FINAL REMOVAL AND UPGRADE OF UNDERGROUND STORAGE TANK AND INTERIM REMEDIAL ACTION AT THE GOLF COURSE AND MAINTENANCE YARD WORK PLAN NAS FORT WORTH TX

2/1/1996

JACOBS ENGINEERING

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NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 374

United States Air Force
Air Force Base Conversion Agency

FINAL

NAS Fort Worth JRB, Texas
(Formerly Carswell AFB, Texas)

REMOVAL/UPGRADE OF UNDERGROUND STORAGE TANKS AND INTERIM REMEDIAL ACTION AT THE GOLF COURSE MAINTENANCE YARD

WORK PLAN

FEBRUARY 1996

United States Air Force
Air Force Base
Conversion Agency

FINAL

NAS Fort Worth JRB, Texas
(Formerly Carswell AFB, Texas)

WORK PLAN

CAR-J03-10K70200-M1-0002

FEBRUARY 1996

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ACRONYMS and ABBREVIATIONS

AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AFCEE	Air Force Center for Environmental Excellence
BTEX	benzene, toluene, ethylbenzene, xylene
CFR	Code of Federal Regulations
COR	Contracting Officer's Representative
CQP	Construction Quality Plan
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
HNu	brand name of a portable photoionization detector
HSP	Health and Safety Plan
IRA	interim remedial action
IRP	Installation Restoration Program
ITIR	Informal Technical Information Report
I-30	Interstate Highway I-30
Jacobs	Jacobs Engineering Group Inc.
JRB	Joint Reserve Base
LEL	lower explosive limit
NAS	Naval Air Station
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon
PID	photoionization detector
POC	Point of Contact
PQL	practical quantitation limit
PST	petroleum storage tank
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RCRA	Resource Conservation and Recovery Act

ACRONYMS and ABBREVIATIONS

SHSC	Site Health and Safety Coordinator
TAC	Texas Administrative Code
TCE	trichloroethene
TNRCC	Texas Natural Resource Conservation Commission
TPH	total petroleum hydrocarbons
UST	underground storage tank

1.0 INTRODUCTION

This Work Plan has been prepared by Jacobs Engineering Group Inc. (Jacobs) for the removal/upgrade of underground storage tanks (USTs) and interim remedial action (IRA) for the golf course maintenance yard at Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB), Carswell Field, Fort Worth, Texas. This station was formerly called Carswell Air Force Base (AFB), and will be referred to in this document at NAS Fort Worth. The Work Plan constitutes one of the planning documents required by the Statement of Work for Contract F41624-94-D-8116, Delivery Order 0003, issued to Jacobs by the Air Force Center for Environmental Excellence (AFCEE). Other planning documents prepared for this contract and delivery order include the Quality Assurance Project Plan (QAPP), Construction Quality Plan (CQP), and Health and Safety Plan (HSP).

The Work Plan consists of five sections. Section 1.0 is the introduction. Section 2.0 describes the project scope and objectives, and includes a site description, site history, project approach and objectives, project management organization, waste management, record keeping and reporting, and data quality and data submittals. Section 3.0 summarizes the reporting requirements for this project. Section 4.0 includes the project schedule, and Section 5.0 presents a list of references used to prepare this document.

1.1 SITE DESCRIPTION AND HISTORY

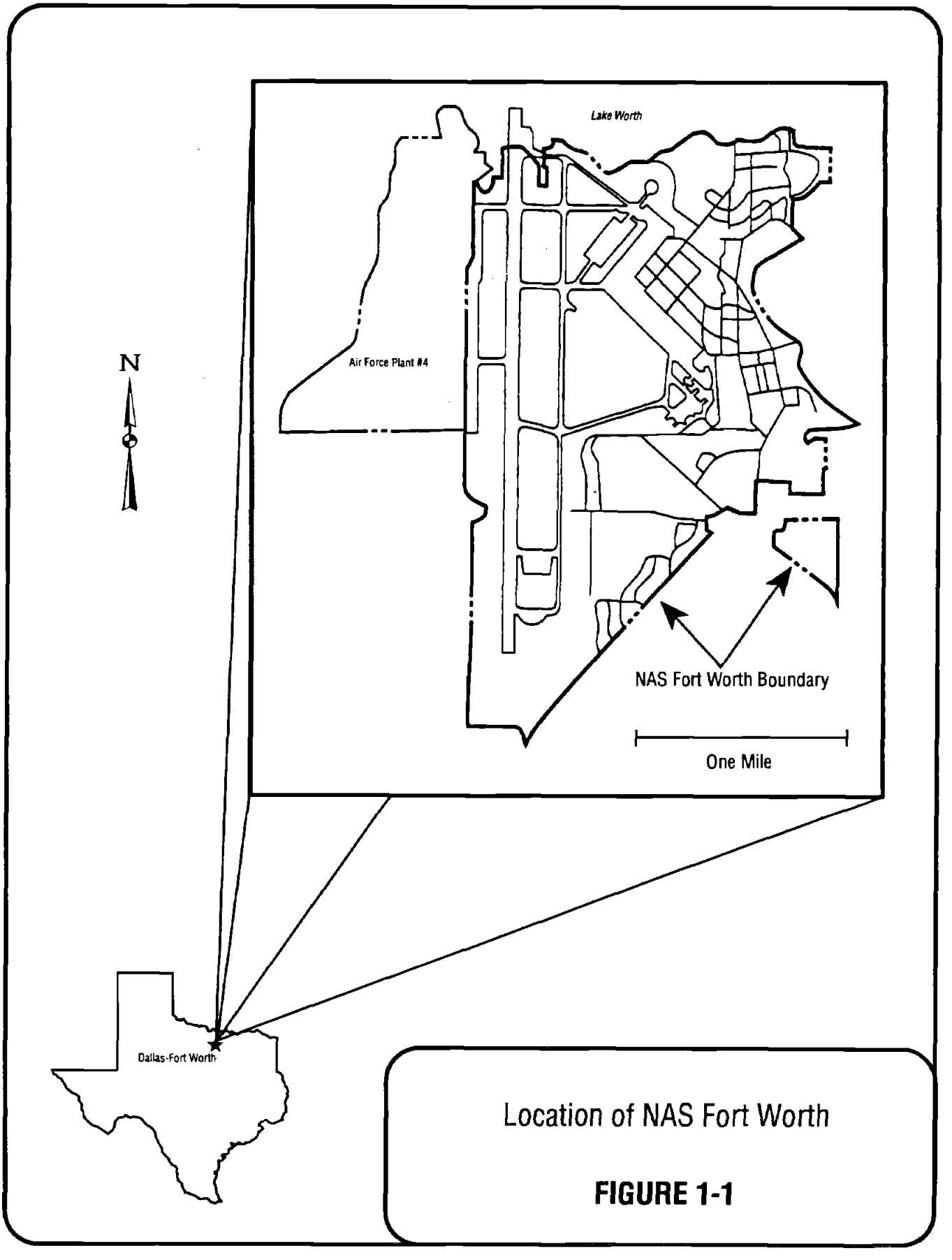
The following paragraphs describe the location and land uses of the area around NAS Fort Worth and the historical uses and investigations related to the USTs and golf course maintenance yard.

