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27TH SPECIAL OPERATIONS CIVIL ENGINEER SQUADRON (AFSOC)
CANNON AIR FORCE BASE NEW MEXICO

ENTERED

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JUN 02 2010

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Dear Ms. Stewart

Cannon Air Force Base, NM is forwarding two hardbound and two electronic copies of the *Site ST-26 (SWMU 48A) Corrective Measure Implementation (CMI) Site Closure Report Addendum, Cannon Air Force Base, New Mexico, May 2010* for your approval (Attachment).

If you have any questions, please contact Mr. Hugh G. Hanson, Asset Management Flight, at 575-784-6391.

Sincerely

RONALD A. LANCASTER
Chief, Asset Management Flight

Attachment:
Hardbound and Electronic Documents (2)

cc:
NMED (D. Cobrain) w/o documents
EPA Region VI (W. Jacques) w/o documents

SITE ST-26 (SWMU 48A)
CORRECTIVE MEASURE IMPLEMENTATION (CMI)
SITE CLOSURE REPORT ADDENDUM
CANNON AIR FORCE BASE, NEW MEXICO

AFCEE Contract No. FA8903-04-D-8679 Task Order No. 0079
Project No. CZQZ20077926L

May 2010



Prepared for



Air Force Special
Operations Command



27th Special
Operations Wing

Under contract to



Air Force Center for
Engineering and the
Environment

URS

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Acronyms and Abbreviations

°C	degrees Celsius
<2X	analytical data review symbol indicating the difference between sample results was less than two times the reporting limit
µg/kg	micrograms per kilogram
27 CES	27 th Special Operations Wing, Civil Engineering Squadron
AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environment
AOC	Area of Concern
APPL	Agriculture and Priority Pollutants Laboratories, Inc
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
C26-	sample identifier for Site ST-26 (SWMU 48A)
CAC	Corrective Action Complete
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
COC	chemical of concern
CRZ	Contaminant reduction zone
DOT	Department of Transportation
DRO	diesel range organics
DQCR	Daily Quality Control Report
ERP	Environmental Restoration Program
EZ	Excavation zone
F	analytical data review qualifier for a result between MDL and RL
gpm	gallon(s) per minute
GRO	gasoline range organics
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSP	Health and Safety Plan
ID	Identification

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J	analytical data review qualifier for an estimated result
Lee Wan	Lee Wan and Associates, Inc.
LRL	LRL Sciences, Inc.
MDL	Method Detection Limit
mg/kg	milligram/kilogram
msl	mean sea level
MS/MSD	matrix spike/matrix spike duplicate
MSSL	media specific screening level
N/A	not applicable
NMED	New Mexico Environment Department
No.	number
PAH	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
POL	Petroleum, Oils, and Lubricants
PPE	personal protective equipment
PID	photoionization detector
QAPP	Quality Assurance Project Plan
QA/QC	Quality assurance / quality control
QUAL	qualifier
RCRA	Resource Conservation Recovery Act
RFI	RCRA Facility Investigation
RL	Reporting Limit
RPD	Relative Percent Difference
SCFS	Sample Collection Field Sheet
SHSO	Site Health and Safety Officer
SMS	Safety Management Standard
SMWU	solid waste management unit
SOP	Standard Operating Procedure
SSL	soil screening level

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SVOC	semivolatile organic compound
SZ	Support zone
TAL	Target Analyte List
TCL	Target Compound List
TO	Task Order
TPH	total petroleum hydrocarbon
TRPH	total recoverable petroleum hydrocarbons
U	analytical data review qualifier for a value below detection limits
UB	analytical data review qualifier for a value below detection limits due to the method blank
UJ	analytical data review qualifier for an estimated value below detection limits
URS	URS Group, Inc.
USAF	United States Department of the Air Force
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
W-C	Woodward-Clyde

1.1 PROJECT WORK AUTHORITY

This Corrective Measures Implementation (CMI) Site Closure Report Addendum documents the procedures followed to evaluate risk and remove potentially contaminated media at Site ST-26 (Solid Waste Management Unit [SWMU] 48A) at Cannon Air Force Base (AFB), New Mexico. This CMI Site Closure Report Addendum was prepared by URS Group, Inc. (URS) for the Air Force Center for Engineering and the Environment (AFCEE) under Task Order (TO) 0079, Contract FA8903-04-D-8679 (Reference project number [No.] CZQZ20077926L).

Work performed during the Supplemental CMI Field Investigation were completed in accordance with the Site ST-26 (SWMU 48A) and Area of Concern (AOC) 36 Corrective Measures Implementation Work Plan (URS 2007a).

1.2 PROJECT PURPOSE

The objectives of the CMI project for Site ST-26 (SWMU 48A) are to ensure that the site does not pose unacceptable risks to human health or the environment and, once this has been verified, to obtain concurrence for a Corrective Action Complete (CAC) recommendation for the site from New Mexico Environment Department (NMED).

The historical data collected at ST-26 (SWMU 48A) was re-assessed and concluded that that further horizontal definition of the extent of elevated petroleum hydrocarbons was needed. Seven additional borings were completed at Site ST-26 (SWMU 48A) to potentially identify additional chemicals of concern (COCs), and to evaluate the horizontal and vertical distribution of petroleum hydrocarbon contamination.

In response to NMED's 6 February 2009 comments of the Draft Site-26 (SWMU 48A) & AOC 36 Corrective Measures Implementation (CMI) Site Closure Report, a revised letter Work Plan (WP) addendum to the Site ST-26 (SWMU 48A) and AOC 36 CMI WP, Cannon Air Force Base, New Mexico (URS 2007a) was submitted (URS 2009) on 21 October 2009 and approved by NMED on 23 November 2009. The letter WP addendum described plans to further investigate Site ST-26 by trenching to more thoroughly examine and document subsurface soil conditions in the area of the 1994 soil boring 4806.

The CMI field investigation results and conclusions for AOC 36 are addressed in the Final Site ST-26 (SWMU 48A) & AOC 36 CMI Site Closure Report (URS 2008) and are not discussed in this CMI Site Closure Report Addendum.

1.3 PROJECT DESCRIPTION AND GENERAL SCOPE

To achieve the project objectives, a re-assessment of historical data obtained from past investigations was conducted. Results of the data re-assessment were then used to design an additional field investigation for Site ST-26 (SWMU 48A). The historical data re-assessment

(**Section 1.8**) and a summary of the field investigation (**Section 3**) and Supplemental CMI Field Investigation (**Section 4**) activities are summarized in this document.

1.4 ST-26 (SWMU 48A) SITE DESCRIPTION

Cannon AFB is situated in the Southern High Plains Physiographic Province in the Llano Estacado subprovince, which is a nearly flat plain that slopes gently to the east and southeast. Soil types include Amarillo fine sandy loams and Clovis fine sandy loams. Caliche is often present at depths greater than 5 feet. The depth to groundwater exceeds 200 feet below ground surface (bgs). A site-specific description of Site ST-26 (SWMU 48A) appears in the following sub-section. **Figure 1-1** presents a map of Cannon AFB, and the location of ST-26 (SWMU 48A).

Site ST-26 (SWMU 48A) was located in the Cantonment Area, Cluster E, which was approximately 125 feet east of the intersection of Argentia Avenue and Torch Boulevard, near Facility number (No.) 4028. SWMU 48A was a 20,000-gallon underground storage tank (UST). The tank and associated piping were removed in 1988. The area is presently paved and used as a parking lot. The depth of the former tank is unknown, but residual contaminants were previously detected at depths up to 25 feet bgs. Topography is generally flat, with an approximate elevation of 4,300 feet above mean sea level (msl). A map of Site ST-26 (SWMU 48A) is presented as **Figure 1-2**.

1.5 SITE GEOLOGY AND GROUNDWATER

The following sub-sections discuss the geology and groundwater at Cannon AFB.

1.5.1 Generalized Geology

Underlying geology at Cannon AFB consists of Late Miocene to Late Pliocene Ogallala Formation sediments overlying Early Triassic Dockum Group sedimentary rocks. The upper part of the Dockum Group consists mostly of red shale interbedded with minor sandstone. The top of the Dockum Group is marked by an erosional unconformity with several hundred feet of relief (Lee Wan [Lee Wan and Associates, Inc.] 1990).

The Ogallala Formation is 360 to 415 feet thick near Cannon AFB and consists of poorly sorted (well graded) gravel, sand, silt, and clay. The base of the Ogallala Formation generally consists of gravel, cobbles, and boulders. In many places, the Ogallala sediments are loose and friable; however, caliche is a major feature of the Ogallala Formation. Caliche is a hard, white to pale tan accumulation of calcium carbonate cement in the pore spaces of the Ogallala sediments. There are numerous continuous and discontinuous caliche layers throughout the Ogallala Formation (Lee Wan 1990).

1.5.2 Groundwater

The lower part of the Ogallala Formation is saturated and forms a regional, unconfined aquifer that is used for domestic and irrigation water. The depth to groundwater is more than 200 feet near Cannon AFB, and the saturated thickness varies from 90 to 140 feet. The regional hydraulic gradient slopes to the southeast at about 13 feet per mile (0.0025 feet per foot). Well yields vary from less than 1 gallon per minute (gpm) in thinly bedded silts and fine sands to 1,600 gpm in sand and gravel (Lee Wan 1990).

Groundwater in the Ogallala Aquifer is the primary water source in eastern New Mexico. Water table declines of between 50 and 100 feet were observed in the area near Clovis, New Mexico for the period from about 1930 to 1980 (Lee Wan 1990).

1.6 SITE ST-26 (SWMU 48A) HISTORY

Site ST-26 (SWMU 48A) was an active gas station from 1941 to 1965, but the 20,000-gallon UST was active from 1941 to 1985. From 1965 to 1985 the UST was used for liquid waste storage. The tank reportedly received waste oils, spent solvents, paint thinners, and recovered fuels. The liquid wastes were removed periodically from the tank. The quantities of each of the liquid waste stored in the tank are unknown (A.T. Kearney 1987). The tank and associated piping were removed in 1988.

1.7 PREVIOUS SITE ST-26 (SWMU 48A) INVESTIGATIONS

Site ST-26 (SWMU 48A) has been the subject of several site investigations, which are summarized below:

- A Preliminary Review/Visual Site Inspection Report Resource Conservation and Recovery Act (RCRA) Facility Assessment (A.T. Kearney 1987) identified three separate units within the area of Site ST-26 (SWMU 48A): Underground Waste Oil Tank (48-A), Aboveground Overflow Capacity Tank (48-B), Inactive Petroleum, Oils and Lubricants (POL) Storage Tank No. 4028a and Inactive POL Storage Tank No. 4028b.
- During a Phase I RCRA Facility Investigation (RFI) ([LRL Sciences, Inc.] (LRL) 1993), five soil borings (48A-1 through 48A-3, 48B-1, and 48B-2) shown on Figure 1-2 of the Final Site ST-26 (SWMU 48A) & AOC 36 CMI Site Closure Report (URS 2008) (associated with SWMUs 48A and 48B), were drilled and sampled to a depth of 30 feet bgs at the site of the former USTs to determine whether a release of chemicals from the USTs had occurred. Samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs); cyanide; Target Analyte List (TAL) metals; and benzene, toluene, ethylbenzene, and xylene (BTEX).

Low levels of acetone, xylene, and methylene chloride were detected in surface and near-surface soil samples, but this was attributed to laboratory contamination. Ethylbenzene, toluene, and

xylene were detected in boring 48A-2 at 10 feet and 20 feet bgs. Metals were detected above background levels in surface and subsurface soils.

- During a Phase II RFI (Woodward-Clyde [W-C] 1997b), five soil borings, shown on Figure 1-2 of the Final Site ST-26 (SWMU 48A) & AOC 36 CMI Site Closure Report (URS 2008) (4804, 4805, 4806, 4903, and 4904), were drilled and sampled in the area of SWMU 48A. The borings were drilled to depths between 39.5 and 40 feet bgs, and the samples were analyzed for VOCs, semivolatile organic compounds (SVOCs), TAL metals, and total recoverable petroleum hydrocarbons (TRPH).

Metals were detected above background concentrations in surface and subsurface soils. SVOCs, VOCs, and total petroleum hydrocarbons (TPH) were also detected, and the highest TPH concentrations occurred in soil boring 4806 (17,300 milligrams per kilogram [mg/kg] at 10 feet bgs, and 3,890 mg/kg at 15 feet bgs). Detected total polynuclear aromatic hydrocarbons (PAH) concentrations reported in soil boring 4806 ranged from 3.4 mg/kg to 18.99 mg/kg. PAHs were not detected in any other borings.

- A Corrective Measures Study (CMS) (URS 2000) was completed in 2000. The CMS compared maximum detected concentrations of organic compounds and metals to United States Environmental Protection Agency (USEPA) Region 6 residential media specific screening levels (MSSLs). TPH concentrations were not evaluated; instead, individual petroleum hydrocarbon constituents (e.g., BTEX, PAHs, etc.) were used to evaluate potential impacts from petroleum hydrocarbons at SWMU 48A. None of the individual chemicals detected at the site exceeded the residential MSSLs.
- NMED issued comments on the 2000 CMS in December 2006 (NMED 2006c). The comments indicated that future work should consider the 2006 NMED total petroleum hydrocarbons (TPH) guidance document, which lists a residential direct-exposure TPH screening value for waste oil of 2,500 mg/kg.
- The RFI for 21 SWMUs (URS 2007b) included SWMUs 49 and 50 (which share the same area as Site ST-26 [SWMU 48A]). SWMUs 49 and 50 were identified as inactive POL Storage Tanks. Samples from two borings (4903 and 4904) completed near the location of the two inactive POL Storage Tanks were evaluated against 2005 NMED soil screening levels (SSLs) (NMED 2006a) and residential direct-exposure TPH screening values (NMED 2006b). Low levels of organics, metals, and TRPH were detected, but all were below NMED screening levels.

1.8 EXISTING DATA RE-ASSESSMENT

The first phase of the CMI was a comparison of data from previous investigations at Site ST-26 (SWMU 48A) to current NMED SSLs and residential direct-exposure TPH screening values for waste oil. The results are summarized in **Sections 1.8.1 to 1.8.3**.

1.8.1 Chemicals of Concern

Data collected from ten soil borings (48A-1 through 48A-3, 48B-1, 48B-2, 4804 through 4806, 4903, and 4904) drilled and sampled during previous investigations at Site ST-26 (SWMU 48A) identified TRPH as a COC. A comparison of historical Site ST-26 (SWMU 48A) data to current NMED screening levels indicated that TPH concentrations exceeded the residential direct-exposure TPH screening value for waste oil (2,500 mg/kg) in samples collected from 10 feet bgs (17,300 mg/kg) and 15 feet bgs (3,890 mg/kg) in one soil boring (4806). No other chemicals exceeded NMED residential SSLs. TPH was identified as a COC, based on the results of the comparison.

1.8.2 Extent of Elevated Petroleum Hydrocarbons Concentrations

Based on historical data, the TPH residential direct-exposure screening value was exceeded in two samples collected from the 1994 soil boring 4806 at Site ST-26 (SWMU 48A) from depths of 10 feet and 15 feet bgs. Boring 4806 was located within the presumed location of the former UST. Low levels of BTEX and TRPH were detected in samples collected from other borings, but did not exceed NMED residential SSLs or residential direct-exposure TPH screening values. BTEX and TRPH were not detected at depths greater than 25 feet bgs in any of the borings.

1.8.3 Re-Assessment Conclusion

The historical Site ST-26 (SWMU 48A) data indicated that further horizontal definition of the extent of elevated petroleum hydrocarbons was needed. The placement of historical soil borings did not completely characterize site soil conditions, and the selected analytical parameters did not address the potential for other chemicals (e.g., pesticides/polychlorinated biphenyls [PCBs]) to be present at the site.

1.9 INITIAL CMI FIELD INVESTIGATION

Based on the results of the historical data re-assessment, the CMI field investigation included collecting samples from seven borings at Site ST-26 (SWMU 48A) to potentially identify additional COCs, and to evaluate the horizontal and vertical distribution of petroleum hydrocarbon contamination. Samples were analyzed for the following parameters: Target Compound List (TCL) VOCs and SVOCs, pesticides/PCBs, TPH-diesel range organics (DRO), TPH-gasoline range organics (GRO), TPH-Motor Oils, and TAL metals. Each boring was advanced to a maximum depth of 20 feet bgs. **Section 3** summarizes the results of the CMI field investigation.

1.10 SUPPLEMENTAL CMI FIELD INVESTIGATION

A supplemental CMI field investigation was completed as the third phase of the ST-26 (SWMU 48A) CMI. This investigation included excavating soil around the 1994 soil boring 4806, collecting confirmatory samples, transporting excavated materials off site for disposal and

backfilling and restoring the site to the pre-existing conditions. **Section 4** presents the results of the supplemental CMI field investigation.

1.11 CMI SITE CLOSURE REPORT ADDENDUM ORGANIZATION

This document describes historical data collection activities, the CMI field investigation activities, Supplemental CMI Field Investigation activities, and analyzes both the historical data and the CMI field investigation data by screening them against local background concentrations and applicable NMED screening levels.

This CMI Site Closure Report Addendum is organized as follows:

- **Section 1 – Introduction and Background** presents the authority, purpose, project description and general scope, site description and history, and the objectives of the Supplemental CMI Field Investigation activities.
- **Section 2 – Site Administration** provides a description of the health and safety protocols followed during the Supplemental CMI Field Investigation activities. Additionally, this section presents a summary of the daily and weekly reporting activities completed during the Supplemental CMI Field Investigation. Health and safety protocols, daily and weekly reporting activities completed during the CMI field investigation can be found in the Final Site ST-26 (SWMU 48A) and AOC 36 Corrective Measure Implementation Site Closure Report (URS 2008).
- **Section 3 – Initial CMI Field Investigation** summarizes the findings of the field activities, and includes the comparison of maximum concentrations to NMED SSLs. Additional information that includes how samples were collected and handled, how waste was stored and handled. Discussion of sample analytical results and conclusions can be found in the Final Site ST-26 (SWMU 48A) and AOC 36 Corrective Measure Implementation Site Closure Report (URS 2008).
- **Section 4 – Supplemental CMI Field Investigation** describes the excavation activities including how the waste was segregated, handled, transported, and disposed. This section also provides a description of the backfill placement and site restoration activities.
- **Section 5 – References** provides references used to develop the CMI Site Closure Report Addendum.

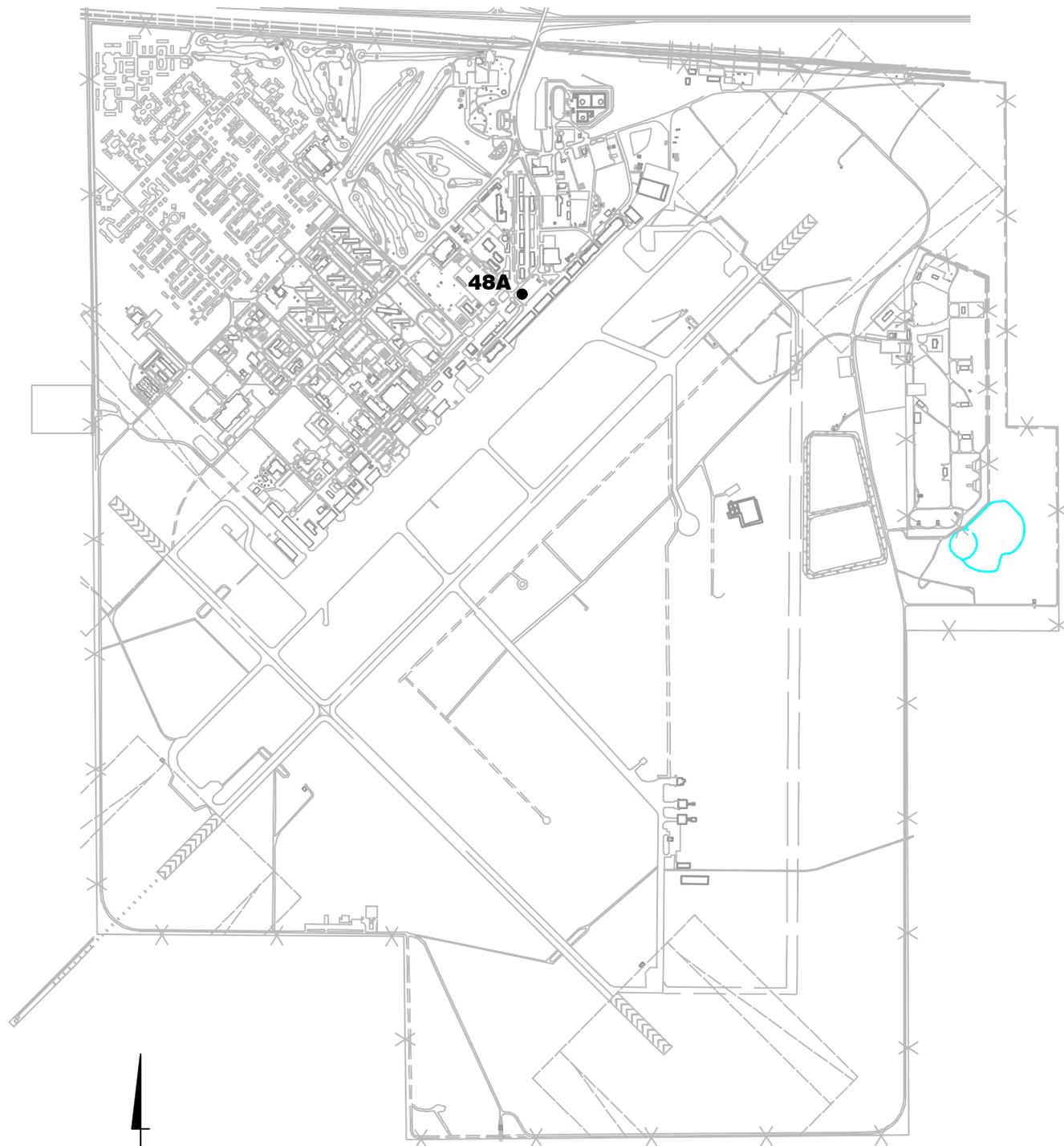
LEGEND

SWMU

48A

DESIGNATED AREA

ST-26 (SWMU 48A)



2000 1000 0 2000

SCALE IN FEET

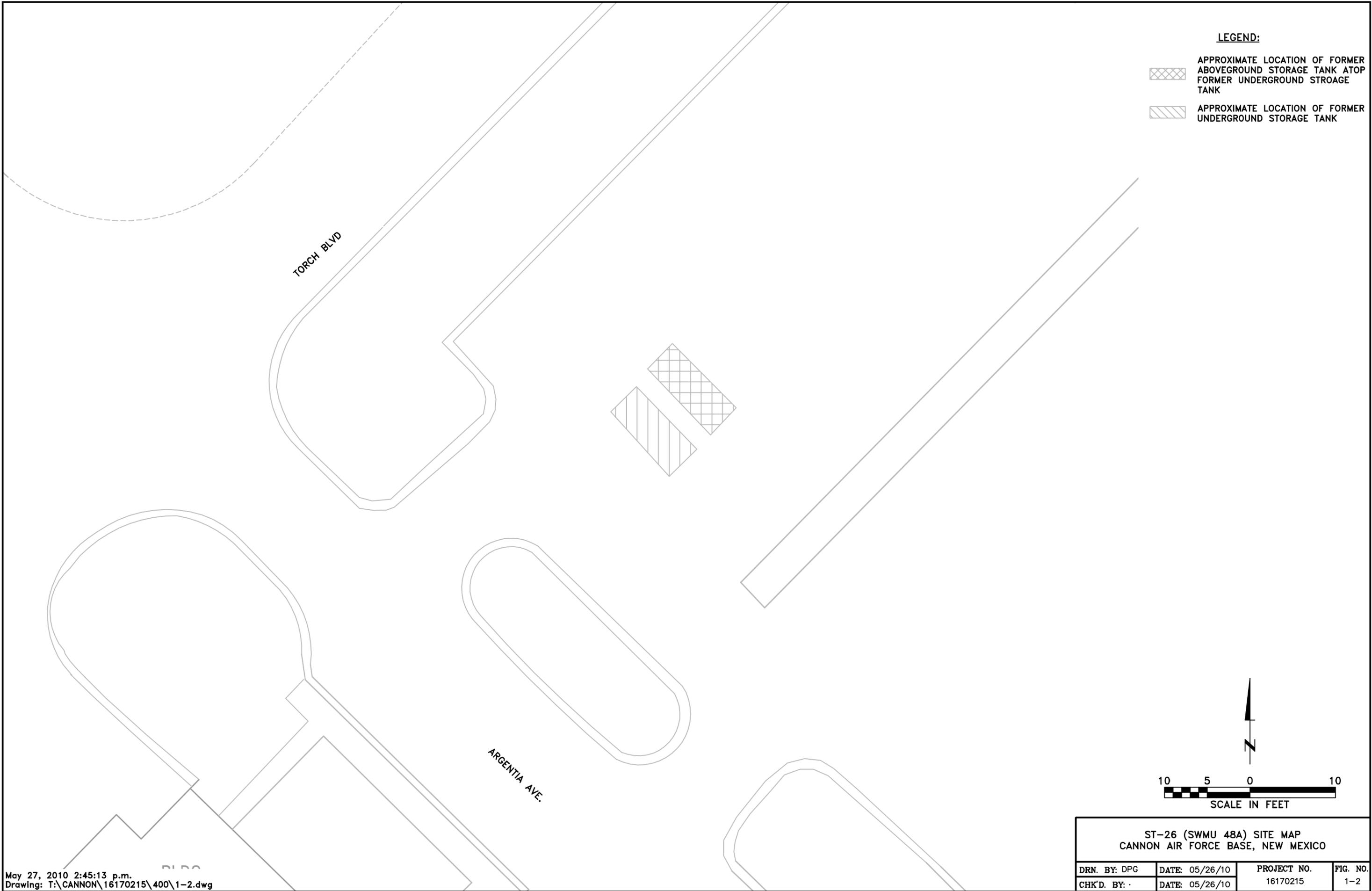
May 26, 2010 1:59:37 p.m.
Drawing: T:\CANNON\16170215\400\1-1.dwg

**SITE ST-26 (SWMU 48A)
LOCATION MAP
CANNON AIR FORCE BASE, NEW MEXICO**

DRN. BY: DPG	DATE: 05/26/10	PROJECT NO. 16169983	FIG. NO. 1-1
CHK'D. BY: .	REVISION: 0		

LEGEND:

-  APPROXIMATE LOCATION OF FORMER ABOVEGROUND STORAGE TANK ATOP FORMER UNDERGROUND STORAGE TANK
-  APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK



May 27, 2010 2:45:13 p.m.
Drawing: T:\CANNON\16170215\400\1-2.dwg

ST-26 (SWMU 48A) SITE MAP CANNON AIR FORCE BASE, NEW MEXICO			
DRN. BY: DPG	DATE: 05/26/10	PROJECT NO. 16170215	FIG. NO. 1-2
CHK'D. BY: .	DATE: 05/26/10		

This section provides an overview of the on-site health and safety program and summarizes the reporting activities associated with the Supplemental CMI Field Investigation project.

