phenanthrene-d10	92.4	0	50-200	0		%REC	10	05/17/16 05:05 AM
Surr: 2-Fluorobiphenyl	74.0	0	46-115	0		%REC	10	05/16/16 04:28 AM
Surr: 2-Fluorobiphenyl	91.9	0	46-115	0		%REC	10	05/17/16 05:05 AM
Surr: 4-Terphenyl-d14	63.1	0	58-133	0		%REC	10	05/16/16 04:28 AM
Surr: 4-Terphenyl-d14	77.4	0	58-133	0		%REC	10	05/17/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-13
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 01:53 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	78.4	JH	0.0847	0.254	0.127		mg/Kg-dry	5	05/18/16 04:42 PM
IS: Bismuth	84.7		0	30-120	0		%REC	5	05/18/16 04:42 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.463		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Acenaphthylene	0.143		0.0956	0.191	0.143	U	mg/Kg-dry	20	05/15/16 08:22 PM
Anthracene	1.32	JL	0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[a]anthracene	10.2		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[a]pyrene	12.9		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[b]fluoranthene	12.3		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[e]pyrene	9.21		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[g,h,i]perylene	9.23		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[j]fluoranthene	6.62		0.0956	0.191	0.143	N	mg/Kg-dry	20	05/15/16 08:22 PM
Benzo[k]fluoranthene	6.89		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Chrysene	12.8		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Dibenz[a,h]anthracene	2.17	JH	0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Fluoranthene	15.6		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Fluorene	0.240		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Indeno[1,2,3-cd]pyrene	8.03		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Phenanthrene	6.89		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
Pyrene	13.6		0.0956	0.191	0.143		mg/Kg-dry	20	05/15/16 08:22 PM
IS: Acenaphthene-d10	104		0	50-200	0		%REC	20	05/15/16 08:22 PM
IS: Chrysene-d12	87.6		0	50-200	0		%REC	20	05/15/16 08:22 PM
IS: Naphthalene-d8	105		0	50-200	0		%REC	20	05/15/16 08:22 PM
IS: Perylene-d12	89.6		0	50-200	0		%REC	20	05/15/16 08:22 PM
IS: Phenanthrene-d10	84.1		0	50-200	0		%REC	20	05/15/16 08:22 PM
Surr: 2-Fluorobiphenyl	74.6		0	46-115	0		%REC	20	05/15/16 08:22 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-13
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 01:53 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.7	0	58-133	0		%REC	20	05/15/16 08:22 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-14
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 01:55 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	14.4 JH	0.0943	0.283	0.142		mg/Kg-dry	5	05/18/16 05:41 PM
IS: Bismuth	77.5	0	30-120	0		%REC	5	05/18/16 05:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/16/16 05:07 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/16/16 05:07 AM
Anthracene	0.0881	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[a]anthracene	0.673	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[a]pyrene	0.833	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[b]fluoranthene	0.770	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[e]pyrene	0.627	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[g,h,i]perylene	0.586	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[j]fluoranthene	0.408	0.0495	0.0989	0.0742	N	mg/Kg-dry	10	05/16/16 05:07 AM
Benzo[k]fluoranthene	0.382	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Chrysene	0.814	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Dibenz[a,h]anthracene	0.124	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Fluoranthene	1.22	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/16/16 05:07 AM
Indeno[1,2,3-cd]pyrene	0.758	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/17/16 05:42 AM
Phenanthrene	0.439	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
Pyrene	1.06	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/16/16 05:07 AM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/17/16 05:42 AM
IS: Acenaphthene-d10	80.7	0	50-200	0		%REC	10	05/16/16 05:07 AM
IS: Chrysene-d12	89.8	0	50-200	0		%REC	10	05/16/16 05:07 AM
IS: Chrysene-d12	72.2	0	50-200	0		%REC	10	05/17/16 05:42 AM
IS: Naphthalene-d8	131	0	50-200	0		%REC	10	05/16/16 05:07 AM
IS: Naphthalene-d8	94.4	0	50-200	0		%REC	10	05/17/16 05:42 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-14
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 01:55 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	92.0	0	50-200	0		%REC	10	05/16/16 05:07 AM
IS: Perylene-d12	77.9	0	50-200	0		%REC	10	05/17/16 05:42 AM
IS: Phenanthrene-d10	87.4	0	50-200	0		%REC	10	05/16/16 05:07 AM
IS: Phenanthrene-d10	84.1	0	50-200	0		%REC	10	05/17/16 05:42 AM
Surr: 2-Fluorobiphenyl	70.8	0	46-115	0		%REC	10	05/16/16 05:07 AM
Surr: 2-Fluorobiphenyl	86.1	0	46-115	0		%REC	10	05/17/16 05:42 AM
Surr: 4-Terphenyl-d14	61.8	0	58-133	0		%REC	10	05/16/16 05:07 AM
Surr: 4-Terphenyl-d14	80.8	0	58-133	0		%REC	10	05/17/16 05:42 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-15
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 01:57 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.21 JH	0.0870	0.261	0.130		mg/Kg-dry	5	05/18/16 06:29 PM
IS: Bismuth	80.1	0	30-120	0		%REC	5	05/18/16 06:29 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 05:46 AM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 05:46 AM
Anthracene	0.0709	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[a]anthracene	0.267	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[a]pyrene	0.297	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[b]fluoranthene	0.290	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[e]pyrene	0.232	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[g,h,i]perylene	0.209	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[j]fluoranthene	0.150	0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/16/16 05:46 AM
Benzo[k]fluoranthene	0.142	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Chrysene	0.316	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 05:46 AM
Fluoranthene	0.591	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 05:46 AM
Indeno[1,2,3-cd]pyrene	0.260	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/17/16 06:18 AM
Phenanthrene	0.362	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
Pyrene	0.468	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 05:46 AM
IS: Acenaphthene-d10	130	0	50-200	0		%REC	10	05/17/16 06:18 AM
IS: Acenaphthene-d10	79.0	0	50-200	0		%REC	10	05/16/16 05:46 AM
IS: Chrysene-d12	86.9	0	50-200	0		%REC	10	05/16/16 05:46 AM
IS: Chrysene-d12	78.6	0	50-200	0		%REC	10	05/17/16 06:18 AM
IS: Naphthalene-d8	123	0	50-200	0		%REC	10	05/16/16 05:46 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/17/16 06:18 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-15
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 01:57 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	88.9	0	50-200	0		%REC	10	05/16/16 05:46 AM
IS: Perylene-d12	84.6	0	50-200	0		%REC	10	05/17/16 06:18 AM
IS: Phenanthrene-d10	85.8	0	50-200	0		%REC	10	05/16/16 05:46 AM
IS: Phenanthrene-d10	93.3	0	50-200	0		%REC	10	05/17/16 06:18 AM
Surr: 2-Fluorobiphenyl	76.8	0	46-115	0		%REC	10	05/16/16 05:46 AM
Surr: 2-Fluorobiphenyl	93.2	0	46-115	0		%REC	10	05/17/16 06:18 AM
Surr: 4-Terphenyl-d14	65.0	0	58-133	0		%REC	10	05/16/16 05:46 AM
Surr: 4-Terphenyl-d14	80.6	0	58-133	0		%REC	10	05/17/16 06:18 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-16
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:00 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.15 JH	0.0980	0.294	0.147		mg/Kg-dry	5	05/18/16 06:35 PM
IS: Bismuth	76.4	0	30-120	0		%REC	5	05/18/16 06:35 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[a]anthracene	0.0541	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[a]pyrene	0.0745	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[b]fluoranthene	0.0701	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[e]pyrene	0.0583	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[g,h,i]perylene	0.0579	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/16/16 06:26 AM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Chrysene	0.0660	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Fluoranthene	0.0855	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Indeno[1,2,3-cd]pyrene	0.0859	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/17/16 06:55 AM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 06:26 AM
Pyrene	0.0799	0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 06:26 AM
IS: Acenaphthene-d10	130	0	50-200	0		%REC	10	05/17/16 06:55 AM
IS: Acenaphthene-d10	87.0	0	50-200	0		%REC	10	05/16/16 06:26 AM
IS: Chrysene-d12	93.1	0	50-200	0		%REC	10	05/16/16 06:26 AM
IS: Chrysene-d12	78.6	0	50-200	0		%REC	10	05/17/16 06:55 AM
IS: Naphthalene-d8	140	0	50-200	0		%REC	10	05/16/16 06:26 AM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/17/16 06:55 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-16
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:00 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	96.6	0	50-200	0		%REC	10	05/16/16 06:26 AM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/17/16 06:55 AM
IS: Phenanthrene-d10	91.2	0	50-200	0		%REC	10	05/16/16 06:26 AM
IS: Phenanthrene-d10	92.8	0	50-200	0		%REC	10	05/17/16 06:55 AM
Surr: 2-Fluorobiphenyl	68.2	0	46-115	0		%REC	10	05/16/16 06:26 AM
Surr: 2-Fluorobiphenyl	94.2	0	46-115	0		%REC	10	05/17/16 06:55 AM
Surr: 4-Terphenyl-d14	58.5	0	58-133	0		%REC	10	05/16/16 06:26 AM
Surr: 4-Terphenyl-d14	80.1	0	58-133	0		%REC	10	05/17/16 06:55 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605074-17
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:01 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.82 JH	0.0909	0.273	0.136		mg/Kg-dry	5	05/18/16 06:41 PM
IS: Bismuth	80.4	0	30-120	0		%REC	5	05/18/16 06:41 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[a]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[b]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/15/16 08:59 PM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/15/16 08:59 PM
IS: Acenaphthene-d10	93.4	0	50-200	0		%REC	10	05/15/16 08:59 PM
IS: Chrysene-d12	87.2	0	50-200	0		%REC	10	05/15/16 08:59 PM
IS: Naphthalene-d8	99.2	0	50-200	0		%REC	10	05/15/16 08:59 PM
IS: Perylene-d12	88.1	0	50-200	0		%REC	10	05/15/16 08:59 PM
IS: Phenanthrene-d10	73.4	0	50-200	0		%REC	10	05/15/16 08:59 PM
Surr: 2-Fluorobiphenyl	70.5	0	46-115	0		%REC	10	05/15/16 08:59 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605074-17
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:01 PM
Lab Order:	1605074	**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	05/15/16 08:59 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-18
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:08 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	188	JH	0.0952	0.286	0.143		mg/Kg-dry	5	05/18/16 06:47 PM
IS: Bismuth	85.4		0	30-120	0		%REC	5	05/18/16 06:47 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.433		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Acenaphthylene	0.147		0.0983	0.197	0.147	U	mg/Kg-dry	20	05/15/16 09:36 PM
Anthracene	0.878		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[a]anthracene	7.68		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[a]pyrene	10.8		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[b]fluoranthene	10.1		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[e]pyrene	7.72		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[g,h,i]perylene	7.96		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[j]fluoranthene	5.38		0.0983	0.197	0.147	N	mg/Kg-dry	20	05/15/16 09:36 PM
Benzo[k]fluoranthene	5.48		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Chrysene	9.99		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Dibenz[a,h]anthracene	1.80		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Fluoranthene	11.7		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Fluorene	0.261		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Indeno[1,2,3-cd]pyrene	6.75		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Phenanthrene	5.09		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
Pyrene	10.6		0.0983	0.197	0.147		mg/Kg-dry	20	05/15/16 09:36 PM
IS: Acenaphthene-d10	98.5		0	50-200	0		%REC	20	05/15/16 09:36 PM
IS: Chrysene-d12	84.1		0	50-200	0		%REC	20	05/15/16 09:36 PM
IS: Naphthalene-d8	101		0	50-200	0		%REC	20	05/15/16 09:36 PM
IS: Perylene-d12	85.0		0	50-200	0		%REC	20	05/15/16 09:36 PM
IS: Phenanthrene-d10	81.2		0	50-200	0		%REC	20	05/15/16 09:36 PM
Surr: 2-Fluorobiphenyl	78.9		0	46-115	0		%REC	20	05/15/16 09:36 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-18
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:08 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	81.1	0	58-133	0		%REC	20	05/15/16 09:36 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-19
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:10 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	9.07	JH	0.0980	0.294	0.147		mg/Kg-dry	5	05/18/16 06:53 PM
IS: Bismuth	82.5		0	30-120	0		%REC	5	05/18/16 06:53 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0721		0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/15/16 10:13 PM
Acenaphthylene	0.0747		0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/15/16 10:13 PM
Anthracene	0.127		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[a]anthracene	0.819		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[a]pyrene	1.19		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[b]fluoranthene	1.11		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[e]pyrene	0.847		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[g,h,i]perylene	0.915		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[j]fluoranthene	0.566		0.0498	0.0996	0.0747	N	mg/Kg-dry	10	05/15/16 10:13 PM
Benzo[k]fluoranthene	0.589		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Chrysene	1.09		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Dibenz[a,h]anthracene	0.228		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Fluoranthene	1.40		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Fluorene	0.0696		0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/15/16 10:13 PM
Indeno[1,2,3-cd]pyrene	0.761		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Phenanthrene	0.707		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
Pyrene	1.21		0.0498	0.0996	0.0747		mg/Kg-dry	10	05/15/16 10:13 PM
IS: Acenaphthene-d10	102		0	50-200	0		%REC	10	05/15/16 10:13 PM
IS: Chrysene-d12	87.0		0	50-200	0		%REC	10	05/15/16 10:13 PM
IS: Naphthalene-d8	103		0	50-200	0		%REC	10	05/15/16 10:13 PM
IS: Perylene-d12	88.9		0	50-200	0		%REC	10	05/15/16 10:13 PM
IS: Phenanthrene-d10	81.2		0	50-200	0		%REC	10	05/15/16 10:13 PM
Surr: 2-Fluorobiphenyl	76.0		0	46-115	0		%REC	10	05/15/16 10:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-19
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:10 PM
Lab Order:	1605074	**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	05/15/16 10:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-20
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:12 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.66 JH	0.0901	0.270	0.135		mg/Kg-dry	5	05/18/16 06:59 PM
IS: Bismuth	75.8	0	30-120	0		%REC	5	05/18/16 06:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Acenaphthylene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Anthracene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[a]anthracene	0.0536	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[a]pyrene	0.0768	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[b]fluoranthene	0.0733	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[e]pyrene	0.0549	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[g,h,i]perylene	0.0670	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[j]fluoranthene	0.0720	0.0480	0.0960	0.0720	NU	mg/Kg-dry	10	05/15/16 10:50 PM
Benzo[k]fluoranthene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Chrysene	0.0719	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Dibenz[a,h]anthracene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Fluoranthene	0.0835	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Fluorene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Indeno[1,2,3-cd]pyrene	0.0543	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
Phenanthrene	0.0720	0.0480	0.0960	0.0720	U	mg/Kg-dry	10	05/15/16 10:50 PM
Pyrene	0.0747	0.0480	0.0960	0.0720	J	mg/Kg-dry	10	05/15/16 10:50 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/15/16 10:50 PM
IS: Chrysene-d12	88.1	0	50-200	0		%REC	10	05/15/16 10:50 PM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/15/16 10:50 PM
IS: Perylene-d12	88.7	0	50-200	0		%REC	10	05/15/16 10:50 PM
IS: Phenanthrene-d10	82.5	0	50-200	0		%REC	10	05/15/16 10:50 PM
Surr: 2-Fluorobiphenyl	73.6	0	46-115	0		%REC	10	05/15/16 10:50 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-20
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:12 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.0	0	58-133	0		%REC	10	05/15/16 10:50 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-21
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:15 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.81 JH	0.0926	0.278	0.139		mg/Kg-dry	5	05/18/16 07:05 PM
IS: Bismuth	83.1	0	30-120	0		%REC	5	05/18/16 07:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Acenaphthylene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Anthracene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[a]anthracene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[a]pyrene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[b]fluoranthene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[e]pyrene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[g,h,i]perylene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[j]fluoranthene	0.106	0.0706	0.141	0.106	NU	mg/Kg-dry	10	05/15/16 11:27 PM
