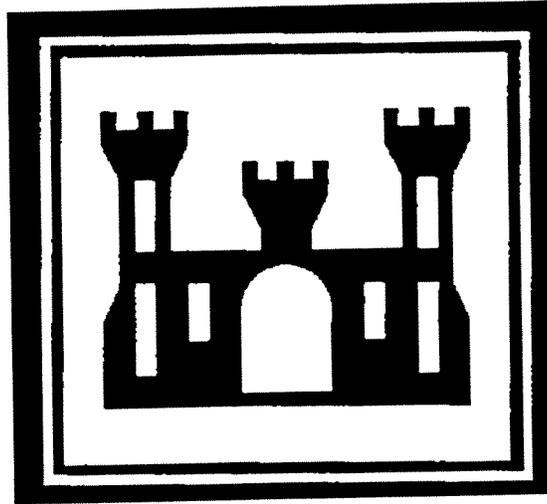


*Revised 9/10/96 EFW*

# REMEDIAL INVESTIGATION WORKPLAN

FIRE TRAINING AREA BURN PITS  
FORMER LAREDO AIR FORCE BASE  
(LAREDO INTERNATIONAL AIRPORT)



U.S. ARMY CORPS OF ENGINEERS  
TULSA DISTRICT

JULY, 1996

00369

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## 1.0 Introduction

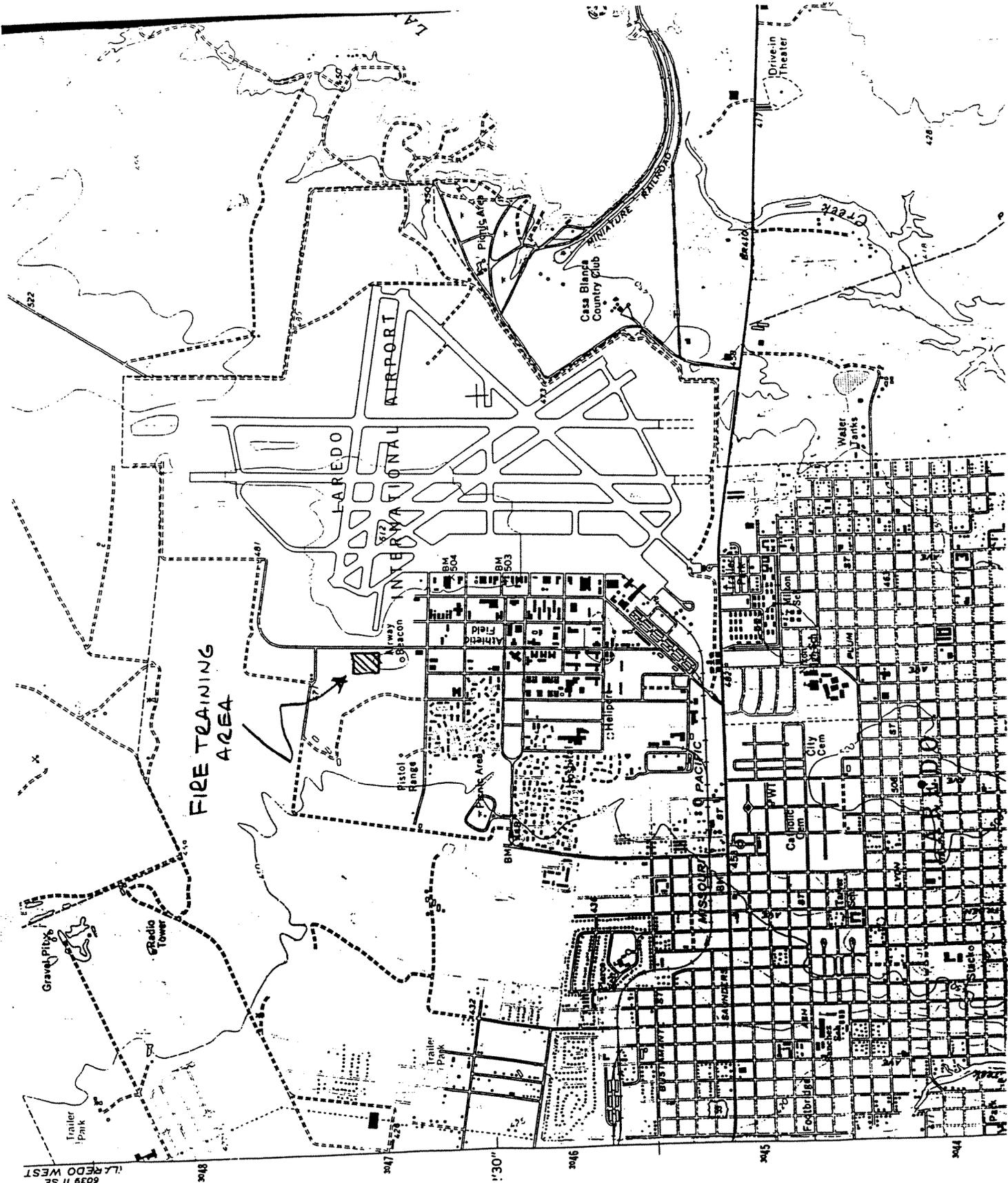
In 1942, the Government acquired 2,085 acres of land and constructed what later became Laredo Air Force Base. In 1974, the base was reported excess and transferred to the City of Laredo which began airport operations as the Laredo International Airport (LIA).