2.1 HEALTH AND SAFETY

On-site health and safety complied with the Site ST-26 (SWMU 48A) and AOC 36 Health and Safety Plan (HSP), which was included as part of the Site ST-26 (SWMU 48A) and AOC 36 Corrective Measures Implementation Work Plan (URS 2007a), and applicable Cannon AFB regulations (such as speed limits and prohibiting cell phone use while driving).

2.1.1 Personnel Health and Safety Responsibilities

URS was responsible for overall on-site health and safety oversight. The URS site health and safety officer (SHSO) implemented the Site ST-26 (SWMU 48A) & AOC 36 HSP (URS 2007a) and reported any deviations from the anticipated conditions described in the plan to the Project Manager and the Regional Health and Safety Manager.

All personnel involved in the Supplemental CMI Field Investigation activities were required to abide by the provisions of the Site ST-26 (SWMU 48A) and AOC 36 HSP (URS 2007a). Prior to the start of Supplemental CMI Field Investigation activities, personnel were provided with copies of the HSP. All field personnel submitted copies of their health and safety certificates to the URS SHSO.

On the first day of Supplemental CMI Field Investigation activities (February 24, 2010), the URS SHSO conducted an initial health and safety briefing with all personnel. Upon completing the initial health and safety briefing, each employee signed the Safety Compliance Agreement Form. The health and safety meeting records are provided in **Appendix C**.

2.1.2 PPE Requirements and Monitoring

To ensure the safety of the workers, work zone air monitoring was conducted using a photoionization detector (PID) during Supplemental CMI Field Investigation activities. Air monitoring results were recorded in the field logbook. No air monitoring results were encountered that warranted an upgrade of personal protective equipment (PPE) beyond Level D.

2.1.3 Daily Safety Briefings and Daily Safety Reports

The URS SHSO conducted daily safety briefings for each work day and recorded those in attendance in the field logbook. At the daily safety briefings, hazards associated with the planned work activities were described.

The URS SHSO also completed Daily Safety Reports for each day of field work. The Daily Safety Reports described the type of work performed each day and summarized the daily safety activities. The Daily Safety Reports also documented any safety violations, corrective actions

given, or any corrective actions taken. Copies of the signed Daily Safety Reports are provided in **Appendix C**.

2.2 DAILY QUALITY CONTROL REPORTS

Daily Quality Control Reports (DQCRs) were completed by URS for each day of fieldwork. DQCRs include a summary of the Health and Safety Activities, daily field activities and quality assurance/quality control (QA/QC) information pertaining to all features of work. It was the responsibility of the URS Field Manager or the URS Quality Assurance Officer to complete, date, and sign the DQCRs. Copies of the completed and signed DQCRs are provided in **Appendix D**.

2.3 PHOTOGRAPHIC DOCUMENTATION

A photographic record of site activities and progress was maintained throughout the project. Pertinent photographs were compiled, described, and used to build a photographic log. The photographic log is provided in **Appendix E**.

The following sections summarize the CMI field investigation at Site ST-26 (SWMU 48A). Additional information that describes the general investigative approach and protocols that were followed during the CMI field investigation at Site ST-26 (SWMU 48A) can be found in Section 3 of the Final Site ST-26 (SWMU 48A) and AOC 36 Corrective Measure Implementation Site Closure Report (URS 2008).

3.1 ST-26 (SWMU 48A) INITIAL SAMPLING ACTIVITIES SUMMARY

Initial CMI sampling activities were completed in 2008 in accordance with the standard operating procedures (SOPs) detailed in Appendix C of the Site ST-26 (SWMU 48A) and AOC 36 Corrective Action Measures Implementation Work Plan (URS 2007a).

Seven soil borings (C26-SB01 through C26-SB07) were drilled and sampled at Site ST-26 (SWMU 48A). Six of the borings were drilled around the perimeter of the UST's former location. One soil boring (C26-SB04) was drilled through the former excavation, near the 1994 soil boring 4806 to confirm sample results at that location. Soil boring locations are shown on Figure 3-1 of the Final Site ST-26 (SWMU 48A) and AOC 36 Corrective Measure Implementation Site Closure Report (URS 2008).

The boring locations were determined by evaluating sample results from previous investigations, and were selected to further delineate the horizontal and vertical extent of the TPH-impacted soil. Borings were advanced until refusal, which ranged from 9 to 22 feet bgs. Soil characterization and descriptions were recorded on boring logs included in **Appendix A** of the Final Site ST-26 (SWMU 48A) and AOC 36 Corrective Measure Implementation Site Closure Report (URS 2008).

3.2 ST-26 (SWMU 48A) INITIAL SAMPLING RESULTS SUMMARY

TCL VOC, TCL SVOC, TPH, pesticides, and PCBs detected in samples collected during CMI field activities did not exceed NMED residential SSLs and residential direct-exposure TPH concentrations. TAL metals aluminum, barium, calcium, and lead exceeded Cannon AFB background levels, but did not exceed NMED residential SSLs. **Table 3-1** presents maximum concentrations compared to NMED residential SSLs.

3.3 ST-26 (SWMU 48A) INITIAL CMI FIELD INVESTIGATION CONCLUSIONS

Analytical results for soil samples collected from the seven soil borings completed during the ST-26 (SWMU 48A) CMI field investigation were below NMED's TPH Screening Guideline of 2,000 mg/kg for unknown oil under industrial direct exposure scenarios (NMED 2006b) and current NMED residential SSLs for TCL VOCs and SVOCs, pesticides and PCBs, and TAL metals. In response to NMED's 6 February 2009 comments of the Draft Site-26 (SWMU 48A) & AOC 36 Corrective Measures Implementation (CMI) Site Closure Report, a revised letter WP

addendum to the Site ST-26 (SWMU 48A) and AOC 36 CMI WP, Cannon Air Force Base, New Mexico (URS 2007a) was issued. The WP addendum was prepared to further investigate Site ST-26 by trenching and to more thoroughly examine and document subsurface soil conditions in the area of the 1994 soil boring 4806.

**TABLE 3-1
COMPARISON OF SITE ST-26 (SWMU 48A) INITIAL CMI FIELD INVESTIGATION MAXIMUM CHEMICAL
CONCENTRATIONS TO SOIL SCREENING LEVELS AND BACKGROUND CONCENTRATIONS
CANNON AFB, NEW MEXICO**

Chemical	Maximum Detected Concentration (mg/kg)	Qual	Residential Soil Screening Levels (mg/kg) ¹	Exceeds Residential SSL ?	Industrial Soil Screening Levels (mg/kg) ²	Exceeds Industrial SSL ?	Background Concentration (mg/kg)	Exceeds Background ?
VOLATILE ORGANIC COMPOUNDS (mg/kg)								
Ethylbenzene	1.10E-03	F	6.70E+01	NO	3.85E+02	NO		
m,p-Xylene (sum of isomers)	5.20E-03	F	1.09E+03	NO	3.61E+03	NO		
o-Xylene (1,2-Dimethylbenzene)	1.80E-03	F	9.55E+03	NO	3.15E+04	NO		
SEMIVOLATILE ORGANIC COMPOUNDS (mg/kg)								
Di-n-butylphthalate	7.20E+00		6.11E+03	NO	6.84E+04	NO		
Fluoranthene	9.70E-02	F	2.29E+03	NO	2.44E+04	NO		
Pyrene	1.00E-01	F	1.73E+03	NO	1.83E+04	NO		
PESTICIDES (ORGANOCHLORINE) (mg/kg)								
4,4-DDD	6.40E-02		2.03E+01	NO	7.98E+01	NO		
4,4-DDE	4.90E-01		1.43E+01	NO	5.63E+01	NO		
4,4-DDT	3.60E-02		1.72E+01	NO	7.81E+01	NO		
alpha-Chlordane	4.70E-02		N/A	N/A	N/A	N/A		
gamma-Chlordane	4.90E-02		N/A	N/A	N/A	N/A		
Heptachlor	6.10E-03		1.08E+00	NO	4.26E+00	NO		
Methoxychlor	1.90E-03	F	N/A	N/A	N/A	N/A		
POLYCHLORINATED BIPHENYLS (PCB) (mg/kg)								
All Polychlorinated Biphenyls were nondetect								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)								
Diesel Range Organics	5.80E+02		8.00E+02	NO	2.00E+03	NO		
Motor Oils	1.50E+03		8.00E+02	YES	2.00E+03	NO		
METALS (mg/kg)								
Aluminum	1.31E+04		7.81E+04	NO	1.13E+06	NO	1.22E+04	YES
Antimony	2.50E-01	F	3.13E+01	NO	4.54E+02	NO	N/A	N/A
Arsenic	3.60E+00	J	3.90E+00	NO	1.77E+01	NO	4.30E+00	NO
Barium	1.44E+03		1.56E+04	NO	2.24E+05	NO	8.90E+02	YES
Beryllium	4.80E-01		1.56E+02	NO	2.26E+03	NO	7.30E-01	NO
Calcium	2.71E+05		N/A	N/A	N/A	N/A	2.37E+05	YES
Chromium	1.12E+01		1.13E+05	NO	1.57E+06	NO	1.33E+01	NO
Cobalt	3.00E+00		N/A	NO	N/A	NO	4.70E+00	NO
Copper	6.40E+00		3.13E+03	NO	4.54E+04	NO	8.30E+00	NO
Iron	1.09E+04		5.48E+04	NO	7.95E+05	NO	1.31E+04	NO
Lead	2.12E+01		4.00E+02	NO	8.00E+02	NO	8.70E+00	YES
Magnesium	1.33E+04		N/A	N/A	N/A	N/A	1.93E+04	NO
Manganese	1.41E+02		1.07E+04	NO	1.45E+05	NO	3.33E+02	NO
Mercury	4.60E-02	F	7.71E+00	NO	4.99E+01	NO	N/A	N/A
Nickel	8.80E+00		1.56E+03	NO	2.27E+04	NO	1.50E+01	NO
Potassium	2.34E+03		N/A	N/A	N/A	N/A	2.51E+03	NO
Silver	1.50E-01	F	3.91E+02	NO	5.68E+03	NO	N/A	N/A
Sodium	2.98E+02		N/A	N/A	N/A	N/A	N/A	N/A
Thallium	6.50E-01	F	5.16E+00	NO	7.49E+01	NO	2.70E+00	NO
Vanadium	1.96E+01		3.91E+02	NO	5.68E+03	NO	3.28E+01	NO
Zinc	1.77E+01	J	2.35E+04	NO	3.41E+05	NO	3.06E+01	NO

Notes:

¹ NMED Soil Screening Levels for Residential Soil (NMED 2009) or NMED TPH Screening Guidelines (NMED 2006b) for Residential Direct Exposure to unknown oil

² NMED Soil Screening Levels for Industrial Soil (NMED 2009) or NMED TPH Screening Guidelines (NMED 2006b) for Industrial Direct Exposure to unknown oil

mg/kg = milligram per kilogram

N/A = Not Applicable

NMED = New Mexico Environmental Department

J = Estimated

Qual = Qualifier

F = Result between MDL and RL

SSL = Soil Screening Level

This section describes the work completed during the Supplemental CMI Field Investigation for Site ST-26 (SWMU 48A) completed by URS at Cannon AFB. Excavation, waste transportation and disposal, backfill, and site restoration activities were completed in accordance with the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) and Site ST-26 (SWMU 48A) CMI WP Addendum (URS 2009).

4.1 SITE WORK OVERVIEW

During the period from February 24 through 26, 2010, URS investigated potential petroleum hydrocarbon-impacted soils in the area of the 1994 soil boring 4806 (shown on **Figure 4-1**) using an excavator because evidence of TPH contamination was identified. The goal of the Supplemental CMI Field Investigation activities was to excavate TPH-impacted soil that was above NMED's residential TPH Screening Guideline of 800 mg/kg for unknown oil. However, the Air Force reserved the right to use NMED's industrial TPH Screening Guidelines of 2,000 mg/kg for unknown oil. During excavation activities, TPH-impacted soil was removed from the area of the 1994 soil boring 4806. Boring 4806 was located within the presumed location of the former UST. The excavation was completed in accordance with the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) and Site ST-26 (SWMU 48A) CMI WP Addendum (URS 2009). TPH-impacted soil was temporarily stockpiled in the excavation zone and was later disposed of at Landfarm DP69, which is licensed to accept TPH-impacted soil. Landfarm DP69 is located eight miles outside Hobbs, New Mexico. Upon completing the excavation, six composite confirmatory samples were collected from the walls and floor of the excavation. Before being backfilled, the excavated area was surveyed, and soil compaction tests were completed during backfill of the excavation.

Excavation and backfill activities were conducted by Diamondback Disposal Services Inc. (Diamondback) with oversight by URS. All health and safety air monitoring and environmental sampling activities were completed by URS. Transportation and disposal services were also provided by Diamondback. The Cannon AFB Restoration Program Manager (ERP) signed all trucking manifests. All excavation, backfill, and site restoration activities were documented using DQCRs, daily heavy equipment safety inspection checklists, daily safety task analyses checklists, and daily excavation/trench inspection reports. The following sections provide a detailed description of the work performed during the TPH-impacted soil excavation.

4.2 PRE-CONSTRUCTION MEETINGS

On February 24, 2010, a kick-off and initial safety meeting was held at Site ST-26 (SWMU 48A). All field personnel (URS and Diamondback), attended the meeting. During this meeting, the elements of work for the TPH-impacted soil excavation were explained, and the items on the URS Safety Compliance Agreement Form were covered. In addition, 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certifications were verified for all personnel before work commenced. Health and Safety documents completed during the excavation are provided in **Appendix C**.

4.3 MOBILIZATION ACTIVITIES

The site preparation activities completed prior to beginning excavation activities included defining and establishing the excavation zone (EZ), contaminant reduction zone (CRZ), decontamination area, and the construction work area as well as support zone (SZ), establishing planned excavation limits; clearing for utilities; and mobilizing the contractor's equipment, personnel, and supplies. Each of these activities is described in further detail below.

4.3.1 Construction Work Area

The construction work area included the excavation area at Site ST-26 (SWMU 48A), the soil stockpile/loading areas, haul routes, the equipment storage areas, work zones, support area, and borrow stockpile area. Prior to the start of excavation activities, the construction work area was fully delineated and heavy equipment was not allowed to operate outside of this area. The construction work area for the TPH-impacted excavation at Site ST-26 (SWMU 48A) is shown on **Figure 4-1**.

4.3.2 Establishment of Work Zones

Site work zones were established to prevent or minimize exposure to hazards associated with TPH-impacted soil and to minimize the migration of contaminants from contaminated areas. Work zones were developed in accordance with the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) (i.e., EZ, CRZ, and SZ). These zones were identified during daily safety briefings and are shown on **Figure 4-1**.

An intrusive EZ was established and maintained around the excavation during the excavation and backfill operations. No personnel were allowed to enter the excavation within the intrusive EZ unless they were in heavy equipment. Those personnel who entered the intrusive EZ in heavy equipment were required to don Level D PPE (i.e, hard hat, safety glasses, hearing protection and steel toed boots). The EZ was identified during the daily safety briefings and was marked with orange construction fence supported by steel posts.

A CRZ was located adjacent to the non-intrusive EZ and included the decontamination area for decontaminating heavy equipment and dump trucks. Dry decontamination procedures were followed as described in the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a). Within the decontamination area, the transportation vehicle (dump truck) was loaded with the excavated soil and decontaminated, as necessary. Due to dry conditions during the excavation activities, few trucks required dry decontamination.

An SZ was located adjacent to the CRZ. Within the SZ, the transportation truck was visually inspected for contamination and manifested, before it was allowed to leave the site. During the backfill activities some backfill material occasionally fell from the transportation vehicles onto the asphalt parking lot within the SZ after the backfill material had been dumped onsite. This dropped backfill material was immediately cleaned up with a stiff-bristled push broom and shovel.

4.3.3 Site Controls and Access

Although Cannon AFB is a secure facility, Site ST-26 (SWMU 48A) does not have a fenced perimeter. During daily work activities, additional site controls and security measures were followed, including:

- Orange construction fencing was placed around the excavation and secured with steel posts at Site ST-26 (SWMU 48A).
- Stockpiled TPH-impacted soil was covered with plastic sheeting to protect against dispersion to wind and secured until loaded and hauled from Site ST-26 (SWMU 48A).
- Equipment was parked at the northwest end of the excavation each night, and the keys were removed.

4.3.4 Establishment of Excavation Limits and Topographic Surveying

Prior to the start of excavation activities, URS completed soil borings as part of the CMI conducted in June 2008 at locations determined using previous sampling results from borings previously completed at Site ST-26 (SWMU 48A). The analytical results for these borings did not exceed NMED residential SSLs and residential direct-exposure TPH concentrations. The historical TPH analytical data from the 1994 soil borings 4806 and 4904 as well as the 2008 soil borings SB03, SB04 and SB06 were used to identify the excavation limits for the excavation of the TPH-impacted soil. The final excavation limits are shown on **Figure 4-2**.

Upon completion of the excavation activities, the excavation limits were surveyed. Lydick Engineering and Surveyors of Clovis, New Mexico, completed the surveying activities. Final excavation limits of the excavation are shown in **Figure 4-2**. In addition, pictures of excavation activities and the finished grade are shown in the photographic log (**Appendix E**).

4.3.5 Utility Clearances

Utility locates were performed at Site ST-26 (SWMU 48A) prior to the start of intrusive activities. There were no underground utilities identified at Site ST-26 (SWMU 48A). The utility locates were completed by 27 CES personnel, QWEST communications and Suddenlink. There were no overhead utilities located in the vicinity of Site ST-26 (SWMU 48A).

4.3.6 Mobilization of Manpower and Heavy Equipment

URS mobilized to the site on February 22, 2010 to complete utility locates. The excavation subcontractor (Diamondback) initially mobilized to the site on February 24, 2010. A Quality Assurance officer was provided by URS (Mr. Tony Sedlacek) to ensure that all excavation activities were being conducted in accordance with the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) and Site ST-26 (SWMU 48A) CMI WP Addendum (URS 2009) and all documentation was completed correctly. In addition, Mr. Sedlacek acted as the SHSO.

An excavation-competent person was provided by URS (Mr. Skip Wrightson) to inspect the excavations for proper safe sloping and/or benching requirements. The excavation-competent person met the requirements outlined in the URS Safety Management Standard (SMS) No. 18. In addition, Mr. Wrightson acted as the Site Supervisor.

Two pieces of heavy equipment were mobilized to the site included:

- A Caterpillar track hoe with model number 325B and equipment ID 2J1202055 on February 24, 2010
- A John Deere backhoe with model number 310SG and equipment ID T0310SG954362 on February 26, 2010

Heavy equipment used during excavation and backfill activities was provided by Diamondback. To minimize the potential for exposure to contaminated media, all excavation heavy equipment had enclosed cabs. Daily heavy equipment safety inspection checklists were completed each day before excavation activities began and are provided in **Appendix G**. The equipment operator signed the checklist and any items that did not pass that the inspection were fixed before the equipment was allowed to be used. Equipment used during the excavation and backfill activities passed inspection.

4.4 EXCAVATION ACTIVITIES

This section describes the field activities associated with the excavation, handling, and segregation of soil, and asphalt debris from Site ST-26 (SWMU 48A). These excavation activities were performed in accordance with the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) and Site ST-26 (SWMU 48A) CMI WP Addendum (URS 2009). This section also provides a detailed description of how Site ST-26 (SWMU 48A) was excavated and what was encountered during excavation activities. Diamondback completed the excavation, handling, and segregation activities, with oversight by URS.

4.4.1 Excavation Area Controls

Controls put in place around the ST-26 (SWMU 48A) excavation area during and after daily intrusive operations included the following:

- An Intrusive EZ was delineated around the excavation area during active intrusive operations and a non-intrusive EZ was established around the stockpiles and heavy equipment as described in **Section 4.3.2**. Orange construction safety fencing supported by steel posts was placed around the excavation limits to restrict access.
- The excavation was completely enclosed with the construction fencing, and the heavy equipment was parked at the northwest end of the excavation with the keys removed at the end of each workday.
- The TPH-impacted soil stockpile was covered with plastic sheeting to reduce wind dispersion and migration potential until it could be loaded and hauled from the site.

4.4.2 General Excavation and Material Handling Procedures

The excavation activities were completed in a manner to minimize the number of times the excavated soil was handled. However, since the TPH-impacted soil was transported to a land treatment facility outside Hobbs New Mexico, it was more efficient to temporarily stockpile the excavated soil until a sufficient volume accumulated to warrant off-site transport. During excavation activities, the first seven feet of soil (overburden) was removed and segregated into a clean fill stockpile to be used as backfill material. Analytical results from the soil borings were used to segregate the excavated soil.

Visible inspection and a PID were also used to help segregate the soil. If, during the visual inspection process, heavy staining, strong petroleum-based odors or elevated PID readings were encountered, the soil was added to the TPH-impacted soil stockpile. In addition, the clean fill stockpile and TPH-impacted stockpile were adequately separated to ensure that cross contamination did not occur (**Figure 4-1**). The TPH-impacted stockpile was also positioned downwind from the clean fill stockpile to help eliminate the potential for cross contamination. All TPH-impacted soil was loaded and transported in a 20-cubic-yard capacity belly-dump truck. The transport truck was equipped with a roll bar liner to cover the loads per United States Department of Transportation (DOT) regulation. The truck was not allowed to leave Site ST-26 (SWMU 48A) without an inspection, proper paperwork (i.e., manifests), and its load covered. Copies of the trucking manifests is provided in **Appendix I**.