Benzo[k]fluoranthene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Chrysene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Dibenz[a,h]anthracene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Fluoranthene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Fluorene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Indeno[1,2,3-cd]pyrene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Phenanthrene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
Pyrene	0.106	0.0706	0.141	0.106	U	mg/Kg-dry	10	05/15/16 11:27 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/15/16 11:27 PM
IS: Chrysene-d12	86.2	0	50-200	0		%REC	10	05/15/16 11:27 PM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/15/16 11:27 PM
IS: Perylene-d12	88.1	0	50-200	0		%REC	10	05/15/16 11:27 PM
IS: Phenanthrene-d10	81.0	0	50-200	0		%REC	10	05/15/16 11:27 PM
Surr: 2-Fluorobiphenyl	78.0	0	46-115	0		%REC	10	05/15/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-21
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:15 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.2	0	58-133	0		%REC	10	05/15/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605074-22
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:16 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.23 JH	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 07:11 PM
IS: Bismuth	81.0	0	30-120	0		%REC	5	05/18/16 07:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[a]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[a]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[b]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[e]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[g,h,i]perylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[j]fluoranthene	0.0749	0.0499	0.0998	0.0749	NU	mg/Kg-dry	10	05/16/16 12:04 AM
Benzo[k]fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Chrysene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Fluoranthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Indeno[1,2,3-cd]pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Phenanthrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
Pyrene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 12:04 AM
IS: Acenaphthene-d10	99.9	0	50-200	0		%REC	10	05/16/16 12:04 AM
IS: Chrysene-d12	85.9	0	50-200	0		%REC	10	05/16/16 12:04 AM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/16/16 12:04 AM
IS: Perylene-d12	88.9	0	50-200	0		%REC	10	05/16/16 12:04 AM
IS: Phenanthrene-d10	81.2	0	50-200	0		%REC	10	05/16/16 12:04 AM
Surr: 2-Fluorobiphenyl	78.2	0	46-115	0		%REC	10	05/16/16 12:04 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605074-22
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:16 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.9	0	58-133	0		%REC	10	05/16/16 12:04 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-23
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:18 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	86.6 JH	0.0980	0.294	0.147		mg/Kg-dry	5	05/18/16 07:17 PM
IS: Bismuth	86.0	0	30-120	0		%REC	5	05/18/16 07:17 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.623	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Acenaphthylene	0.147	0.0982	0.196	0.147	U	mg/Kg-dry	20	05/16/16 12:41 AM
Anthracene	2.61	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[a]anthracene	15.3	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[a]pyrene	18.1	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[b]fluoranthene	16.9	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[e]pyrene	12.7	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[g,h,i]perylene	12.6	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[j]fluoranthene	9.30	0.0982	0.196	0.147	N	mg/Kg-dry	20	05/16/16 12:41 AM
Benzo[k]fluoranthene	9.51	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Chrysene	18.6	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Dibenz[a,h]anthracene	3.02	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Fluoranthene	24.3	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Fluorene	0.435	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Indeno[1,2,3-cd]pyrene	10.9	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Phenanthrene	12.5	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
Pyrene	20.8	0.0982	0.196	0.147		mg/Kg-dry	20	05/16/16 12:41 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	20	05/16/16 12:41 AM
IS: Chrysene-d12	80.7	0	50-200	0		%REC	20	05/16/16 12:41 AM
IS: Naphthalene-d8	102	0	50-200	0		%REC	20	05/16/16 12:41 AM
IS: Perylene-d12	83.6	0	50-200	0		%REC	20	05/16/16 12:41 AM
IS: Phenanthrene-d10	81.1	0	50-200	0		%REC	20	05/16/16 12:41 AM
Surr: 2-Fluorobiphenyl	79.7	0	46-115	0		%REC	20	05/16/16 12:41 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-23
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:18 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.9	0	58-133	0		%REC	20	05/16/16 12:41 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-24
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:20 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.23 JH	0.0943	0.283	0.142		mg/Kg-dry	5	05/18/16 07:23 PM
IS: Bismuth	82.3	0	30-120	0		%REC	5	05/18/16 07:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.278	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/16/16 01:18 AM
Anthracene	1.55	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[a]anthracene	6.97	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[a]pyrene	7.58	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[b]fluoranthene	6.88	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[e]pyrene	5.10	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[g,h,i]perylene	4.99	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[j]fluoranthene	3.88	0.0499	0.0997	0.0748	N	mg/Kg-dry	10	05/16/16 01:18 AM
Benzo[k]fluoranthene	4.03	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Chrysene	8.14	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Dibenz[a,h]anthracene	1.12	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Fluoranthene	11.6	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Fluorene	0.272	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Indeno[1,2,3-cd]pyrene	4.34	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Phenanthrene	6.70	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
Pyrene	9.58	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 01:18 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/16/16 01:18 AM
IS: Chrysene-d12	82.5	0	50-200	0		%REC	10	05/16/16 01:18 AM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/16/16 01:18 AM
IS: Perylene-d12	85.9	0	50-200	0		%REC	10	05/16/16 01:18 AM
IS: Phenanthrene-d10	82.0	0	50-200	0		%REC	10	05/16/16 01:18 AM
Surr: 2-Fluorobiphenyl	76.5	0	46-115	0		%REC	10	05/16/16 01:18 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-24
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:20 PM
Lab Order:	1605074	**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	05/16/16 01:18 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605074-25
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:23 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	7.43	JH	0.0901	0.270	0.135		mg/Kg-dry	5	05/19/16 02:05 PM
IS: Bismuth	77.6		0	30-120	0		%REC	5	05/19/16 02:05 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0712		0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/16/16 01:55 AM
Acenaphthylene	0.0712		0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/16/16 01:55 AM
Anthracene	0.168		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[a]anthracene	0.618		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[a]pyrene	0.627		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[b]fluoranthene	0.551		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[e]pyrene	0.421		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[g,h,i]perylene	0.419		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[j]fluoranthene	0.328		0.0474	0.0949	0.0712	N	mg/Kg-dry	10	05/16/16 01:55 AM
Benzo[k]fluoranthene	0.333		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Chrysene	0.700		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Dibenz[a,h]anthracene	0.0970		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Fluoranthene	1.21		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Fluorene	0.0712		0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/16/16 01:55 AM
Indeno[1,2,3-cd]pyrene	0.354		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Phenanthrene	0.711		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
Pyrene	0.976		0.0474	0.0949	0.0712		mg/Kg-dry	10	05/16/16 01:55 AM
IS: Acenaphthene-d10	104		0	50-200	0		%REC	10	05/16/16 01:55 AM
IS: Chrysene-d12	85.3		0	50-200	0		%REC	10	05/16/16 01:55 AM
IS: Naphthalene-d8	104		0	50-200	0		%REC	10	05/16/16 01:55 AM
IS: Perylene-d12	87.7		0	50-200	0		%REC	10	05/16/16 01:55 AM
IS: Phenanthrene-d10	83.6		0	50-200	0		%REC	10	05/16/16 01:55 AM
Surr: 2-Fluorobiphenyl	79.4		0	46-115	0		%REC	10	05/16/16 01:55 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605074-25
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:23 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.0	0	58-133	0		%REC	10	05/16/16 01:55 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605074-26
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:25 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.48 JH	0.0893	0.268	0.134		mg/Kg-dry	5	05/19/16 02:11 PM
IS: Bismuth	79.9	0	30-120	0		%REC	5	05/19/16 02:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/16/16 02:32 AM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:32 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/16/16 02:32 AM
IS: Chrysene-d12	82.3	0	50-200	0		%REC	10	05/16/16 02:32 AM
IS: Naphthalene-d8	99.4	0	50-200	0		%REC	10	05/16/16 02:32 AM
IS: Perylene-d12	84.6	0	50-200	0		%REC	10	05/16/16 02:32 AM
IS: Phenanthrene-d10	78.9	0	50-200	0		%REC	10	05/16/16 02:32 AM
Surr: 2-Fluorobiphenyl	82.5	0	46-115	0		%REC	10	05/16/16 02:32 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605074-26
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:25 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.4	0	58-133	0		%REC	10	05/16/16 02:32 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605074-27
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:30 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.67 JH	0.0926	0.278	0.139		mg/Kg-dry	5	05/19/16 02:16 PM
IS: Bismuth	76.1	0	30-120	0		%REC	5	05/19/16 02:16 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Acenaphthylene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Anthracene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[a]anthracene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[a]pyrene	0.0573	0.0496	0.0991	0.0743	J	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[b]fluoranthene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[e]pyrene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[g,h,i]perylene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[j]fluoranthene	0.0743	0.0496	0.0991	0.0743	NU	mg/Kg-dry	10	05/16/16 06:48 AM
Benzo[k]fluoranthene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Chrysene	0.0667	0.0496	0.0991	0.0743	J	mg/Kg-dry	10	05/16/16 06:48 AM
Dibenz[a,h]anthracene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Fluoranthene	0.0799	0.0496	0.0991	0.0743	J	mg/Kg-dry	10	05/16/16 06:48 AM
Fluorene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Indeno[1,2,3-cd]pyrene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Phenanthrene	0.0743	0.0496	0.0991	0.0743	U	mg/Kg-dry	10	05/16/16 06:48 AM
Pyrene	0.0799	0.0496	0.0991	0.0743	J	mg/Kg-dry	10	05/16/16 06:48 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/16/16 06:48 AM
IS: Chrysene-d12	78.5	0	50-200	0		%REC	10	05/16/16 06:48 AM
IS: Naphthalene-d8	98.3	0	50-200	0		%REC	10	05/16/16 06:48 AM
IS: Perylene-d12	80.4	0	50-200	0		%REC	10	05/16/16 06:48 AM
IS: Phenanthrene-d10	80.5	0	50-200	0		%REC	10	05/16/16 06:48 AM
Surr: 2-Fluorobiphenyl	78.7	0	46-115	0		%REC	10	05/16/16 06:48 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU044(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605074-27
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:30 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.3	0	58-133	0		%REC	10	05/16/16 06:48 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605074-28
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:05 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	52.7 JH	0.127	0.381	0.191		mg/Kg-dry	5	05/19/16 02:22 PM
IS: Bismuth	82.0	0	30-120	0		%REC	5	05/19/16 02:22 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0920	0.0613	0.123	0.0920	U	mg/Kg-dry	10	05/16/16 07:25 AM
Acenaphthylene	0.0920	0.0613	0.123	0.0920	U	mg/Kg-dry	10	05/16/16 07:25 AM
Anthracene	0.0920	0.0613	0.123	0.0920	U	mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[a]anthracene	0.166	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[a]pyrene	0.201	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[b]fluoranthene	0.193	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[e]pyrene	0.151	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[g,h,i]perylene	0.166	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[j]fluoranthene	0.106	0.0613	0.123	0.0920	JN	mg/Kg-dry	10	05/16/16 07:25 AM
Benzo[k]fluoranthene	0.115	0.0613	0.123	0.0920	J	mg/Kg-dry	10	05/16/16 07:25 AM
Chrysene	0.210	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Dibenz[a,h]anthracene	0.0920	0.0613	0.123	0.0920	U	mg/Kg-dry	10	05/16/16 07:25 AM
Fluoranthene	0.295	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Fluorene	0.0920	0.0613	0.123	0.0920	U	mg/Kg-dry	10	05/16/16 07:25 AM
Indeno[1,2,3-cd]pyrene	0.140	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Phenanthrene	0.126	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
Pyrene	0.249	0.0613	0.123	0.0920		mg/Kg-dry	10	05/16/16 07:25 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/16/16 07:25 AM
IS: Chrysene-d12	79.2	0	50-200	0		%REC	10	05/16/16 07:25 AM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/16/16 07:25 AM
IS: Perylene-d12	81.7	0	50-200	0		%REC	10	05/16/16 07:25 AM
IS: Phenanthrene-d10	81.4	0	50-200	0		%REC	10	05/16/16 07:25 AM
Surr: 2-Fluorobiphenyl	80.9	0	46-115	0		%REC	10	05/16/16 07:25 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605074-28
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:05 PM
Lab Order:	1605074	**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	05/16/16 07:25 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	24.3	0	0	0		WT%	1	05/11/16 09:30 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605074-29
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:10 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	29.2 JH	0.123	0.370	0.185		mg/Kg-dry	5	05/19/16 02:28 PM
IS: Bismuth	84.1	0	30-120	0		%REC	5	05/19/16 02:28 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0887	0.0591	0.118	0.0887	U	mg/Kg-dry	10	05/16/16 08:02 AM
Acenaphthylene	0.0887	0.0591	0.118	0.0887	U	mg/Kg-dry	10	05/16/16 08:02 AM
Anthracene	0.0887	0.0591	0.118	0.0887	U	mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[a]anthracene	0.385	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[a]pyrene	0.467	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[b]fluoranthene	0.431	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[e]pyrene	0.419	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[g,h,i]perylene	0.427	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[j]fluoranthene	0.233	0.0591	0.118	0.0887	N	mg/Kg-dry	10	05/16/16 08:02 AM
Benzo[k]fluoranthene	0.237	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Chrysene	0.493	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Dibenz[a,h]anthracene	0.105	0.0591	0.118	0.0887	J	mg/Kg-dry	10	05/16/16 08:02 AM
Fluoranthene	0.565	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Fluorene	0.0887	0.0591	0.118	0.0887	U	mg/Kg-dry	10	05/16/16 08:02 AM
Indeno[1,2,3-cd]pyrene	0.304	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Phenanthrene	0.260	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
Pyrene	0.526	0.0591	0.118	0.0887		mg/Kg-dry	10	05/16/16 08:02 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/16/16 08:02 AM
IS: Chrysene-d12	77.0	0	50-200	0		%REC	10	05/16/16 08:02 AM
IS: Naphthalene-d8	98.4	0	50-200	0		%REC	10	05/16/16 08:02 AM
IS: Perylene-d12	80.4	0	50-200	0		%REC	10	05/16/16 08:02 AM
IS: Phenanthrene-d10	81.8	0	50-200	0		%REC	10	05/16/16 08:02 AM
Surr: 2-Fluorobiphenyl	82.8	0	46-115	0		%REC	10	05/16/16 08:02 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605074-29
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:10 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.0	0	58-133	0		%REC	10	05/16/16 08:02 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	22.0	0	0	0		WT%	1	05/11/16 09:30 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605074-30
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:15 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	40.0	JH	0.122	0.365	0.182		mg/Kg-dry	5	05/19/16 02:34 PM
IS: Bismuth	84.2		0	30-120	0		%REC	5	05/19/16 02:34 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.101		0.0675	0.135	0.101	U	mg/Kg-dry	10	05/16/16 08:49 AM
Acenaphthylene	0.101		0.0675	0.135	0.101	U	mg/Kg-dry	10	05/16/16 08:49 AM
Anthracene	0.101		0.0675	0.135	0.101	U	mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[a]anthracene	0.164		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[a]pyrene	0.225		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[b]fluoranthene	0.233		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[e]pyrene	0.183		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[g,h,i]perylene	0.214		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[j]fluoranthene	0.121		0.0675	0.135	0.101	JN	mg/Kg-dry	10	05/16/16 08:49 AM
Benzo[k]fluoranthene	0.129		0.0675	0.135	0.101	J	mg/Kg-dry	10	05/16/16 08:49 AM