1.1.1 Site Description

NAS Fort Worth is located in north-central Texas in Tarrant County, 8 miles west of downtown Fort Worth (Figure 1-1). The area surrounding the station is mostly suburban, including the residential areas of the cities of Fort Worth, Westworth Village, and White Settlement. The main station totals 2,264 acres and is bordered on the north by Lake Worth, on the east by the Trinity River and Westworth Village, on the northeast and southeast by Fort Worth, on the west and southwest by White Settlement, and on the west by Air Force Plant 4 (Lockheed).

The existing land uses in the immediate vicinity of the station include industrial, commercial, residential, and recreational. The land uses west of the station are primarily industrial as a result of industrial complexes at Air Force Plant 4 and in White Settlement. Additional uses to the west include residential and some supporting commercial. South of the station are commercial areas at the interchange of Interstate Highway I-30 (I-30) and State Highway 183. This area includes a regional shopping mall, a discount shopping center, and a small convenience center. Both single-family and multifamily residential development dominate the area southeast of the station and north of I-30 and the area east of the station. The area north of the station is predominantly composed of recreational and public facilities. The south shore of Lake Worth is restricted to public access because of the presence of NAS Forth Worth and Air Force Plant 4, but the lake is open for recreation. A fish hatchery, a YMCA camp, and private recreational land are along the West Fork of the Trinity River northeast of the station. The area surrounding the Offsite Weapons Storage Area is primarily rural, although a residential development is located south of White Settlement Road.

The principal hydrogeologic units underlying NAS Fort Worth include the Terrace Alluvium Aquifer, and the Upper, Middle, and Lower Paluxy Aquifers. The Paluxy



Location of NAS Fort Worth

FIGURE 1-1

Aquifers are bedrock hosted. The Terrace Alluvium Aquifer is the uppermost aquifer and occurs in unconsolidated material and in the Goodland Formation. The unconsolidated material constituting the Terrace Alluvium is predominantly alluvial and fluvial deposits of clay, silt, sand, and gravel. The Goodland Formation is a thinly to massively bedded fossiliferous limestone. The Terrace Alluvium Aquifer is only partially saturated and is not a source of drinking water. Recharge is from precipitation and leaking water supply lines, sewers, and storm drains. Discharge occurs as seeps into unnamed small streams and the Trinity River.

The Paluxy Aquifers are hosted by fine- to medium-grained sandstone separated by clays and shales of the Paluxy Formation. The middle Paluxy Aquifer serves as a water supply source for the community of White Settlement. The Paluxy Aquifers are hydraulically separated from the Terrace Alluvium Aquifer by the Walnut Formation, a limestone coquina. The Walnut Formation has been subjected to subaerial erosion and, based on drill data, has been entirely removed by erosion from one location on Air Force Plant 4. This erosion suggests the possibility of local hydraulic communication between the Terrace Formation Aquifer and the deeper Paluxy Aquifers.

A trichloroethene (TCE) plume is contained in the Terrace Alluvium Aquifer and appears to be migrating in an easterly to southeasterly direction toward NAS Fort Worth from Air Force Plant 4.

1.1.2 Site History and Previous Investigations

NAS Fort Worth was originally a modest dirt runway built to service the aircraft manufacturing plant now called Air Force Plant 4. The installation was established in 1942 and was referred to as the Tarrant Field Airdrome. Its mission was to provide training for B-24 bomber pilots. The Strategic Air Command assumed control of the installation in 1946. In 1948, the base was renamed Carswell AFB in honor of Fort

Worth native Major Horace S. Carswell. Carswell AFB became host base for its first B-52s and KC-135s in 1956.

Pursuant to the Base Closure and Realignment Act of 1990, Carswell AFB was selected for closure and associated property disposal during Round II Base Closure Commission deliberations. This announcement initiated the closure and disposal and reuse planning process. Drawdown activities were initiated in 1992, and all aircraft were relocated by January 1993. The base officially closed on 30 September 1993. On 01 October 1994, the U.S. Navy assumed control of Carswell AFB; the base was renamed NAS Fort Worth.

In 1984, the Installation Restoration Program (IRP) was initiated at NAS Fort Worth with a records search by CH2M Hill, Inc. that identified 15 sites requiring further evaluation (CH2M Hill 1984). Several other IRP studies have been conducted, including a 1989 Resource Conservation and Recovery Act (RCRA) Facility Assessment by A.T. Kearney, Inc. (A.T. Kearney, Inc. 1989). Soil sampling was conducted at the golf course maintenance yard in 1993 by Southwestern Laboratories. No other investigations of the USTs or golf course maintenance yard are known.