Once the excavation depth, as determined based on historical soil boring analytical results, had been reached and no elevated PID readings, visible staining, or strong odor were encountered, the excavation criteria were met, and the excavation was considered ready for the collection of confirmatory samples from the walls and floor of the excavation. Once the confirmation samples analytical results were determined to be below NMED TPH Screening Guidelines, the excavation was ready to backfill (see **Section 4.7**).

The depth and size of the excavation did not require entrance by heavy equipment. The excavation consisted of a trenched area in the vicinity of the 1994 soil boring 4806 in what is now an asphalt parking lot. The excavated trench was inspected daily by an excavation-competent person. The excavation inspections were documented using the Daily Excavation/Trenching Inspection Report (see **Appendix H**). Groundwater was never encountered during excavation operations at Site ST-26 (SWMU 48A).

4.4.3 Excavation Description

Site ST-26 (SWMU 48A) excavation activities began on February 24, 2010 and were completed on February 26, 2010. Excavation of the material began on the southeast end of the planned excavation limits (**Figure 4-2**), and proceeded to the northwest.

The first step of the excavation entailed cutting the asphalt parking lot cap with a concrete saw using to establish the excavation limits. After the asphalt was removed, approximately seven

feet of overburden soil was removed from the excavation area. The overburden was removed from southeast to northwest and stockpiled in an area south of the excavation.

Once the overburden was removed, the excavation of TPH-impacted soil commenced at the southeast end to the excavation. The excavated TPH-impacted soil was directly loaded into a belly dump truck on the north side of the excavation. Once the belly dump truck was full the additional TPH-impacted soil was stockpiled on the north side of the excavation and covered with 10-mil thick poly for dust control. Excavation depths were based on historical analytical results from the 1994 soil boring 4806, visible inspections for staining, observations of soil odors, and PID readings. Soil was excavated to 12 feet beyond the first 7 feet of the excavation. The initial excavation dimensions were 4 feet by 7 feet by 19 feet. The excavated soil had no visible petroleum staining, and PID readings of zero. Slight petroleum odors were noted in the 8-to-11 foot and 11-to-14 foot samples collected for soil characterization (i.e., staining, odor and PID readings). Based on the odors the excavation was expanded to the final dimensions of 6 feet by 14 feet by 19.9 feet and confirmatory samples were collected.

4.4.4 Stockpile/Loading Area

Excavated soil was directly loaded into the transportation vehicles as the excavation was being completed and once the transportation vehicles were full the excavated soil was stockpiled along the north side of the excavation.

Material was stockpiled until sufficient soil was available for the loading transportation vehicles. Once sufficient soil had been stockpiled, the transportation vehicles were loaded using a backhoe. Transportation vehicles were then inspected and, if necessary, decontaminated prior to departure from the site.

4.4.5 Dust Control

Dust control measures were implemented during excavation, handling, segregation, loading, and transportation activities at Site ST-26 (SWMU 48A). Dust control was accomplished by covering the stockpile with 10-mil polyethylene sheeting to eliminate the potential for dust emissions and wind dispersion. The stockpile was covered at the completion of the stockpiling activities. In addition, all loads into and out of Site ST-26 (SWM 48A) were covered in accordance with DOT regulations. No visible airborne dust was observed, so no further dust controls were necessary.

4.4.6 Heavy Equipment Decontamination

All heavy equipment underwent dry decontamination procedures (broom and scraping device to remove visible contamination), as necessary. The decontamination area was designated within the CRZ. Material removed as part of decontamination procedures were collected and added to the excavated TPH-impacted stockpile awaiting disposal. The decontamination zone is shown on **Figure 4-1**.

Additionally, the transportation vehicle only drove on asphalt parking lots and road; this helped to limit the amount of transportation vehicle decontamination required. After loading, all transportation vehicles were visually inspected, and decontamination procedures were implemented as needed. Due to the dry weather conditions during the excavation activities, only dry decontamination procedures were required.

4.5 EXCAVATION CONFIRMATORY SOIL SAMPLING AND ANALYSIS

In accordance with the Site ST-26 (SWMU 48A) CMI WP Addendum (URS 2009), composite confirmatory soil samples were collected using the excavator bucket to eliminate the need for personnel to enter the excavation. Composite confirmatory samples were collected from the walls and floor of the excavation. The wall samples were collected from a composite of approximately 10-to-18 feet by scraping the excavator bucket along the wall. The floor sample composite sample was collected by scraping the excavator on the floor of the excavation. All samples were submitted at $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ to Agriculture & Priority Pollutants Laboratories, Inc. in Clovis, California for analysis. A summary of samples collected during Supplemental CMI Field Investigation activities are shown on **Table 4-1**. Confirmation samples were analyzed utilizing USEPA SW-846 Methods. Confirmation samples were collected and analyzed for BTEX + naphthalene by Method 8260C/5035; PAHs by Method 8270C/3550B; TPH-GRO by Method 8015B/5035, TPH-DRO by Method 8015B/3550B, and TPH-Motor Oils by Method 8015B/3550B.

4.5.1 Summary of Confirmatory Soil Sample Results

PAHs and TPH-GRO were nondetect in all confirmatory samples, naphthalene was detected between the method detection limit (MDL) and reporting limit (RL) and did not exceed the NMED residential direct-exposure SSL. The TPH-Motor Oils result (960 mg/kg) for sample C26-Northwall-20 exceeded the NMED residential direct-exposure SSL for unknown soil (800 mg/kg), however the result was below the NMED industrial direct-exposure SSL for unknown oil (2,000 mg/kg). Due to the industrial setting, the proximity of Site ST-26 (SWMU 48A) to the flightline, and historical use of Site ST-26 (SWMU 48A) as a parking lot associated with flightline hangers 195 and 196, screening confirmation samples against the industrial SSLs is warranted. The total TPH results for confirmation sample C26-West-20 (820 mg/kg) were above the NMED residential direct-exposure SSL, but below the NMED industrial direct-exposure SSL. All total TPH results were below the NMED industrial direct-exposure SSL for unknown oil of 2,000 mg/kg. **Table 4-2** presents a summary of chemicals detected in Supplemental CMI Field Investigation soil samples. **Table 4-3** presents maximum concentrations compared to NMED soil screening levels.

4.6 QUALITY ASSURANCE/QUALITY CONTROL

The following sub-sections discuss the procedures and results of the quality assurance/quality control measures followed during the Supplemental CMI Field Investigation, as established in

the Site ST-26 (SWMU 48A) and AOC 36 Corrective Action Measures Implementation Work Plan (URS 2007a).

4.6.1 Field Duplicates

One field duplicate sample (C26-WESTD-20, a duplicate of C26-WEST-20) was collected during the Supplemental CMI Field Investigation and was analyzed for BTEX + naphthalene, PAHs, TPH-DRO, TPH-GRO, TPH-Motor Oils. The field duplicate was collected to assess the precision of the data collection activity, which includes sample collection, sample heterogeneity, and analysis. The duplicate sample exhibited similar chemical concentrations to the original sample's chemical concentrations and are presented in **Appendix B**.

4.6.2 Matrix Spike/Matrix Spike Duplicates

One matrix spike/matrix spike duplicate (MS/MSD) was collected (C26-Southwall-20), and analyzed for BTEX + naphthalene, PAHs, TPH-DRO, TPH-GRO, TPH-Motor Oils. The MS/MSD was collected to assess any potential matrix effects associated with a site. Several BTEX and TPH-ORO MS/MSD recoveries were low and are further discussed in the data review in **Appendix B**.

4.6.3 Data Review

Samples were analyzed by APPL of Fresno, California and submitted as part of sample delivery groups. A 100 percent data review was completed for all samples in accordance with AFCEE Technical Services Quality Assurance Program – Quality Assurance Project Plan (QAPP) Version 4.0. Data was qualified due to method blank contamination. Data reviews completed for confirmation samples collected as part of the Site ST-26 (SWMU 48A) Supplemental CMI Field Investigation, and a summary of qualified data are located in **Appendix B**.

4.7 SUPPLEMENTAL CMI FIELD INVESTIGATION CONCLUSIONS

Analytical results for the six confirmation soil samples collected during the Supplemental CMI Field Investigation were below NMED's TPH Screening Guideline of 2,000 mg/kg for unknown oil under industrial direct-exposure scenarios (NMED 2006b) and current NMED residential SSLs for BTEX + naphthalene and PAHs.

4.8 TPH-IMPACTED SOIL TRANSPORTATION, DISPOSAL, AND DOCUMENTATION

This section describes the TPH-impacted soils transportation, disposal, and documentation procedures followed during the Supplemental CMI Field Investigation completed at Site ST-26 (SWMU 48A). Transportation and disposal activities were completed by Diamondback in accordance with the requirements of the ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) as well as applicable federal, state, and local regulations.

4.8.1 Waste Characterization and Analytical Data Package

Confirmatory sample results were used to characterize the soil. No additional characterization analyses were required by the DP69 Landfarm, where the excavated soil was taken for disposal.

4.8.2 Waste Transportation

Prior to the start of transportation activities, excavated TPH-impacted soil was segregated from non-TPH-impacted soil. The truck was loaded with approximately 20 cubic yards of soil. The transportation vehicle (belly dump truck) was also fitted with a cover to reduce the possibility of wind dispersal of the soil during transport. An inspection of the tarp and other potential release points (i.e., belly dump openings) was completed before the vehicle left the worksite. Vehicle decontamination procedures were implemented in accordance with the ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a) as needed. Photos of the transportation vehicles are included in the Photographic Log in **Appendix E**.

4.8.3 Transportation Routes

Transportation routes included the Torch Boulevard, the base perimeter road to the Portales Gate and the roadways between Cannon AFB and the DP69 Landfarm. Maintenance of the transportation route on Cannon AFB property was completed as needed (e.g., cleanup of any spilled backfill material). Upon the completion of the excavation activities at Site ST-26 (SWMU 48A), Diamondback swept up any visible backfill material on the asphalt parking lot and loaded it into the dump truck.

No accidents, releases, or spills occurred inside or outside Cannon AFB facility during transport and disposal operations.

4.8.4 Waste Disposal

Waste was transported to, and disposed of at, DP619 Landfarm. Each load of waste was accompanied by the appropriate documentation (see **Section 4.4.2** and **4.8**), in accordance with the requirements of the Site ST-26 (SWMU 48A) and AOC 36 CMI WP (URS 2007a); and federal, state, and local regulations.

Upon arrival at DP69 Landfarm, the transport vehicle driver checked in with the attendant, provided the attendant the proper documentation, and was then directed to the appropriate disposal area at the landfarm. Once the load was delivered to the landfill, the truck was either refilled with backfill material or remained empty, the tarp was placed back over the bed, and the transportation vehicle mobilized back to the site.

4.8.5 Waste Shipment Records

A non-hazardous waste manifest was prepared and accompanied each load of waste transported to the DP69 Landfarm. The purpose of the Waste Shipment Record was to manifest the waste

and to certify that the proper transportation procedures were followed. The Waste Shipment Records were signed by the Cannon AFB ERP Manager (Mr. Hanson) and the transportation vehicle driver. Each non-hazardous waste manifest was proved to the attendant at the DP69 Landfarm and was signed by the person at the landfill responsible for certifying the receipt and proper disposal of waste. Copies of the non-hazardous waste manifest forms are provided in **Appendix I**.

4.9 BACKFILL AND SITE RESTORATION

As the excavation was completed, based on confirmation sample analytical results from the Supplemental CMI Field Investigation, the excavated area was backfilled, compacted, and graded for asphalt restoration.

4.9.1 Backfill Equipment

Excavation backfilling and compaction activities were completed using the heavy equipment described in **Section 4.3.6**. Heavy equipment and personnel used to perform backfill and site restoration activities were provided by Diamondback. URS provided full-time oversight and monitoring of backfill and Diamondback provided oversight for site restoration activities.

4.9.2 Borrow Material

The initial backfill material used was the overburden from the top seven feet of excavation. An additional 32 cubic yards of sampled, clean, engineered, crushed caliche backfill from the Wallach Concrete Inc. (Wallach Eunice Crusher Plant) in Hobbs, New Mexico was used to bring the excavation to grade. The engineered backfill material used was approved before use by the Cannon AFB ERP Manager. Backfill analytical results are provided in **Appendix J**.

4.9.3 Excavation Backfill Method

Backfill material was pushed into the excavation with the John Deere backhoe. The backfill material was added in two foot lifts and was compacted with the track hoe bucket. The last two foot lift was wheel rolled with the backhoe.

4.9.4 Backfill Compaction Testing

To ensure placement of materials within the limits of the above-specified densities, Diamondback contracted Lydick Engineers and Surveyors to complete the backfill compaction tests. Two compaction tests were performed on the final grade of the engineered backfill material. All backfill compaction tests performed indicated that backfill placement met the minimum 80 to 85 percent modified compaction requirements. Backfill compaction test results are provided on **Table 4-4** and also in the geotechnical test results in **Appendix K**.

4.9.5 Site Restoration

The final subgrade of Site ST-26 (SWMU 48A) was graded and compacted to a uniform depth of two inches for asphalt site restoration. Prior to demobilization activities, URS and Diamondback completed a site walkover to identify heavy equipment disturbance that required corrective action and to cleanup of any backfill material that dropped from the trucks. Heavy equipment disturbances were repaired as part of the asphalt restoration. URS and Diamondback removed all equipment and leftover construction materials from Site ST-26 (SWMU 48A) during time of demobilization, with the exception of the track hoe owned by Diamondback. The asphalt restoration was unable to be completed prior to demobilization due to cold weather. The barricades were left in place until the asphalt restoration was completed on March 10, 2010. The asphalt restoration was subcontracted to K. Barnett and Sons Inc. of Clovis, New Mexico by Diamondback. As of May 2010, parking stall striping has not been completed for the asphalt restoration because K. Barnett and Sons Inc. is not licensed to complete the striping. Diamondback has contracted a second subcontractor approved by Cannon AFB to complete the asphalt striping, which will be completed in June, 2010.

4.10 DEMOBILIZATION

Following completion of the final subgrade compaction and testing, the remaining TPH-impacted soil was loaded and hauled from Site ST-26 (SWMU 48A) and the entire area was swept. Demobilization activities were completed on February 26, 2010. Demobilization activities included the following activities:

- All heavy equipment was decontaminated and removed from the site.
- All temporary orange construction fence and steel posts were removed.

4.11 EXCAVATION, BACKFILL, AND TRANSPORTATION QUANTITY SUMMARY

The excavation and backfill quantity summary for dates February 24 to 26, 2010 are provided in the following tables:

Backfill (cubic yards)		
Clean Overburden	Engineered Backfill	Total Cubic Yards
22	32	54

Quantities were determined based on the sum of truck manifest.

The transportation vehicle summary is provided in the following table:

Number of Transport Vehicles		
Excavation	Backfill	Total Transport Vehicles
2	2	2

All soil excavated from Site St-26 (SWMU 48A) was transported and disposed at the DP69 Landfarm outside Hobbs, New Mexico. At ST-26 (SWMU 48A) approximately 40 cubic yards were transported and disposed at the landfarm and approximately 54 cubic yards were backfilled, with approximately 22 cubic yards of clean overburden was used as backfill.

4.12 SITE CLOSURE DOCUMENTATION

The objective of the CMI for Site ST-26 (SWMU 48A) is to ensure that the site does not pose unacceptable risk to human health or the environment. A phased approach was designed that with re-assessment of existing Site ST-26 (SWMU 48A) data and additional field investigation activities followed by a Supplemental CMI Field Investigation and excavation. Seven additional borings were completed during the CMI field investigation. All analytical results were below NMED screening levels. Even though all chemical concentrations fell below applicable SSLs, the Air Force decided to proceed with a Supplemental CMI Field Investigation to address the petroleum hydrocarbon impacted soil around the 1994 soil boring 4806. Based on the CMI field investigation results and the completed Supplemental CMI Field Investigation and excavation, Corrective Action Complete with Controls is appropriate for Site ST-26 (SWMU 48A). A Corrective Action Complete Proposal, a Statement of Basis and Solid Waste Amendments/Corrective Action Related Permits Modification Request should be prepared once NMED concurs that Corrective Action Complete with Controls is appropriate for Site ST-26 (SWMU 48A).

**TABLE 4-1
SUMMARY OF CONFIRMATION SAMPLES COLLECTED
DURING THE SUPPLEMENTAL CMI FIELD INVESTIGATION
AT SITE ST-26 (SWMU 48A),
CANNON AFB, NEW MEXICO**

Sample Date	Sample Location	Field ID	Depth Interval (feet bgs)	Date Lab Received	Matrix	Investigative	Duplicate	MS/MSD	VOCs (8260B)	PAHs (8270C)	TPH-GRO (8015B)	TPH-DRO (8015B)	TPH -Motor Oils (8015B)
2/24/2010	North Wall	C26-Northwall-20	10-18	2/25/2010	Soil	x			x	x	x	x	x
2/24/2010	East Wall	C26-East-20	10-18	2/25/2010	Soil	x			x	x	x	x	x
2/24/2010	South Wall	C26-Southwall-20	10-18	2/25/2010	Soil	x		x	x	x	x	x	x
2/24/2010	West Wall	C26-West-20	10-18	2/25/2010	Soil	x			x	x	x	x	x
2/24/2010	West Wall	C26-WestD-20	10-18	2/25/2010	Soil		x		x	x	x	x	x
2/24/2010	Floor	C26-Floor-20	18-20	2/25/2010	Soil	x			x	x	x	x	x

Notes:

Agriculture and Priority Pollutants Laboratory, Inc (APPL) provided analytical services.

bgs = below ground surface

DRO = Diesel Range Organics

ID = Identification

GRO = Gasoline Range Organics

MS/MSD = Matrix spike/matrix spike duplicate

PAHs = Polynuclear Aromatic Hydrocarbons

TPH = Total Petroleum Hydrocarbons

VOCs = Volatile Organic Compounds

TABLE 4-2
SUMMARY OF CHEMICALS DETECTED IN SUPPLEMENTAL CMI FIELD INVESTIGATION SOIL CONFIRMATION SAMPLES
COLLECTED AT SITE ST-26 (SWMU 48A)
CANNON AFB, NEW MEXICO

FIELD ID DATE COLLECTED			C26-EAST-20 February 24, 2010				C26-FLOOR-20 February 24, 2010				C26-NORTHWALL-20 February 24, 2010					
			Maximum	Frequency	Result	RL	MDL	Qual	Result	RL	MDL	Qual	Result	RL	MDL	Qual
VOLATILE ORGANIC COMPOUNDS (mg/kg)																
Naphthalene	7.00E-04	F	1	5	7.00E-04	6.00E-03	5.00E-04	F	<	6.00E-03	5.00E-04	U	<	6.00E-03	4.00E-04	U
POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg)																
All Polynuclear Aromatic Hydrocarbons were nondetect																
TOTAL PETROLEUM HYDROCARBONS (mg/kg)																
Diesel Range Organics	5.80E+02		5	5	1.50E+01	1.00E+01	1.00E+00		1.20E+02	5.00E+01	5.00E+00		5.80E+02	1.00E+02	1.00E+01	
Motor Oils	9.60E+02		5	5	4.10E+01	1.00E+01	3.50E+00		2.10E+02	5.00E+01	1.75E+01		9.60E+02	1.00E+02	3.50E+01	

Notes:

< = Less than the Reporting Limit

mg/kg = milligram per kilogram

F = Result between MDL and RL

ID = identification

MDL = Method Detection Limit

Qual = Qualifier

RL = Reporting Limit

U = Nondetect

TABLE 4-2
SUMMARY OF CHEMICALS DETECTED IN SUPPLEMENTAL CMI FIELD INVESTIGATION SOIL CONFIRMATION SAMPLES
COLLECTED AT SITE ST-26 (SWMU 48A)
CANNON AFB, NEW MEXICO

FIELD ID DATE COLLECTED	C26-SOUTHWALL-20				C26-WEST-20					
	Maximum	Frequency	Result	RL	MDL	Qual	Result	RL	MDL	Qual
VOLATILE ORGANIC COMPOUNDS (mg/kg)										
Naphthalene	7.00E-04 F	1 / 5	<	6.00E-03	4.00E-04	U	<	6.00E-03	4.00E-04	U
POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg)										
All Polynuclear Aromatic Hydrocarbons were nondetect										
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
Diesel Range Organics	5.80E+02	5 / 5	1.20E+01	1.00E+01	1.00E+00		4.60E+02	1.00E+02	1.00E+01	
Motor Oils	9.60E+02	5 / 5	2.70E+01	1.00E+01	3.50E+00		3.60E+02	1.00E+02	3.50E+01	

Notes:

< = Less than the Reporting Limit

mg/kg = milligram per kilogram

F = Result between MDL and RL

ID = identification

MDL = Method Detection Limit

Qual = Qualifier

RL = Reporting Limit

U = Nondetect

TABLE 4-3
COMPARISON OF SITE ST-26 (SWMU 48A) SUPPLEMENTAL CMI FIELD INVESTIGATION
CONFIRMATION SAMPLES MAXIMUM CHEMICAL CONCENTRATIONS TO SOIL SCREENING
LEVELS, CANNON AFB, NEW MEXICO

Chemical	Maximum Detected Concentration (mg/kg)	Qual	Residential Soil Screening Levels (mg/kg) ¹	Exceeds Residential SSL ?	Industrial Soil Screening Levels (mg/kg) ²	Exceeds Industrial SSL ?
VOLATILE ORGANIC COMPOUNDS (mg/kg)						
Naphthalene	7.00E-04	F	4.50E+01	NO	2.52E+02	NO
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
Diesel Range Organics	5.80E+02		8.00E+02	NO	2.00E+03	NO
Motor Oils	9.60E+02		8.00E+02	YES	2.00E+03	NO

Notes:

¹ NMED Soil Screening Levels for Residential Soil (NMED 2009) or NMED TPH Screening Guidelines (NMED 2006b) for Residential Direct Exposure to unknown oil

² NMED Soil Screening Levels for Industrial Soil (NMED 2009) or NMED TPH Screening Guidelines (NMED 2006b) for Industrial Direct Exposure to unknown oil

mg/kg = milligram per kilogram

Qual = Qualifier

F = Result between MDL and RL

SSL = Soil Screening Level

TABLE 4-4
SITE ST-26 (SWMU 48A) SUPPLEMENTAL CMI FIELD INVESTIGATION COMPACTION TEST RESULTS FOR
TOP TWO FEET OF BACKFILL, CANNON AFB, NEW MEXICO

Lift ID	Wet Density	Moisture Content	Dry Density	Percent of Compaction
Top 2 feet (North)	137.4	9.1	125.9	98.6
Top 2 feet (South)	138.3	9.7	126.1	98.7

Notes:

The percent of compaction required = 85%

The percent moisture required = \pm 3.0%

TORCH BLVD

ARGENTIA AVE.