Chrysene	0.239		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Dibenz[a,h]anthracene	0.101		0.0675	0.135	0.101	U	mg/Kg-dry	10	05/16/16 08:49 AM
Fluoranthene	0.293		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Fluorene	0.101		0.0675	0.135	0.101	U	mg/Kg-dry	10	05/16/16 08:49 AM
Indeno[1,2,3-cd]pyrene	0.176		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Phenanthrene	0.154		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
Pyrene	0.246		0.0675	0.135	0.101		mg/Kg-dry	10	05/16/16 08:49 AM
IS: Acenaphthene-d10	117		0	50-200	0		%REC	10	05/16/16 08:49 AM
IS: Chrysene-d12	76.5		0	50-200	0		%REC	10	05/16/16 08:49 AM
IS: Naphthalene-d8	111		0	50-200	0		%REC	10	05/16/16 08:49 AM
IS: Perylene-d12	85.2		0	50-200	0		%REC	10	05/16/16 08:49 AM
IS: Phenanthrene-d10	81.4		0	50-200	0		%REC	10	05/16/16 08:49 AM
Surr: 2-Fluorobiphenyl	77.8		0	46-115	0		%REC	10	05/16/16 08:49 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605074-30
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:15 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	67.5	0	58-133	0		%REC	10	05/16/16 08:49 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	27.2	0	0	0		WT%	1	05/11/16 09:30 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605074-31
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:20 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	31.2 JH	0.115	0.345	0.172		mg/Kg-dry	5	05/19/16 02:40 PM
IS: Bismuth	83.6	0	30-120	0		%REC	5	05/19/16 02:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0973	0.0649	0.130	0.0973	U	mg/Kg-dry	10	05/16/16 09:26 AM
Acenaphthylene	0.0973	0.0649	0.130	0.0973	U	mg/Kg-dry	10	05/16/16 09:26 AM
Anthracene	0.0973	0.0649	0.130	0.0973	U	mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[a]anthracene	0.158	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[a]pyrene	0.194	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[b]fluoranthene	0.187	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[e]pyrene	0.143	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[g,h,i]perylene	0.161	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[j]fluoranthene	0.0988	0.0649	0.130	0.0973	JN	mg/Kg-dry	10	05/16/16 09:26 AM
Benzo[k]fluoranthene	0.109	0.0649	0.130	0.0973	J	mg/Kg-dry	10	05/16/16 09:26 AM
Chrysene	0.193	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Dibenz[a,h]anthracene	0.0973	0.0649	0.130	0.0973	U	mg/Kg-dry	10	05/16/16 09:26 AM
Fluoranthene	0.255	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Fluorene	0.0973	0.0649	0.130	0.0973	U	mg/Kg-dry	10	05/16/16 09:26 AM
Indeno[1,2,3-cd]pyrene	0.139	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
Phenanthrene	0.109	0.0649	0.130	0.0973	J	mg/Kg-dry	10	05/16/16 09:26 AM
Pyrene	0.220	0.0649	0.130	0.0973		mg/Kg-dry	10	05/16/16 09:26 AM
IS: Acenaphthene-d10	109	0	50-200	0		%REC	10	05/16/16 09:26 AM
IS: Chrysene-d12	82.3	0	50-200	0		%REC	10	05/16/16 09:26 AM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/16/16 09:26 AM
IS: Perylene-d12	85.6	0	50-200	0		%REC	10	05/16/16 09:26 AM
IS: Phenanthrene-d10	87.4	0	50-200	0		%REC	10	05/16/16 09:26 AM
Surr: 2-Fluorobiphenyl	77.4	0	46-115	0		%REC	10	05/16/16 09:26 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU151-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605074-31
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:20 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.7	0	58-133	0		%REC	10	05/16/16 09:26 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	26.3	0	0	0		WT%	1	05/11/16 09:30 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP02(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-32
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:30 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	63.1	JH	0.118	0.353	0.176		mg/Kg-dry	5	05/19/16 02:46 PM
IS: Bismuth	85.4		0	30-120	0		%REC	5	05/19/16 02:46 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0882		0.0588	0.118	0.0882	U	mg/Kg-dry	10	05/16/16 10:03 AM
Acenaphthylene	0.0882		0.0588	0.118	0.0882	U	mg/Kg-dry	10	05/16/16 10:03 AM
Anthracene	0.0882		0.0588	0.118	0.0882	U	mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[a]anthracene	0.177		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[a]pyrene	0.251		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[b]fluoranthene	0.234		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[e]pyrene	0.182		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[g,h,i]perylene	0.205		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[j]fluoranthene	0.125		0.0588	0.118	0.0882	N	mg/Kg-dry	10	05/16/16 10:03 AM
Benzo[k]fluoranthene	0.130		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Chrysene	0.235		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Dibenz[a,h]anthracene	0.0642		0.0588	0.118	0.0882	J	mg/Kg-dry	10	05/16/16 10:03 AM
Fluoranthene	0.251		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Fluorene	0.0882		0.0588	0.118	0.0882	U	mg/Kg-dry	10	05/16/16 10:03 AM
Indeno[1,2,3-cd]pyrene	0.171		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
Phenanthrene	0.0803		0.0588	0.118	0.0882	J	mg/Kg-dry	10	05/16/16 10:03 AM
Pyrene	0.224		0.0588	0.118	0.0882		mg/Kg-dry	10	05/16/16 10:03 AM
IS: Acenaphthene-d10	112		0	50-200	0		%REC	10	05/16/16 10:03 AM
IS: Chrysene-d12	82.5		0	50-200	0		%REC	10	05/16/16 10:03 AM
IS: Naphthalene-d8	105		0	50-200	0		%REC	10	05/16/16 10:03 AM
IS: Perylene-d12	86.3		0	50-200	0		%REC	10	05/16/16 10:03 AM
IS: Phenanthrene-d10	87.6		0	50-200	0		%REC	10	05/16/16 10:03 AM
Surr: 2-Fluorobiphenyl	83.4		0	46-115	0		%REC	10	05/16/16 10:03 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP02(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-32
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 12:30 PM
Lab Order:	1605074	**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	05/16/16 10:03 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	17.4	0	0	0		WT%	1	05/11/16 09:30 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB06(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-33
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:50 AM
Lab Order:	1605074	**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 01:44 PM
IS: Bismuth	99.2	0	30-120	0		%REC	1	05/20/16 01:44 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Acenaphthylene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Anthracene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Benzo[a]anthracene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Benzo[a]pyrene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Benzo[b]fluoranthene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Benzo[e]pyrene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Benzo[g,h,i]perylene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Benzo[j]fluoranthene	0.0000626	0.0000391	0.0000782	0.0000626	NU	mg/L	1	05/18/16 03:17 PM
Benzo[k]fluoranthene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Chrysene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Dibenz[a,h]anthracene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Fluoranthene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Fluorene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Indeno[1,2,3-cd]pyrene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Phenanthrene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
Pyrene	0.0000626	0.0000391	0.0000782	0.0000626	U	mg/L	1	05/18/16 03:17 PM
IS: Acenaphthene-d10	86.5	0	50-200	0		%REC	1	05/18/16 03:17 PM
IS: Chrysene-d12	88.8	0	50-200	0		%REC	1	05/18/16 03:17 PM
IS: Naphthalene-d8	89.5	0	50-200	0		%REC	1	05/18/16 03:17 PM
IS: Perylene-d12	87.2	0	50-200	0		%REC	1	05/18/16 03:17 PM
IS: Phenanthrene-d10	84.6	0	50-200	0		%REC	1	05/18/16 03:17 PM
Surr: 2-Fluorobiphenyl	65.4	0	53-106	0		%REC	1	05/18/16 03:17 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB06(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-33
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:50 AM
Lab Order:	1605074	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.0	0	58-132	0		%REC	1	05/18/16 03:17 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB07(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-34
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:35 PM
Lab Order:	1605074	**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 01:46 PM
IS: Bismuth	98.3	0	30-120	0		%REC	1	05/20/16 01:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Acenaphthylene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Anthracene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Benzo[a]anthracene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Benzo[a]pyrene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Benzo[b]fluoranthene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Benzo[e]pyrene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Benzo[g,h,i]perylene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Benzo[j]fluoranthene	0.0000620	0.0000388	0.0000775	0.0000620	NU	mg/L	1	05/18/16 03:53 PM
Benzo[k]fluoranthene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Chrysene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Dibenz[a,h]anthracene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Fluoranthene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Fluorene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Indeno[1,2,3-cd]pyrene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Phenanthrene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
Pyrene	0.0000620	0.0000388	0.0000775	0.0000620	U	mg/L	1	05/18/16 03:53 PM
IS: Acenaphthene-d10	85.8	0	50-200	0		%REC	1	05/18/16 03:53 PM
IS: Chrysene-d12	85.8	0	50-200	0		%REC	1	05/18/16 03:53 PM
IS: Naphthalene-d8	87.3	0	50-200	0		%REC	1	05/18/16 03:53 PM
IS: Perylene-d12	85.7	0	50-200	0		%REC	1	05/18/16 03:53 PM
IS: Phenanthrene-d10	83.7	0	50-200	0		%REC	1	05/18/16 03:53 PM
Surr: 2-Fluorobiphenyl	64.4	0	53-106	0		%REC	1	05/18/16 03:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB07(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-34
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 02:35 PM
Lab Order:	1605074	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.3	0	58-132	0		%REC	1	05/18/16 03:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB08(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-35
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 05:00 PM
Lab Order:	1605074	**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 01:48 PM
IS: Bismuth	97.6	0	30-120	0		%REC	1	05/20/16 01:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000618	0.0000386	0.0000773	0.0000618	U	mg/L	1	05/18/16 04:30 PM
Acenaphthylene	0.0000618	0.0000386	0.0000773	0.0000618	U	mg/L	1	05/18/16 04:30 PM
Anthracene	0.0000618	0.0000386	0.0000773	0.0000618	U	mg/L	1	05/18/16 04:30 PM
Benzo[a]anthracene	0.0000683	0.0000386	0.0000773	0.0000618	J	mg/L	1	05/18/16 04:30 PM
Benzo[a]pyrene	0.0000903	0.0000386	0.0000773	0.0000618		mg/L	1	05/18/16 04:30 PM
Benzo[b]fluoranthene	0.000101	0.0000386	0.0000773	0.0000618		mg/L	1	05/18/16 04:30 PM
Benzo[e]pyrene	0.0000672	0.0000386	0.0000773	0.0000618	J	mg/L	1	05/18/16 04:30 PM
Benzo[g,h,i]perylene	0.0000670	0.0000386	0.0000773	0.0000618	J	mg/L	1	05/18/16 04:30 PM
Benzo[j]fluoranthene	0.0000404	0.0000386	0.0000773	0.0000618	JN	mg/L	1	05/18/16 04:30 PM
Benzo[k]fluoranthene	0.0000511	0.0000386	0.0000773	0.0000618	J	mg/L	1	05/18/16 04:30 PM
Chrysene	0.0000898	0.0000386	0.0000773	0.0000618		mg/L	1	05/18/16 04:30 PM
Dibenz[a,h]anthracene	0.0000618	0.0000386	0.0000773	0.0000618	U	mg/L	1	05/18/16 04:30 PM
Fluoranthene	0.0000918	0.0000386	0.0000773	0.0000618		mg/L	1	05/18/16 04:30 PM
Fluorene	0.0000618	0.0000386	0.0000773	0.0000618	U	mg/L	1	05/18/16 04:30 PM
Indeno[1,2,3-cd]pyrene	0.0000621	0.0000386	0.0000773	0.0000618	J	mg/L	1	05/18/16 04:30 PM
Phenanthrene	0.0000618	0.0000386	0.0000773	0.0000618	U	mg/L	1	05/18/16 04:30 PM
Pyrene	0.0000835	0.0000386	0.0000773	0.0000618		mg/L	1	05/18/16 04:30 PM
IS: Acenaphthene-d10	88.3	0	50-200	0		%REC	1	05/18/16 04:30 PM
IS: Chrysene-d12	88.4	0	50-200	0		%REC	1	05/18/16 04:30 PM
IS: Naphthalene-d8	90.3	0	50-200	0		%REC	1	05/18/16 04:30 PM
IS: Perylene-d12	88.8	0	50-200	0		%REC	1	05/18/16 04:30 PM
IS: Phenanthrene-d10	85.7	0	50-200	0		%REC	1	05/18/16 04:30 PM
Surr: 2-Fluorobiphenyl	65.4	0	53-106	0		%REC	1	05/18/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB08(20160506)
Project:	Laredo SGR	**Lab ID:**	1605074-35
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 05:00 PM
Lab Order:	1605074	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.4	0	58-132	0		%REC	1	05/18/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-36
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:11 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	35.1 JH	0.0855	0.256	0.128		mg/Kg-dry	5	05/19/16 02:52 PM
IS: Bismuth	83.5	0	30-120	0		%REC	5	05/19/16 02:52 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/16/16 10:40 AM
Acenaphthylene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/16/16 10:40 AM
Anthracene	0.211	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[a]anthracene	1.19	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[a]pyrene	1.35	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[b]fluoranthene	1.28	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[e]pyrene	0.955	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[g,h,i]perylene	0.981	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[j]fluoranthene	0.699	0.0473	0.0945	0.0709	N	mg/Kg-dry	10	05/16/16 10:40 AM
Benzo[k]fluoranthene	0.700	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Chrysene	1.40	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Dibenz[a,h]anthracene	0.237	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Fluoranthene	2.10	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Fluorene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/16/16 10:40 AM
Indeno[1,2,3-cd]pyrene	0.847	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Phenanthrene	1.12	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
Pyrene	1.72	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/16/16 10:40 AM
IS: Acenaphthene-d10	111	0	50-200	0		%REC	10	05/16/16 10:40 AM
IS: Chrysene-d12	80.6	0	50-200	0		%REC	10	05/16/16 10:40 AM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/16/16 10:40 AM
IS: Perylene-d12	83.3	0	50-200	0		%REC	10	05/16/16 10:40 AM
IS: Phenanthrene-d10	85.0	0	50-200	0		%REC	10	05/16/16 10:40 AM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/16/16 10:40 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-36
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:11 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	83.3	0	58-133	0		%REC	10	05/16/16 10:40 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-37
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:12 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	11.4 JH	0.0833	0.250	0.125		mg/Kg-dry	5	05/19/16 03:34 PM
IS: Bismuth	81.6	0	30-120	0		%REC	5	05/19/16 03:34 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/16/16 11:16 AM
Acenaphthylene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/16/16 11:16 AM
Anthracene	0.0608	0.0491	0.0982	0.0737	J	mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[a]anthracene	0.250	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[a]pyrene	0.282	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[b]fluoranthene	0.242	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[e]pyrene	0.183	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[g,h,i]perylene	0.203	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[j]fluoranthene	0.134	0.0491	0.0982	0.0737	N	mg/Kg-dry	10	05/16/16 11:16 AM
Benzo[k]fluoranthene	0.140	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Chrysene	0.284	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Dibenz[a,h]anthracene	0.0694	0.0491	0.0982	0.0737	J	mg/Kg-dry	10	05/16/16 11:16 AM
Fluoranthene	0.471	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Fluorene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/16/16 11:16 AM
Indeno[1,2,3-cd]pyrene	0.174	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Phenanthrene	0.269	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
Pyrene	0.378	0.0491	0.0982	0.0737		mg/Kg-dry	10	05/16/16 11:16 AM
IS: Acenaphthene-d10	113	0	50-200	0		%REC	10	05/16/16 11:16 AM
IS: Chrysene-d12	78.9	0	50-200	0		%REC	10	05/16/16 11:16 AM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/16/16 11:16 AM
IS: Perylene-d12	82.7	0	50-200	0		%REC	10	05/16/16 11:16 AM
IS: Phenanthrene-d10	87.7	0	50-200	0		%REC	10	05/16/16 11:16 AM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/16/16 11:16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-37
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:12 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	80.5	0	58-133	0		%REC	10	05/16/16 11:16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-38
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:14 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.56 JH	0.0971	0.291	0.146		mg/Kg-dry	5	05/19/16 03:40 PM
IS: Bismuth	81.5	0	30-120	0		%REC	5	05/19/16 03:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 11:53 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 11:53 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[a]anthracene	0.0914	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[a]pyrene	0.107	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[b]fluoranthene	0.104	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[e]pyrene	0.0811	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[g,h,i]perylene	0.0948	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[j]fluoranthene	0.0536	0.0498	0.0995	0.0746	JN	mg/Kg-dry	10	05/16/16 11:53 AM
Benzo[k]fluoranthene	0.0592	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 11:53 AM
Chrysene	0.116	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 11:53 AM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 11:53 AM
Fluoranthene	0.152	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 11:53 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 11:53 AM