The USTs to be removed or upgraded were installed from 1958 to 1986, and range in size from 315 to 20,000 gallons. All of the tanks are constructed of either fiberglass or steel. The golf course maintenance yard has been in use since the early days of the base; the area has been used for storage of maintenance vehicles and equipment, as well as pesticides and herbicides for weed and insect control.

1.2 PREVIOUS ANALYTICAL RESULTS

As stated above, soil sampling was conducted at the golf course maintenance yard in 1993 by Southwestern Laboratories. Little information is available on this investigation; it is believed that surface soil samples were collected at five locations within the fenced area of the maintenance yard. Samples were analyzed for pesticides

(Method SW8080), herbicides (Method SW8150), and total petroleum hydrocarbons (TPH) (Method E418.1). The maximum TPH detected in soils was 4,870 milligrams per kilogram (mg/kg). The only pesticide detected was chlordane at a maximum concentration of 9.5 mg/kg; no herbicides were detected.

2.0 PROJECT SCOPE AND OBJECTIVES

The proposed Work Plan is discussed in detail in this section. The subsections describe the scope of work, the objectives, the project management strategy, the residual and waste management objectives, record keeping and reporting, and data quality and data submittal requirements.

2.1 SCOPE OF WORK

The scope of work consists of removal of 12 USTs, upgrade of 11 USTs with spill and overfill protection, and an IRA at the golf course maintenance yard to remove potentially contaminated soil. The work will be accomplished by Jacobs with subcontractors selected for their technical qualifications and ability to perform the assigned tasks. Subcontracts will be issued for UST removal, UST upgrades, excavation and disposal of contaminated soils, building demolition, building erection, and analytical laboratory services. Subcontractors have not yet been selected; as soon as the selection process is complete, a list of subcontractors will be submitted.

2.2 APPROACH AND OBJECTIVES

Three different field tasks will be conducted as part of this project: removal of 12 USTs, upgrade of 11 USTs, and removal of contaminated soil from the golf course maintenance yard. Each of these tasks is described in the following sections.

2.2.1 Underground Storage Tank Removal

Twelve USTs will be removed as part of this project. Table 2-1 lists the USTs, their size, age, composition, and contents.

TABLE 2-1
Underground Storage Tanks to be Removed
NAS Fort Worth JRB, Texas

UST Number	Capacity (gallons)	Contents	Composition	Tank Cover	Year Installed
1411-1	2,000	Jet fuel	Steel	Concrete	1963
1411-2	2,000	Diesel	Steel	Concrete	1963
1411-3	2,000	Gasoline	Steel	Concrete	1963
1518-5	600	Waste oil	Unknown	Concrete	1970
1750-2	8,000	Diesel	Fiberglass	Grass	1986
3001-1a	20,000	Heating fuel	Steel	Grass	1959
3001-1b	20,000	Heating fuel	Steel	Grass	1959
4102-1	315	Diesel	Steel	Grass	1980
4210-1	8,000	Waste oil	Fiberglass	Gravel	1985
4210-2	8,000	Waste oil	Fiberglass	Gravel	1985
4210-3	8,000	Waste oil	Fiberglass	Gravel	1985
4210-5	2,000	JP-10	Fiberglass	Gravel	1985

Note:

Tanks 1411-1, 1411-2, and 1411-3 will be removed during the same excavation, as will Tanks 3001-1a and 3001-1b, and Tanks 4210-1, 4210-2, 4210-3, and 4210-5.

All tank contents will be removed from the USTs by Air Force Base Conversion Agency (AFBCA) personnel before Jacobs begins work. Before beginning fieldwork, a 30-day written notification of UST removal will be provided to the Texas Natural Resource Conservation Commission (TNRCC) Region 4 field office in Duncanville, Texas. Verbal notification will be provided to the same office 24 to 72 hours prior to removal. The first field task to be performed by Jacobs and its designated subcontractor will be to triple rinse the tanks to remove any residual fluids or sludges remaining in the tanks. This step will reduce the lower explosive limit (LEL) of the atmosphere in each tank to less than 10 percent by volume by displacing any explosive vapors in the tank. If the triple rinsing does not reduce the LEL to less than 10

percent, dry ice will be placed in each tank to lower the LEL. After the LEL in the tanks is reduced to less than 10 percent, removal may begin.

The soils overlying the tanks will be carefully excavated and removed to a stockpile area. The removed soils will be screened for contamination using a photoionization detector (PID) with a 11.7 electron volt lamp. Soil samples will be taken from the stockpiled soil at a rate of one sample for every 50 cubic yards, and will be analyzed by an offsite laboratory for TPH (Method E418.1) and benzene, toluene, ethylbenzene, and xylene (BTEX) using Method SW8020. Analytical results from this sampling will identify which soils can be replaced into the excavation and which soils require disposal offsite, in accordance with TNRCC regulations. If soils are visibly contaminated, the excavation will be extended 2 feet in all directions to remove contaminated soils. If contamination is detected (through visual or olfactory observations or PID readings) beyond the 2-foot overexcavation, the Air Force will be notified so that additional overexcavation can be authorized.

The LEL in each tank will be checked to ensure that it is less than 10 percent. The tank hold-down straps will be cold cut and as much of the strapping will be removed as possible. The subcontractor will prepare a lift plan stating rigging and crane requirements. Jacobs will approve this plan before any lifting is done. Rigging will be attached to the tank, and a truck-mounted crane or rough-terrain hydraulic crane will be used to lift the tank from the excavation. The tank will be placed on a truck and transported by a licensed transporter to a certified tank destruction facility for final disposition. An updated TNRCC UST registration form will be submitted to the TNRCC Petroleum Storage Tank (PST) Registration Section and to the TNRCC Region 4 office for each UST removed.