LEGEND:

- 4806 ● PHASE II SOIL BORING LOCATION AND NUMBER
- SB04 ⊕ 2008 CMI BORING LOCATION AND NUMBER
- FINAL EXCAVATION LIMITS

CONTAMINATION REDUCTION ZONE

SUPPORT ZONE

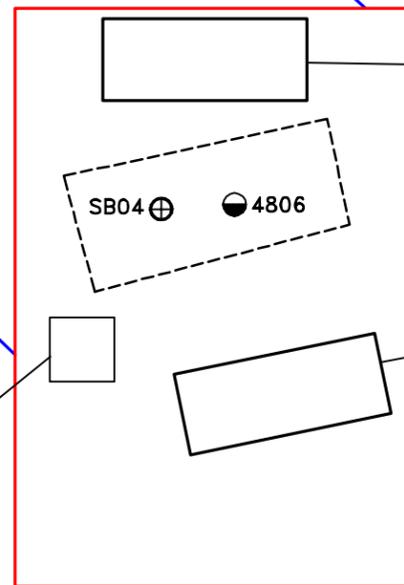
EXCAVATION ZONE

DECONTAMINATION ZONE

OVERBURDEN STOCKPILE AREA

TPH-IMPACTED SOIL STOCKPILE

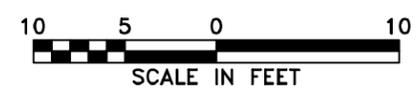
CLEAN FILL SOIL STOCKPILE AREA



SB03 ⊕

4904 ●

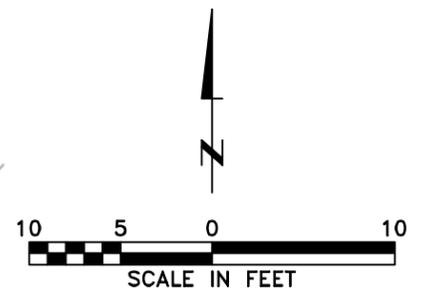
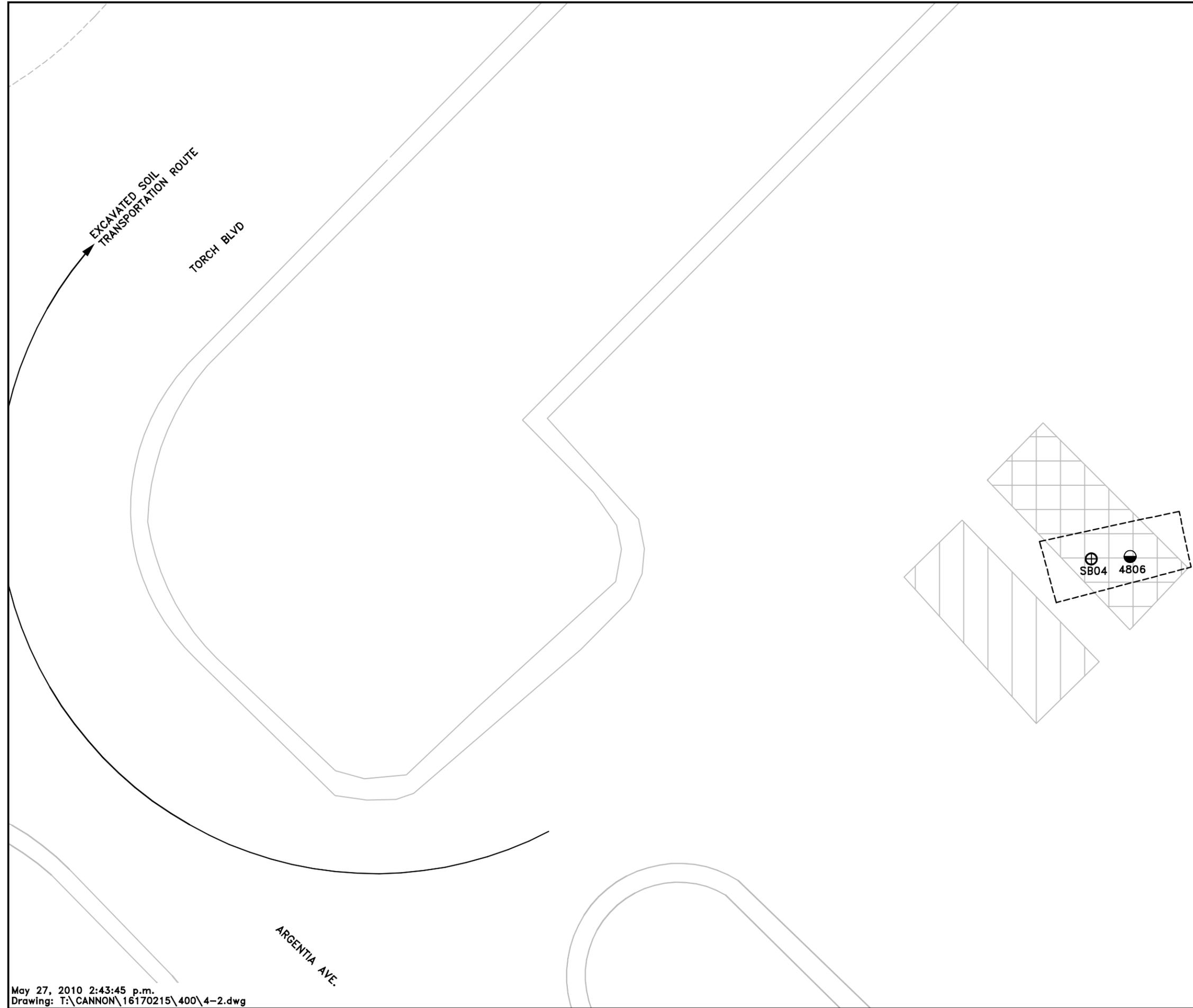
SB06 ⊕



ST-26 (SWMU 48A) WORK ZONES CANNON AIR FORCE BASE, NEW MEXICO			
DRN. BY: DPG	DATE: 04/30/10	PROJECT NO. 16170215	FIG. NO. 4-1
CHK'D. BY: .	DATE: 04/30/10		

LEGEND:

-  APPROXIMATE LOCATION OF FORMER ABOVEGROUND STORAGE TANK ATOP FORMER UNDERGROUND STORAGE TANK
-  APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK
-  4806 PHASE II SOIL BORING LOCATION AND NUMBER
-  SB04 2008 CMI BORING LOCATION AND NUMBER
-  ----- FINAL EXCAVATION LIMITS



ST-26 (SWMU 48A) EXCAVATION MAP CANNON AIR FORCE BASE, NEW MEXICO			
DRN. BY: DPG	DATE: 04/30/10	PROJECT NO. 16170215	FIG. NO. 4-2
CHK'D. BY: .	DATE: 04/30/10		

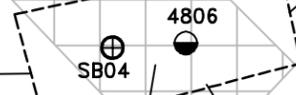
LEGEND:

-  APPROXIMATE LOCATION OF FORMER ABOVEGROUND STORAGE TANK ATOP FORMER UNDERGROUND STORAGE TANK
-  APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK
-  4806 PHASE II SOIL BORING LOCATION AND NUMBER
-  SB04 2008 CMI BORING LOCATION AND NUMBER
- ND NON DETECT

2/24/2010	10-18'
All VOCs	ND
All PAHs	ND
TPH-DRO	580
TPH-GRO	ND
TPH-Motor Oils	960

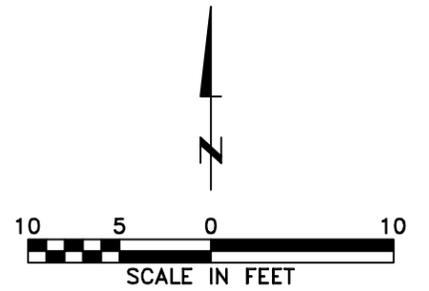
2/24/2010	10-18'
Naphthalene	0.7
Toluene	0.8
All PAHs	ND
TPH-DRO	15
TPH-GRO	ND
TPH-Motor Oils	41

2/24/2010	10-18'
All VOCs	ND
All PAHs	ND
TPH-DRO	460
TPH-GRO	ND
TPH-Motor Oils	360



2/24/2010	10-18'
All VOCs	ND
All PAHs	ND
TPH-DRO	12
TPH-GRO	ND
TPH-Motor Oils	27

2/24/2010	20'
Toluene	0.7
All PAHs	ND
TPH-DRO	120
TPH-GRO	ND
TPH-Motor Oils	210



SITE ST-26 (SWMU 48A) CONFIRMATION SOIL SAMPLING RESULTS CANNON AIR FORCE BASE, NEW MEXICO			
DRN. BY: DPG	DATE: 04/30/10	PROJECT NO. 16170215	FIG. NO. 4-3
CHK'D. BY: .	REVISION: 0		

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- Lee Wan and Associates, Inc. (Lee Wan). 1990. RCRA Facility Investigation Field Sampling Plan. Cannon AFB, New Mexico. June.
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- W-C. 1997b. RCRA Facility Investigation, Appendix II SWMUs – Phase II, Cannon Air Force Base, New Mexico. November.

A.1 Boring Logs

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME URS GROUP, INC.			2. DRILLING CONTRACTOR Diamondback Disposal Services (excavation subcontractor)			AFCEE ST-26-Excavation		
3. PROJECT CANNON AFB - ST-26 (SWMV 48A)			4. LOCATION CANNON AFB, NEW MEXICO					
5. NAME OF DRILLER NA			6. MANUFACTURER'S DESIGNATION OF DRILL NA					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Caterpillar 325B Trackhoe bucket		8. HOLE LOCATION 1,236,768.00N 806,245.00E				
				9. SURFACE ELEVATION 4302'				
				10. DATE STARTED 2/24/10		11. DATE COMPLETED 2/24/10		
12. OVERBURDEN THICKNESS 7'			15. DEPTH GROUNDWATER ENCOUNTERED					
13. DEPTH DRILLED INTO ROCK 0			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED NA					
14. TOTAL DEPTH OF HOLE 19.9'			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY) NA					
18. GEOTECHNICAL SAMPLES (TESTED) NA		DISTURBED NA		UNDISTURBED NA		19. TOTAL NUMBER OF CORE BOXES NA		
20. SAMPLES FOR CHEMICAL ANALYSIS 5		VOC X	METALS NA	OTHER (SPECIFY) TPH - DRO/ORO	OTHER (SPECIFY) TPH - GRO	OTHER (SPECIFY) PAHs	21. TOTAL CORE RECOVERY NA %	
22. DISPOSITION OF HOLE NA		BACKFILLED Yes	MONITORING WELL NA	OTHER (SPECIFY) Excavation	23. SIGNATURE OF INSPECTOR Skip Wrightson			
LOCATION SKETCH/COMMENTS						SCALE: 1" = 30'		
PROJECT CANNON AFB - ST-26 (SWMV 48A) CANNON AFB, NEW MEXICO						HOLE NO ST-26-Excavation		

ENG FORM 5056-R, AUG 94
URSRev.030401

(Proponent: CECW-EG)

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
ST-26-Excavation
SHEET 2 OF SHEETS 3

PROJECT CANNON AFB - ST-26 (SWMV 48A) CANNON AFB, NEW MEXICO
INSPECTOR Skip Wrightson

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
4302.0	0	Asphalt					
		SAND and Gravel (SP-GM) - Loose, dry, light pink, fine- to medium-grained, angular, well cemented	HS = 0.6 ppm				No visible staining No product odor
4301.0	1	SILT (ML) - Stiff, dry, dark reddish-brown, low plastic, homogenous, with some clay	HS = 0.6 ppm				No visible staining No product odor
4300.0	2						No product odor
4299.0	3	Sandy Silt (ML) - Loose, light pink, homogenous, with caliche nodules	HS = 0.1 ppm				No visible staining No product odor
4298.0	4						No product odor
4297.0	5	0.5' hard caliche layer from 5.0' to 5.5' bgs					
4296.0	6		HS = 0.1 ppm				No visible staining No product odor
4295.0	7						
4294.0	8						
4293.0	9						No visible staining No product odor
4292.0	10	Becomes well cemented, with calcareous caliche	HS = 0.6 ppm				

PROJECT CANNON AFB - ST-26 (SWMV 48A) CANNON AFB, NEW MEXICO
HOLE NO ST-26-Excavation

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

URSRev.030401

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
ST-26-Excavation
SHEET 3 OF SHEETS 3

PROJECT CANNON AFB - ST-26 (SWMV 48A)
CANNON AFB, NEW MEXICO

INSPECTOR
Skip Wrightson

ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
4292.0	10	SAME: Sandy Silt (ML) - Stiff, light pink, homogenous, well cemented. with calcareous caliche					No visible staining No product odor
4291.0	11	Becomes very stiff	HS = 0.6 ppm				Slight hydrocarbon odor No visible staining
4290.0	12						
4289.0	13						
4288.0	14						
4287.0	15		HS = 8 ppm				Very hard excavating Slight hydrocarbon odor No visible staining
4286.0	16						
4285.0	17	Silty SAND (SM) - Very dense, dry, light pink, well cemented, calcareous caliche, fine-grained	HS = 10 ppm				Very hard excavating Slight hydrocarbon odor No visible staining
4284.0	18	SAND (SP) - Very dense, dry, light pink, well cemented, poorly graded caliche, fine-grained, with some silt	HS = 3.6 ppm				No product odor No visible staining
4283.0	19						
4282.0	20	B.O.B. @ 19.9' bgs					

PROJECT CANNON AFB - ST-26 (SWMV 48A) CANNON AFB, NEW MEXICO

HOLE NO ST-26-Excavation

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

URSRev.030401

A.2 Sample Collection Field Sheets

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: ST-26 (SWMU 48A) Corrective Measures Implementation PROJECT NO. 16170215

SAMPLE NO. C26-East-20 BORING NO. NA

DATE/TIME COLLECTED: 2-24-10 1536 PERSONNEL: TS

SAMPLE METHOD / DEPTH: Track hoe bucket/Stainless Steel Bowl 10-18 Ft. SW

SAMPLE MEDIA:

SOIL	SEDIMENT	SLUDGE
-------------	----------	--------

SAMPLE QA SPLIT: YES

NO

 SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES

NO

 DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES

NO

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

<u>Sample Container</u>	<u>Preservative</u>	<u>Analysis Requested</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>1 8oz. Wide mouth glass jars</u>	<u>4°C</u>	<u>TPH-DRO/TPH-ORO/PAHs (8015B/8270C)</u>

OVA MEASUREMENTS

Background 0.0 ppm
 Breathing zone NA
 Boring NA
 Headspace 2.1 ppm

SAMPLE DESCRIPTION

DEPTH: 10-18' DESCRIPTION: Silt (SP)- Very dense, dry, light pink, well cemented with very fine grained and poorly graded sand (caliche).

GENERAL COMMENTS

Composite sample was collected with a track hoe bucket.

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: ST-26 (SWMU 48A) Corrective Measures Implementation PROJECT NO. 16170215

SAMPLE NO. C26-Floor-20 BORING NO. NA

DATE/TIME COLLECTED: 2-24-10 1558 PERSONNEL: TS

SAMPLE METHOD / DEPTH: Track hoe bucket/Stainless Steel Bowl 19.9 Ft. SW

SAMPLE MEDIA:	SOIL	SEDIMENT	SLUDGE	
SAMPLE QA SPLIT:	YES	NO		SPLIT SAMPLE NO. <u>NA</u>
SAMPLE QC DUPLICATE:	YES	NO		DUPLICATE SAMPLE NO. <u>NA</u>
MS/MSD REQUESTED:	YES	NO		

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

<u>Sample Container</u>	<u>Preservative</u>	<u>Analysis Requested</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>1 8oz. Wide mouth glass jars</u>	<u>4°C</u>	<u>TPH-DRO/TPH-ORO/PAHs (8015B/8270C)</u>

OVA MEASUREMENTS

Background 0.0 ppm

Breathing zone NA

Boring NA

Headspace 0.4 ppm

SAMPLE DESCRIPTION

DEPTH: 19.9 DESCRIPTION: Silt (SP)- Very dense, dry, light pink, well cemented with very fine grained and poorly graded sand (caliche).

GENERAL COMMENTS

Composite sample was collected with a track hoe bucket.

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: ST-26 (SWMU 48A) Corrective Measures Implementation PROJECT NO. 16170215

SAMPLE NO. C26-Northwall-20 BORING NO. NA

DATE/TIME COLLECTED: 2-24-10 1614 PERSONNEL: TS

SAMPLE METHOD / DEPTH: Track hoe bucket/Stainless Steel Bowl 10-18 Ft. SW

SAMPLE MEDIA:	SOIL	SEDIMENT	SLUDGE
SAMPLE QA SPLIT:	YES	NO	SPLIT SAMPLE NO. <u>NA</u>
SAMPLE QC DUPLICATE:	YES	NO	DUPLICATE SAMPLE NO. <u>NA</u>
MS/MSD REQUESTED:	YES	NO	

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

<u>Sample Container</u>	<u>Preservative</u>	<u>Analysis Requested</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>1 8oz. Wide mouth glass jars</u>	<u>4°C</u>	<u>TPH-DRO/TPH-ORO/PAHs (8015B/8270C)</u>
_____	_____	_____
_____	_____	_____

OVA MEASUREMENTS

Background 0.0 ppm

Breathing zone NA

Boring NA

Headspace 0.5 ppm

SAMPLE DESCRIPTION

DEPTH: 10-18' DESCRIPTION: Silt (SP)- Very dense, dry, light pink, well cemented with very fine grained and poorly graded sand (caliche).

GENERAL COMMENTS

Composite sample was collected with a track hoe bucket.

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: ST-26 (SWMU 48A) Corrective Measures Implementation PROJECT NO. 16170215

SAMPLE NO. C26-Southwall-20 BORING NO. NA

DATE/TIME COLLECTED: 2-24-10 1622 PERSONNEL: TS

SAMPLE METHOD / DEPTH: Track hoe bucket/Stainless Steel Bowl 10-18 Ft. SW

SOIL	SEDIMENT	SLUDGE
YES	NO	
YES	NO	
YES	NO	

SAMPLE QA SPLIT: YES SPLIT SAMPLE NO. NA

SAMPLE QC DUPLICATE: YES DUPLICATE SAMPLE NO. NA

MS/MSD REQUESTED: YES MS/MSD C26-Southwall-20 MS/MSD

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

Sample Container	Preservative	Analysis Requested
1 preweighed VOA vials with methanol	4°C	TPH-GRO (8015B)
2 preweighed VOA vials with water	4°C	TPH-GRO (8015B)
1 preweighed VOA vials with methanol	4°C	BTEX + Naphthalene (8260B)
2 preweighed VOA vials with water	4°C	BTEX + Naphthalene (8260B)
1 8oz. Wide mouth glass jars	4°C	TPH-DRO/TPH-ORO/PAHs (8015B/8270C)

OVA MEASUREMENTS

Background 0.0 ppm

Breathing zone NA

Boring NA

Headspace 0.7 ppm

SAMPLE DESCRIPTION

DEPTH: 10-18' DESCRIPTION: Silt (SP)- Very dense, dry, light pink, well cemented with very fine grained and poorly graded sand (caliche).

GENERAL COMMENTS

Composite sample was collected with a track hoe bucket.

SOIL SAMPLE COLLECTION FIELD SHEET

GENERAL INFORMATION

SITE NAME: ST-26 (SWMU 48A) Corrective Measures Implementation PROJECT NO. 16170215

SAMPLE NO. C26-West-20 BORING NO. NA

DATE/TIME COLLECTED: 2-24-10 1544 PERSONNEL: TS

SAMPLE METHOD / DEPTH: Track hoe bucket/Stainless Steel Bowl 10-18 Ft. SW

SAMPLE MEDIA:

SOIL	SEDIMENT	SLUDGE
------	----------	--------

SAMPLE QA SPLIT:

YES	NO
-----	----

 SPLIT SAMPLE NO. _____

SAMPLE QC DUPLICATE:

YES	NO
-----	----

 DUPLICATE SAMPLE NO. C26-West D-20 @ 1900

MS/MSD REQUESTED:

YES	NO
-----	----

SAMPLE CONTAINERS, PRESERVATIVES, ANALYSIS

<u>Sample Container</u>	<u>Preservative</u>	<u>Analysis Requested</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>TPH-GRO (8015B)</u>
<u>1 preweighed VOA vials with methanol</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>2 preweighed VOA vials with water</u>	<u>4°C</u>	<u>BTEX + Naphthalene (8260B)</u>
<u>1 8oz. Wide mouth glass jars</u>	<u>4°C</u>	<u>TPH-DRO/TPH-ORO/PAHs (8015B/8270C)</u>

OVA MEASUREMENTS

Background 0.0 ppm
 Breathing zone NA
 Boring NA
 Headspace 1.8 ppm

SAMPLE DESCRIPTION

DEPTH: 10-18' DESCRIPTION: Silt (SP)- Very dense, dry, light pink, well cemented with very fine grained and poorly graded sand (caliche).

GENERAL COMMENTS

Composite sample was collected with a track hoe bucket.

APPENDIX B

Laboratory Results, Data Reviews, Qualified Data Table, and Chains of Custody

**B.1 Laboratory Reports
(Included on CD)**

**SUMMARY OF SOIL ANALYTICAL DATA FOR REMOVAL ACTION FROM SITE ST-26 (SWMU 48A)
CANNON AFB, NEW MEXICO**

FIELD ID DATE COLLECTED			C26-EAST-20				C26-FLOOR-20				C26-NORTHWALL-20			
			February 24, 2010				February 24, 2010				February 24, 2010			
	Maximum	Frequency	Result	RL	MDL	Qual	Result	RL	MDL	Qual	Result	RL	MDL	Qual
VOLATILE ORGANIC COMPOUNDS (mg/kg)														
Benzene	ND	0 / 5	<	2.00E-03	7.00E-04	U	<	2.00E-03	7.00E-04	U	<	2.00E-03	7.00E-04	U
Ethylbenzene	ND	0 / 5	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U
m,p-Xylene (sum of isomers)	ND	0 / 5	<	6.00E-03	5.00E-04	U	<	6.00E-03	5.00E-04	U	<	6.00E-03	4.00E-04	U
Naphthalene	7.00E-04 F	1 / 5	7.00E-04	6.00E-03	5.00E-04	F	<	6.00E-03	5.00E-04	U	<	6.00E-03	4.00E-04	U
o-Xylene	ND	0 / 5	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U
Toluene	ND	0 / 5	<	6.00E-03	7.00E-04	UB	<	6.00E-03	7.00E-04	UB	<	6.00E-03	7.00E-04	U
POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg)														
2-Methylnaphthalene	ND	0 / 5	<	5.00E-03	9.40E-04	U	<	5.00E-03	9.40E-04	U	<	5.00E-03	9.40E-04	U
Benzo(a)anthracene	ND	0 / 5	<	5.00E-03	9.10E-04	U	<	5.00E-03	9.10E-04	U	<	5.00E-03	9.10E-04	U
Benzo(a)pyrene	ND	0 / 5	<	5.00E-03	9.30E-04	U	<	5.00E-03	9.30E-04	U	<	5.00E-03	9.30E-04	U
Benzo(b)fluoranthene	ND	0 / 5	<	5.00E-03	1.11E-03	U	<	5.00E-03	1.11E-03	U	<	5.00E-03	1.11E-03	U
Benzo(k)fluoranthene	ND	0 / 5	<	5.00E-03	1.04E-03	U	<	5.00E-03	1.04E-03	U	<	5.00E-03	1.04E-03	U
Chrysene	ND	0 / 5	<	5.00E-03	8.50E-04	U	<	5.00E-03	8.50E-04	U	<	5.00E-03	8.50E-04	U
Dibenz(a,h)anthracene	ND	0 / 5	<	5.00E-03	9.20E-04	U	<	5.00E-03	9.20E-04	U	<	5.00E-03	9.20E-04	U
Indeno(1,2,3-cd)pyrene	ND	0 / 5	<	5.00E-03	9.00E-04	U	<	5.00E-03	9.00E-04	U	<	5.00E-03	9.00E-04	U
Naphthalene	ND	0 / 5	<	5.00E-03	8.90E-04	U	<	5.00E-03	8.90E-04	U	<	5.00E-03	8.90E-04	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)														
Diesel Range Organics	5.80E+02	5 / 5	1.50E+01	1.00E+01	1.00E+00		1.20E+02	5.00E+01	5.00E+00		5.80E+02	1.00E+02	1.00E+01	
Gasoline Range Organics	ND	0 / 5	<	1.10E+00	3.40E-01	U	<	1.10E+00	3.40E-01	U	<	1.10E+00	3.30E-01	U
Motor Oils	9.60E+02	5 / 5	4.10E+01	1.00E+01	3.50E+00		2.10E+02	5.00E+01	1.75E+01		9.60E+02	1.00E+02	3.50E+01	

Notes:

mg/kg = milligram per kilogram
 F = Result between MDL and RL
 MDL = Method Detection Limit
 ND = Not Detected
 Qual = Qualifier
 RL = Reporting Limit
 U = Nondetect
 UB = Qualified nondetect due to method blank