Indeno[1,2,3-cd]pyrene	0.0758	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 11:53 AM
Phenanthrene	0.0809	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 11:53 AM
Pyrene	0.127	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 11:53 AM
IS: Acenaphthene-d10	112	0	50-200	0		%REC	10	05/16/16 11:53 AM
IS: Chrysene-d12	79.5	0	50-200	0		%REC	10	05/16/16 11:53 AM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/16/16 11:53 AM
IS: Perylene-d12	82.7	0	50-200	0		%REC	10	05/16/16 11:53 AM
IS: Phenanthrene-d10	88.1	0	50-200	0		%REC	10	05/16/16 11:53 AM
Surr: 2-Fluorobiphenyl	79.5	0	46-115	0		%REC	10	05/16/16 11:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-38
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:14 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.5	0	58-133	0		%REC	10	05/16/16 11:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-39
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:16 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.63	0.0901	0.270	0.135		mg/Kg-dry	5	05/19/16 01:53 PM
IS: Bismuth	79.9	0	30-120	0		%REC	5	05/19/16 01:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[a]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[a]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[b]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[e]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[g,h,i]perylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[j]fluoranthene	0.0746	0.0498	0.0995	0.0746	NU	mg/Kg-dry	10	05/16/16 10:55 AM
Benzo[k]fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Chrysene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Dibenz[a,h]anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Fluoranthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Phenanthrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
Pyrene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 10:55 AM
IS: Acenaphthene-d10	72.1	0	50-200	0		%REC	10	05/16/16 10:55 AM
IS: Chrysene-d12	71.0	0	50-200	0		%REC	10	05/16/16 10:55 AM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/16/16 10:55 AM
IS: Perylene-d12	72.5	0	50-200	0		%REC	10	05/16/16 10:55 AM
IS: Phenanthrene-d10	73.1	0	50-200	0		%REC	10	05/16/16 10:55 AM
Surr: 2-Fluorobiphenyl	82.0	0	46-115	0		%REC	10	05/16/16 10:55 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-39
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:16 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/16/16 10:55 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-40
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:21 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **RO**
Lead	25.9	JH	0.0952	0.286	0.143		mg/Kg-dry	5	05/23/16 03:59 PM
IS: Bismuth	98.4		0	30-120	0		%REC	5	05/23/16 03:59 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.109		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Acenaphthylene	0.0749		0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/16/16 11:35 AM
Anthracene	0.689		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[a]anthracene	3.26		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[a]pyrene	3.25		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[b]fluoranthene	3.01		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[e]pyrene	2.35		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[g,h,i]perylene	2.03		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[j]fluoranthene	1.67		0.0499	0.0998	0.0749	N	mg/Kg-dry	10	05/16/16 11:35 AM
Benzo[k]fluoranthene	1.57		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Chrysene	3.58		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Dibenz[a,h]anthracene	0.498		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Fluoranthene	6.11		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Fluorene	0.0992		0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/16/16 11:35 AM
Indeno[1,2,3-cd]pyrene	1.71		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Phenanthrene	2.88		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
Pyrene	4.83		0.0499	0.0998	0.0749		mg/Kg-dry	10	05/16/16 11:35 AM
IS: Acenaphthene-d10	70.4		0	50-200	0		%REC	10	05/16/16 11:35 AM
IS: Chrysene-d12	71.2		0	50-200	0		%REC	10	05/16/16 11:35 AM
IS: Naphthalene-d8	112		0	50-200	0		%REC	10	05/16/16 11:35 AM
IS: Perylene-d12	73.5		0	50-200	0		%REC	10	05/16/16 11:35 AM
IS: Phenanthrene-d10	74.8		0	50-200	0		%REC	10	05/16/16 11:35 AM
Surr: 2-Fluorobiphenyl	70.4		0	46-115	0		%REC	10	05/16/16 11:35 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-40
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:21 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	60.7	0	58-133	0		%REC	10	05/16/16 11:35 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-41
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:22 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	10.9 JH	0.0926	0.278	0.139		mg/Kg-dry	5	05/23/16 04:01 PM
IS: Bismuth	99.0	0	30-120	0		%REC	5	05/23/16 04:01 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0646	0.0489	0.0978	0.0734	J	mg/Kg-dry	10	05/16/16 12:14 PM
Acenaphthylene	0.0734	0.0489	0.0978	0.0734	U	mg/Kg-dry	10	05/16/16 12:14 PM
Anthracene	0.397	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[a]anthracene	1.75	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[a]pyrene	1.70	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[b]fluoranthene	1.55	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[e]pyrene	1.21	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[g,h,i]perylene	1.04	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[j]fluoranthene	0.859	0.0489	0.0978	0.0734	N	mg/Kg-dry	10	05/16/16 12:14 PM
Benzo[k]fluoranthene	0.832	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Chrysene	1.91	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Dibenz[a,h]anthracene	0.258	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Fluoranthene	3.40	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Fluorene	0.0576	0.0489	0.0978	0.0734	J	mg/Kg-dry	10	05/16/16 12:14 PM
Indeno[1,2,3-cd]pyrene	0.882	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Phenanthrene	1.64	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
Pyrene	2.66	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/16/16 12:14 PM
IS: Acenaphthene-d10	71.4	0	50-200	0		%REC	10	05/16/16 12:14 PM
IS: Chrysene-d12	71.5	0	50-200	0		%REC	10	05/16/16 12:14 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/16/16 12:14 PM
IS: Perylene-d12	74.4	0	50-200	0		%REC	10	05/16/16 12:14 PM
IS: Phenanthrene-d10	76.2	0	50-200	0		%REC	10	05/16/16 12:14 PM
Surr: 2-Fluorobiphenyl	66.8	0	46-115	0		%REC	10	05/16/16 12:14 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-41
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:22 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	60.9	0	58-133	0		%REC	10	05/16/16 12:14 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-42
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:24 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.86 JH	0.0962	0.288	0.144		mg/Kg-dry	5	05/19/16 03:46 PM
IS: Bismuth	81.9	0	30-120	0		%REC	5	05/19/16 03:46 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/16/16 12:54 PM
Acenaphthylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/16/16 12:54 PM
Anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[a]anthracene	0.274	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[a]pyrene	0.315	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[b]fluoranthene	0.277	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[e]pyrene	0.224	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[g,h,i]perylene	0.209	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[j]fluoranthene	0.149	0.0494	0.0988	0.0741	N	mg/Kg-dry	10	05/16/16 12:54 PM
Benzo[k]fluoranthene	0.149	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Chrysene	0.315	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Dibenz[a,h]anthracene	0.0532	0.0494	0.0988	0.0741	J	mg/Kg-dry	10	05/16/16 12:54 PM
Fluoranthene	0.445	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Fluorene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/16/16 12:54 PM
Indeno[1,2,3-cd]pyrene	0.170	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Phenanthrene	0.140	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
Pyrene	0.383	0.0494	0.0988	0.0741		mg/Kg-dry	10	05/16/16 12:54 PM
IS: Acenaphthene-d10	70.6	0	50-200	0		%REC	10	05/16/16 12:54 PM
IS: Chrysene-d12	69.5	0	50-200	0		%REC	10	05/16/16 12:54 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/16/16 12:54 PM
IS: Perylene-d12	72.6	0	50-200	0		%REC	10	05/16/16 12:54 PM
IS: Phenanthrene-d10	73.3	0	50-200	0		%REC	10	05/16/16 12:54 PM
Surr: 2-Fluorobiphenyl	74.3	0	46-115	0		%REC	10	05/16/16 12:54 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-42
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:24 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	64.2	0	58-133	0		%REC	10	05/16/16 12:54 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-43
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:26 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.08 JH	0.0943	0.283	0.142		mg/Kg-dry	5	05/19/16 03:52 PM
IS: Bismuth	84.2	0	30-120	0		%REC	5	05/19/16 03:52 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Acenaphthylene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Anthracene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[a]anthracene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[a]pyrene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[b]fluoranthene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[e]pyrene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[g,h,i]perylene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[j]fluoranthene	0.0732	0.0488	0.0977	0.0732	NU	mg/Kg-dry	10	05/16/16 01:33 PM
Benzo[k]fluoranthene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Chrysene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Dibenz[a,h]anthracene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Fluoranthene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Fluorene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Indeno[1,2,3-cd]pyrene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Phenanthrene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
Pyrene	0.0732	0.0488	0.0977	0.0732	U	mg/Kg-dry	10	05/16/16 01:33 PM
IS: Acenaphthene-d10	72.6	0	50-200	0		%REC	10	05/16/16 01:33 PM
IS: Chrysene-d12	72.0	0	50-200	0		%REC	10	05/16/16 01:33 PM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/16/16 01:33 PM
IS: Perylene-d12	75.0	0	50-200	0		%REC	10	05/16/16 01:33 PM
IS: Phenanthrene-d10	73.6	0	50-200	0		%REC	10	05/16/16 01:33 PM
Surr: 2-Fluorobiphenyl	69.0	0	46-115	0		%REC	10	05/16/16 01:33 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-43
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:26 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	58.7	0	58-133	0		%REC	10	05/16/16 01:33 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-44
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:29 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	36.2	JH	0.0909	0.273	0.136		mg/Kg-dry	5	05/19/16 03:58 PM
IS: Bismuth	92.1		0	30-120	0		%REC	5	05/19/16 03:58 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746		0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 02:13 PM
Acenaphthylene	0.0746		0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 02:13 PM
Anthracene	0.0532		0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[a]anthracene	0.424	JH	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[a]pyrene	0.525	JH	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[b]fluoranthene	0.513	JH	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[e]pyrene	0.425		0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[g,h,i]perylene	0.408		0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[j]fluoranthene	0.263		0.0497	0.0994	0.0746	N	mg/Kg-dry	10	05/16/16 02:13 PM
Benzo[k]fluoranthene	0.259		0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Chrysene	0.536	JH	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Dibenz[a,h]anthracene	0.0891		0.0497	0.0994	0.0746	J	mg/Kg-dry	10	05/16/16 02:13 PM
Fluoranthene	0.724	JH	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Fluorene	0.0746		0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/16/16 02:13 PM
Indeno[1,2,3-cd]pyrene	0.324		0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Phenanthrene	0.285		0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
Pyrene	0.625	JH	0.0497	0.0994	0.0746		mg/Kg-dry	10	05/16/16 02:13 PM
IS: Acenaphthene-d10	70.9		0	50-200	0		%REC	10	05/16/16 02:13 PM
IS: Chrysene-d12	69.6		0	50-200	0		%REC	10	05/16/16 02:13 PM
IS: Naphthalene-d8	112		0	50-200	0		%REC	10	05/16/16 02:13 PM
IS: Perylene-d12	72.9		0	50-200	0		%REC	10	05/16/16 02:13 PM
IS: Phenanthrene-d10	73.3		0	50-200	0		%REC	10	05/16/16 02:13 PM
Surr: 2-Fluorobiphenyl	82.7		0	46-115	0		%REC	10	05/16/16 02:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-44
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:29 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	68.5	0	58-133	0		%REC	10	05/16/16 02:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-45
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:30 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **KL**
Lead	10.1	JH	0.0847	0.254	0.127		mg/Kg-dry	5	05/19/16 04:04 PM
IS: Bismuth	89.9		0	30-120	0		%REC	5	05/19/16 04:04 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Acenaphthylene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Anthracene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[a]anthracene	0.0528		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[a]pyrene	0.0736		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[b]fluoranthene	0.0699		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[e]pyrene	0.0627		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[g,h,i]perylene	0.0694		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[j]fluoranthene	0.0619		0.0494	0.0987	0.0740	JN	mg/Kg-dry	10	05/17/16 10:51 AM
Benzo[k]fluoranthene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Chrysene	0.0653		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Dibenz[a,h]anthracene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Fluoranthene	0.0618		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Fluorene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Indeno[1,2,3-cd]pyrene	0.0549		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
Phenanthrene	0.0740		0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/17/16 10:51 AM
Pyrene	0.0616		0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/17/16 10:51 AM
IS: Acenaphthene-d10	73.3		0	50-200	0		%REC	10	05/17/16 10:51 AM
IS: Chrysene-d12	69.2		0	50-200	0		%REC	10	05/17/16 10:51 AM
IS: Naphthalene-d8	108		0	50-200	0		%REC	10	05/17/16 10:51 AM
IS: Perylene-d12	71.7		0	50-200	0		%REC	10	05/17/16 10:51 AM
IS: Phenanthrene-d10	73.2		0	50-200	0		%REC	10	05/17/16 10:51 AM
Surr: 2-Fluorobiphenyl	75.2		0	46-115	0		%REC	10	05/17/16 10:51 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-45
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:30 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	63.1	0	58-133	0		%REC	10	05/17/16 10:51 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605074-46
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:31 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.96 JH	0.0893	0.268	0.134		mg/Kg-dry	5	05/19/16 04:10 PM
IS: Bismuth	85.9	0	30-120	0		%REC	5	05/19/16 04:10 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/16/16 03:32 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/16/16 03:32 PM
IS: Acenaphthene-d10	70.3	0	50-200	0		%REC	10	05/16/16 03:32 PM
IS: Chrysene-d12	69.5	0	50-200	0		%REC	10	05/16/16 03:32 PM
IS: Naphthalene-d8	113	0	50-200	0		%REC	10	05/16/16 03:32 PM
IS: Perylene-d12	71.1	0	50-200	0		%REC	10	05/16/16 03:32 PM
IS: Phenanthrene-d10	70.4	0	50-200	0		%REC	10	05/16/16 03:32 PM
Surr: 2-Fluorobiphenyl	75.9	0	46-115	0		%REC	10	05/16/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605074-46
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:31 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	65.9	0	58-133	0		%REC	10	05/16/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605074-47
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:32 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.61 JH	0.0935	0.280	0.140		mg/Kg-dry	5	05/19/16 04:16 PM
IS: Bismuth	88.8	0	30-120	0		%REC	5	05/19/16 04:16 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/16/16 04:12 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/16/16 04:12 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[a]anthracene	0.217	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[a]pyrene	0.192	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[b]fluoranthene	0.182	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[e]pyrene	0.136	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[g,h,i]perylene	0.119	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[j]fluoranthene	0.102	0.0499	0.0997	0.0748	N	mg/Kg-dry	10	05/16/16 04:12 PM
Benzo[k]fluoranthene	0.101	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Chrysene	0.238	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/16/16 04:12 PM
Fluoranthene	0.474	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/16/16 04:12 PM
Indeno[1,2,3-cd]pyrene	0.106	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Phenanthrene	0.242	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
Pyrene	0.377	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/16/16 04:12 PM
IS: Acenaphthene-d10	73.3	0	50-200	0		%REC	10	05/16/16 04:12 PM
IS: Chrysene-d12	71.7	0	50-200	0		%REC	10	05/16/16 04:12 PM
IS: Naphthalene-d8	111	0	50-200	0		%REC	10	05/16/16 04:12 PM
IS: Perylene-d12	74.7	0	50-200	0		%REC	10	05/16/16 04:12 PM
IS: Phenanthrene-d10	75.4	0	50-200	0		%REC	10	05/16/16 04:12 PM
Surr: 2-Fluorobiphenyl	79.1	0	46-115	0		%REC	10	05/16/16 04:12 PM