If concrete piers or saddles are found under the tanks, additional soil will be removed to allow for the removal of these piers or saddles. The piers or saddles will be decontaminated as necessary and disposed of offsite.

Soil sampling will be conducted in each tank excavation, along the associated piping, and at dispenser locations. Five samples will be collected from each excavation: one from each sidewall and one at the bottom of the excavation. The number of soil samples to be collected along the piping and at dispenser locations will be determined in the field depending on the length of piping, number of elbows, visual and olfactory observations, and PID readings. All soil samples will be analyzed for TPH (Method E418.1), BTEX (Method SW8020), and semivolatile organic compounds (Method SW8270). Tank 1518-5 and the tanks at Building 4210 formerly contained waste oil; in accordance with TNRCC requirements, soils from these excavations will also be analyzed for volatile organic compounds (Method SW8240) and metals (Method SW6010). Only six excavations are planned for removal of the 12 USTs; co-located tanks are indicated in Table 2-1.

During a preliminary site visit, monitoring wells were noted adjacent to USTs 1411-1, 1411-2, 1411-3, 1750-2, and 4102-1. These wells are located close enough to the USTs that the wells will be damaged or destroyed during UST removal. Before the USTs are excavated and removed, the monitoring wells will be abandoned in accordance with TNRCC requirements. This will prevent a damaged monitoring well from serving as a potential conduit for contamination to reach groundwater.

2.2.2 Underground Storage Tank Upgrade

Eleven USTs will be upgraded with spill and overfill protection in accordance with 30 Texas Administrative Code (TAC) Section 334.51. Table 2-2 is a list of the USTs that will be upgraded, with their sizes and contents.

Before installing spill and overfill protection, Jacobs will coordinate with AFBCA personnel to determine which USTs require belowground installation of protection, and which USTs can have the protection installed aboveground. Spill protection will consist of a catchment device to contain any potential spills around the fill tube, as well

TABLE 2-2
Underground Storage Tanks to be Upgraded
NAS Fort Worth JRB, Texas

UST Number	Capacity (gallons)	Contents	Year Installed
1015-1	3,000	JP-4	1967
3001-1	10,000	Diesel	1959
4111-1	500	Diesel	1979
4127-1	500	Diesel	1959
4136-1	300	Diesel	Unknown
4141-1	250	Diesel	1959
4143-1	500	Diesel	1964
4145-1	500	Diesel	1981
4155-1	1,000	Diesel	1955
4171-1	5,000	Diesel	1976
4216-1	5,000	Diesel	1983

as a tight fill adapter that will prevent leaks during filling of the tanks. Overfill protection will include a valve that will restrict the flow of fluid into the tank when the liquid level in the tank reaches 95 percent of capacity. When 98 percent of the tank's capacity is reached, the valve will automatically close, allowing no additional fluid to enter the tank. Before beginning fieldwork, Jacobs will provide 30-day written notice to the TNRCC Region 4 field office, and will also provide verbal notice 24 to 72 hours before each upgrade activity. Following completion of the upgrades, revised UST registration forms will be submitted to the TNRCC PST Registration Section and the Region 4 field office.

Soil samples will be collected from each UST upgrade location. One hand auger boring will be installed into the native soil at each location. One soil sample will be collected from each hand auger boring at a depth just below the fill pipe to identify any

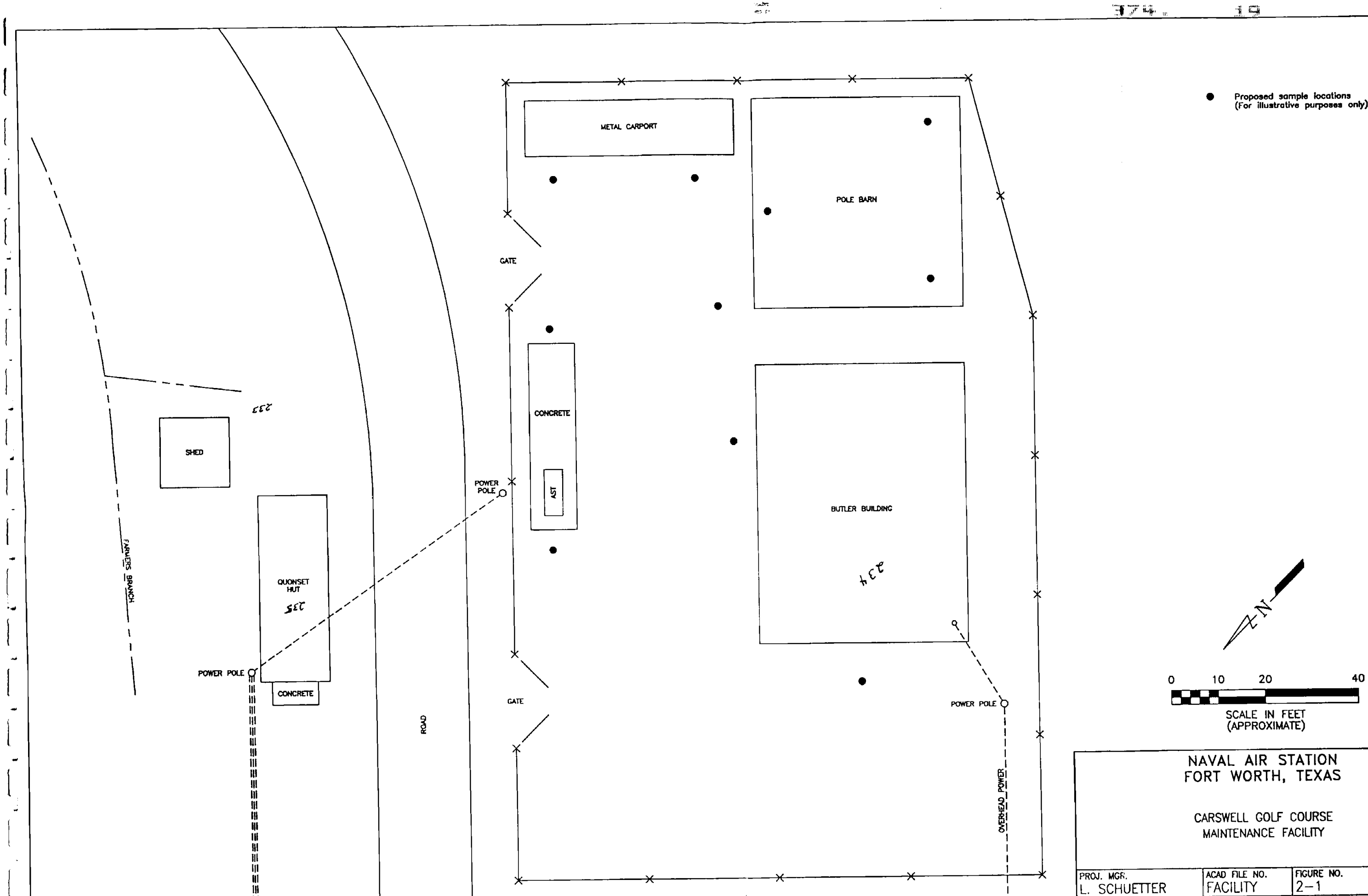
potential contamination from historical spills during filling. The soil samples will be analyzed for TPH (Method E418.1) only.