**SUMMARY OF SOIL ANALYTICAL DATA FOR REMOVAL ACTION FROM SITE ST-26 (SWMU 48A)
CANNON AFB, NEW MEXICO**

FIELD ID	DATE COLLECTED		C26-SOUTHWALL-20				C26-WEST-20			
			February 24, 2010				February 24, 2010			
	Maximum	Frequency	Result	RL	MDL	Qual	Result	RL	MDL	Qual
VOLATILE ORGANIC COMPOUNDS (mg/kg)										
Benzene	ND	0 / 5	<	2.00E-03	7.00E-04	U	<	2.00E-03	7.00E-04	U
Ethylbenzene	ND	0 / 5	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U
m,p-Xylene (sum of isomers)	ND	0 / 5	<	6.00E-03	4.00E-04	U	<	6.00E-03	4.00E-04	U
Naphthalene	7.00E-04 F	1 / 5	<	6.00E-03	4.00E-04	U	<	6.00E-03	4.00E-04	U
o-Xylene	ND	0 / 5	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U
Toluene	ND	0 / 5	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U
POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg)										
2-Methylnaphthalene	ND	0 / 5	<	5.00E-03	9.40E-04	U	<	5.00E-03	9.40E-04	U
Benzo(a)anthracene	ND	0 / 5	<	5.00E-03	9.10E-04	U	<	5.00E-03	9.10E-04	U
Benzo(a)pyrene	ND	0 / 5	<	5.00E-03	9.30E-04	U	<	5.00E-03	9.30E-04	U
Benzo(b)fluoranthene	ND	0 / 5	<	5.00E-03	1.11E-03	U	<	5.00E-03	1.11E-03	U
Benzo(k)fluoranthene	ND	0 / 5	<	5.00E-03	1.04E-03	U	<	5.00E-03	1.04E-03	U
Chrysene	ND	0 / 5	<	5.00E-03	8.50E-04	U	<	5.00E-03	8.50E-04	U
Dibenz(a,h)anthracene	ND	0 / 5	<	5.00E-03	9.20E-04	U	<	5.00E-03	9.20E-04	U
Indeno(1,2,3-cd)pyrene	ND	0 / 5	<	5.00E-03	9.00E-04	U	<	5.00E-03	9.00E-04	U
Naphthalene	ND	0 / 5	<	5.00E-03	8.90E-04	U	<	5.00E-03	8.90E-04	U
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
Diesel Range Organics	5.80E+02	5 / 5	1.20E+01	1.00E+01	1.00E+00		4.60E+02	1.00E+02	1.00E+01	
Gasoline Range Organics	ND	0 / 5	<	1.10E+00	3.40E-01	U	<	1.10E+00	3.40E-01	U
Motor Oils	9.60E+02	5 / 5	2.70E+01	1.00E+01	3.50E+00		3.60E+02	1.00E+02	3.50E+01	

Notes:

mg/kg = milligram per kilogram

F = Result between MDL and RL

MDL = Method Detection Limit

ND = Not Detected

Qual = Qualifier

RL = Reporting Limit

U = Nondetect

UB = Qualified nondetect due to method blank

**CMI REMOVAL ACTION ANALYTICAL RESULTS FOR FIELD DUPLICATES
COLLECTED AT SITE ST-26 (SWMU 48A), CANNON AFB, NEW MEXICO**

FIELD ID DATE COLLECTED	C26-WEST-20 February 24, 2010				C26-WESTD-20 February 24, 2010				RPD
	Result	RL	MDL	Qual	Result	RL	MDL	Qual	
VOLATILE ORGANIC COMPOUNDS (mg/kg)									
Benzene	<	2.00E-03	7.00E-04	U	<	2.00E-03	7.00E-04	U	< 2X
Ethylbenzene	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U	< 2X
m,p-Xylene (sum of isomers)	<	6.00E-03	4.00E-04	U	<	6.00E-03	4.00E-04	U	< 2X
Naphthalene	<	6.00E-03	4.00E-04	U	1.00E-03	6.00E-03	4.00E-04	F	< 2X
o-Xylene (1,2-Dimethylbenzene)	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U	< 2X
Toluene	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	UB	< 2X
POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg)									
2-Methylnaphthalene	<	5.00E-03	9.40E-04	U	<	5.00E-03	9.40E-04	U	< 2X
Benzo(a)anthracene	<	5.00E-03	9.10E-04	U	<	5.00E-03	9.10E-04	U	< 2X
Benzo(a)pyrene	<	5.00E-03	9.30E-04	U	<	5.00E-03	9.30E-04	U	< 2X
Benzo(b)fluoranthene	<	5.00E-03	1.11E-03	U	<	5.00E-03	1.11E-03	U	< 2X
Benzo(k)fluoranthene	<	5.00E-03	1.04E-03	U	<	5.00E-03	1.04E-03	U	< 2X
Chrysene	<	5.00E-03	8.50E-04	U	<	5.00E-03	8.50E-04	U	< 2X
Dibenz(a,h)anthracene	<	5.00E-03	9.20E-04	U	<	5.00E-03	9.20E-04	U	< 2X
Indeno(1,2,3-cd)pyrene	<	5.00E-03	9.00E-04	U	<	5.00E-03	9.00E-04	U	< 2X
Naphthalene	<	5.00E-03	8.90E-04	U	<	5.00E-03	8.90E-04	U	< 2X
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel Range Organics	4.60E+02	1.00E+02	1.00E+01		4.90E+02	1.00E+02	1.00E+01		< 2X
Gasoline Range Organics	<	1.10E+00	3.40E-01	U	<	1.10E+00	3.40E-01	U	< 2X
Motor Oils	3.60E+02	1.00E+02	3.50E+01		3.70E+02	1.00E+02	3.50E+01		< 2X

Notes:

RPD was calculated for results greater than 5X the reporting limit

mg/kg = milligram per kilogram

< = Less than the Reporting Limit

< 2X = Difference between sample results was less than two times the reporting limit

F = Result between MDL and RL

ID = identification

MDL = Method Detection Limit

Qual = Qualifier

RPD = Relative Percent Difference

RL = Reporting Limit

U = Nondetect

UB = Qualified nondetect due to method blank

B.2 Data Reviews

Cannon AFB Data Review

Laboratory SDG: 60996

Reviewer: Tony Sedlacek

Date Reviewed: 4/07/2010

Guidance: HQ Air Force Center for Environmental Excellence Quality Assurance Project Plan Final Version 4.0.01

Applicable QAPP: Cannon AFB ST-26 (SWMU 48A) and AOC 36 QAPP (URS 2007)

Sample Identification #	Sample Identification #
C26-EAST-20	C26-WEST D-20
C26-FLOOR-20	C26-NORTHWALL-20
C26-WEST-20	C26-SOUTHWALL-20

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that TPH-DRO surrogate recoveries were outside evaluation criteria. TPH-ORO (Motor Oils) and VOC MS/MSD recoveries were outside evaluation criteria. Analytes were diluted due to high levels of target analytes. Toluene was detected in the method blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated no problems or discrepancies were encountered.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

Field ID	Parameter	Analyte	Qualification
----------	-----------	---------	---------------

N/A			
-----	--	--	--

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration	Units
AH100225-BLK	VOCs	Toluene	0.0007	mg/kg

Qualifications due to blank contamination are included in the table below. Analytical data that were reported nondetect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

Field ID	Parameter	Analyte	New RL	Qualification
C26-EAST-20	VOCs	Toluene	-	UB
C26-WEST D-20	VOCs	Toluene	-	UB
C26-FLOOR-20	VOCs	Toluene	-	UB

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

LCS ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/RPD Criteria
N/A					

Analytical data that required qualification based on LCS data are included in the table below.

Field ID	Parameter	Analyte	Qualification
N/A			

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Field ID	Parameter	Surrogate	Recovery	Criteria
----------	-----------	-----------	----------	----------

C26-WEST D-20	TPH-DRO	<i>o</i> -Terphenyl	149	47-142
C26-NORTHWALL-20	TPH-DRO	Octacosane	225	25-162
C26-NORTHWALL-20	TPH-DRO	<i>o</i> -Terphenyl	171	47-142
C26-WEST-20	TPH-DRO	<i>o</i> -Terphenyl	152	47-142

Analytical data that required qualification based on surrogate data are included in the table below. Surrogate recoveries outside evaluation criteria were associated with sample results that exceeded the calibration range of the instrument. These samples were diluted and all surrogate recoveries were within evaluation criteria, no qualification of data was required.

Field ID	Parameter	Analyte	Qualification
N/A			

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample C26-SOUTHWALL-20 was spiked and analyzed for TPH-DRO, TPH-ORO (Motor Oil), TPH-GRO, VOCs and PAHs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
C26-SOUTHWALL-20	TPH-ORO	Motor Oil	46.3/47.0	0.7	51-153/50
C26-SOUTHWALL-20	VOCs	Benzene	81.4/ 71.6	12.9	73-126/30
C26-SOUTHWALL-20	VOCs	Ethylbenzene	77.3/ 69.9	10.1	74-127/30
C26-SOUTHWALL-20	VOCs	m,p-Xylene	76.1/68.7	10.3	79-126/30
C26-SOUTHWALL-20	VOCs	<i>o</i> -Xylene	77.1/ 68.9	11.2	77-125/30
C26-SOUTHWALL-20	VOCs	Toluene	81.4/ 69.9	15.3	71-127/30
C26-SOUTHWALL-20	VOCs	Xylenes (total)	76.5/68.8	10.6	77-125/30

Analytical data that required qualification based on MS/MSD data are included in the table below. The AFCEE QAPP Version 4.0.01 indicates that organic data should not be qualified based on MS/MSD data alone and LCS recoveries were within evaluation criteria, therefore no qualification of the data was required.

Field ID	Parameter	Analyte	Qualification
N/A			

8.0 Laboratory Duplicate Results

Were laboratory duplicate samples analyzed as part of this SDG?

No

Were laboratory duplicate sample RPDs within criteria?

N/A

Field ID	Parameter	Analyte	RPD	Criteria
N/A				

Data qualified due to outlying laboratory duplicate recoveries are identified below:

Field ID	Parameter	Analyte	Qualification
N/A			

9.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
C26-WEST-20	C26-WEST D-20

Were field duplicates within evaluation criteria?

Yes

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
N/A					

10.0 Sample Dilutions

For samples which were diluted, were undiluted results also reported?

Analytes were detected in samples that were diluted.

The following table identifies the analyses which were reported as nondetect, diluted, and an undiluted run *was not* reported:

Field ID	Parameter	Dilution Factor
N/A		

11.0 Additional Qualifications

Were additional qualifications applied?

No

B.3 Qualified Data Table

SUMMARY OF DATA QUALIFICATIONS

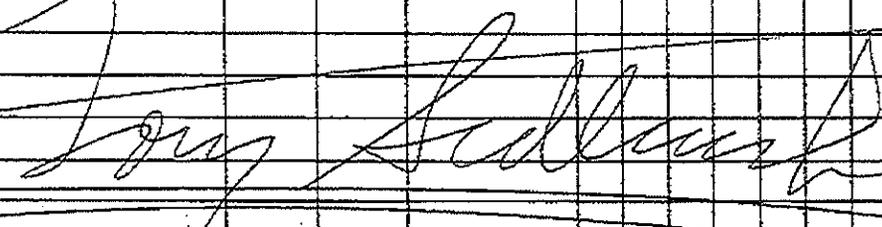
SDG	Field ID	Matrix	Analysis	Analyte	NEW URS		Code	Comments
					RL	Qual.		
60996	C26-EAST-20	Soil	VOCs	Toluene	-	UB	MB	Method Blank Contamination
60996	C26-WESTD-20	Soil	VOCs	Toluene	-	UB	MB	Method Blank Contamination
60996	C26-FLOOR-20	Soil	VOCs	Toluene	-	UB	MB	Method Blank Contamination

ID Identification
 MB Method Blank Contamination
 Qual Qualification
 RL Reporting Limit
 SDG Sample Delivery Group
 UB Nondetect due to blank contamination
 URS URS Group, Inc.
 VOCs Volatile Organic Compounds

B.4 Chains of Custody

Project Name ST-26 (SUMY CBA) Cont Removl				Project No. 16170215-00300				Analytical Parameters			
Project Location Cannon AFB				Project Manager Jeff Vopike				<div style="transform: rotate(-45deg); font-size: small;"> BTEX + Non-Halogenes (2015B) TPH-GP (2015B) TPH-DB (2015B) TPH-OPD (2015B) Low Level PAHs (2015B) </div>			
Sampler(s) Tony Sedlacek, Skip Wrightson											
Sample		Type		Sample Identification		Matrix					
Date	Time	Comp.	Grab					No.	Type	Remarks	
2/24/10	1536		X	C26-East-20		Soil		2	40ml vials	X	40C
			X	"				2	40ml vials	X	40C
			X	"				2	40ml vials	X	40C
			X	"				1	40ml vials	X	40C
		X		"				1	Bottle	X X X	40C
	1400		X	C26-West D-20				2	40ml vials	X	40C
			X	"				1	40ml vials	X	40C
			X	"				2	40ml vials	X	40C
			X	"				1	40ml vials	X	40C
		X		"				1	Bottle	X X X	40C
	1558		X	C26-Floor-20				2	40ml vials	X	40C
			X	"				1	40ml vials	X	40C
			X	"				2	40ml vials	X	40C
			X	"				1	40ml vials	X	40C

Signatures		Date	Time	Shipping Details	Special Instructions
Relinquished by: <i>Tony Sedlacek</i>		2/24/10	1730	Method of Shipment FedEx	24 Hr. TAT on all Sample. PAH analyze list per email. Email results to Tony Sedlacek and Jeff Aust.
Received by:				Airbill No. 871256892749	
Relinquished by:				Lab Address	
Received for Laboratory by: <i>[Signature]</i>		2/25/10	1100		

Project Name SF-26 (Sumner AFB) Contaminated				Project No. 16170215				Analytical Parameters											
Project Location Sumner AFB				Project Manager Jeff Mueller				<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> BTEX + Naphthalene TPH - GCS TPH - DCS TPH - DRO Low Level PAMS </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> BTEX </div> </div>											
Sampler(s) Tony Sedlacek, Skye Wrightson																			
Sample		Type		Sample Identification	Matrix	Containers										Remarks			
Date	Time	Comp.	Grab			No.	Type												
2/24/03	1558	X	Flow	C-26-Flow-20	Soil	1	8oz Jar	X	X	X						40C + water			
	1614		X	C-26 - Northwell - 20	Soil	2	4oz L VOA	X								40C + water			
			X	"		1	4oz L VOA	X								40C + water			
			X	"		2	4oz L VOA	X								40C + water			
			X	"		1	4oz L VOA	X								40C + water			
		X		"		1	8oz Jar		X	X	X					40C + water			
												11							
Signatures				Date	Time	Shipping Details				Special Instructions									
Relinquished by: Tony Sedlacek				2/24/03	1730	Method of Shipment FedEx				24 hr TAT small samples. PAMS analyze list per email Email results to Tony Sedlacek and Jeff Austin									
Received by:						Airbill No. 8712 5689 2749													
Relinquished by:						Lab Address APPLab 908 North Temperance Ave Chavis CA, 93611													
Received for Laboratory by:				4/2/10	1100														

12120 Shawrock Plaza Suite 300, Omaha, NE 68154 (402) 334-3181 Fax (402) 334-1984

Project Name ST-26 (SWMU 48A) CMT				Project No. 16170245.00300				Analytical Parameters					
Project Location Canon AFB				Project Manager Jeff Voelker				<div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;"> BTEX + Metals (8015B) TPH - G/B (8015B) TPH - DRD (8015B) TPH - O/B (8015B) Low Carb PAHs (8015B) </div>					
Sampler(s) Tony Sedlacek, Skip Wrightson													
Sample		Type		Sample Identification	Matrix	Containers		Remarks					
Date	Time	Comp.	Grab			No.	Type						
	1544		X	C26 - West - 20	Soil	2	40mL VOA vials	X					40C
			X	"		1	40mL VOA vial	X					40C
			X	"		2	40mL VOA vial	X					40C
			X	"		1	40mL VOA vial	X					40C
		X	.	"		1	8oz Jar		X	X	X		40C
	1622		X	C26 - Southwall. - 20		6	40mL VOA vials	X					40C + MS/MSD
			X	"		3	40mL VOA vial	X					40C + MS/MSD
			X	"		6	40mL VOA vials	X					40C + MS/MSD
			X	"		3	40mL VOA vial	X					40C + MS/MSD
		X		"		2	8oz Jar		X	X	X		40C + MS/MSD
Signatures				Date	Time	Shipping Details			Special Instructions				
Relinquished by: <i>Tony Sedlacek</i>				2/24/10	1730	Method of Shipment Fedex			24 Hr. TAT for all Analyses. PAH analyte list per email. Email results to Tony Sedlacek and Jeff Aot.				
Received by:						Airbill No. 871256892749							
Relinquished by:						Lab Address APPL Lab 908 North Tennessee Ave Clavis CA 93611							
Received for Laboratory by: <i>[Signature]</i>				2/25/10	1600								

**SAFETY COMPLIANCE AGREEMENT AND
DOCUMENTATION OF SITE SAFETY BRIEFING**

DATE 2-24-10 TIME 1121

SITE LOCATION Cannon AFB - SF-26 (SWMU 48A) PROJECT NUMBER 16170215.00300

SITE SAFETY OFFICER Tony Sedlacek PROJECT MANAGER Jeff Voelker

TOPICS COVERED DURING BRIEFING:

- EXTENT AND CONCENTRATION OF CHEMICAL HAZARDS ON SITE
- HEALTH EFFECTS OF CHEMICALS HAZARDS
- PHYSICAL HAZARDS ON SITE
- LEVELS OF PROTECTION REQUIRED
- LOCATION OF EMERGENCY EQUIPMENT (FIRST AID, FIRE FIGHTING EQUIPMENT...)
- VERIFICATION THAT HEALTH AND SAFETY PLAN HAS BEEN RECEIVED AND READ
- MONITORING PROCEDURES
- ACTION LEVELS
- DECONTAMINATION PROCEDURES
- LOCATION OF EMERGENCY NUMBERS
- ROUTE TO THE HOSPITAL

Discussed haul rates, cell phone compliance, PPE requirements

I, the undersigned, have received a copy of the safety plan for the referenced project. I have read the plan, understand it, and agree to comply with all of the health and safety requirements. I understand that I may be prohibited from working on the project for violating any of the requirements. In addition I have been verbally briefed on the topics noted above.

DOCUMENTATION (SSO MUST SEE
VERIFICATION BEFORE INITIALLING
COLUMN)

ATTENDEES:

NAME	COMPANY	40 HR	FIT	MEDICAL
1.(print) <u>Tony Sedlacek</u>	<u>URS</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(signature) <u>Tony Sedlacek</u>				
2.(print) <u>Skip Wright</u>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(signature) <u>dhg</u>	<u>URS</u>			
3.(print) <u>Justin Roberts</u>	<u>DDSI</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(signature) <u>Justin Roberts</u>				

SAFETY COMPLIANCE AGREEMENT AND DOCUMENTATION OF SITE SAFETY BRIEFING - Page 2

I, the undersigned, have received a copy of the safety plan for the referenced project. I have read the plan, understand it, and agree to comply with all of the health and safety requirements. I understand that I may be prohibited from working on the project for violating any of the requirements. In addition I have been verbally briefed on the topics noted above.

DOCUMENTATION (SSO MUST SEE VERIFICATION BEFORE INITIALLING COLUMN)

ATTENDEES:

NAME	COMPANY	40 HR	FIT	MEDICAL
4.(print) <u>Brandon Price</u> (signature) <u>[Signature]</u>	<u>DDSI</u>	<input checked="" type="checkbox"/>		
5.(print) <u>P. Amino Acosta</u> (signature) <u>[Signature]</u>	<u>DDSI</u>	<input checked="" type="checkbox"/>		
6.(print) <u>Eric Johnson</u> (signature) <u>[Signature]</u>	<u>DDSI</u>	<input checked="" type="checkbox"/>		
7.(print) _____ (signature) _____				
8.(print) _____ (signature) _____				
9.(print) _____ (signature) _____				
10.(print) _____ (signature) _____				
11.(print) _____ (signature) _____				
12.(print) _____ (signature) _____				

Daily Safety Task Analysis

JOB/TASK Obtain Signatures for Dig Permit

DATE 2-22-10

Work Area Cannon AFB (Base-wide)

Permits(s) Required and attached YES NO

Major Steps of Task	Recognized/Unanticipated Hazards	Safe Plan	Tools Required to do the job safely
Mobilization to Base	Traffic	CMR Health and Safety Plan	None
Driving around Base	Traffic	"	"
Demobilization from Base	Traffic	"	"

Other Items discussed during the Safety Briefing:
No cell phones will driving, speed limit.

Adjacent Work/Processes and/or co-occupancy Yes No Other workers adjacent, above, below
 Notified them of our presence Coordinated with adjacent work supervisor/customer operator. Can work safely

TEAM MEMBERS SIGNATURES

Jerry Sedlaczek _____
AWC (Skip Wrightson) _____

The signature of the Supervisor certifies the completion of the Hazard Assessment and Safe Plan of Action by the crew.

Supervisor's Signature: Jerry Sedlaczek Date 2/22/10

Instructions: 1. Write the name of the job or task in the space provided. 2. Conduct a walk-through survey of work area. 3. Write the steps of the task in a safe sequence. 4. List all possible hazards involved in each step as well as reaction to failure. 5. In the Safe Plan column, provide the corrective actions that will be taken to keep the hazard from becoming an accident or injury. 6. In Tools column list tools needed to do the job, additional safety equipment, etc. 7. Have each team member that helped develop and will use this STA sign in the spaces provided at the bottom. 8. Review the STA at the end of the task for improvements. (NOTE: THE WORK SHALL STOP IF CONDITIONS CHANGE, JOB CHANGES, OR DEFICIENCY IN PLAN IS NOTED.)