Qualifiers:

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E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU082(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605074-47
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 04:32 PM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	67.1	0	58-133	0		%REC	10	05/16/16 04:12 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		

May 27, 2016

Alex Walter
Arcadis
8725 Rosehill #350
Lenexa, Kansas 66215
TEL: (913) 492-0900
FAX (913) 492-0902

Order No.: 1605074

RE: Laredo SGR

Dear Alex Walter:

DHL Analytical, Inc. received 47 sample(s) on 5/7/2016 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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GCMS8 Raw Data 417

ICP-MS3 Raw Data 746

ICP-MS4 Raw Data 914

Pmoist Raw Data 1178

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Phone (512) 388-8222 ■ FAX (512) 388-8229
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№ 71111

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.Ankenberger@arcadis.com

DATE: May 6, 2016 PAGE 1 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605074
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 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 ☐ T PHOS, AMMONIA ☐	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-DU084(0-2)-A	01	5-6-16	1017	S	Bag	1				X						X						X								
SGR-DU084(2-4)-A	02	5-6-16	1020	S	Bag	1				X						X						X								
SGR-DU084(4-6)-A	03	5-6-16	1023	S	Bag	1				X						X						X								
SGR-DU084(6-8)-A	04	5-6-16	1027	S	Bag	1				X						X						X								
~~SGR-DU084(8-10)-A~~		~~5-6-16~~		~~S~~	~~Bag~~	~~1~~				~~X~~						~~X~~						~~X~~								GF
SGR-DU084(0-2)-B	05	5-6-16	1031	S	Bag	1				X						X						X								
SGR-DU084(2-4)-B	06	5-6-16	1042	S	Bag	1				X						X						X								
SGR-DU084(4-6)-B	07	5-6-16	1044	S	Bag	1				X						X						X								
SGR-DU084(6-8)-B	08	5-6-16	1047	S	Bag	1				X						X						X								
~~SGR-DU084(8-10)-B~~		~~5-6-16~~		~~S~~	~~Bag~~	~~1~~				~~X~~						~~X~~						~~X~~								GF
SGR-DU084(0-2)-C	09	5-6-16	1050	S	Bag	1				X						X						X								
SGR-DU084(2-4)-C	10	5-6-16	1052	S	Bag	1				X						X						X								
SGR-DU084(4-6)-C	11	5-6-16	1055	S	Bag	1				X						X						X								
SGR-DU084(6-8)-C	12	5-6-16	1058	S	Bag	1				X						X						X								
~~SGR-DU084(8-10)-C~~		~~5-6-16~~		~~S~~	~~Bag~~	~~1~~				~~X~~						~~X~~						~~X~~								GF

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CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
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№ 71112

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 6, 2015 PAGE 2 OF 4
PO #: 04285021.0000.00044 DHL WORK ORDER #: 1L005074
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285021.0000.00044 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 2008 ☐ 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-DU044(0-2)-A	13	5-6-16	1353	S	Bag	1				X					X					X								
SGR-DU044(2-4)-A	14	5-6-16	1355	S	Bag	1				X					X					X								
SGR-DU044(4-6)-A	15	5-6-16	1357	S	Bag	1				X					X					X								
SGR-DU044(6-8)-A	16	5-6-16	1400	S	Bag	1				X					X					X								
SGR-DU044(8-10)-A	17	5-6-16	1401	S	Bag	1				X					X					X								
SGR-DU044(0-2)-B	18	5-6-16	1408	S	Bag	1				X					X					X								
SGR-DU044(2-4)-B	19	5-6-16	1410	S	Bag	1				X					X					X								
SGR-DU044(4-6)-B	20	5-6-16	1412	S	Bag	1				X					X					X								
SGR-DU044(6-8)-B	21	5-6-16	1415	S	Bag	1				X					X					X								
SGR-DU044(8-10)-B	22	5-6-16	1416	S	Bag	1				X					X					X								
SGR-DU044(0-2)-C	23	5-6-16	1418	S	Bag	1				X					X					X								
SGR-DU044(2-4)-C	24	5-6-16	1420	S	Bag	1				X					X					X								
SGR-DU044(4-6)-C	25	5-6-16	1423	S	Bag	1				X					X					X								
SGR-DU044(6-8)-C	26	5-6-16	1425	S	Bag	1				X					X					X								
SGR-DU044(8-10)-C	27	5-6-16	1430	S	Bag	1				X					X					X								

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	5-6-16/1800	FedEx
FedEx	5/7/16 10:00	[signature]

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Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 71113

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 6, 2016 PAGE 3 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605074
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	HNO3	H2SO4 ☐ 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 2008 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ 1640	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-DU151-STRAT 1	28	5-6-16	1205	S	4oz Jar	1				X						X						X									
SGR-DU151-STRAT 2	29	5-6-16	1210	S	4oz Jar	1				X						X						X									
SGR-DU151-STRAT 3	30	5-6-16	1215	S	4oz Jar	1				X						X						X									
SGR-DU151-STRAT 4	31	5-6-16	1220	S	4oz Jar	1				X						X						X									
DUP02(20160506)	32	5-6-16	1230	S	4oz Jar	1				X						X						X									
EB06(20160506)	33	5-6-16	1050	W	Glass/Poly	2		X		X						X						X									
EB07(20160506)	34	5-6-16	1435	W	Glass/Poly	2		X		X						X						X									
EB08(20160506)	35	5-6-16	1700	W	Glass/Poly	2		X		X						X						X									

RELINQUISHED BY: (Signature) DATE/TIME 5-6-16/1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) FedEx DATE/TIME 5/7/16 10:00 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: 2.0 | 1.6 | 1.2 / 1.3 | 0.2 | 0.5 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

№ 70080

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill, Ste 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 6, 2016 PAGE 4 OF 4
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1605074
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	HNO3	H2SO4 ☐ 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 ☐ Cr, Pb ☐	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-DU082(0-2)-A	36	5-6-16	1611	S	Bag	1				X						X						X								
SGR-DU082(2-4)-A	37	5-6-16	1612	S	Bag	1				X						X						X								
SGR-DU082(4-6)-A	38	5-6-16	1614	S	Bag	1				X						X						X								
SGR-DU082(6-8)-A	39	5-6-16	1616	S	Bag	1				X						X						X								
SGR-DU082(0-2)-B	40	5-6-16	1621	S	Bag	1				X						X						X								
SGR-DU082(2-4)-B	41	5-6-16	1622	S	Bag	1				X						X						X								
SGR-DU082(4-6)-B	42	5-6-16	1624	S	Bag	1				X						X						X								
SGR-DU082(6-8)-B	43	5-6-16	1626	S	Bag	1				X						X						X								
SGR-DU082(0-2)-C	44	5-6-16	1629	S	Bag	1				X						X						X								
SGR-DU082(2-4)-C	45	5-6-16	1630	S	Bag	1				X						X						X								
SGR-DU082(4-6)-C	46	5-6-16	1631	S	Bag	1				X						X						X								
SGR-DU082(6-8)-C	47	5-6-16	1632	S	Bag	1				X						X						X								

RELINQUISHED BY: (Signature) DATE/TIME 5-6-16/1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) DATE/TIME 5-7-16 10:00 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: 2.0 1.6 1.2 1.3 1.0 2.1 0.5 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: 06MAY16
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: DEPT:

540J16323/727F

FedEx. Express

6 of 6
MPS# 0263 7762 8278 2086
Mstr# 7762 8278 1594 0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5-6-16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

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INV:
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2 of 6
MPS# 0263 7762 8278 1470
Mstr# 7762 8278 1594 0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5-6-16
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: 06MAY16
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: DEPT:

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1 of 6

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 0201 7762 8278 1594
MASTER

X0 BSMA

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Quality Environmental Containers
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CUSTODY SEAL
DATE 5-6-16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
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7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 06MAY16
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CAD: 1660358/INET3730
DIMS: 24x13x15 IN

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5 of 6

SATURDAY 12:00P
PRIORITY OVERNIGHT

MPS# 0263 7762 8278 2064
Mstr# 7762 8278 1594 0201

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GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 06MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

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INV:
PO: DEPT:

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4 of 6

SATURDAY 12:00P
PRIORITY OVERNIGHT

MPS# 0263 7762 8278 1686
Mstr# 7762 8278 1594

0201

X0 BSMA

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DATE 5-6-16
SIGNATURE

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ORIGIN ID:LRDA (915) 433-1761
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7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 06MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

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2300 DOUBLE CREEK DR

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INV:
PO: DEPT:

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3 of 6

SATURDAY 12:00P
PRIORITY OVERNIGHT

MPS# 0263 7762 8278 1940
Mstr# 7762 8278 1594

0201

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CUSTODY SEAL
DATE 5-6-16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Arcadis | Date Received: 5/7/2016

Work Order Number 1605074 | Received by JT

Checklist completed by: Signature | 5/9/2016 Date | Reviewed by Initials | 5/9/2016 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 ☐	2.0 °C 1.6°C, 1.2°C, 1.3°C, 0.2°C, 0.5°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? No		Checked by JT
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 _____

Page 1 of 1

DHL Analytical, Inc.
Laboratory Review Checklist: Reportable Data

Project Name: Laredo SGR	**Date:** 5/27/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605074
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			**R7-04**
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:** 5/27/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605074

#[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			**S2-02**
		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		05/31/16
Scott Schroeder – Technical Director	Signature	Date

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 5/7/2016. A total of 47 samples were received and analyzed. The samples arrived in good condition and was properly packaged.

Exception Report R7-03 and R7-04

For Metals Analysis, for soil Batch 75118, the recovery of Lead for the Matrix Spike (1605074-13 MS) was above 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.

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. No further corrective action was taken.

For PAH Analysis, for soil batch 75127, the recoveries of up to six compounds for the Matrix Spike and Matrix Spike Duplicate (1605074-44 MS/MSD) were above the method control limits. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were 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.