### 1.1 Fire Training Area Burn Pits

The Fire Training Area Burn Pits (FTA) were operated by the Air Force for a number of years prior to transfer of the base to the City of Laredo. No evidence of the FTA is seen on early 1950's vintage aerial photography of the site. Air Force practice was to use jet fuel for fire training. The city has since operated one of the two burn pits for training exercises for the city fire department. Fuels used include jet fuel and possibly gasoline. Five shallow borings taken by TAC Environmental showed TPH values up to 29,900 ppm at the surface and 7,340 ppm at 5 feet.

The FTA site is about 500 feet by 700 feet and comprises about 8 acres of open area next to the airport.

Figure 1 - Location of FTA Burn Pit Site  
(Next Page)



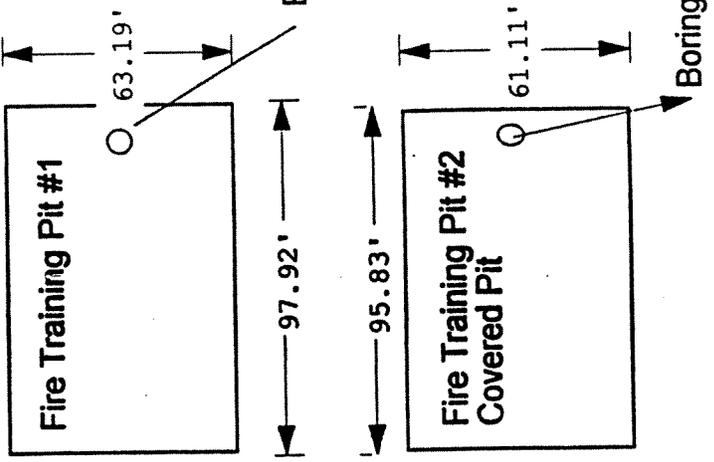
FIRE TRAINING AREA

Figure 2 - Location of Prior Surface Sampling Locations  
(Next Page)

Airport Service Road

Bexar Electric

North



Boring #4  
 TPH  
 0' - 29,900 M9/K9  
 1' - 373

Boring #1  
 TPH  
 0' - 1800 M9/K9  
 1' - 7300  
 5' - 7340

Boring #2  
 TPH  
 0' - 456 M9/K9  
 2' -  
 5' - 3682

Boring #5  
 TPH  
 0' - <10 M9/K9  
 1' - <10  
 5' - <10  
 375

Laredo Airport Fire  
 Training pits  
 Scale 1"=50.00'

Boring #3  
 TPH  
 0' - <10 M9/K9  
 1' - <10

TAC

## 1.2 Purpose of this Investigation

The purpose of this investigation is to delineate any hydrocarbon groundwater plume(s) and soil contamination associated with the FTA. The primary investigation will be accomplished with a Site Characterization and Analysis Penetrometer System (SCAPS) unit which was designed, built, and patented by the U.S. Army Corps of Engineers Waterways Experiment Station.

## 2.0 Groundwater Hydrology

Boring logs from an undated Preliminary Site Assessment Report of the FTA apparently produced in April, 1995, indicate the site to be underlain by dark brown to black to brown clay to silty clay down to a depth of five feet, where the borings were terminated. Monitoring well logs from the August 27, 1992, Quarterly Groundwater Monitoring Report for the Fuel Farm which is located 4500 feet south of the FTA indicate the shallow subsurface geology to be fine to medium silty sand with gypsum crystals and partings to a depth of 25 feet where the borings were terminated. Depth to the water table varies from 8 to 12 feet at the Fuel Farm.

Slug test results reported in the March 5, 1993, Quarterly Groundwater Monitoring Report indicate hydraulic conductivities of 1.38 ft/d and 2.58 ft/d from wells MW-4 and MW-7, respectively.

Groundwater quality is marginal with 3,510 ppm TDS, according to the January 31, 1992, Fuel Farm RAP Report filed with TNRCC.