2.2.3 Golf Course Maintenance Yard

The golf course maintenance yard consists of an area approximately one-half acre in size. Several structures occupy the yard, including a wooden pole barn and metal carport used for storage, a metal building used as an office and work area, and a concrete pad containing an aboveground fuel tank. The entire yard is fenced and is composed of dirt and gravel (Figure 2-1).

Jacobs will conduct preliminary soil sampling at the golf course maintenance yard using a hand auger. Before sampling begins, Jacobs will provide a 14-day notice to the TNRCC Region 4 field office. Ten hand auger borings will be installed at locations to be selected in the field; the locations shown in Figure 2-1 are for illustrative purposes only. Locations will be selected based on visual observation of stained soil, odor, HNu response, and historical knowledge of product storage and possible spill areas. Soil samples will be collected at depths of 0 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches. All samples will be analyzed using immunoassay field screening techniques for BTEX and polycyclic aromatic hydrocarbons (PAH). If contamination is found at 24 inches (2 feet) in depth, the hand auger boring will be deepened and additional samples analyzed until no contamination is detected. The samples from 6 to 12 inches and the deepest sample will be sent to an offsite laboratory for analysis for pesticides (Method SW8080) and herbicides (Method SW8150) with a seven-day turnaround for results.

While awaiting analytical results, Jacobs will use a subcontractor to demolish the wooden pole barn and dismantle the metal carport. The wooden pole barn will be disposed of offsite, and the metal carport will be saved for reassembly. When analytical results are received, an area of contamination will be delineated based on both the



NAVAL AIR STATION
FORT WORTH, TEXAS

CARSWELL GOLF COURSE
MAINTENANCE FACILITY

PROJ. MGR.	ACAD FILE NO.	FIGURE NO.
L. SCHUETTER	FACILITY	2-1
DRAWN BY	PROJ. NO.	DATE
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immunoassay results and offsite laboratory results. This area will be reviewed with AFCEE and base personnel prior to excavation. A subcontractor will excavate all potentially contaminated soil. Potentially contaminated soil will be removed to the detection limit of the analytical method, or practical quantitation limit (PQL) to meet TNRCC Risk Reduction Standard 1. Depending on the analytical results, the soils will be disposed of at a licensed landfill or other treatment facility.

Following excavation and before backfill and site restoration, confirmation soil samples will be collected from an additional 10 hand auger borings. These samples will all be sent to an offsite laboratory for analysis for TPH (Method E418.1), pesticides (Method SW8080), herbicides (Method SW8150), and metals (Method SW6010), volatile organic compounds (Method SW8240), semivolatile organic compounds (Method SW8270), antimony (Method SW7040), arsenic (Method SW7060), cadmium (Method SW7130), lead (Method SW7421), mercury (Method SW7471), nickel (Method SW7520), selenium (Method SW7740), and silver (Method SW7760). If the analytical results confirm that all contamination has been removed, Jacobs' subcontractor will proceed with backfill and site restoration. If contamination is still present, additional soil will be excavated and removed.

Following restoration of the site, Jacobs and a subcontractor will reconstruct the metal carport, and will build an addition to the existing metal building to replace the wooden pole barn. This building will be a preengineered metal building consisting of three sides attached to the north side of the existing building. The new building will have an area of approximately 2,300 square feet and will be 12 feet high. A concrete slab will be installed as a foundation for the new building.

2.3 PROJECT ORGANIZATION AND RESPONSIBILITIES

The organization for the Jacobs project team includes technical professionals with experience in project management, quality assurance (QA), analytical chemistry, environmental engineering, field investigations, data management, and other

technical/engineering skills. An organization chart that shows all key project personnel for implementing the field investigations has been prepared (Figure 2-2). Responsibilities for each of the project team positions are described below.

Contracting Officer's Representative. The AFCEE Contracting Officer's Representative (COR) for Delivery Order No. 0003 is Mr. Charles Rice, who is located at Brooks AFB, Texas. The AFBCA point of contact (POC) for this project is Mr. Olen Long, who is located at NAS Fort Worth, Texas. The Jacobs project team will coordinate all activities conducted under this delivery order with these Air Force representatives through the Jacobs Project Manager, Ms. Lynn Schuetter, located at the Jacobs office in Denver, Colorado.