For PAH Analysis, for soil batch 75119, the recoveries/RPDs of up to fourteen compounds for the Matrix Spike and Matrix Spike Duplicate (1605074-13 MS/MSD) were outside of the method control limits. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were 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 PAH Analysis, Sample SGR-DU084(2-4)-B was analyzed at higher dilution than usual, due to very dark color extract observed.

For all of the surface and subsurface samples in this workorder, 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 # 1605074-01 through -27, -36 through -47) processed to pass #10 sieve (2mm). Of those subsurface samples fourteen samples had insufficient sample volume for these samples to perform the sub-sampling procedure as stated in the SOP and the entire sieved sample mass was used for the analysis. The remaining samples analyzed were discreet soil samples collected in 4 ounce soil containers and ISM process not used, as per project specs.

Exception Report S2-02

For Metals Analysis, the recovery of Lead for the Low Level Calibration Verification (LCVL1-160518) was above the method control limits, due to possible error during preparation. This is flagged accordingly in the QC Summary Report. The concentration of this analyte was within method control limits in the initial and ending LCVL for this analytical run. This analytes meet method control limits in the associated bracketing QC. 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.

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.

CASE NARRATIVE

This sample delivery group arrives at DHL Analytical sent on 5/7/2016 and the Sample Summary was sent on 5/9/2016. 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 5/9/2016 - from J. DuPont to the Arcadis Kansas Laredo email group regarding insufficient sample to perform subsamling. The client accepted the corrective action for the quality exceedances.
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 5/13/2016 - from J. DuPont to L. Mott of Arcadis regarding recoveries of surrogates, recoveries/RPD of MS/MSD and MSD analyzed outside of the tune window. The client accepted the corrective action for the quality exceedances.
email communications 5/20/2016 - from J. DuPont to L. Mott of Arcadis regarding recoveries of recoveries/RPD of MS/MSD(s) and LCVL for Lead. The client accepted the corrective action for the quality exceedances.

DHL Analytical, Inc.

Date: *27-May-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605074

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605074-01	SGR-DU084(0-2)-A		05/06/16 10:17 AM	5/7/2016
1605074-02	SGR-DU084(2-4)-A		05/06/16 10:20 AM	5/7/2016
1605074-03	SGR-DU084(4-6)-A		05/06/16 10:23 AM	5/7/2016
1605074-04	SGR-DU084(6-8)-A		05/06/16 10:27 AM	5/7/2016
1605074-05	SGR-DU084(0-2)-B		05/06/16 10:31 AM	5/7/2016
1605074-06	SGR-DU084(2-4)-B		05/06/16 10:42 AM	5/7/2016
1605074-07	SGR-DU084(4-6)-B		05/06/16 10:44 AM	5/7/2016
1605074-08	SGR-DU084(6-8)-B		05/06/16 10:47 AM	5/7/2016
1605074-09	SGR-DU084(0-2)-C		05/06/16 10:50 AM	5/7/2016
1605074-10	SGR-DU084(2-4)-C		05/06/16 10:52 AM	5/7/2016
1605074-11	SGR-DU084(4-6)-C		05/06/16 10:55 AM	5/7/2016
1605074-12	SGR-DU084(6-8)-C		05/06/16 10:58 AM	5/7/2016
1605074-13	SGR-DU044(0-2)-A		05/06/16 01:53 PM	5/7/2016
1605074-14	SGR-DU044(2-4)-A		05/06/16 01:55 PM	5/7/2016
1605074-15	SGR-DU044(4-6)-A		05/06/16 01:57 PM	5/7/2016
1605074-16	SGR-DU044(6-8)-A		05/06/16 02:00 PM	5/7/2016
1605074-17	SGR-DU044(8-10)-A		05/06/16 02:01 PM	5/7/2016
1605074-18	SGR-DU044(0-2)-B		05/06/16 02:08 PM	5/7/2016
1605074-19	SGR-DU044(2-4)-B		05/06/16 02:10 PM	5/7/2016
1605074-20	SGR-DU044(4-6)-B		05/06/16 02:12 PM	5/7/2016
1605074-21	SGR-DU044(6-8)-B		05/06/16 02:15 PM	5/7/2016
1605074-22	SGR-DU044(8-10)-B		05/06/16 02:16 PM	5/7/2016
1605074-23	SGR-DU044(0-2)-C		05/06/16 02:18 PM	5/7/2016
1605074-24	SGR-DU044(2-4)-C		05/06/16 02:20 PM	5/7/2016
1605074-25	SGR-DU044(4-6)-C		05/06/16 02:23 PM	5/7/2016
1605074-26	SGR-DU044(6-8)-C		05/06/16 02:25 PM	5/7/2016
1605074-27	SGR-DU044(8-10)-C		05/06/16 02:30 PM	5/7/2016
1605074-28	SGR-DU151-STRAT1		05/06/16 12:05 PM	5/7/2016
1605074-29	SGR-DU151-STRAT2		05/06/16 12:10 PM	5/7/2016
1605074-30	SGR-DU151-STRAT3		05/06/16 12:15 PM	5/7/2016
1605074-31	SGR-DU151-STRAT4		05/06/16 12:20 PM	5/7/2016
1605074-32	DUP02(20160506)		05/06/16 12:30 PM	5/7/2016
1605074-33	EB06(20160506)		05/06/16 10:50 AM	5/7/2016
1605074-34	EB07(20160506)		05/06/16 02:35 PM	5/7/2016
1605074-35	EB08(20160506)		05/06/16 05:00 PM	5/7/2016
1605074-36	SGR-DU082(0-2)-A		05/06/16 04:11 PM	5/7/2016
1605074-37	SGR-DU082(2-4)-A		05/06/16 04:12 PM	5/7/2016
1605074-38	SGR-DU082(4-6)-A		05/06/16 04:14 PM	5/7/2016
1605074-39	SGR-DU082(6-8)-A		05/06/16 04:16 PM	5/7/2016
1605074-40	SGR-DU082(0-2)-B		05/06/16 04:21 PM	5/7/2016
1605074-41	SGR-DU082(2-4)-B		05/06/16 04:22 PM	5/7/2016
1605074-42	SGR-DU082(4-6)-B		05/06/16 04:24 PM	5/7/2016

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605074

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605074-43	SGR-DU082(6-8)-B		05/06/16 04:26 PM	5/7/2016
1605074-44	SGR-DU082(0-2)-C		05/06/16 04:29 PM	5/7/2016
1605074-45	SGR-DU082(2-4)-C		05/06/16 04:30 PM	5/7/2016
1605074-46	SGR-DU082(4-6)-C		05/06/16 04:31 PM	5/7/2016
1605074-47	SGR-DU082(6-8)-C		05/06/16 04:32 PM	5/7/2016

Lab Order: 1605074
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605074-01A	SGR-DU084(0-2)-A	05/06/16 10:17 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(0-2)-A	05/06/16 10:17 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605074-02A	SGR-DU084(2-4)-A	05/06/16 10:20 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(2-4)-A	05/06/16 10:20 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605074-03A	SGR-DU084(4-6)-A	05/06/16 10:23 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(4-6)-A	05/06/16 10:23 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605074-04A	SGR-DU084(6-8)-A	05/06/16 10:27 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(6-8)-A	05/06/16 10:27 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/11/16 10:25 AM	75104
1605074-05A	SGR-DU084(0-2)-B	05/06/16 10:31 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(0-2)-B	05/06/16 10:31 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-06A	SGR-DU084(2-4)-B	05/06/16 10:42 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(2-4)-B	05/06/16 10:42 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-07A	SGR-DU084(4-6)-B	05/06/16 10:44 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(4-6)-B	05/06/16 10:44 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(4-6)-B	05/06/16 10:44 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-08A	SGR-DU084(6-8)-B	05/06/16 10:47 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(6-8)-B	05/06/16 10:47 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(6-8)-B	05/06/16 10:47 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-09A	SGR-DU084(0-2)-C	05/06/16 10:50 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(0-2)-C	05/06/16 10:50 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(0-2)-C	05/06/16 10:50 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-10A	SGR-DU084(2-4)-C	05/06/16 10:52 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(2-4)-C	05/06/16 10:52 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(2-4)-C	05/06/16 10:52 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-11A	SGR-DU084(4-6)-C	05/06/16 10:55 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(4-6)-C	05/06/16 10:55 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(4-6)-C	05/06/16 10:55 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-12A	SGR-DU084(6-8)-C	05/06/16 10:58 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113

Lab Order: 1605074
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605074-12A	SGR-DU084(6-8)-C	05/06/16 10:58 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU084(6-8)-C	05/06/16 10:58 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-13A	SGR-DU044(0-2)-A	05/06/16 01:53 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(0-2)-A	05/06/16 01:53 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-14A	SGR-DU044(2-4)-A	05/06/16 01:55 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU044(2-4)-A	05/06/16 01:55 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU044(2-4)-A	05/06/16 01:55 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-15A	SGR-DU044(4-6)-A	05/06/16 01:57 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU044(4-6)-A	05/06/16 01:57 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU044(4-6)-A	05/06/16 01:57 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-16A	SGR-DU044(6-8)-A	05/06/16 02:00 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU044(6-8)-A	05/06/16 02:00 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/11/16 01:33 PM	75113
	SGR-DU044(6-8)-A	05/06/16 02:00 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-17A	SGR-DU044(8-10)-A	05/06/16 02:01 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(8-10)-A	05/06/16 02:01 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-18A	SGR-DU044(0-2)-B	05/06/16 02:08 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(0-2)-B	05/06/16 02:08 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-19A	SGR-DU044(2-4)-B	05/06/16 02:10 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(2-4)-B	05/06/16 02:10 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-20A	SGR-DU044(4-6)-B	05/06/16 02:12 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(4-6)-B	05/06/16 02:12 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-21A	SGR-DU044(6-8)-B	05/06/16 02:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(6-8)-B	05/06/16 02:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-22A	SGR-DU044(8-10)-B	05/06/16 02:16 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(8-10)-B	05/06/16 02:16 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-23A	SGR-DU044(0-2)-C	05/06/16 02:18 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(0-2)-C	05/06/16 02:18 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-24A	SGR-DU044(2-4)-C	05/06/16 02:20 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119

Lab Order: 1605074
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605074-24A	SGR-DU044(2-4)-C	05/06/16 02:20 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/13/16 08:30 AM	75118
1605074-25A	SGR-DU044(4-6)-C	05/06/16 02:23 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(4-6)-C	05/06/16 02:23 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-26A	SGR-DU044(6-8)-C	05/06/16 02:25 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(6-8)-C	05/06/16 02:25 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-27A	SGR-DU044(8-10)-C	05/06/16 02:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU044(8-10)-C	05/06/16 02:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-28A	SGR-DU151-STRAT1	05/06/16 12:05 PM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU151-STRAT1	05/06/16 12:05 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU151-STRAT1	05/06/16 12:05 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-29A	SGR-DU151-STRAT2	05/06/16 12:10 PM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU151-STRAT2	05/06/16 12:10 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU151-STRAT2	05/06/16 12:10 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-30A	SGR-DU151-STRAT3	05/06/16 12:15 PM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU151-STRAT3	05/06/16 12:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU151-STRAT3	05/06/16 12:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-31A	SGR-DU151-STRAT4	05/06/16 12:20 PM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	SGR-DU151-STRAT4	05/06/16 12:20 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU151-STRAT4	05/06/16 12:20 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-32A	DUP02(20160506)	05/06/16 12:30 PM	Soil	D2216	Moisture Preparation	05/10/16 03:13 PM	75081
	DUP02(20160506)	05/06/16 12:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	DUP02(20160506)	05/06/16 12:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-33A	EB06(20160506)	05/06/16 10:50 AM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605074-33B	EB06(20160506)	05/06/16 10:50 AM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146
1605074-34A	EB07(20160506)	05/06/16 02:35 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605074-34B	EB07(20160506)	05/06/16 02:35 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146
1605074-35A	EB08(20160506)	05/06/16 05:00 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605074-35B	EB08(20160506)	05/06/16 05:00 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146

Lab Order: 1605074
Client: Arcadis
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PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605074-36A	SGR-DU082(0-2)-A	05/06/16 04:11 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU082(0-2)-A	05/06/16 04:11 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-37A	SGR-DU082(2-4)-A	05/06/16 04:12 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU082(2-4)-A	05/06/16 04:12 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-38A	SGR-DU082(4-6)-A	05/06/16 04:14 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 08:29 AM	75119
	SGR-DU082(4-6)-A	05/06/16 04:14 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-39A	SGR-DU082(6-8)-A	05/06/16 04:16 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(6-8)-A	05/06/16 04:16 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-40A	SGR-DU082(0-2)-B	05/06/16 04:21 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(0-2)-B	05/06/16 04:21 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/17/16 08:30 AM	75166
1605074-41A	SGR-DU082(2-4)-B	05/06/16 04:22 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(2-4)-B	05/06/16 04:22 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/17/16 08:30 AM	75166
1605074-42A	SGR-DU082(4-6)-B	05/06/16 04:24 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(4-6)-B	05/06/16 04:24 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-43A	SGR-DU082(6-8)-B	05/06/16 04:26 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(6-8)-B	05/06/16 04:26 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-44A	SGR-DU082(0-2)-C	05/06/16 04:29 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(0-2)-C	05/06/16 04:29 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-45A	SGR-DU082(2-4)-C	05/06/16 04:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(2-4)-C	05/06/16 04:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(2-4)-C	05/06/16 04:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-46A	SGR-DU082(4-6)-C	05/06/16 04:31 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(4-6)-C	05/06/16 04:31 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132
1605074-47A	SGR-DU082(6-8)-C	05/06/16 04:32 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/12/16 09:33 AM	75127
	SGR-DU082(6-8)-C	05/06/16 04:32 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 10:18 AM	75132