Safe Plan of Action Checklist (Check the items that apply)

Permits/Clearances	Hazards	Safe Plan		
<input checked="" type="checkbox"/> Utility Clearance Obtained				
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Overhead Utilities	<input type="checkbox"/> Power de-energization required <input type="checkbox"/> Required clearance distance = _____ ft.		
<input type="checkbox"/> Critical Lift	<input type="checkbox"/> Crane or other Lifting Equipment	<input type="checkbox"/> Signalman assigned <input type="checkbox"/> Tag lines in use <input type="checkbox"/> Lifting equipment inspected		
<input type="checkbox"/> Hoisting & Rigging Safety Review	<input type="checkbox"/> Underground Utilities	<input type="checkbox"/> Reviewed as-bulbs <input type="checkbox"/> Required clearance distance = _____ ft.		
<input type="checkbox"/> Boom Assembly and Breakdown	<input type="checkbox"/> Electrical	<input type="checkbox"/> Lock Out/Tag Out/Try Out? <input type="checkbox"/> Reviewed electrical safety procedures		
<input type="checkbox"/> Boom Proximity	<input type="checkbox"/> Excavations	<input type="checkbox"/> Permits <input type="checkbox"/> Inspected prior to entering <input type="checkbox"/> Barricades provided <input type="checkbox"/> Access/egress provided		
<input type="checkbox"/> Concrete Structure Penetration	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Permit <input type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Unnecessary flammable material removed		
<input type="checkbox"/> Soil Excavation	<input type="checkbox"/> Vehicular Traffic or Heavy Equipment	<input type="checkbox"/> Traffic Barricades <input type="checkbox"/> Cones <input type="checkbox"/> Signs <input type="checkbox"/> Communication with equipment operator		
<input type="checkbox"/> Pneumatic Test	<input type="checkbox"/> Noise > 85 dB	Hearing protection is required: <input type="checkbox"/> Ear plugs <input type="checkbox"/> Ear muffs		
<input type="checkbox"/> Hot Work	<input type="checkbox"/> Hand & Power Tools:	<input type="checkbox"/> Inspect general condition <input type="checkbox"/> GFCI in use <input type="checkbox"/> Reviewed safety requirements in operators manual(s) <input type="checkbox"/> List sharp tools, material, equipment		
<input type="checkbox"/> Scaffolding Erection Plan	<input type="checkbox"/> Hand Hazards	<input type="checkbox"/> PPE gloves, etc. <input type="checkbox"/> Protected sharp edges as necessary <input type="checkbox"/> Additional info below		
<input type="checkbox"/> Steel Erection/Decking/Flooring/ Grating Checklist	<input type="checkbox"/> Manual Lifting	<input type="checkbox"/> Reviewed proper lifting tech. <input type="checkbox"/> Hand protection required <input type="checkbox"/> Back support belts <input type="checkbox"/> Additional information below		
<input type="checkbox"/> Request for Shutdown	<input type="checkbox"/> Ladders	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Ladder tied off <input type="checkbox"/> Proper angle and placement <input type="checkbox"/> Reviewed ladder safety		
<input type="checkbox"/> Electrically Hazardous Work	<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Toe boards used <input type="checkbox"/> Footings adequate <input type="checkbox"/> Tags in place <input type="checkbox"/> Properly secured <input type="checkbox"/> Materials properly stored on scaffold		
<input type="checkbox"/> Radiation Work Permit for Visitors	<input type="checkbox"/> Slips, Trips, Falls	<input type="checkbox"/> Inspect for trip hazards <input type="checkbox"/> Hazards marked <input type="checkbox"/> Extension cords properly secured <input type="checkbox"/> Work zone free of debris <input type="checkbox"/> Tools & material properly stored <input type="checkbox"/> Additional information below		
Required PPE				
<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Pinch Points	List potential pinch points: <input type="checkbox"/> Working near operating equipment <input type="checkbox"/> Hand/Body positioning <input type="checkbox"/> Additional information below		
<input type="checkbox"/> Ear Plugs/Ear Muffs	<input type="checkbox"/> Working w/Chemicals	<input type="checkbox"/> The task creates potential for direct contact with hazardous chemicals. <input type="checkbox"/> Reviewed MSDS hazards and precautions <input type="checkbox"/> Have identified proper PPE (respirators, clothing, gloves, etc.) <input type="checkbox"/> Have proper containers and labels		
Eye Protection				
<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> Heat Stress Potential	<input type="checkbox"/> Heat stress monitoring (>85° F; 29.4° C) <input type="checkbox"/> Liquids available <input type="checkbox"/> Sun Screen <input type="checkbox"/> Reviewed Heat Stress symptoms		
<input type="checkbox"/> Face Shield	<input type="checkbox"/> Cold Stress Potential	<input type="checkbox"/> Proper clothing (i.e., gloves, coat, coveralls) <input type="checkbox"/> Reviewed Cold Stress symptoms <input type="checkbox"/> Warm up periods <input type="checkbox"/> Additional information below		
<input type="checkbox"/> Chemical Goggles	<input type="checkbox"/> Environmental	<input type="checkbox"/> Air emissions <input type="checkbox"/> Water discharge <input type="checkbox"/> Pollution prevention <input type="checkbox"/> Hazardous wastes <input type="checkbox"/> Other wastes <input type="checkbox"/> Waste minimization		
<input type="checkbox"/> Welding Hood	<input type="checkbox"/> Natural or Site Hazards	<input type="checkbox"/> Weather <input type="checkbox"/> Terrain <input type="checkbox"/> Animals/reptiles/insects hazards <input type="checkbox"/> Adjacent operations or processes <input type="checkbox"/> Biological hazards		
Hand Protection				
<input type="checkbox"/> Cut Resistant Gloves	<input type="checkbox"/> Overhead Work	<input type="checkbox"/> Caution barricade tape required <input type="checkbox"/> Rigid railing required <input type="checkbox"/> Covers over opening <input type="checkbox"/> Danger barricade tape required <input type="checkbox"/> Warning signs required		
<input type="checkbox"/> Welders Gloves	Additional Information			
<input type="checkbox"/> Nitrile Gloves	<p style="font-size: 1.2em; margin: 0;"><i>Items above were not applicable for obtaining signatures on dig permit.</i></p>			
<input type="checkbox"/> Surgical Gloves				
<input type="checkbox"/> Rubber Gloves				
<input type="checkbox"/> Electrical Insulated Gloves				
<input type="checkbox"/> Arm Sleeves				
Foot Protection				
<input type="checkbox"/> Safety Toe Boots				
<input type="checkbox"/> Rubber Boots				
<input type="checkbox"/> Rubber Boot Covers				
<input type="checkbox"/> Dielectric Footwear				
Respiratory Protection				
<input type="checkbox"/> Dust Mask (NIOSH)				
<input type="checkbox"/> Air Purifying Respirator				
<input type="checkbox"/> Supplied Air Respirator				
<input type="checkbox"/> SCBA				
<input type="checkbox"/> Emergency Escape Respirator				
Special Clothing				
<input type="checkbox"/> Tyvek®				
<input type="checkbox"/> Poly Coated Tyvek®				
<input type="checkbox"/> NOMEX®				
<input type="checkbox"/> Rain Suit				
Fall Protection				
<input type="checkbox"/> Harness				
<input type="checkbox"/> Double Lanyard Required				
<input type="checkbox"/> Anchorage Point Available				

Daily Safety Task Analysis

JOB/TASK Layout Excavation Limits

DATE 2/23/10

Work Area Cannon AFB (Base) ST-26 (SWMU 48A)

Permits(s) Required and attached YES NO

Major Steps of Task:	Recognized/Unanticipated Hazards:	Safe Plan:	Tools Required to do the job safely:
Mobilization to Base	Traffic	CMI Health and Safety Plan	None
Walking with GPS	Slips, Trips and falls	"	"
Demobilization from Base	Traffic	"	"

Other Items discussed during the Safety Briefing:

Since there is still snow and some ice on asphalt parking lot, beware of slips, trips and falls. Maintain good footing

Adjacent Work/Processes and/or co-occupancy Yes No Other workers adjacent, above, below
 Notified them of our presence Coordinated with adjacent work supervisor/customer operator Can work safely

TEAM MEMBERS SIGNATURES

Tony Sedlach _____

The signature of the Supervisor certifies the completion of the Hazard Assessment and Safe Plan of Action by the crew.

Supervisor's Signature: Tony Sedlach Date 2/23/10

Instructions: 1. Write the name of the job or task in the space provided. 2. Conduct a walk-through survey of work area. 3. Write the steps of the task in a safe sequence. 4. List all possible hazards involved in each step as well as reaction to failure. 5. In the Safe Plan column, provide the corrective actions that will be taken to keep the hazard from becoming an accident or injury. 6. In Tools column list tools needed to do the job, additional safety equipment, etc. 7. Have each team member that helped develop and will use this STA sign in the spaces provided at the bottom. 8. Review the STA at the end of the task for improvements. (NOTE: THE WORK SHALL STOP IF CONDITIONS CHANGE, JOB CHANGES, OR DEFICIENCY IN PLAN IS NOTED.)

Safe Plan of Action Checklist (Check the items that apply)

Permits/Clearances	Hazards	Safe Plan
<input checked="" type="checkbox"/> Utility Clearance Obtained		
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Overhead Utilities	<input type="checkbox"/> Power de-energization required <input type="checkbox"/> Required clearance distance = _____ ft.
<input type="checkbox"/> Critical Lift	<input type="checkbox"/> Crane or other Lifting Equipment	<input type="checkbox"/> Signalman assigned <input type="checkbox"/> Tag lines in use <input type="checkbox"/> Lifting equipment inspected
<input type="checkbox"/> Hoisting & Rigging Safety Review	<input type="checkbox"/> Underground Utilities	<input type="checkbox"/> Reviewed as-builts <input type="checkbox"/> Required clearance distance = _____ ft.
<input type="checkbox"/> Boom Assembly and Breakdown	<input type="checkbox"/> Electrical	<input type="checkbox"/> Lock Out/Tag Out/Try Out? <input type="checkbox"/> Reviewed electrical safety procedures
<input type="checkbox"/> Boom Proximity	<input type="checkbox"/> Excavations	<input type="checkbox"/> Permits <input type="checkbox"/> Inspected prior to entering <input type="checkbox"/> Barricades provided <input type="checkbox"/> Access/egress provided
<input type="checkbox"/> Concrete Structure Penetration	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Permit <input type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Unnecessary flammable material removed
<input type="checkbox"/> Soil Excavation	<input type="checkbox"/> Vehicular Traffic or Heavy Equipment	<input type="checkbox"/> Traffic Barricades <input type="checkbox"/> Cones <input type="checkbox"/> Signs <input type="checkbox"/> Communication with equipment operator
<input type="checkbox"/> Pneumatic Test	<input type="checkbox"/> Noise > 85 dB	Hearing protection is required: <input type="checkbox"/> Ear plugs <input type="checkbox"/> Ear muffs
<input type="checkbox"/> Hot Work	<input type="checkbox"/> Hand & Power Tools:	<input type="checkbox"/> Inspect general condition <input type="checkbox"/> GFCI in use <input type="checkbox"/> Reviewed safety requirements in operators manual(s) <input type="checkbox"/> List sharp tools, material, equipment
<input type="checkbox"/> Scaffolding Erection Plan	<input type="checkbox"/> Hand Hazards	<input type="checkbox"/> PPE gloves, etc. <input type="checkbox"/> Protected sharp edges as necessary <input type="checkbox"/> Additional info below
<input type="checkbox"/> Steel Erection/Decking/Flooring/Grating Checklist	<input type="checkbox"/> Manual Lifting	<input type="checkbox"/> Reviewed proper lifting tech. <input type="checkbox"/> Hand protection required <input type="checkbox"/> Back support belts <input type="checkbox"/> Identified material requiring lifting equipment <input type="checkbox"/> Additional information below
<input type="checkbox"/> Request for Shutdown	<input type="checkbox"/> Ladders	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Ladder tied off <input type="checkbox"/> Proper angle and placement <input type="checkbox"/> Ladder inspected within last quarter <input type="checkbox"/> Reviewed ladder safety
<input type="checkbox"/> Electrically Hazardous Work	<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Toe boards used <input type="checkbox"/> Footings adequate <input type="checkbox"/> Tags in place <input type="checkbox"/> Properly secured <input type="checkbox"/> Materials properly stored on scaffold
<input type="checkbox"/> Radiation Work Permit for Visitors	<input type="checkbox"/> Slips, Trips, Falls	<input type="checkbox"/> Inspect for trip hazards <input type="checkbox"/> Hazards marked <input type="checkbox"/> Extension cords properly secured <input type="checkbox"/> Work zone free of debris <input type="checkbox"/> Tools & material properly stored <input type="checkbox"/> Additional information below
Required PPE		<input type="checkbox"/> List potential pinch points:
<input type="checkbox"/> Hard Hat		<input type="checkbox"/> Working near operating equipment <input type="checkbox"/> Hand/Body positioning <input type="checkbox"/> Additional information below
<input type="checkbox"/> Ear Plugs/Ear Muffs		<input type="checkbox"/> The task creates potential for direct contact with hazardous chemicals. <input type="checkbox"/> Reviewed MSDS hazards and precautions <input type="checkbox"/> Have proper containers and labels
Eye Protection		<input type="checkbox"/> Have identified proper PPE (respirators, clothing, gloves, etc.) <input type="checkbox"/> Heat stress monitoring (>85° F; 29.4° C) <input type="checkbox"/> Liquids available <input type="checkbox"/> Sun Screen <input type="checkbox"/> Reviewed Heat Stress symptoms
<input type="checkbox"/> Safety Glasses		<input type="checkbox"/> Cool down periods <input type="checkbox"/> Additional info below
<input type="checkbox"/> Face Shield		<input type="checkbox"/> Proper clothing (i.e., gloves, coat, coveralls) <input type="checkbox"/> Reviewed Cold Stress symptoms <input type="checkbox"/> Warm up periods <input type="checkbox"/> Additional information below
<input type="checkbox"/> Chemical Goggles		<input type="checkbox"/> Air emissions <input type="checkbox"/> Water discharge <input type="checkbox"/> Pollution prevention <input type="checkbox"/> Hazardous wastes <input type="checkbox"/> Other wastes <input type="checkbox"/> Waste minimization
<input type="checkbox"/> Welding Hood		<input type="checkbox"/> Weather <input type="checkbox"/> Terrain <input type="checkbox"/> Animals/reptiles/insects hazards <input type="checkbox"/> Adjacent operations or processes <input type="checkbox"/> Biological hazards
Hand Protection		
<input type="checkbox"/> Cut Resistant Gloves		
<input type="checkbox"/> Welders Gloves		
<input type="checkbox"/> Nitrile Gloves		
<input type="checkbox"/> Surgical Gloves		
<input type="checkbox"/> Rubber Gloves		
<input type="checkbox"/> Electrical Insulated Gloves		
<input type="checkbox"/> Arm Sleeves		
Foot Protection		
<input type="checkbox"/> Safety Toe Boots		
<input type="checkbox"/> Rubber Boots		
<input type="checkbox"/> Rubber Boot Covers		
<input type="checkbox"/> Dielectric Footwear		
Respiratory Protection		
<input type="checkbox"/> Dust Mask (NIOSH)		
<input type="checkbox"/> Air Purifying Respirator		
<input type="checkbox"/> Supplied Air Respirator		
<input type="checkbox"/> SCBA		
<input type="checkbox"/> Emergency Escape Respirator		
Special Clothing		
<input type="checkbox"/> Tyvek®		
<input type="checkbox"/> Poly Coated Tyvek®		
<input type="checkbox"/> NOMEX®		
<input type="checkbox"/> Rain Suit		
Fall Protection		
<input type="checkbox"/> Harness		
<input type="checkbox"/> Double Lanyard Required		
<input type="checkbox"/> Anchorage Point Available		
Additional Information		
Items above were not applicable for Laying out Excavation Limits.		

Daily Safety Task Analysis

JOB/TASK Excavating TPH impacted Soil

DATE 2/24/10

Work Area ST-26 (SLMU 48A)

Permits(s) Required and attached YES NO

Major Steps of Task:	Recognized/Unanticipated Hazards:	Safe Plan:	Tools Required to do the job safely:
Mobilization to Site	Traffic	CM I Health and Safety Plan	None
Unload heavy equipment	Heavy equipment moving	"	None
Excavate Soil	Heavy equipment	"	Track Hoe
Collect Samples (Confirmation)	Heavy equipment, contaminated soil	"	Terra Cor Samplers, Track hoe bucket
Demobilization from Site	Traffic	"	None

Other Items discussed during the Safety Briefing:

Proper PPE, overhead hazards from track hoe, contaminated soil concentrations, route to hospital, PID monitoring

Adjacent Work/Processes and/or co-occupancy Yes No Other workers adjacent, above, below
 Notified them of our presence Coordinated with adjacent work supervisor/customer operator Can work safely

TEAM MEMBERS SIGNATURES

Tony Sedlaczek _____
See safety compliance agreement form _____

The signature of the Supervisor certifies the completion of the Hazard Assessment and Safe Plan of Action by the crew.

Supervisor's Signature: Tony Sedlaczek Date 2/24/10

Instructions: 1. Write the name of the job or task in the space provided. 2. Conduct a walk-through survey of work area. 3. Write the steps of the task in a safe sequence. 4. List all possible hazards involved in each step as well as reaction to failure. 5. In the Safe Plan column, provide the corrective actions that will be taken to keep the hazard from becoming an accident or injury. 6. In Tools column list tools needed to do the job, additional safety equipment, etc. 7. Have each team member that helped develop and will use this STA sign in the spaces provided at the bottom. 8. Review the STA at the end of the task for improvements. (NOTE: THE WORK SHALL STOP IF CONDITIONS CHANGE, JOB CHANGES, OR DEFICIENCY IN PLAN IS NOTED.)

Safe Plan of Action Checklist (Check the items that apply)

Permits/Clearances	Hazards	Safe Plan	
<input checked="" type="checkbox"/> Utility Clearance Obtained			
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Overhead Utilities	<input type="checkbox"/> Power de-energization required	<input type="checkbox"/> Insulation blankets required <input type="checkbox"/> Wire watcher required
<input type="checkbox"/> Critical Lift		<input type="checkbox"/> Required clearance distance = _____ ft.	<input type="checkbox"/> Safe work zone marked
<input type="checkbox"/> Hoisting & Rigging Safety Review	<input type="checkbox"/> Crane or other Lifting Equipment	<input type="checkbox"/> Signman assigned <input type="checkbox"/> Tag lines in use	<input type="checkbox"/> Area around crane barricaded
<input type="checkbox"/> Boom Assembly and Breakdown		<input type="checkbox"/> Lifting equipment inspected	<input type="checkbox"/> Personnel protected from overhead load
<input type="checkbox"/> Boom Proximity	<input type="checkbox"/> Underground Utilities	<input type="checkbox"/> Reviewed as-built	<input type="checkbox"/> Subsurface surveys <input checked="" type="checkbox"/> Received dig permit
<input type="checkbox"/> Concrete Structure Penetration		<input type="checkbox"/> Required clearance distance = _____ ft.	<input type="checkbox"/> Safe work zone marked
<input checked="" type="checkbox"/> Soil Excavation	<input type="checkbox"/> Electrical	<input type="checkbox"/> Lock Out/Tag Out/Try Out?	<input type="checkbox"/> Permit required <input type="checkbox"/> Confirm that equipment is de-energized
<input type="checkbox"/> Pneumatic Test		<input type="checkbox"/> Reviewed electrical safety procedures	<input type="checkbox"/> Additional info below
<input type="checkbox"/> Hot Work	<input checked="" type="checkbox"/> Excavations	<input type="checkbox"/> Permits <input type="checkbox"/> Inspected prior to entering	<input type="checkbox"/> Proper sloping/shoring
<input type="checkbox"/> Scaffolding Erection Plan		<input checked="" type="checkbox"/> Barricades provided <input checked="" type="checkbox"/> Access/egress provided	<input type="checkbox"/> Protection from accumulated water
<input type="checkbox"/> Steel Erection/Decking/Flooring/ Grating Checklist	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Permit <input type="checkbox"/> Fire Extinguishers	<input type="checkbox"/> Fire watch <input type="checkbox"/> Adjacent area protected
<input type="checkbox"/> Request for Shutdown		<input type="checkbox"/> Unnecessary flammable material removed	<input type="checkbox"/> Additional info below
<input type="checkbox"/> Electrically Hazardous Work	<input checked="" type="checkbox"/> Vehicular Traffic or Heavy Equipment	<input checked="" type="checkbox"/> Traffic Barricades <input type="checkbox"/> Cones <input checked="" type="checkbox"/> Signs	<input type="checkbox"/> Flagmen <input type="checkbox"/> Lane closure
<input type="checkbox"/> Radiation Work Permit for Visitors		<input checked="" type="checkbox"/> Communication with equipment operator	<input type="checkbox"/> Additional information below
Required PPE			
<input checked="" type="checkbox"/> Hard Hat	<input checked="" type="checkbox"/> Noise > 85 dB	Hearing protection is required: <input checked="" type="checkbox"/> Ear plugs <input type="checkbox"/> Ear muffs	<input type="checkbox"/> Both <input type="checkbox"/> Additional info below
<input checked="" type="checkbox"/> Ear Plugs/Ear Muffs	<input type="checkbox"/> Hand & Power Tools:	<input type="checkbox"/> Inspect general condition <input type="checkbox"/> GFCI In use	<input type="checkbox"/> Identified PEP required for each tool
Eye Protection		<input type="checkbox"/> Reviewed safety requirements in operators manual(s)	<input type="checkbox"/> Guarding OK <input type="checkbox"/> Additional info below
<input checked="" type="checkbox"/> Safety Glasses	<input type="checkbox"/> Hand Hazards	<input type="checkbox"/> List sharp tools, material, equipment	
<input type="checkbox"/> Face Shield		<input checked="" type="checkbox"/> PPE gloves, etc. <input type="checkbox"/> Protected sharp edges as necessary	<input type="checkbox"/> Additional info below
<input type="checkbox"/> Chemical Goggles	<input type="checkbox"/> Manual Lifting	<input type="checkbox"/> Reviewed proper lifting tech.	<input type="checkbox"/> Identified material requiring lifting equipment
<input type="checkbox"/> Welding Hood		<input checked="" type="checkbox"/> Hand protection required <input type="checkbox"/> Back support belts	<input type="checkbox"/> Additional information below
Hand Protection			
<input type="checkbox"/> Cut Resistant Gloves	<input type="checkbox"/> Ladders	<input type="checkbox"/> Inspect general condition before use	<input type="checkbox"/> Ladder inspected within last quarter
<input type="checkbox"/> Welders Gloves		<input type="checkbox"/> Ladder tied off <input type="checkbox"/> Proper angle and placement	<input type="checkbox"/> Reviewed ladder safety
<input checked="" type="checkbox"/> Nitrile Gloves	<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Inspect general condition before use	<input type="checkbox"/> Tags in place <input type="checkbox"/> Properly secured
<input type="checkbox"/> Surgical Gloves		<input type="checkbox"/> Toe boards used <input type="checkbox"/> Footings adequate	<input type="checkbox"/> Materials properly stored on scaffold
<input type="checkbox"/> Rubber Gloves	<input checked="" type="checkbox"/> Slips, Trips, Falls	<input checked="" type="checkbox"/> Inspect for trip hazards <input type="checkbox"/> Hazards marked	<input type="checkbox"/> Tools & material properly stored
<input type="checkbox"/> Electrical Insulated Gloves		<input type="checkbox"/> Extension cords properly secured <input type="checkbox"/> Work zone free of debris	<input type="checkbox"/> Additional information below
<input type="checkbox"/> Arm Sleeves	<input checked="" type="checkbox"/> Pinch Points	List potential pinch points:	
Foot Protection		<input checked="" type="checkbox"/> Working near operating equipment <input type="checkbox"/> Hand/Body positioning	<input type="checkbox"/> Additional information below
<input checked="" type="checkbox"/> Safety Toe Boots	<input checked="" type="checkbox"/> Working w/Chemicals	<input type="checkbox"/> The task creates potential for direct contact with hazardous chemicals.	<input checked="" type="checkbox"/> Have proper containers and labels
<input type="checkbox"/> Rubber Boots		<input type="checkbox"/> Reviewed MSDS hazards and precautions	
<input type="checkbox"/> Rubber Boot Covers	<input type="checkbox"/> Heat Stress Potential	<input checked="" type="checkbox"/> Have identified proper PPE (respirators, clothing, gloves, etc.)	
<input type="checkbox"/> Dielectric Footwear		<input type="checkbox"/> Heat stress monitoring (>85° F; 29.4° C) <input type="checkbox"/> Liquids available	<input type="checkbox"/> Cool down periods
Respiratory Protection		<input type="checkbox"/> Sun Screen <input type="checkbox"/> Reviewed Heat Stress symptoms	<input type="checkbox"/> Additional info below
<input type="checkbox"/> Dust Mask (NIOSH)	<input type="checkbox"/> Cold Stress Potential	<input checked="" type="checkbox"/> Proper clothing (i.e., gloves, coat, coveralls)	<input type="checkbox"/> Wind chill (<32° F; 0° C)
<input type="checkbox"/> Air Purifying Respirator		<input type="checkbox"/> Reviewed Cold Stress symptoms <input type="checkbox"/> Warm up periods	<input type="checkbox"/> Additional information below
<input type="checkbox"/> Supplied Air Respirator	<input checked="" type="checkbox"/> Environmental	<input checked="" type="checkbox"/> Air emissions <input type="checkbox"/> Water discharge	<input type="checkbox"/> Hazardous wastes <input checked="" type="checkbox"/> Other wastes
<input type="checkbox"/> SCBA		<input type="checkbox"/> Pollution prevention	<input type="checkbox"/> Waste minimization
<input type="checkbox"/> Emergency Escape Respirator	<input type="checkbox"/> Natural or Site Hazards	<input checked="" type="checkbox"/> Weather <input type="checkbox"/> Terrain	<input type="checkbox"/> Adjacent operations or processes <input type="checkbox"/> Biological hazards
Special Clothing		<input type="checkbox"/> Animals/reptiles/insects hazards	
<input type="checkbox"/> Tyvek®	<input type="checkbox"/> Overhead Work	<input checked="" type="checkbox"/> Caution barricade tape required	<input type="checkbox"/> Danger barricade tape required
<input type="checkbox"/> Poly Coated Tyvek®		<input type="checkbox"/> Rigid railing required <input type="checkbox"/> Covers over opening	<input type="checkbox"/> Warning signs required
<input type="checkbox"/> NOMEX®	Additional Information		
<input type="checkbox"/> Rain Suit			
Fall Protection			
<input type="checkbox"/> Harness			
<input type="checkbox"/> Double Lanyard Required			
<input type="checkbox"/> Anchorage Point Available			

Daily Safety Task Analysis

JOB/TASK Surveying Excavation and previous borings

DATE 2/25/10

Work Area Cannon AFB ST-26 (SWMU 48A)

Permits(s) Required and attached YES NO

Major Steps of Task	Recognized/Unanticipated Hazards	Safe Plan	Tools Required to do the job safely
Mobilization to Base	Traffic	CMI Health and Safety Plan	NONE
Surveying	Slips, Trips, Falls	"	GPS unit
Demobilization from Base	Traffic	"	None

Other Items discussed during the Safety Briefing:

Adjacent Work/Processes and/or co-occupancy Yes No Other workers adjacent, above, below
 Notified them of our presence Coordinated with adjacent work supervisor/customer operator Can work safely

TEAM MEMBERS SIGNATURES

Tony Sedlueh _____

The signature of the Supervisor certifies the completion of the Hazard Assessment and Safe Plan of Action by the crew.