## 3.0 Field Work

Field work will consist of surveying, drilling and sampling, and chemical analysis including QA/QC.

### 3.1 Water and Soil Sampling Strategy

Primary contaminants of concern are jet fuel and possibly gasoline. Air Force practice has been to use jet fuel as a fuel source for fire training because of the reduce probability of explosion. The basis for the sampling strategy is to completely delineate contamination both vertically and horizontally.

A grid will be established over an area of 500 feet by 700 feet and staked on 50 foot centers. Soil samples will be taken at 1 foot, 5 feet and 10 feet and a water sample will be taken from each hole. Investigation will begin in the center of the FTA and work outward. A field gas chromatograph, hand-held PID, and or hand-held FID will be used to check each sample in the field. Holes which field screening indicates

are not contaminated will indicate that the edge of the contaminated area has been reached. Uncontaminated holes will not be offset beyond the edge of the contaminated area.

Procedures for decontamination, sampling, sample containment and preservation, chain-of-custody, and similar procedures are covered in the attached Sampling and Analysis Plan.

### 3.2 Surveying and Mapping

Registered Land Surveyors will prepare a base map of the FTA which will include cultural features, roads, fences, wooded areas, buildings, utility poles, underground utilities, berms, and all above ground structures, including piping systems and surface features. A grid will be established over an area of 500 feet by 700 feet and boring locations will be staked on 50 foot centers. A minimum of four benchmarks will be established by the surveyors and the map will be tied in to the appropriate coordinate system. The surveyors will delineate topography on 1 foot contour intervals. The base map will be prepared at a scale of 1 inch = 50 feet. The base map will be prepared using digital formats including Intergraph Microstation and AutoCad and will be delivered on disk.

### 3.3 Drilling and Sampling

Holes will be pushed by a SCAPS unit to a depth of 20 feet and soil samples taken at 1 foot, 5 feet and 10 feet. The water table is expected between 10 and 15 feet. A temporary piezometer will be installed in each hole. After the water table equilibrates, the elevation of the water table will be measured and water samples will be taken with a teflon bailer or an appropriate pump after purging three to five well volumes. Further details of sampling procedures are found in the Sampling and Analysis Plan for this project.

### 3.4 Sample Numbering

Boreholes will be numbered <sup>using stake numbers provided by surveyors</sup> sequentially, 1 to 50, in the order in which they are drilled. Soil samples will be designated S1, S2, and S3, from shallowest to deepest. Water samples will be designated with the letter W. Thus the soil sample from five feet in the seventh well would be designated S52, the soil sample from 6 inches in the 40th well would be S49S1 and the water sample from the 25th well would be sample number 25W.

229W

### 3.5 Chemical Analysis

Each water and soil sample will be analyzed for TPH using EPA SW-846 Method 8015 modified for both gasoline range and diesel range organic components. Each sample will also be analyzed for BTEX using EPA SW-846 Method 8020 and for lead using EPA SW-846 Method 7421.

At the request of TNRCC, selected samples will also be scanned for a wide range of contaminants including volatile organic compounds using EPA Method 8260, semi-volatile organic compounds using EPA Method 8270, and eight RCRA metals using EPA Methods 6010, 7421, 7470 (7471), 7240, and 7060. Roger Dockery who is a member of the Federal Facilities Team, Corrective Action Section, Industrial and Hazardous Waste Division, Office of Waste Management of the Texas Natural Resources Conservation Commission, said in a telephone conversation on August 8, 1996, that we should check for these contaminants, even though there is no reason to believe they were ever dumped at the site.

Detailed discussions of analysis procedures are found in the Sampling and Analysis Plan for this project.

### 3.6 Investigative Derived Material (IDM)

Since the contaminants at this site include only petroleum hydrocarbons, Personal Protective Equipment (PPE) such as gloves will be a Class III non-hazardous industrial waste according to 30 TAC 335.505 and may be disposed as ordinary trash. Decontamination and purge water and soil produced in connection with sampling may be Class I, II, or III non-hazardous industrial waste and must be containerized and held pending results of chemical analysis. At the conclusion of the investigation, a representative sample of soil IDM will be taken and analyzed for TPH using EPA SW-846 Method 8015. A Toxicity Characteristic Leachate Procedure will be performed on this soil sample and the leachate analyzed for BTEX using EPA SW-846 Method 8020. The results of these analyses will be used to classify the IDM.

### 4.0 Reporting

At the conclusion of this phase of investigation, either an Interim Remedial Investigation Report or a Remedial Investigation Report will be prepared depending on whether contamination was adequately delineated and characterized. If delineation and characterization are complete, alternatives for remediation will be considered, if necessary. If the contamination is not completely delineated, an Interim Remedial Investigation Report will propose further delineation of the contaminated area.