Lab Order: 1605074
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TCLP/SPLP PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605074-01A	SGR-DU084(0-2)-A	5/6/2016 10:17:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-02A	SGR-DU084(2-4)-A	5/6/2016 10:20:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-03A	SGR-DU084(4-6)-A	5/6/2016 10:23:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-04A	SGR-DU084(6-8)-A	5/6/2016 10:27:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-05A	SGR-DU084(0-2)-B	5/6/2016 10:31:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-06A	SGR-DU084(2-4)-B	5/6/2016 10:42:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-07A	SGR-DU084(4-6)-B	5/6/2016 10:44:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-08A	SGR-DU084(6-8)-B	5/6/2016 10:47:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-09A	SGR-DU084(0-2)-C	5/6/2016 10:50:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-10A	SGR-DU084(2-4)-C	5/6/2016 10:52:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-11A	SGR-DU084(4-6)-C	5/6/2016 10:55:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-12A	SGR-DU084(6-8)-C	5/6/2016 10:58:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-13A	SGR-DU044(0-2)-A	5/6/2016 1:53:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-14A	SGR-DU044(2-4)-A	5/6/2016 1:55:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-15A	SGR-DU044(4-6)-A	5/6/2016 1:57:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-16A	SGR-DU044(6-8)-A	5/6/2016 2:00:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-17A	SGR-DU044(8-10)-A	5/6/2016 2:01:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-18A	SGR-DU044(0-2)-B	5/6/2016 2:08:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-19A	SGR-DU044(2-4)-B	5/6/2016 2:10:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-20A	SGR-DU044(4-6)-B	5/6/2016 2:12:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-21A	SGR-DU044(6-8)-B	5/6/2016 2:15:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-22A	SGR-DU044(8-10)-B	5/6/2016 2:16:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-23A	SGR-DU044(0-2)-C	5/6/2016 2:18:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-24A	SGR-DU044(2-4)-C	5/6/2016 2:20:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-25A	SGR-DU044(4-6)-C	5/6/2016 2:23:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-26A	SGR-DU044(6-8)-C	5/6/2016 2:25:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-27A	SGR-DU044(8-10)-C	5/6/2016 2:30:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-36A	SGR-DU082(0-2)-A	5/6/2016 4:11:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016

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TCLP/SPLP PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605074-37A	SGR-DU082(2-4)-A	5/6/2016 4:12:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-38A	SGR-DU082(4-6)-A	5/6/2016 4:14:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-39A	SGR-DU082(6-8)-A	5/6/2016 4:16:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-40A	SGR-DU082(0-2)-B	5/6/2016 4:21:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-41A	SGR-DU082(2-4)-B	5/6/2016 4:22:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-42A	SGR-DU082(4-6)-B	5/6/2016 4:24:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-43A	SGR-DU082(6-8)-B	5/6/2016 4:26:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-44A	SGR-DU082(0-2)-C	5/6/2016 4:29:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-45A	SGR-DU082(2-4)-C	5/6/2016 4:30:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-46A	SGR-DU082(4-6)-C	5/6/2016 4:31:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016
1605074-47A	SGR-DU082(6-8)-C	5/6/2016 4:32:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/9/2016 9:45:00 AM	75016

Lab Order: 1605074
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
1605074-01A	SGR-DU084(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 05:13 PM	GCMS6_160515A
	SGR-DU084(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:43 PM	ICP-MS4_160516B
1605074-02A	SGR-DU084(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	20	05/15/16 05:53 PM	GCMS6_160515A
	SGR-DU084(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:45 PM	ICP-MS4_160516B
1605074-03A	SGR-DU084(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 06:32 PM	GCMS6_160515A
	SGR-DU084(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:47 PM	ICP-MS4_160516B
1605074-04A	SGR-DU084(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 07:12 PM	GCMS6_160515A
	SGR-DU084(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75104	5	05/16/16 06:49 PM	ICP-MS4_160516B
1605074-05A	SGR-DU084(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/15/16 07:52 PM	GCMS6_160515A
	SGR-DU084(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 04:54 PM	ICP-MS3_160518C
1605074-06A	SGR-DU084(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75113	100	05/15/16 08:33 PM	GCMS6_160515A
	SGR-DU084(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:00 PM	ICP-MS3_160518C
1605074-07A	SGR-DU084(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75113	20	05/16/16 01:07 AM	GCMS6_160515A
	SGR-DU084(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 02:00 AM	GCMS8_160516A
	SGR-DU084(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:06 PM	ICP-MS3_160518C
1605074-08A	SGR-DU084(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/16/16 01:47 AM	GCMS6_160515A
	SGR-DU084(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 02:37 AM	GCMS8_160516A
	SGR-DU084(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:12 PM	ICP-MS3_160518C
1605074-09A	SGR-DU084(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/16/16 02:27 AM	GCMS6_160515A
	SGR-DU084(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 03:14 AM	GCMS8_160516A
	SGR-DU084(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:17 PM	ICP-MS3_160518C
1605074-10A	SGR-DU084(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	50	05/16/16 03:08 AM	GCMS6_160515A
	SGR-DU084(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	20	05/17/16 03:50 AM	GCMS8_160516A
	SGR-DU084(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:23 PM	ICP-MS3_160518C
1605074-11A	SGR-DU084(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	20	05/16/16 03:48 AM	GCMS6_160515A
	SGR-DU084(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 04:28 AM	GCMS8_160516A
	SGR-DU084(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:29 PM	ICP-MS3_160518C
1605074-12A	SGR-DU084(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 05:05 AM	GCMS8_160516A

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ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605074-12A	SGR-DU084(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/16/16 04:28 AM	GCMS6_160515A
	SGR-DU084(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:35 PM	ICP-MS3_160518C
1605074-13A	SGR-DU044(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75119	20	05/15/16 08:22 PM	GCMS8_160515A
	SGR-DU044(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 04:42 PM	ICP-MS3_160518C
1605074-14A	SGR-DU044(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/16/16 05:07 AM	GCMS6_160515A
	SGR-DU044(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 05:42 AM	GCMS8_160516A
	SGR-DU044(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 05:41 PM	ICP-MS3_160518C
1605074-15A	SGR-DU044(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/16/16 05:46 AM	GCMS6_160515A
	SGR-DU044(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 06:18 AM	GCMS8_160516A
	SGR-DU044(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 06:29 PM	ICP-MS3_160518C
1605074-16A	SGR-DU044(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/17/16 06:55 AM	GCMS8_160516A
	SGR-DU044(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75113	10	05/16/16 06:26 AM	GCMS6_160515A
	SGR-DU044(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 06:35 PM	ICP-MS3_160518C
1605074-17A	SGR-DU044(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/15/16 08:59 PM	GCMS8_160515A
	SGR-DU044(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 06:41 PM	ICP-MS3_160518C
1605074-18A	SGR-DU044(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75119	20	05/15/16 09:36 PM	GCMS8_160515A
	SGR-DU044(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 06:47 PM	ICP-MS3_160518C
1605074-19A	SGR-DU044(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/15/16 10:13 PM	GCMS8_160515A
	SGR-DU044(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 06:53 PM	ICP-MS3_160518C
1605074-20A	SGR-DU044(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/15/16 10:50 PM	GCMS8_160515A
	SGR-DU044(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 06:59 PM	ICP-MS3_160518C
1605074-21A	SGR-DU044(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/15/16 11:27 PM	GCMS8_160515A
	SGR-DU044(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 07:05 PM	ICP-MS3_160518C
1605074-22A	SGR-DU044(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 12:04 AM	GCMS8_160515A
	SGR-DU044(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 07:11 PM	ICP-MS3_160518C
1605074-23A	SGR-DU044(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75119	20	05/16/16 12:41 AM	GCMS8_160515A
	SGR-DU044(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 07:17 PM	ICP-MS3_160518C
1605074-24A	SGR-DU044(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 01:18 AM	GCMS8_160515A

Lab Order: 1605074
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ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605074-24A	SGR-DU044(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75118	5	05/18/16 07:23 PM	ICP-MS3_160518C
1605074-25A	SGR-DU044(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 01:55 AM	GCMS8_160515A
	SGR-DU044(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:05 PM	ICP-MS3_160519A
1605074-26A	SGR-DU044(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 02:32 AM	GCMS8_160515A
	SGR-DU044(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:11 PM	ICP-MS3_160519A
1605074-27A	SGR-DU044(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 06:48 AM	GCMS8_160515A
	SGR-DU044(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:16 PM	ICP-MS3_160519A
1605074-28A	SGR-DU151-STRAT1	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 07:25 AM	GCMS8_160515A
	SGR-DU151-STRAT1	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU151-STRAT1	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:22 PM	ICP-MS3_160519A
1605074-29A	SGR-DU151-STRAT2	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 08:02 AM	GCMS8_160515A
	SGR-DU151-STRAT2	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU151-STRAT2	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:28 PM	ICP-MS3_160519A
1605074-30A	SGR-DU151-STRAT3	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 08:49 AM	GCMS8_160515A
	SGR-DU151-STRAT3	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU151-STRAT3	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:34 PM	ICP-MS3_160519A
1605074-31A	SGR-DU151-STRAT4	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 09:26 AM	GCMS8_160515A
	SGR-DU151-STRAT4	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	SGR-DU151-STRAT4	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:40 PM	ICP-MS3_160519A
1605074-32A	DUP02(20160506)	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 10:03 AM	GCMS8_160515A
	DUP02(20160506)	Soil	D2216	Percent Moisture	75081	1	05/11/16 09:30 AM	PMOIST_160510B
	DUP02(20160506)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:46 PM	ICP-MS3_160519A
1605074-33A	EB06(20160506)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 01:44 PM	ICP-MS4_160520C
1605074-33B	EB06(20160506)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/18/16 03:17 PM	GCMS8_160518B
1605074-34A	EB07(20160506)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 01:46 PM	ICP-MS4_160520C
1605074-34B	EB07(20160506)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/18/16 03:53 PM	GCMS8_160518B
1605074-35A	EB08(20160506)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 01:48 PM	ICP-MS4_160520C
1605074-35B	EB08(20160506)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/18/16 04:30 PM	GCMS8_160518B

Lab Order: 1605074
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
1605074-36A	SGR-DU082(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 10:40 AM	GCMS8_160515A
	SGR-DU082(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 02:52 PM	ICP-MS3_160519A
1605074-37A	SGR-DU082(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 11:16 AM	GCMS8_160515A
	SGR-DU082(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 03:34 PM	ICP-MS3_160519A
1605074-38A	SGR-DU082(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75119	10	05/16/16 11:53 AM	GCMS8_160515A
	SGR-DU082(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 03:40 PM	ICP-MS3_160519A
1605074-39A	SGR-DU082(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 10:55 AM	GCMS6_160516A
	SGR-DU082(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 01:53 PM	ICP-MS3_160519A
1605074-40A	SGR-DU082(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 11:35 AM	GCMS6_160516A
	SGR-DU082(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75166	5	05/23/16 03:59 PM	ICP-MS4_160523F
1605074-41A	SGR-DU082(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 12:14 PM	GCMS6_160516A
	SGR-DU082(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75166	5	05/23/16 04:01 PM	ICP-MS4_160523F
1605074-42A	SGR-DU082(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 12:54 PM	GCMS6_160516A
	SGR-DU082(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 03:46 PM	ICP-MS3_160519A
1605074-43A	SGR-DU082(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 01:33 PM	GCMS6_160516A
	SGR-DU082(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 03:52 PM	ICP-MS3_160519A
1605074-44A	SGR-DU082(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 02:13 PM	GCMS6_160516A
	SGR-DU082(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 03:58 PM	ICP-MS3_160519A
1605074-45A	SGR-DU082(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 02:52 PM	GCMS6_160516A
	SGR-DU082(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/17/16 10:51 AM	GCMS6_160516A
	SGR-DU082(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 04:04 PM	ICP-MS3_160519A
1605074-46A	SGR-DU082(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 03:32 PM	GCMS6_160516A
	SGR-DU082(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 04:10 PM	ICP-MS3_160519A
1605074-47A	SGR-DU082(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75127	10	05/16/16 04:12 PM	GCMS6_160516A
	SGR-DU082(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75132	5	05/19/16 04:16 PM	ICP-MS3_160519A

DHL Analytical, Inc.