Supervisor's Signature: Tony Sedlueh Date 2/25/10

Instructions: 1. Write the name of the job or task in the space provided. 2. Conduct a walk-through survey of work area. 3. Write the steps of the task in a safe sequence. 4. List all possible hazards involved in each step as well as reaction to failure. 5. In the Safe Plan column, provide the corrective actions that will be taken to keep the hazard from becoming an accident or injury. 6. In Tools column list tools needed to do the job, additional safety equipment, etc. 7. Have each team member that helped develop and will use this STA sign in the spaces provided at the bottom. 8. Review the STA at the end of the task for improvements. (NOTE: THE WORK SHALL STOP IF CONDITIONS CHANGE, JOB CHANGES, OR DEFICIENCY IN PLAN IS NOTED.)

Safe Plan of Action Checklist (Check the items that apply)

Permits/Clearances	Hazards	Safe Plan	
<input checked="" type="checkbox"/> Utility Clearance Obtained			
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Overhead Utilities	<input type="checkbox"/> Power de-energization required	<input type="checkbox"/> Insulation blankets required <input type="checkbox"/> Wire watcher required
<input type="checkbox"/> Critical Lift		<input type="checkbox"/> Required clearance distance = _____ ft.	<input type="checkbox"/> Safe work zone marked
<input type="checkbox"/> Hoisting & Rigging Safety Review	<input type="checkbox"/> Crane or other Lifting Equipment	<input type="checkbox"/> Signalman assigned <input type="checkbox"/> Tag lines in use	<input type="checkbox"/> Area around crane barricaded
<input type="checkbox"/> Boom Assembly and Breakdown		<input type="checkbox"/> Lifting equipment inspected	<input type="checkbox"/> Personnel protected from overhead load
<input type="checkbox"/> Boom Proximity	<input type="checkbox"/> Underground Utilities	<input type="checkbox"/> Reviewed as-builts	<input checked="" type="checkbox"/> Subsurface surveys <input checked="" type="checkbox"/> Received dig permit
<input type="checkbox"/> Concrete Structure Penetration		<input type="checkbox"/> Required clearance distance = _____ ft.	<input type="checkbox"/> Safe work zone marked
<input type="checkbox"/> Soil Excavation	<input type="checkbox"/> Electrical	<input type="checkbox"/> Lock Out/Tag Out/Try Out?	<input type="checkbox"/> Permit required <input type="checkbox"/> Confirm that equipment is de-energized
<input type="checkbox"/> Pneumatic Test		<input type="checkbox"/> Reviewed electrical safety procedures	<input type="checkbox"/> Additional Info below
<input type="checkbox"/> Hot Work	<input checked="" type="checkbox"/> Excavations	<input type="checkbox"/> Permits <input type="checkbox"/> Inspected prior to entering	<input type="checkbox"/> Proper sloping/shoring
<input type="checkbox"/> Scaffolding Erection Plan		<input type="checkbox"/> Barricades provided <input type="checkbox"/> Access/egress provided	<input type="checkbox"/> Protection from accumulated water
<input type="checkbox"/> Steel Erection/Decking/Flooring/ Grating Checklist	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Permit <input type="checkbox"/> Fire Extinguishers	<input type="checkbox"/> Fire watch <input type="checkbox"/> Adjacent area protected
<input type="checkbox"/> Request for Shutdown		<input type="checkbox"/> Unnecessary flammable material removed	<input type="checkbox"/> Additional Info below
<input type="checkbox"/> Electrically Hazardous Work	<input checked="" type="checkbox"/> Vehicular Traffic or Heavy Equipment	<input type="checkbox"/> Traffic Barricades <input type="checkbox"/> Cones <input type="checkbox"/> Signs	<input type="checkbox"/> Flagmen <input type="checkbox"/> Lane closure
<input type="checkbox"/> Radiation Work Permit for Visitors		<input type="checkbox"/> Communication with equipment operator	<input type="checkbox"/> Additional Information below
Required PPE		<input type="checkbox"/> Noise > 85 dB	Hearing protection is required: <input type="checkbox"/> Ear plugs <input type="checkbox"/> Ear muffs
<input type="checkbox"/> Hard Hat			<input type="checkbox"/> Both <input type="checkbox"/> Additional Info below
<input type="checkbox"/> Ear Plugs/Ear Muffs	<input type="checkbox"/> Hand & Power Tools:	<input type="checkbox"/> Inspect general condition <input type="checkbox"/> GFCI in use	<input type="checkbox"/> Identified PEP required for each tool
Eye Protection		<input type="checkbox"/> Reviewed safety requirements in operators manual(s)	<input type="checkbox"/> Guarding OK <input type="checkbox"/> Additional info below
<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> Hand Hazards	<input type="checkbox"/> List sharp tools, material, equipment	
<input type="checkbox"/> Face Shield		<input type="checkbox"/> PPE gloves, etc. <input type="checkbox"/> Protected sharp edges as necessary	<input type="checkbox"/> Additional Info below
<input type="checkbox"/> Chemical Goggles	<input checked="" type="checkbox"/> Manual Lifting	<input type="checkbox"/> Reviewed proper lifting tech.	<input type="checkbox"/> Identified material requiring lifting equipment
<input type="checkbox"/> Welding Hood		<input type="checkbox"/> Hand protection required <input type="checkbox"/> Back support belts	<input type="checkbox"/> Additional information below
Hand Protection		<input type="checkbox"/> Inspect general condition before use	<input type="checkbox"/> Ladder inspected within last quarter
<input type="checkbox"/> Cut Resistant Gloves	<input type="checkbox"/> Ladders	<input type="checkbox"/> Ladder tied off <input type="checkbox"/> Proper angle and placement	<input type="checkbox"/> Reviewed ladder safety
<input type="checkbox"/> Welders Gloves	<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Inspect general condition before use	<input type="checkbox"/> Tags in place <input type="checkbox"/> Properly secured
<input type="checkbox"/> Nitrile Gloves		<input type="checkbox"/> Toe boards used <input type="checkbox"/> Footings adequate	<input type="checkbox"/> Materials properly stored on scaffold
<input type="checkbox"/> Surgical Gloves	<input checked="" type="checkbox"/> Slips, Trips, Falls	<input checked="" type="checkbox"/> Inspect for trip hazards <input type="checkbox"/> Hazards marked	<input type="checkbox"/> Tools & material properly stored
<input type="checkbox"/> Rubber Gloves		<input type="checkbox"/> Extension cords properly secured <input type="checkbox"/> Work zone free of debris	<input type="checkbox"/> Additional Information below
<input type="checkbox"/> Electrical Insulated Gloves	<input type="checkbox"/> Pinch Points	List potential pinch points:	
<input type="checkbox"/> Arm Sleeves		<input type="checkbox"/> Working near operating equipment <input type="checkbox"/> Hand/Body positioning	<input type="checkbox"/> Additional Information below
Foot Protection		<input type="checkbox"/> The task creates potential for direct contact with hazardous chemicals.	
<input checked="" type="checkbox"/> Safety Toe Boots	<input type="checkbox"/> Working w/Chemicals	<input type="checkbox"/> Reviewed MSDS hazards and precautions	<input type="checkbox"/> Have proper containers and labels
<input type="checkbox"/> Rubber Boots		<input type="checkbox"/> Have identified proper PPE (respirators, clothing, gloves, etc.)	
<input type="checkbox"/> Rubber Boot Covers	<input type="checkbox"/> Heat Stress Potential	<input type="checkbox"/> Heat stress monitoring (>85° F; 29.4° C) <input type="checkbox"/> Liquids available	<input type="checkbox"/> Cool down periods
<input type="checkbox"/> Dielectric Footwear		<input type="checkbox"/> Sun Screen <input type="checkbox"/> Reviewed Heat Stress symptoms	<input type="checkbox"/> Additional Info below
Respiratory Protection		<input type="checkbox"/> Proper clothing (i.e., gloves, coat, coveralls)	<input type="checkbox"/> Wind chill (<32° F; 0° C)
<input type="checkbox"/> Dust Mask (NIOSH)	<input type="checkbox"/> Cold Stress Potential	<input type="checkbox"/> Reviewed Cold Stress symptoms <input type="checkbox"/> Warm up periods	<input type="checkbox"/> Additional information below
<input type="checkbox"/> Air Purifying Respirator		<input type="checkbox"/> Air emissions <input type="checkbox"/> Water discharge	<input type="checkbox"/> Hazardous wastes <input type="checkbox"/> Other wastes
<input type="checkbox"/> Supplied Air Respirator	<input checked="" type="checkbox"/> Environmental	<input type="checkbox"/> Pollution prevention	<input type="checkbox"/> Waste minimization
<input type="checkbox"/> SCBA		<input checked="" type="checkbox"/> Weather <input checked="" type="checkbox"/> Terrain	<input type="checkbox"/> Adjacent operations or processes <input type="checkbox"/> Biological hazards
<input type="checkbox"/> Emergency Escape Respirator	<input checked="" type="checkbox"/> Natural or Site Hazards	<input type="checkbox"/> Animals/reptiles/insects hazards	
Special Clothing		<input type="checkbox"/> Caution barricade tape required	<input type="checkbox"/> Danger barricade tape required
<input type="checkbox"/> Tyvek®	<input type="checkbox"/> Overhead Work	<input type="checkbox"/> Rigid railing required <input type="checkbox"/> Covers over opening	<input type="checkbox"/> Warning signs required
<input type="checkbox"/> Poly Coated Tyvek®		Additional Information	
<input type="checkbox"/> NOMEX®			
<input type="checkbox"/> Rain Suit			
Fall Protection			
<input type="checkbox"/> Harness			
<input type="checkbox"/> Double Lanyard Required			
<input type="checkbox"/> Anchorage Point Available			

Daily Safety Task Analysis

JOB/TASK

Backfill excavation and asphalt restoration

DATE

2/26/10

Work Area

ST-26 (SWMU 48A)

Permits(s) Required and attached

YES

NO

Major Steps of Task:	Recognized/Unanticipated Hazards:	Safe Plan:	Tools Required to do the job safely:
Mobilization	Traffic	CMI Health and Safety Plan	None
Unloading/Loading Heavy Equipment	Moving equipment	"	Heavy equipment
Backfill excavation	Heavy Equipment	"	Brooms, Heavy equipment
Asphalt restoration	Chemical, Heavy equipment	"	Heavy equipment (Roller)
Demobilization	Traffic	"	None

Other Items discussed during the Safety Briefing:

Adjacent Work/Processes and/or co-occupancy Yes No Other workers adjacent, above, below
 Notified them of our presence Coordinated with adjacent work supervisor/customer operator Can work safely

TEAM MEMBERS SIGNATURES

Tony Sedlarch _____

The signature of the Supervisor certifies the completion of the Hazard Assessment and Safe Plan of Action by the crew.

Supervisor's Signature: Tony Sedlarch Date 2/26/10

Instructions: 1. Write the name of the job or task in the space provided. 2. Conduct a walk-through survey of work area. 3. Write the steps of the task in a safe sequence. 4. List all possible hazards involved in each step as well as reaction to failure. 5. In the Safe Plan column, provide the corrective actions that will be taken to keep the hazard from becoming an accident or injury. 6. In Tools column list tools needed to do the job, additional safety equipment, etc. 7. Have each team member that helped develop and will use this STA sign in the spaces provided at the bottom. 8. Review the STA at the end of the task for improvements. (NOTE: THE WORK SHALL STOP IF CONDITIONS CHANGE, JOB CHANGES, OR DEFICIENCY IN PLAN IS NOTED.)

Safe Plan of Action Checklist (Check the items that apply)

Permits/Clearances	Hazards	Safe Plan
<input checked="" type="checkbox"/> Utility Clearance Obtained		
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Overhead Utilities	<input type="checkbox"/> Power de-energization required <input type="checkbox"/> Required clearance distance = _____ ft. <input type="checkbox"/> Insulation blankets required <input type="checkbox"/> Wire watcher required
<input type="checkbox"/> Critical Lift	<input checked="" type="checkbox"/> Crane or other Lifting Equipment	<input type="checkbox"/> Signalman assigned <input type="checkbox"/> Tag lines in use <input type="checkbox"/> Safe work zone marked <input type="checkbox"/> Area around crane barricaded
<input type="checkbox"/> Hoisting & Rigging Safety Review	<input type="checkbox"/> Underground Utilities	<input type="checkbox"/> Lifting equipment inspected <input type="checkbox"/> Personnel protected from overhead load <input type="checkbox"/> Subsurface surveys <input type="checkbox"/> Received dig permit
<input type="checkbox"/> Boom Assembly and Breakdown	<input type="checkbox"/> Electrical	<input type="checkbox"/> Reviewed as-bulbts <input type="checkbox"/> Required clearance distance = _____ ft. <input type="checkbox"/> Safe work zone marked
<input type="checkbox"/> Boom Proximity	<input checked="" type="checkbox"/> Excavations	<input type="checkbox"/> Lock Out/Tag Out/Try Out? <input type="checkbox"/> Permit required <input type="checkbox"/> Confirm that equipment is de-energized <input type="checkbox"/> Reviewed electrical safety procedures <input type="checkbox"/> Additional info below
<input type="checkbox"/> Concrete Structure Penetration	<input type="checkbox"/> Fire Hazard	<input type="checkbox"/> Permits <input checked="" type="checkbox"/> Inspected prior to entering <input type="checkbox"/> Proper sloping/shoring <input checked="" type="checkbox"/> Barricades provided <input checked="" type="checkbox"/> Access/egress provided <input type="checkbox"/> Protection from accumulated water
<input type="checkbox"/> Soil Excavation	<input checked="" type="checkbox"/> Vehicular Traffic or Heavy Equipment	<input type="checkbox"/> Permit <input type="checkbox"/> Fire Extinguishers <input type="checkbox"/> Fire watch <input type="checkbox"/> Adjacent area protected <input type="checkbox"/> Unnecessary flammable material removed <input type="checkbox"/> Additional info below
<input type="checkbox"/> Pneumatic Test	<input checked="" type="checkbox"/> Noise > 85 dB	<input checked="" type="checkbox"/> Traffic Barricades <input type="checkbox"/> Cones <input checked="" type="checkbox"/> Signs <input type="checkbox"/> Flagmen <input type="checkbox"/> Lane closure <input checked="" type="checkbox"/> Communication with equipment operator <input type="checkbox"/> Additional Information below
<input type="checkbox"/> Hot Work	<input type="checkbox"/> Hand & Power Tools:	Hearing protection is required: <input checked="" type="checkbox"/> Ear plugs <input type="checkbox"/> Ear muffs <input type="checkbox"/> Both <input type="checkbox"/> Additional info below
<input type="checkbox"/> Scaffolding Erection Plan	<input type="checkbox"/> Hand Hazards	<input type="checkbox"/> Inspect general condition <input type="checkbox"/> GFCI in use <input type="checkbox"/> Identified PEP required for each tool <input type="checkbox"/> Reviewed safety requirements in operators manual(s) <input type="checkbox"/> Guarding OK <input type="checkbox"/> Additional info below
<input type="checkbox"/> Steel Erection/Decking/Flooring/ Grating Checklist	<input type="checkbox"/> Manual Lifting	<input type="checkbox"/> List sharp tools, material, equipment <input type="checkbox"/> PPE gloves, etc. <input type="checkbox"/> Protected sharp edges as necessary <input type="checkbox"/> Additional info below
<input type="checkbox"/> Request for Shutdown	<input type="checkbox"/> Ladders	<input type="checkbox"/> Reviewed proper lifting tech. <input type="checkbox"/> Identified material requiring lifting equipment <input type="checkbox"/> Hand protection required <input type="checkbox"/> Back support belts <input type="checkbox"/> Additional information below
<input type="checkbox"/> Electrically Hazardous Work	<input type="checkbox"/> Scaffolds	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Ladder tied off <input type="checkbox"/> Proper angle and placement <input type="checkbox"/> Ladder inspected within last quarter <input type="checkbox"/> Reviewed ladder safety
<input type="checkbox"/> Radiation Work Permit for Visitors	<input checked="" type="checkbox"/> Slips, Trips, Falls	<input type="checkbox"/> Inspect general condition before use <input type="checkbox"/> Toe boards used <input type="checkbox"/> Footings adequate <input type="checkbox"/> Tags in place <input type="checkbox"/> Properly secured <input type="checkbox"/> Materials properly stored on scaffold
Required PPE	<input checked="" type="checkbox"/> Pinch Points	<input type="checkbox"/> Inspect for trip hazards <input type="checkbox"/> Hazards marked <input type="checkbox"/> Tools & material properly stored <input type="checkbox"/> Additional information below
<input checked="" type="checkbox"/> Hard Hat		List potential pinch points: <input checked="" type="checkbox"/> Working near operating equipment <input type="checkbox"/> Hand/Body positioning <input type="checkbox"/> Additional information below
<input checked="" type="checkbox"/> Ear Plugs/Ear Muffs	<input type="checkbox"/> Working w/Chemicals	<input type="checkbox"/> The task creates potential for direct contact with hazardous chemicals. <input type="checkbox"/> Reviewed MSDS hazards and precautions <input type="checkbox"/> Have proper containers and labels
Eye Protection	<input type="checkbox"/> Heat Stress Potential	<input type="checkbox"/> Have identified proper PPE (respirators, clothing, gloves, etc.) <input type="checkbox"/> Heat stress monitoring (>85° F; 29.4° C) <input type="checkbox"/> Liquids available <input type="checkbox"/> Cool down periods <input type="checkbox"/> Additional info below
<input checked="" type="checkbox"/> Safety Glasses	<input type="checkbox"/> Cold Stress Potential	<input type="checkbox"/> Sun Screen <input type="checkbox"/> Reviewed Heat Stress symptoms <input type="checkbox"/> Additional information below
<input type="checkbox"/> Face Shield	<input type="checkbox"/> Environmental	<input type="checkbox"/> Proper clothing (i.e., gloves, coat, coveralls) <input type="checkbox"/> Reviewed Cold Stress symptoms <input type="checkbox"/> Warm up periods <input type="checkbox"/> Additional information below
<input type="checkbox"/> Chemical Goggles	<input checked="" type="checkbox"/> Natural or Site Hazards	<input type="checkbox"/> Air emissions <input type="checkbox"/> Water discharge <input type="checkbox"/> Hazardous wastes <input type="checkbox"/> Other wastes <input type="checkbox"/> Pollution prevention <input type="checkbox"/> Waste minimization
<input type="checkbox"/> Welding Hood	<input type="checkbox"/> Overhead Work	<input type="checkbox"/> Weather <input type="checkbox"/> Terrain <input type="checkbox"/> Adjacent operations or processes <input type="checkbox"/> Biological hazards
Hand Protection		<input type="checkbox"/> Animals/reptiles/insects hazards <input type="checkbox"/> Caution barricade tape required <input type="checkbox"/> Danger barricade tape required
<input type="checkbox"/> Cut Resistant Gloves		<input type="checkbox"/> Rigid railing required <input type="checkbox"/> Covers over opening <input type="checkbox"/> Warning signs required
<input type="checkbox"/> Welders Gloves		Additional Information
<input type="checkbox"/> Nitrile Gloves		
<input type="checkbox"/> Surgical Gloves		
<input type="checkbox"/> Rubber Gloves		
<input type="checkbox"/> Electrical Insulated Gloves		
<input type="checkbox"/> Arm Sleeves		
Foot Protection		
<input checked="" type="checkbox"/> Safety Toe Boots		
<input type="checkbox"/> Rubber Boots		
<input type="checkbox"/> Rubber Boot Covers		
<input type="checkbox"/> Dielectric Footwear		
Respiratory Protection		
<input type="checkbox"/> Dust Mask (NIOSH)		
<input type="checkbox"/> Air Purifying Respirator		
<input type="checkbox"/> Supplied Air Respirator		
<input type="checkbox"/> SCBA		
<input type="checkbox"/> Emergency Escape Respirator		
Special Clothing		
<input type="checkbox"/> Tyvek®		
<input type="checkbox"/> Poly Coated Tyvek®		
<input type="checkbox"/> NOMEX®		
<input type="checkbox"/> Rain Suit		
Fall Protection		
<input type="checkbox"/> Harness		
<input type="checkbox"/> Double Lanyard Required		
<input type="checkbox"/> Anchorage Point Available		

DAILY QUALITY CONTROL REPORT

Date **21-Feb-10**

Day	S	M	T	W	TH	F	S
	X						

Site Name and Location Site ST-26 (SWMU 48A),
Cannon AFB, New Mexico

AFCEE Project Manager Dana McIntyre
 Project CMI Removal Action
 Project No. 16170215.00300
 Contract No. FA8903-04-D-8679

On Site Hours	0
Travel Time	8
Office Time	0

Weather	Bright Sun	Clear	Overcast	Rain	Snow
			X		
Temp	To 32	32-50	50-70	70-85	85 up
	X				
Wind	Still	Moderate	High	Report No. 1	
		X			
Humidity	Dry	Moderate	Humid		
	X				

Subcontractors on Site:

None

Equipment on Site:

None

Visitors on Site:

None

URS Personnel on Site:

None

Field Work Performed (including sampling):

URS personnel mobilized to Clovis.

Quality Control Activities (including field calibration):

None

Health and Safety and Activities:

None

Observations/Problems Encountered/Corrective Action Taken:

None

By *Tony Sedlacek*

Title *Field Manager*

DAILY QUALITY CONTROL REPORT

Date **22-Feb-10**

Day	S	M	T	W	TH	F	S
		X					

Site Name and Location Site ST-26 (SWMU 48A),
Cannon AFB, New Mexico

AFCEE Project Manager Dana McIntyre
Project CMI Removal Action
Project No. 16170215.00300
Contract No. FA8903-04-D-8679

On Site Hours	7
Travel Time	1
Office Time	0

Weather	Bright Sun	Clear	Overcast	Rain	Snow
			X		
Temp	To 32	32-50	50-70	70-85	85 up
	X				
Wind	Still	Moderate	High	Report No. 2	
		X			
Humidity	Dry	Moderate	Humid		
	X				

Subcontractors on Site:

None

Equipment on Site:

None

Visitors on Site:

Sgt. Clayton - Base security, Phil Carr - Base Civil Engineering, Jim - Quest Communications

URS Personnel on Site:

Tony Sedlacek, Skip Wrightson

Field Work Performed (including sampling):

Obtained the required base signatures for dig permit (utility clearance).

Quality Control Activities (including field calibration):

None

Health and Safety and Activities:

None

Observations/Problems Encountered/Corrective Action Taken:

None

By *Tony Sedlacek*

Title *Field Manager*

DAILY QUALITY CONTROL REPORT

Date **23-Feb-10**

Day	S	M	T	W	TH	F	S
			X				

Site Name and Location Site ST-26 (SWMU 48A),
Cannon AFB, New Mexico

AFCEE Project Manager Dana McIntyre
Project CMI Removal Action
Project No. 16170215.00300
Contract No. FA8903-04-D-8679

On Site Hours	2
Travel Time	1
Office Time	0

Weather	Bright Sun X	Clear	Overcast	Rain	Snow
Temp	To 32	32-50 X	50-70	70-85	85 up
Wind	Still	Moderate	High X	Report No.	
Humidity	Dry X	Moderate	Humid	3	

Subcontractors on Site:

None

Equipment on Site:

Trimble / Geo XH (GPS Unit)

Visitors on Site:

None

URS Personnel on Site:

Tony Sedlacek and Skip Wrightson

Field Work Performed (including sampling):

Marked out excavation limits on asphalt around 1995 soil boring 4806 with paint. Troubleshot GPS issues with Jeff Zaleski (URS Omaha office). The GPS could not maintain positional fix and kept jumping around. Due to GPS issues, historical soil boring locations were verified by measuring from and using the man hole at Site ST-26 as a benchmark. In addition, nearby reference points coordinates (i.e., stop sign, light pole) were collected to determine the GPS unit could get a repeatable location fix.