Jacobs Manager of Federal Programs. The Jacobs Manager of Federal Programs is Mr. Tim Forden, who is located at the Jacobs office in Houston, Texas. Mr. Forden's responsibilities for the project include monthly administrative review of project progress, as well as coordination with AFCEE on contract-related issues.

Jacobs Program Manager/Project Manager. The Jacobs Program Manager/Project Manager, Ms. Lynn Schuetter, has overall responsibility for work performed for the Air Force under this contract. As Program Manager, Ms. Schuetter, will ensure high-quality work, make resources available, and approve all work under this delivery order. In addition, the Program Manager will review progress, anticipate and resolve problems, and ensure client satisfaction.

As the Jacobs Project Manager, Ms. Schuetter, has day-to-day responsibility for all aspects of Jacobs work on Delivery Order No. 0003. The Project Manager maintains close communication and coordinates all activities with the AFCEE COR and the POC for NAS Fort Worth. She is responsible for identifying appropriate staff for each task and providing oversight of all work to ensure its successful completion.

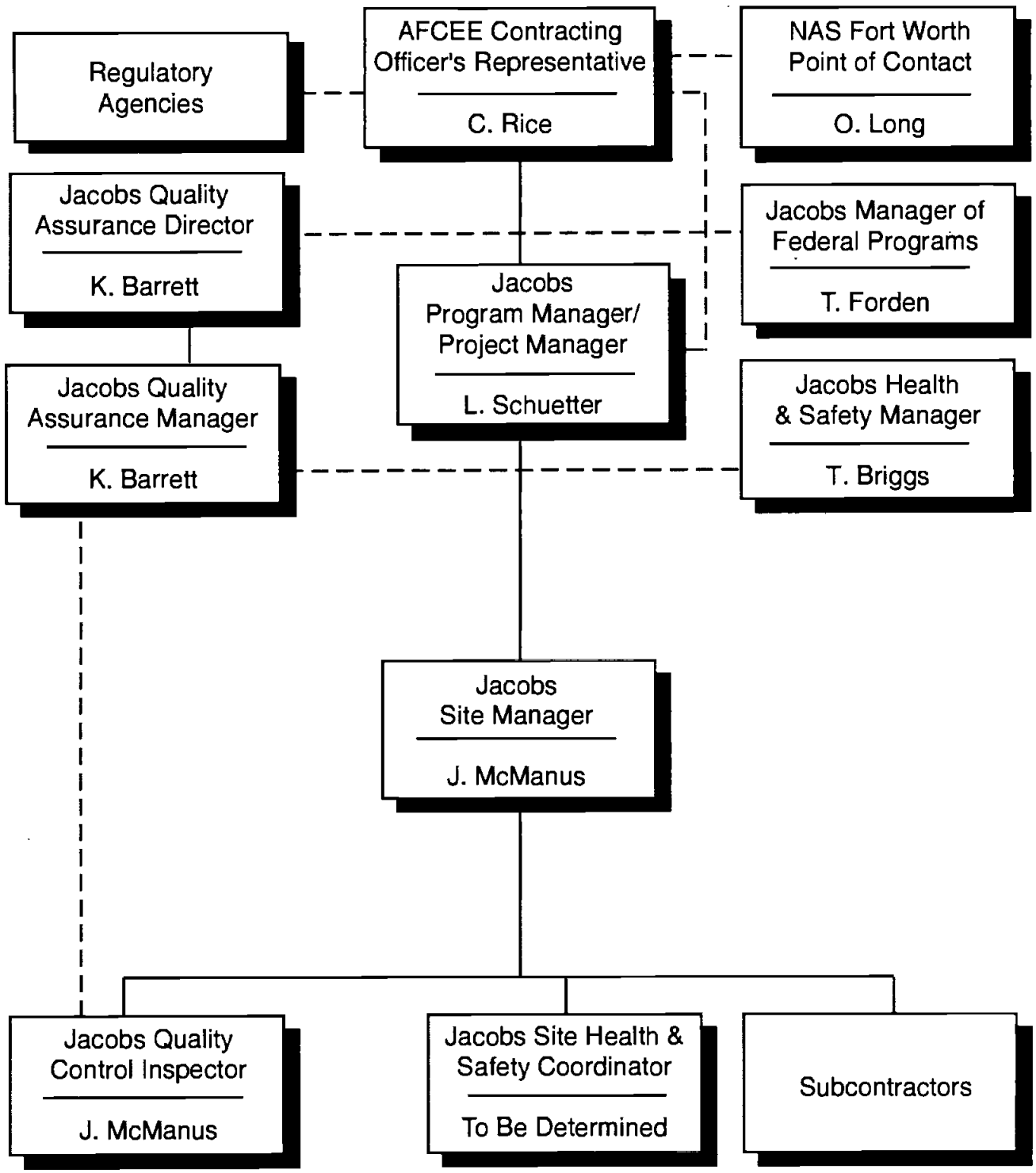

FIGURE 2-2
Project Organization Chart
Removal/Upgrade of USTs and IRA for Golf Course Maintenance Yard
NAS Fort Worth, Texas

In addition, the Project Manager uses the information provided by Jacobs Project Controls and Accounting to track the progress of costs and schedules and prepare monthly summary reports for the COR.

Jacobs Quality Assurance Director. The Jacobs QA Officer, Mr. Kris Barrett, will ensure that all work is performed according to the specifications of this Work Plan. Mr. Barrett will report to the Air Force and be responsible for all program QA issues. In addition, Mr. Barrett will review evaluation reports, audits, and corrective action procedures to ensure that the project meets IRP Handbook standards.

Jacobs Health and Safety Manager. The Health and Safety Manager, Dr. Terry Briggs, will make certain that all work is performed in accordance with the approved HSP and the provisions of the Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120 for worker health and safety. Dr. Briggs will provide assistance, oversight, and senior review of the HSP. The Health and Safety Manager or his designee will perform audits to make certain that fieldwork is conducted to the specifications of the HSP.