Date: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-01
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:17 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	14.2	0.0943	0.283	0.142		mg/Kg-dry	5	05/16/16 06:43 PM
IS: Bismuth	92.2	0	30-120	0		%REC	5	05/16/16 06:43 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[a]anthracene	0.118	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[a]pyrene	0.142	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[b]fluoranthene	0.142	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[e]pyrene	0.110	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[g,h,i]perylene	0.109	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[j]fluoranthene	0.0748	0.0497	0.0993	0.0745	JN	mg/Kg-dry	10	05/15/16 05:13 PM
Benzo[k]fluoranthene	0.0715	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 05:13 PM
Chrysene	0.141	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Fluoranthene	0.226	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 05:13 PM
Indeno[1,2,3-cd]pyrene	0.0872	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 05:13 PM
Phenanthrene	0.0867	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 05:13 PM
Pyrene	0.195	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 05:13 PM
IS: Acenaphthene-d10	66.8	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Chrysene-d12	75.4	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Perylene-d12	74.1	0	50-200	0		%REC	10	05/15/16 05:13 PM
IS: Phenanthrene-d10	75.3	0	50-200	0		%REC	10	05/15/16 05:13 PM
Surr: 2-Fluorobiphenyl	85.6	0	46-115	0		%REC	10	05/15/16 05:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605074-01
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:17 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	74.1	0	58-133	0		%REC	10	05/15/16 05:13 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-02
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:20 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	55.9	0.0971	0.291	0.146		mg/Kg-dry	5	05/16/16 06:45 PM
IS: Bismuth	92.6	0	30-120	0		%REC	5	05/16/16 06:45 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.150	0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Acenaphthylene	0.150	0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Anthracene	0.150	0.100	0.200	0.150	J	mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[a]anthracene	0.579	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[a]pyrene	0.610	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[b]fluoranthene	0.591	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[e]pyrene	0.468	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[g,h,i]perylene	0.439	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[j]fluoranthene	0.321	0.100	0.200	0.150	N	mg/Kg-dry	20	05/15/16 05:53 PM
Benzo[k]fluoranthene	0.309	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Chrysene	0.647	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Dibenz[a,h]anthracene	0.150	0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Fluoranthene	1.22	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Fluorene	0.150	0.100	0.200	0.150	U	mg/Kg-dry	20	05/15/16 05:53 PM
Indeno[1,2,3-cd]pyrene	0.340	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Phenanthrene	0.619	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
Pyrene	0.974	0.100	0.200	0.150		mg/Kg-dry	20	05/15/16 05:53 PM
IS: Acenaphthene-d10	73.9	0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Chrysene-d12	78.2	0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Naphthalene-d8	114	0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Perylene-d12	77.2	0	50-200	0		%REC	20	05/15/16 05:53 PM
IS: Phenanthrene-d10	74.7	0	50-200	0		%REC	20	05/15/16 05:53 PM
Surr: 2-Fluorobiphenyl	78.9	0	46-115	0		%REC	20	05/15/16 05:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605074-02
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:20 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.2	0	58-133	0		%REC	20	05/15/16 05:53 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-03
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:23 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	15.1	0.0962	0.288	0.144		mg/Kg-dry	5	05/16/16 06:47 PM
IS: Bismuth	90.2	0	30-120	0		%REC	5	05/16/16 06:47 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[a]anthracene	0.130	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[a]pyrene	0.195	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[b]fluoranthene	0.189	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[e]pyrene	0.152	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[g,h,i]perylene	0.160	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[j]fluoranthene	0.0941	0.0500	0.0999	0.0749	JN	mg/Kg-dry	10	05/15/16 06:32 PM
Benzo[k]fluoranthene	0.0912	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/15/16 06:32 PM
Chrysene	0.165	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Dibenz[a,h]anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Fluoranthene	0.214	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/15/16 06:32 PM
Indeno[1,2,3-cd]pyrene	0.120	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
Phenanthrene	0.0748	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/15/16 06:32 PM
Pyrene	0.196	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/15/16 06:32 PM
IS: Acenaphthene-d10	72.3	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Chrysene-d12	81.3	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Naphthalene-d8	117	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Perylene-d12	79.1	0	50-200	0		%REC	10	05/15/16 06:32 PM
IS: Phenanthrene-d10	81.6	0	50-200	0		%REC	10	05/15/16 06:32 PM
Surr: 2-Fluorobiphenyl	77.8	0	46-115	0		%REC	10	05/15/16 06:32 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605074-03
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:23 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	66.1	0	58-133	0		%REC	10	05/15/16 06:32 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-04
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:27 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.34	0.0847	0.254	0.127		mg/Kg-dry	5	05/16/16 06:49 PM
IS: Bismuth	89.1	0	30-120	0		%REC	5	05/16/16 06:49 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Acenaphthylene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Anthracene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[a]anthracene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[a]pyrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[b]fluoranthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[e]pyrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[g,h,i]perylene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[j]fluoranthene	0.0725	0.0483	0.0966	0.0725	NU	mg/Kg-dry	10	05/15/16 07:12 PM
Benzo[k]fluoranthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Chrysene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Dibenz[a,h]anthracene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Fluoranthene	0.0539	0.0483	0.0966	0.0725	J	mg/Kg-dry	10	05/15/16 07:12 PM
Fluorene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Indeno[1,2,3-cd]pyrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Phenanthrene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/15/16 07:12 PM
Pyrene	0.0495	0.0483	0.0966	0.0725	J	mg/Kg-dry	10	05/15/16 07:12 PM
IS: Acenaphthene-d10	76.2	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Chrysene-d12	84.1	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Naphthalene-d8	121	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Perylene-d12	83.5	0	50-200	0		%REC	10	05/15/16 07:12 PM
IS: Phenanthrene-d10	83.5	0	50-200	0		%REC	10	05/15/16 07:12 PM
Surr: 2-Fluorobiphenyl	76.2	0	46-115	0		%REC	10	05/15/16 07:12 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605074-04
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:27 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	65.4	0	58-133	0		%REC	10	05/15/16 07:12 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-05
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:31 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	18.0	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 04:54 PM
IS: Bismuth	82.8	0	30-120	0		%REC	5	05/18/16 04:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[a]anthracene	0.277	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[a]pyrene	0.352	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[b]fluoranthene	0.358	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[e]pyrene	0.289	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[g,h,i]perylene	0.276	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[j]fluoranthene	0.183	0.0497	0.0993	0.0745	N	mg/Kg-dry	10	05/15/16 07:52 PM
Benzo[k]fluoranthene	0.181	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Chrysene	0.343	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Dibenz[a,h]anthracene	0.0592	0.0497	0.0993	0.0745	J	mg/Kg-dry	10	05/15/16 07:52 PM
Fluoranthene	0.459	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/15/16 07:52 PM
Indeno[1,2,3-cd]pyrene	0.212	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Phenanthrene	0.144	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
Pyrene	0.409	0.0497	0.0993	0.0745		mg/Kg-dry	10	05/15/16 07:52 PM
IS: Acenaphthene-d10	76.6	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Chrysene-d12	83.8	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Naphthalene-d8	125	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/15/16 07:52 PM
IS: Phenanthrene-d10	82.3	0	50-200	0		%REC	10	05/15/16 07:52 PM
Surr: 2-Fluorobiphenyl	78.4	0	46-115	0		%REC	10	05/15/16 07:52 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605074-05
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:31 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	66.8	0	58-133	0		%REC	10	05/15/16 07:52 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-06
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:42 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	27.9	0.0909	0.273	0.136		mg/Kg-dry	5	05/18/16 05:00 PM
IS: Bismuth	82.6	0	30-120	0		%REC	5	05/18/16 05:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Acenaphthylene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Anthracene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[a]anthracene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[a]pyrene	0.627	0.493	0.985	0.739	J	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[b]fluoranthene	0.589	0.493	0.985	0.739	J	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[e]pyrene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[g,h,i]perylene	0.523	0.493	0.985	0.739	J	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[j]fluoranthene	0.739	0.493	0.985	0.739	NU	mg/Kg-dry	100	05/15/16 08:33 PM
Benzo[k]fluoranthene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Chrysene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Dibenz[a,h]anthracene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Fluoranthene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Fluorene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Indeno[1,2,3-cd]pyrene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Phenanthrene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
Pyrene	0.739	0.493	0.985	0.739	U	mg/Kg-dry	100	05/15/16 08:33 PM
IS: Acenaphthene-d10	79.2	0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Chrysene-d12	85.9	0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Naphthalene-d8	126	0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Perylene-d12	86.4	0	50-200	0		%REC	100	05/15/16 08:33 PM
IS: Phenanthrene-d10	82.4	0	50-200	0		%REC	100	05/15/16 08:33 PM
Surr: 2-Fluorobiphenyl	80.1	0	46-115	0		%REC	100	05/15/16 08:33 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605074-06
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:42 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	71.3	0	58-133	0		%REC	100	05/15/16 08:33 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-07
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:44 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	39.5	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 05:06 PM
IS: Bismuth	82.3	0	30-120	0		%REC	5	05/18/16 05:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/17/16 02:00 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/17/16 02:00 AM
Anthracene	0.0521	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[a]anthracene	0.284	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[a]pyrene	0.366	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[b]fluoranthene	0.345	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[e]pyrene	0.276	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[g,h,i]perylene	0.325	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[j]fluoranthene	0.212	0.0498	0.0995	0.0746	N	mg/Kg-dry	10	05/17/16 02:00 AM
Benzo[k]fluoranthene	0.215	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Chrysene	0.357	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Dibenz[a,h]anthracene	0.112	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Fluoranthene	0.407	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/17/16 02:00 AM
Indeno[1,2,3-cd]pyrene	0.274	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Phenanthrene	0.194	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 02:00 AM
Pyrene	0.334	0.0995	0.199	0.149		mg/Kg-dry	20	05/16/16 01:07 AM
IS: Acenaphthene-d10	116	0	50-200	0		%REC	10	05/17/16 02:00 AM
IS: Acenaphthene-d10	80.6	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Chrysene-d12	79.4	0	50-200	0		%REC	10	05/17/16 02:00 AM
IS: Chrysene-d12	87.7	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Naphthalene-d8	127	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/17/16 02:00 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605074-07
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:44 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
IS: Perylene-d12	89.2	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/17/16 02:00 AM
IS: Phenanthrene-d10	87.0	0	50-200	0		%REC	20	05/16/16 01:07 AM
IS: Phenanthrene-d10	88.7	0	50-200	0		%REC	10	05/17/16 02:00 AM
Surr: 2-Fluorobiphenyl	89.4	0	46-115	0		%REC	10	05/17/16 02:00 AM
Surr: 2-Fluorobiphenyl	76.0	0	46-115	0		%REC	20	05/16/16 01:07 AM
Surr: 4-Terphenyl-d14	79.0	0	58-133	0		%REC	10	05/17/16 02:00 AM
Surr: 4-Terphenyl-d14	62.7	0	58-133	0		%REC	20	05/16/16 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-08
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:47 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.35	0.0971	0.291	0.146		mg/Kg-dry	5	05/18/16 05:12 PM
IS: Bismuth	78.1	0	30-120	0		%REC	5	05/18/16 05:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Acenaphthylene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[a]anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[a]pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[b]fluoranthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[e]pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[g,h,i]perylene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[j]fluoranthene	0.0728	0.0485	0.0971	0.0728	NU	mg/Kg-dry	10	05/16/16 01:47 AM
Benzo[k]fluoranthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Chrysene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Dibenz[a,h]anthracene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Fluoranthene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Fluorene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Indeno[1,2,3-cd]pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/17/16 02:37 AM
Phenanthrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
Pyrene	0.0728	0.0485	0.0971	0.0728	U	mg/Kg-dry	10	05/16/16 01:47 AM
IS: Acenaphthene-d10	120	0	50-200	0		%REC	10	05/17/16 02:37 AM
IS: Acenaphthene-d10	79.9	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Chrysene-d12	88.3	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/17/16 02:37 AM
IS: Naphthalene-d8	127	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Naphthalene-d8	103	0	50-200	0		%REC	10	05/17/16 02:37 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605074-08
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:47 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	90.4	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Perylene-d12	87.5	0	50-200	0		%REC	10	05/17/16 02:37 AM
IS: Phenanthrene-d10	84.9	0	50-200	0		%REC	10	05/16/16 01:47 AM
IS: Phenanthrene-d10	90.3	0	50-200	0		%REC	10	05/17/16 02:37 AM
Surr: 2-Fluorobiphenyl	70.5	0	46-115	0		%REC	10	05/16/16 01:47 AM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/17/16 02:37 AM
Surr: 4-Terphenyl-d14	62.8	0	58-133	0		%REC	10	05/16/16 01:47 AM
Surr: 4-Terphenyl-d14	75.7	0	58-133	0		%REC	10	05/17/16 02:37 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-09
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:50 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	55.1	0.0893	0.268	0.134		mg/Kg-dry	5	05/18/16 05:17 PM
IS: Bismuth	78.1	0	30-120	0		%REC	5	05/18/16 05:17 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Acenaphthylene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Anthracene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[a]anthracene	0.299	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[a]pyrene	0.351	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[b]fluoranthene	0.338	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[e]pyrene	0.277	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[g,h,i]perylene	0.262	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[j]fluoranthene	0.183	0.0498	0.0995	0.0746	N	mg/Kg-dry	10	05/16/16 02:27 AM
Benzo[k]fluoranthene	0.174	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Chrysene	0.358	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Dibenz[a,h]anthracene	0.0552	0.0498	0.0995	0.0746	J	mg/Kg-dry	10	05/16/16 02:27 AM
Fluoranthene	0.566	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Fluorene	0.0746	0.0498	0.0995	0.0746	U	mg/Kg-dry	10	05/16/16 02:27 AM
Indeno[1,2,3-cd]pyrene	0.332	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/17/16 03:14 AM
Phenanthrene	0.224	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
Pyrene	0.478	0.0498	0.0995	0.0746		mg/Kg-dry	10	05/16/16 02:27 AM
IS: Acenaphthene-d10	118	0	50-200	0		%REC	10	05/17/16 03:14 AM
IS: Acenaphthene-d10	81.3	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Chrysene-d12	89.9	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Chrysene-d12	78.4	0	50-200	0		%REC	10	05/17/16 03:14 AM
IS: Naphthalene-d8	133	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/17/16 03:14 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605074-09
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:50 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
IS: Perylene-d12	91.9	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Perylene-d12	83.8	0	50-200	0		%REC	10	05/17/16 03:14 AM
IS: Phenanthrene-d10	86.1	0	50-200	0		%REC	10	05/16/16 02:27 AM
IS: Phenanthrene-d10	88.9	0	50-200	0		%REC	10	05/17/16 03:14 AM
Surr: 2-Fluorobiphenyl	71.8	0	46-115	0		%REC	10	05/16/16 02:27 AM
Surr: 2-Fluorobiphenyl	88.4	0	46-115	0		%REC	10	05/17/16 03:14 AM
Surr: 4-Terphenyl-d14	62.9	0	58-133	0		%REC	10	05/16/16 02:27 AM
Surr: 4-Terphenyl-d14	79.5	0	58-133	0		%REC	10	05/17/16 03:14 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-10
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:52 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	92.3	0.0990	0.297	0.149		mg/Kg-dry	5	05/18/16 05:23 PM
IS: Bismuth	80.3	0	30-120	0		%REC	5	05/18/16 05:23 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.150	0.0999	0.200	0.150	U	mg/Kg-dry	20	05/17/16 03:50 AM
Acenaphthylene	0.150	0.0999	0.200	0.150	U	mg/Kg-dry	20	05/17/16 03:50 AM
Anthracene	0.176	0.0999	0.200	0.150	J	mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[a]anthracene	0.749	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[a]pyrene	0.882	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[b]fluoranthene	0.776	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[e]pyrene	0.623	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[g,h,i]perylene	0.704	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[j]fluoranthene	0.458	0.0999	0.200	0.150	N	mg/Kg-dry	20	05/17/16 03:50 AM
Benzo[k]fluoranthene	0.448	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Chrysene	0.888	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Dibenz[a,h]anthracene	0.203	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Fluoranthene	1.24	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Fluorene	0.150	0.0999	0.200	0.150	U	mg/Kg-dry	20	05/17/16 03:50 AM
Indeno[1,2,3-cd]pyrene	0.591	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Phenanthrene	0.789	0.0999	0.200	0.150		mg/Kg-dry	20	05/17/16 03:50 AM
Pyrene	1.12	0.250	0.500	0.375		mg/Kg-dry	50	05/16/16 03:08 AM
IS: Acenaphthene-d10	140	0	50-200	0		%REC	20	05/17/16 03:50 AM
IS: Acenaphthene-d10	80.2	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Chrysene-d12	85.9	0	50-200	0		%REC	20	05/17/16 03:50 AM
IS: Chrysene-d12	89.5	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Naphthalene-d8	128	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Naphthalene-d8	116	0	50-200	0		%REC	20	05/17/16 03:50 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: *27-May-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU084(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605074-10
Project No:	04285081.0000.00044	**Collection Date:**	05/06/16 10:52 AM
Lab Order:	1605074	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
IS: Perylene-d12	90.2	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Perylene-d12	93.8	0	50-200	0		%REC	20	05/17/16 03:50 AM
IS: Phenanthrene-d10	82.8	0	50-200	0		%REC	50	05/16/16 03:08 AM
IS: Phenanthrene-d10	101	0	50-200	0		%REC	20	05/17/16 03:50 AM
Surr: 2-Fluorobiphenyl	82.5	0	46-115	0		%REC	20	05/17/16 03:50 AM
Surr: 2-Fluorobiphenyl	69.6	0	46-115	0		%REC	50	05/16/16 03:08 AM
Surr: 4-Terphenyl-d14	74.6	0	58-133	0		%REC	20	05/17/16 03:50 AM
Surr: 4-Terphenyl-d14	64.2	0	58-133	0		%REC	50	05/16/16 03:08 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		