Jacobs Project Quality Assurance Manager. The Jacobs Project QA Manager, Mr. Kris Barrett, will ensure that all work is performed in accordance with the Work Plan and QAPP. Mr. Barrett will review and audit field operations. Additional responsibilities of the QA Manager are outlined in the CQP. In addition, the Project QA Manager will review the data quality review efforts, assist in performance of any field analytical audits, and report to the Jacobs Project Manager.

Jacobs Site Manager. The Site Manager, Mr. John McManus, has the responsibility of ensuring that the field investigation portion of the project is performed in a manner that maximizes data quality while maintaining a safe environment for the field crew. The Site Manager or his designee is responsible for reviewing all field sampling data forms for completeness, making decisions about sample locations, and making certain that the overall objectives of the field program are met while ensuring that the Air

Force Handbook procedures are followed in meeting these objectives. The Site Manager also has responsibility for ensuring quality control (QC) on construction activities as described in the CQP for this project.

Jacobs Quality Control Inspector. The QC Inspector will be responsible for reviewing all documentation for completeness and correctness. In addition, the QC Inspector will be responsible for ensuring that sample integrity is maintained throughout the field investigation. Mr. John McManus will serve as QC Inspector as well as Site Manager. Additional responsibilities include audits and inspections of construction activities as discussed in the CQP.

Jacobs Site Health and Safety Coordinator. The Site Health and Safety Coordinator (SHSC), has the responsibility for ensuring that the procedures outlined in the site HSP are followed by all members of the field team. The SHSC will investigate all accidents or injuries related to the project that occur at NAS Fort Worth and has the authority to stop all work onsite if deemed necessary for the protection of personnel. The SHSC will also provide a briefing to all field sampling crew members regarding site hazards before field activities begin. The SHSC will be a member of the field team and will be identified when the field team members are assigned.

2.4 RESIDUAL AND WASTE MANAGEMENT OBJECTIVES

The removal of 12 USTs and the IRA for the golf course maintenance yard will result in the generation of several waste streams. The main objective in managing the removal and fate of the materials generated from the field activities is to minimize the volume. Waste minimization will be achieved through efficient decontamination of the UST structures and screening and segregating of the excavated soil to determine whether soil can be placed back into the excavation or must be disposed of offsite. Soils removed from the golf course maintenance yard will be disposed of based on the analytical results of the hand auger sampling described in Section 2.2.3.

Section 1.1.7 in the Field Sampling Plan (FSP) (Attachment 1 to the QAPP) describes procedures for handling investigation-derived waste from soil sampling.

2.5 RECORD KEEPING

Records will be kept for all activities associated with the field activities as a means of maintaining full documentation of project QA/QC procedures and compliance. Records will be kept in the form of logs and standardized forms. The following logs and forms will be used on this site:

- soil boring log (includes PID readings);
- field logbook;
- immunoassay sample preparation form;
- immunoassay measurements and calculations form;
- field laboratory logbook;
- visitor log;
- photograph log; and
- daily field activity forms.

These forms will supplement the Site Manager's Field Logbook. Copies of these forms may be found in Appendix C of the FSP.

2.6 DATA QUALITY OBJECTIVES AND REPORTING

The overall QA objective for this investigation is to ensure that all field data and field screening analytical data are technically sound, statistically valid, and properly documented. Only soil samples will be collected for this investigation effort. Immunoassay field screening techniques for total BTEX and PAHs will be used for samples collected during preliminary sampling at the golf course maintenance yard. (Procedures for generating data using immunoassay screening methods are detailed in

the QAPP.) All other samples will be sent offsite to an AFCEE-audited laboratory; Air Force Level I analytical results will be produced by this investigation.

All analytical results will be evaluated for completeness. Spot checks will be performed to evaluate duplicate results and laboratory control procedures. Third-party validation is not required under this investigation.

2.6.1 Field Quality Assurance/Quality Control Procedures

Immunoassay screening is a data collection technique categorized as an U.S. Environmental Protection Agency (EPA) Level I field screening method. The ability to assess data quality for this method depends on the QA/QC steps taken during the sample collection/analysis process. Such steps will include the following:

- documentation of the sample and sampling procedures;
- documentation of the field laboratory and analytical procedures;
- method calibration;
- method blanks;
- matrix-background samples;
- duplicate samples; and
- matrix spike samples and matrix spike replicate samples.

Additional information on data quality objectives, including offsite laboratory data quality requirements, may be found in the QAPP.

2.6.2 Data Reporting

Analytical data results will be tabulated in the completion report. An Analytical Data Informal Technical Information Report (ITIR) as described in the Air Force IRP Handbook (U.S. Air Force 1993) will not be submitted.

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3.0 REPORTING REQUIREMENTS

Before construction of the new building at the golf course maintenance yard, Jacobs will submit engineering (shop) data consisting of the plan for the building. This plan will be approved by AFBCA and golf course personnel before any construction is started.

During performance of the field activities, the Site Manager will prepare a daily report summarizing all activities conducted each day. This report will be submitted daily to the Project Manager, who will review the report and forward it to the AFCEE COR.

If problems arise and need to be reported, the Jacobs' Project Manager will prepare a Problem Report/Analysis as required in Section 3.1.3.2(c) of the Statement of Work.

Following completion of the field activities, Jacobs will prepare a Technical Report summarizing all work. This report will also contain all analytical data collected during this project. Jacobs will also provide an as-built drawing of the new building at the golf course maintenance yard.

Jacobs will also submit monthly reports for the duration of the project. These reports will consist of the Cost Performance Report, Master Integrated Program Schedule, and Status Report. The Contract Funds Status Report will be submitted quarterly.

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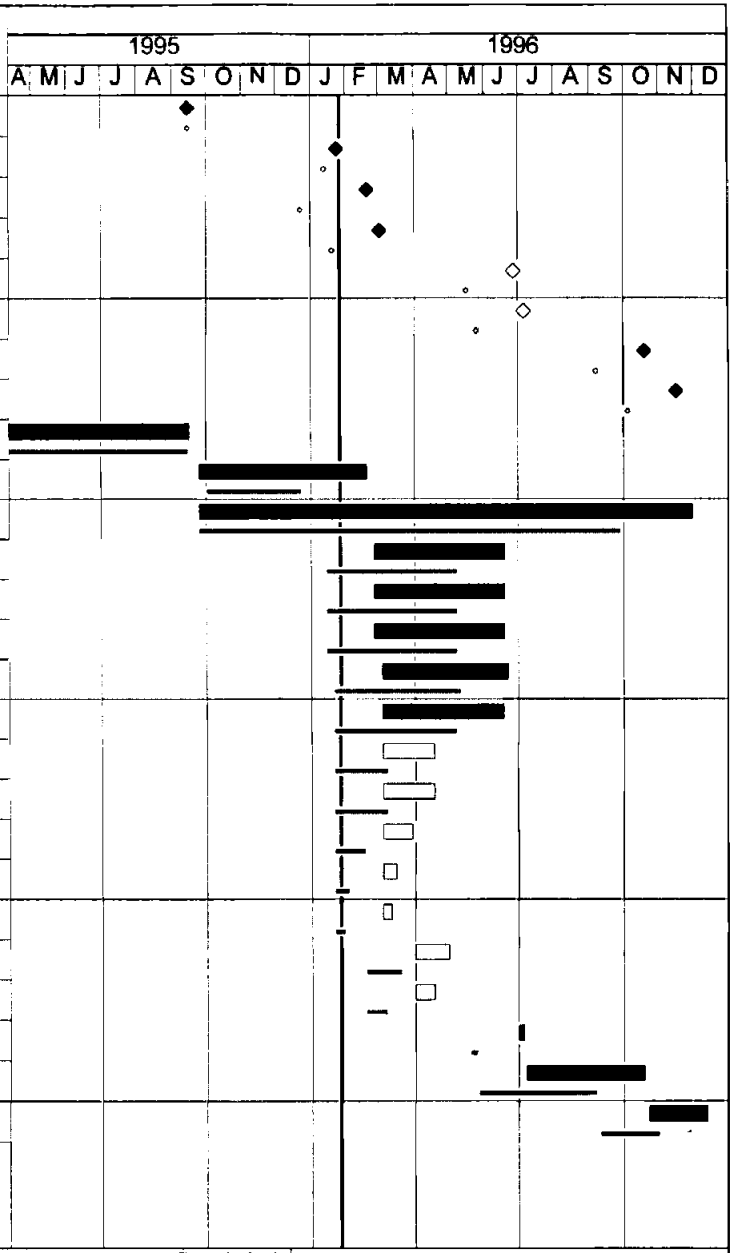
4.0 PROJECT SCHEDULE

The project schedule is shown in Figure 4-1.

ACTIVITY ID	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	REM DUR	PCT
000	DELIVERY ORDER 0003 AWARD	15SEP95A		0	100
002	NOTICE TO PROCEED		23JAN96A	0	100
001	PLANS SUBMITTAL		19FEB96	0	0
003	FIELD MOBILIZATION COMPLE		1MAR96	0	0
004	PRE-FINAL COMPLETE		26JUN96	0	0
005	FIELD DEMOBILIZATION COMP		5JUL96	0	0
006	FINAL REPORT SUBMITTED		18OCT96	0	0
007	FINAL REPORT APPROVED		15NOV96	0	0
339099	COST PROPOSAL	12APR95A	15SEP95A	0	100
330103	PRECONSTRUCTION SUBMITTAL	25SEP95A	19FEB96	16	73
339090	DELIVERY ORDER MANAGEMENT	25SEP95A	29NOV96	220	29
330102	MOBILIZATION OF PERSONNEL	26FEB96	18JUN96	82	0
339100	SITE MANAGEMENT	26FEB96	18JUN96	82	0
339999	DISTRIBUTIVE TRAVEL COSTS	26FEB96	18JUN96	82	0
332003	RE-ESTABLISH ROADS/STRUCT	4MAR96	21JUN96	80	0
330209	LABORATORY CHEMICAL ANALY	4MAR96	17JUN96	76	0
330206	SAMPLING SOIL AND SEDIMEN	4MAR96	17APR96	33	0
331002	TANK REMOVAL	4MAR96	17APR96	33	0
331003	STRUCTURE REMOVAL	4MAR96	29MAR96	20	0
330990	UST UPGRADE	4MAR96	15MAR96	10	0
330204	MONITORING WELLS	4MAR96	11MAR96	6	0
331903	DISPOSAL FEES & TAXES	1APR96	30APR96	22	0
330801	EXCAVATION	1APR96	17APR96	13	0
332104	DEMOBILIZATION	1JUL96	5JUL96	5	0
332106	POST-CONSTRUCTION SUBMITT	8JUL96	18OCT96	75	0
339096	DELIVERY ORDER CLOSE OUT	23OCT96	12DEC96	37	0



Target Date 15SEP95
Plot Date 7FEB96
Data Date 27JAN96
Project Start 12APR95
Project Finish 31OCT96

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NAS FT WORTH JRB CARSWELL FIELD, TX
UST UPGRADE & MAINTENANCE YARD IRA
CONTRACT NO F41624-94-D-8116-0003

JACOBS ENGINEERING GROUP, INC.

Date	Revision	Checked	Approved

5.0 REFERENCES

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CH2M Hill Inc. 1984 (February). *Phase I Records Search.*

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