Quality Control Activities (including field calibration):

None

Health and Safety and Activities:

None

Observations/Problems Encountered/Corrective Action Taken:

Snow and ice on roads, waited for temperature to melt ice and snow from roads.
GPS unit would not maintain location fix - Called Jeff Zaleski (URS Omaha Office)

By *Tony Sedlacek*

Title *Field Manager*

DAILY QUALITY CONTROL REPORT

Date **24-Feb-10**

Day	S	M	T	W	TH	F	S
				X			

Site Name and Location Site ST-26 (SWMU 48A),
Cannon AFB, New Mexico

AFCEE Project Manager Dana McIntyre
Project CMI Removal Action
Project No. 16170215.00300
Contract No. FA8903-04-D-8679

On Site Hours	9
Travel Time	1
Office Time	0

Weather	Bright Sun X	Clear	Overcast	Rain	Snow
Temp	To 32	32-50 X	50-70	70-85	85 up
Wind	Still	Moderate X	High	Report No. 4	
Humidity	Dry X	Moderate	Humid		

Subcontractors on Site:

Diamondback Disposal Services Inc. - Justin Roberts, Brandon Price, Ramiro Acosta, Zane Turnbow

Equipment on Site:

Caterpillar 325B Series Trackhoe, MiniRae PID
Husqvarna K960 Concrete Saw

Visitors on Site:

Kyle Craig- K. Barnett & Sons - (Asphalt Subcontractor to Diamondback)

URS Personnel on Site:

Tony Sedlacek, Skip Wrightson

Field Work Performed (including sampling):

The asphalt marked with paint in the area of 1994 boring 4806 was cut with an concrete saw to define the horizontal limit of excavation and aid in removing the asphalt. The top 7 feet of the excavated soil was stockpiled as overburden that will be used as backfill material. The trench was excavated to dimensions of 4 feet x 7 feet x 19 feet. Hydrocarbon odors were identified in the excavated soils and the excavation was expanded to dimensions 6 feet x 14 feet x 19.9 feet. No evidence of staining was observed. All PID readings very low level and were characteristic of moisture in the soil. Confirmation samples were collected using the excavator bucket. The wall samples were collected from approximately 10-to-18 feet and the floor was collected from the depth of excavation ~ 19.9 feet. The following confirmation samples were collected: C26-East-20, C26-West-20, C26-Northwall-20, C26-Southwall-20, and C26-Floor-20. Samples were submitted to APPL Laboratories and results were requested for 24 hour turn around time.

Quality Control Activities (including field calibration):

Calibration of MiniRae 2000 PID
Field duplicate sample C26-WestD-20 was a duplicate of sample C26-West-20
Matrix spike / matrix spike duplicate sample C26-Southwall-20

Health and Safety and Activities:

Completed tailgate Health and Safety Tailgate Meeting. Conducted Health and Safety Monitoring with PID during excavation.

Observations/Problems Encountered/Corrective Action Taken:

None

By *Tony Sedlacek*

Title *Field Manager*

DAILY QUALITY CONTROL REPORT

Date **25-Feb-10**

Day	S	M	T	W	TH	F	S
					X		

Site Name and Location Site ST-26 (SWMU 48A),
Cannon AFB, New Mexico

AFCEE Project Manager Dana McIntyre
Project CMI Removal Action
Project No. 16170215.00300
Contract No. FA8903-04-D-8679

On Site Hours	2
Travel Time	1
Office Time	3

Weather	Bright Sun	Clear	Overcast	Rain	Snow
			X		
Temp	To 32	32-50	50-70	70-85	85 up
		X			
Wind	Still	Moderate	High	Report No. 5	
		X			
Humidity	Dry	Moderate	Humid		
	X				

Subcontractors on Site:

Lydick Surveyors and Engineers - Carl King, Dusty Bass

Equipment on Site:

Caterpillar 325B Series Trackhoe

Visitors on Site:

None

URS Personnel on Site:

Tony Sedlacek

Field Work Performed (including sampling):

Skip Wrightson mobilized back to URS Office in Albuquerque, New Mexico. The excavaton limits were surveyed by Carl King and Dusty Bass of Lydick Surveyors and Engineers. The soil borings completed during previous investigations that were not covered by soil stockpiles were also surveyed.

Quality Control Activities (including field calibration):

None

Health and Safety and Activities:

None

Observations/Problems Encountered/Corrective Action Taken:

None

By *Tony Sedlacek*

Title *Field Manager*

DAILY QUALITY CONTROL REPORT

Date **26-Feb-10**

Day	S	M	T	W	TH	F	S
						X	

Site Name and Location Site ST-26 (SWMU 48A),
Cannon AFB, New Mexico

AFCEE Project Manager Dana McIntyre
Project CMI Removal Action
Project No. 16170215.00300
Contract No. FA8903-04-D-8679

On Site Hours	0
Travel Time	3
Office Time	0

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	32-50	50-70	70-85	85 up
Wind	Still	Moderate	High	Report No. 6	
Humidity	Dry	Moderate	Humid		

Subcontractors on Site:

Diamondback Excavation

Equipment on Site:

Visitors on Site:

Billy Clayton, Lance Langdon - Lydick Engineers and Surveyors
Mr. Jake Wheeldon - Cannon AFB

URS Personnel on Site:

Tony Sedlacek

Field Work Performed (including sampling):

The excavated was back filled, first with the overburden stockpile and then with the clean engineered caliche base course material. The backfilled material was compacted in two foot lifts. The final two foot lift was track rolled with the back hoe. The entire excavated area was swept, equipment was loaded and barricades were put at both ends other backfilled excavation area. The asphalt restoration was unable to be completed due to cold weather. Note: The asphalt restoration was later completed on March 10, 2010 by K. Barnett and Sons, Inc.

Quality Control Activities (including field calibration):

Calibration of MiniRae 2000 PID

Health and Safety and Activities:

Tailgate Meeting

Observations/Problems Encountered/Corrective Action Taken:

Diamondback's track hoe would not start. Jump started and loaded on trailer.

By *Tony Sedlacek*

Title *Field Manager*

DAILY QUALITY CONTROL REPORT

Date **27-Feb-10**

Day	S	M	T	W	TH	F	S
							X

Site Name and Location Site ST-26 (SWMU-48A),
Cannon AFB, New Mexico

On Site Hours	0
Travel Time	4
Office Time	0

AFCEE Project Manager Dana McIntyre
Project CMI Removal Action
Project No. 16170215.00300
Contract No. FA8903-04-D-8679

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	32-50	50-70	70-85	85 up
Wind	Still	Moderate	High	Report No. 7	
Humidity	Dry	Moderate	Humid		

Subcontractors on Site:

None

Equipment on Site:

None

Visitors on Site:

None

URS Personnel on Site:

None

Field Work Performed (including sampling):

URS personnel demobilized from Clovis.

Quality Control Activities (including field calibration):

None

Health and Safety and Activities:

None

Observations/Problems Encountered/Corrective Action Taken:

None

By *Tony Sedlacek*

Title *Field Manager*

FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo No. 01

Date: 24-Feb-10

Description:

Initial excavation limits around 1994 soil boring 4806.



Photo No. 02

Date: 24-Feb-10

Description:

Cutting asphalt parking lot cap to establish excavation limits and to remove asphalt.



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal
Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo No. 03 Date: 24-Feb-10

Description:

Starting excavation and loading asphalt into transportation vehicle.



Photo No. 04 Date: 24-Feb-10

Description:

Excavating TPH-impacted soil.



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal
Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo No. 05 Date: 24-Feb-10

Description:

Final excavation limits.



Photo No. 06 Date: 25-Feb-10

Description:

Secure excavation area with covered TPH-impacted stockpile.



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal
Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo No. 07	Date: 25-Feb-10
---------------------	---------------------------

Description:

Damaged asphalt from track hoe that required repair.



Photo No. 08	Date: 26-Feb-10
---------------------	---------------------------

Description:

Diamondback Disposal Services Inc. (Excavation Subcontractor) backfilling excavation.



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG		
Site ST-26 (SWMU 48A) CMI Removal Action Cannon Air Force Base, New Mexico	AFCEE	Contract No. FA8903-04-D-8679 Task Order 0079

Photo No. 09	Date: 26-Feb-10
Description: Diamondback Disposal Services Inc. preparing final subgrade.	



Photo No. 10	Date: 26-Feb-10
Description: Final grade after backfill and compaction is complete, site clean up completed and ready for asphalt site restoration.	



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal
Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo
No. 11

Date:
16-Mar-10

Description:

Site preparation for asphalt restoration being completed by Diamondback subcontractor K. Barnett & Sons Inc.



Photo
No. 12

Date:
16-Mar-10

Description:

Asphalt restoration being completed by K. Barnett and Sons Inc.



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal
Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo
No. 13

Date:
16-Mar-10

Description:

Leveling of asphalt
and preparing for roll
compaction.



Photo
No. 14

Date:
16-Mar-10

Description:

Asphalt compaction.



FEBRUARY 2010 VISUAL INSPECTION PHOTOGRAPHIC LOG

Site ST-26 (SWMU 48A) CMI Removal
Action
Cannon Air Force Base, New Mexico

AFCEE

Contract No. FA8903-04-D-8679
Task Order 0079

Photo
No. 15

Date:
16-Mar-10

Description:

Completed asphalt
site restoration.

Note: Stripping is
scheduled for June
2010.



APPENDIX F

Daily Instrument Calibration Check Sheets and Field Monitoring Activity Logs



Health, Safety, and Environment
**DAILY HEAVY EQUIPMENT
 SAFETY INSPECTION CHECKLIST**

Attachment 19-1

Equipment Id No. 2J1202055 Inspector's Name Tony Sedlacek
 Equipment Name Caterpillar 325B Trackhoe Employee No. 36875
 Beg. Hours 1130 End Hours 1630 Date 2/24/10

INSTRUCTIONS: Each shift shall inspect all applicable items indicated. If an unsatisfactory condition is observed, suspend operation of the equipment and report the unsatisfactory condition to the site supervisor immediately.

ITEM INSPECTED	CHECK IF SATISFACTORY	COMMENTS
Falling Object Protective Structure (FOP)	✓	
Roll-Over Protection Structure (ROP)	✓	
Seat Belts	✓	
Operator Seat Bar(s)	N/A	Has seat belt
Side Shields, Screens or Cab	✓	
Lift Arm Device	N/A	Has seat belt
Grab Handles	✓	
Back-up Alarm – Working	✓	
Lights	✓	
Guards	✓	Engine cage is secure
Horn	✓	
Windshield Wipers	✓	Window open
Glass, Mirrors	✓	
Anti-Skid Tread Clear of Mud	N/A	Track clean
Safety Signs (i.e., counterbalance swing area)	✓	
Fire Extinguisher	✓	
General Condition	✓	
Fuel Connection	✓	
Oil (fuel and no leaks)	✓	
Clear of Extra Materials	✓	
Controls Function Properly	✓	
Hydraulic System (full and no leaks)	✓	
Parking Brake	✓	
Lift Arm and Bucket	✓	
Tires/Tracks	✓	
Steering	✓	
Breathing Air System	N/A	Front Windows open
Blast Shields	N/A	
Gallons of Fuel Added	None	
Quarts of Oil Added	None	

Operator Signature

Tony Sedlacek



**Health, Safety, and Environment
DAILY HEAVY EQUIPMENT
SAFETY INSPECTION CHECKLIST**

Attachment 19-1

Equipment Id No. T031056954362 Inspector's Name Tony Sedlacek
 Equipment Name John Deere 310SG Backhoe Employee No. 36875
 Beg. Hours 1000 End Hours 1530 Date 2/26/10

INSTRUCTIONS: Each shift shall inspect all applicable items indicated. If an unsatisfactory condition is observed, suspend operation of the equipment and report the unsatisfactory condition to the site supervisor immediately.

ITEM INSPECTED	CHECK IF SATISFACTORY	COMMENTS
Falling Object Protective Structure (FOP)	✓	
Roll-Over Protection Structure (ROP)	✓	
Seat Belts	✓	
Operator Seat Bar(s)	N/A	Has seat belt
Side Shields, Screens or Cab	✓	
Lift Arm Device	✓	
Grab Handles	✓	
Back-up Alarm - Working	✓	
Lights	✓	
Guards	✓	
Horn	✓	
Windshield Wipers	✓	
Glass, Mirrors	✓	
Anti-Skid Tread Clear of Mud	✓	
Safety Signs (i.e., counterbalance swing area)	✓	
Fire Extinguisher	✓	
General Condition	✓	
Fuel Connection	✓	
Oil (fuel and no leaks)	✓	
Clear of Extra Materials	✓	
Controls Function Properly	✓	
Hydraulic System (full and no leaks)	✓	
Parking Brake	✓	
Lift Arm and Bucket	✓	
Tires/Tracks	✓	
Steering	✓	
Breathing Air System	N/A	
Blast Shields	N/A	
Gallons of Fuel Added	None	
Quarts of Oil Added	None	

Operator Signature

PLR



Health and Safety Program
DAILY EXCAVATION / TRENCH
INSPECTION REPORT

Attachment 13-4

Revision 2: March 2005

Competent Person:	Skip Wrightson / Tony Sedlaczek	Date:	2/24/10
Project Name:	CMI Removal Action	Weather Conditions:	Sunny, low 50's, windy
Projection Location:	Cannon AFB - ST-26 (SUMU 42A)	Rainfall Amounts 4 Hours Previous:	∅

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	✓		
2.	Have tension cracks been observed along the top on any slopes?			✓
3.	Is excavated material at least 2' from the edge of the excavation?	✓		
4.	Are slopes cut at design angle of repose?			✓
5.	Is any water seepage noted in trench walls or bottom?		✓	
6.	Are pumps in place or available if needed?	✓		
7.	Is bracing system installed in accordance with design?			✓
8.	Is there evidence of significant fracture planes in soil or rock?		✓	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		✓	
10.	Are there any zones of unusually weak soils or materials not anticipated?		✓	
11.	Are there any noted dramatic dips or bedrock?		✓	
12.	Are all short-term trench(s) covered within 24 hours?		✓	
13.	Have non-compliance items been photographed?			✓
14.	Are hydraulic shores pumped to design pressure?			✓
15.	Is shoring being used secure?			✓
16.	Does plan include adequate safety factor for equipment being used?	✓		
17.	Is traffic adequately away from trenching operation?	✓		
18.	Are barricades up and secure?	✓		
19.	Are there trees, boulders or other hazards in area?		✓	
20.	Is vibration from equipment or traffic to close to trenching operation?		✓	
21.	Are trench box(s) certified?			✓
22.	Are GFCIs used on ALL temporary electrical cords?			✓
23.	Is access and egress located within 25 feet of entrants?	✓		
24.	Is hazardous testing done on a regular basis?	✓		
25.	Has rescue procedure been established and is equipment immediately available?	✓		



Health and Safety Program
DAILY EXCAVATION / TRENCH
INSPECTION REPORT

Attachment 13-4

Revision 2: March 2005

Competent Person:	SKIP Wrightson / Tony Sedlauer	Date:	2/25/10
Project Name:	CMI Removal Action	Weather Conditions:	Cloudy, Breezy 15-20mph, low 40's
Projection Location:	Cannon AFB ST-26 (SWMU48A)	Rainfall Amounts 24 Hours Previous:	0

"I hereby attest that the following conditions existed and that the following items were checked or reviewed during this inspection".

Check Yes, No or N/A for Not Applicable. If comment is required, circle the number and see Page 2.

		Yes	No	N/A
1.	Are barricades or covers in place and in good condition?	✓		
2.	Have tension cracks been observed along the top on any slopes?			✓
3.	Is excavated material at least 2' from the edge of the excavation?	✓		
4.	Are slopes cut at design angle of repose?			✓
5.	Is any water seepage noted in trench walls or bottom?		✓	
6.	Are pumps in place or available if needed?	✓		
7.	Is bracing system installed in accordance with design?			✓
8.	Is there evidence of significant fracture planes in soil or rock?		✓	
9.	Is there any evidence of caving or sloughing of soil since the last inspection?		✓	
10.	Are there any zones of unusually weak soils or materials not anticipated?		✓	
11.	Are there any noted dramatic dips or bedrock?		✓	
12.	Are all short-term trench(s) covered within 24 hours?		✓	
13.	Have non-compliance items been photographed?			✓
14.	Are hydraulic shores pumped to design pressure?			✓
15.	Is shoring being used secure?			✓
16.	Does plan include adequate safety factor for equipment being used?	✓		
17.	Is traffic adequately away from trenching operation?	✓		
18.	Are barricades up and secure?	✓		
19.	Are there trees, boulders or other hazards in area?		✓	
20.	Is vibration from equipment or traffic to close to trenching operation?		✓	
21.	Are trench box(s) certified?			✓
22.	Are GFCIs used on ALL temporary electrical cords?			✓
23.	Is access and egress located within 25 feet of entrants?	✓		
24.	Is hazardous testing done on a regular basis?	✓		
25.	Has rescue procedure been established and is equipment immediately available?	✓		

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Doc. No.	2. Page 1 of 1	
3. Generator's Name and Mailing Address		CANNON AIR FORCE BASE ASSET MANAGEMENT 506 N. D. L. INGRAM Bld. CAF B, A.M. 88103		SITE ST-26 SWMU 48A	
4. Generator's Phone		575 1784-6319		575-392-9996	
5. Transporter 1 Company Name		6. US EPA ID Number		A. Transporter's Phone	
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter's Phone	
9. Designated Facility Name and Site Address		10. US EPA ID Number		C. Facility's Phone	
11. Waste Shipping Name and Description		12. Containers		13. Total Quantity	
		14. Unit WWVol			
a. Hydro Carbon Impacted Soils		1 No. Type		20 4	
b. CLEAN FILL		1 No. Type		20 4	
c.					
d.					
D. Additional Descriptions for Materials Listed Above			E. Handling Codes for Wastes Listed Above		
WASTE OIL			N/A		
15. Special Handling Instructions and Additional Information					
NONE					
16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.					
Printed/Typed Name		Signature		Month Day Year	
Hugh G. Hanson		[Signature]		10/22/10	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Printed/Typed Name		Signature		Month Day Year	
RAMIRO Acosta		[Signature]		10/24/10	
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Printed/Typed Name		Signature		Month Day Year	
19. Discrepancy Indication Space		Signature		Month Day Year	
#5 P.O. Box 249 Hobbs, A.M. 88241		[Signature]		12/24/10	
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature		Month Day Year	
Linsey Dyer		[Signature]		12/24/10	

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

12-BLS-C5 Rev. 12/98

Please print or type
(Form designed for use on 8 1/2 x 11 (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Doc. No.	2. Page 1 of 1	
3. Generator's Name and Mailing Address		CANNON AIR FORCE BASE ASSET MANAGEMENT 504 N. D.L. INGRAM BLVD CANNON AIR FORCE BASE, N.M. 88103		SITE ST-26 SWMU 48A	
4. Generator's Phone (575) 784-6319		6. US EPA ID Number		A. Transporter's Phone	
5. Transporter 1 Company Name		7. Transporter 2 Company Name		B. Transporter's Phone	
8. US EPA ID Number		9. Designated Facility Name and Site Address		C. Facility's Phone	
10. US EPA ID Number		11. Waste Shipping Name and Description		12. Containers	
				13. Total Quantity	
				14. Unit Wt/Vol	
a. Hydro Carbon Impacted Soils		1		Bally Dump 20 CY	
b. CLEAN FILL		1		Bally Dump 12 CY	
c.					
d.					
D. Additional Descriptions for Materials Listed Above			E. Handling Codes for Wastes Listed Above		
WASTE OIL			N/A		
15. Special Handling Instructions and Additional Information					
NONE					
16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.					
Printed/Typed Name		Signature		Month Day Year	
Hugh G. Hanson		Hugh G. Hanson		12 26 10	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Month Day Year	
CONE TURKBOW		[Signature]		12 12 10	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Month Day Year	
19. Discrepancy Indication Space					
#5 P.O. Box 2491 Hobbs, N.M. 88240					
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name		Signature		Month Day Year	
LINSEY DYER		[Signature]		12 26 10	

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Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

12-BLS-C5 Rev. 12/98

**Inorganic Analysis
Case Narrative
Diamondback Disposal Services
SDG: 10020322**

Method/Analysis Information

Analytical Method: SW846 3050/6010C
Preparatory/Analytical Batch ID: M10122

Method(s):

All analyses were performed utilizing approved methodology.

Holding Times

All holding times for Preparation and Analysis were met.

Preparation

Sample preparation proceeded normally.

Analysis

1. Calibration: All acceptance criteria were met.
2. Blanks: All laboratory MBs associated with the analyses were non-detect for target analytes at the Client Requested Detection Limit (CRDL).
3. ICP Interference Check Samples (ICSA/ICSAB): All elements were within QA/QC criteria for the ICSAB. The ICSA samples did not show any appreciable interferences.
4. Duplicates: All duplicate RPDs were within acceptable QC limits.
5. Spikes: The MS/MSD was unrecoverable due to dilution. The LCS met all acceptance criteria.
6. Samples: The sample BACKFILL STOCKPILE was diluted due to matrix interference with the internal standard. Arsenic was detected as a false positive near the detection level due to matrix interference which the duplicate did not confirm. As per client request the sample was reanalyzed at a lesser dilution to confirm the presence of arsenic. The new result is reflected in this revised report.

Review Validation:

All data received a second level review. The following data reviewer verified the information presented in this case narrative.

Reviewer:



Date: 2/23/2010



4301 Masthead NE Albuquerque, NM 87109, ph. 505-345-8964 fax. 505-345-7259

DIAMONDBACK DISPOSAL SERVICES
attn JUSTIN ROBERTS
P O BOX 2491
HOBBS NM 88241

REVISED
02/19/10 5:18 PM

Explanation of codes	
E	Result is Estimated
H	Analyzed Out of Hold Time
N	Tentatively Identified Compound
S	Subcontracted
U	Concentration is below MDL
J	Concentration between MDL and RDL
1-9	See Footnote

STANDARD

ARSA Analytical, LLC

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: DIAMONDBACK DISPOSAL SERVICES
Project: CAFB- ST-26
Order: 10020322 DDS01 Receipt: 02-14-10

Melanie Garcia
Elvin J. Chavez, President of ARSA Analytical, LLC

Sample: BACKFILL STOCK PILE
Matrix: GRAB

Collected: 02-12-10 6:00:00 By: JR

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Reporting Limit	Code	Prep Date	Run Date
10020322-001A		SW846 3050B/6010B ICP					By: TKT			
M10122	MT.2010.195.47	7440-38-2	Arsenic	ND	mg/kg	2	0.25		02-16-10	02-22-10
M10122	MT.2010.171.34	7440-39-3	Barium	345	mg/kg	50	0.15		02-16-10	02-16-10
M10122	MT.2010.171.30	7440-43-9	Cadmium	ND	mg/kg	10	0.25		02-16-10	02-16-10
M10122	MT.2010.171.33	7440-47-3	Chromium	5.28	mg/kg	10	0.1		02-16-10	02-16-10
M10122	MT.2010.171.30	7439-92-1	Lead	9.58	mg/kg	10	0.25		02-16-10	02-16-10
M10122	MT.2010.171.30	7782-49-2	Selenium	11.2	mg/kg	10	0.5		02-16-10	02-16-10
M10122	MT.2010.171.30	7440-22-4	Silver	ND	mg/kg	10	0.25		02-16-10	02-16-10
10020322-001A		SW846 7471B CVA					By: ELS			
M10128	MT.2010.177.18	7439-97-6	Mercury	ND	ug/Kg	1	20		02-17-10	02-17-10
10020322-001B		SW846 5035B/8260C Purgeable VOCs by GC/MS					By: MR			
V10058	XG.2010.253.1	630-20-6	1,1,1,2-Tetrachloroethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10
V10058	XG.2010.253.1	71-55-8	1,1,1-Trichloroethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10
V10058	XG.2010.253.1	79-34-5	1,1,2,2-Tetrachloroethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10
V10058	XG.2010.253.1	79-00-5	1,1,2-Trichloroethane	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10
V10058	XG.2010.253.1	75-34-3	1,1-Dichloroethane	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10
V10058	XG.2010.253.1	75-35-4	1,1-Dichloroethene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10
V10058	XG.2010.253.1	96-18-4	1,2,3-Trichloropropane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10
V10058	XG.2010.253.1	120-82-1	1,2,4-Trichlorobenzene	ND	mg/Kg	1	0.25	2	02-17-10	02-17-10
V10058	XG.2010.253.1	95-63-6	1,2,4-Trimethylbenzene	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10
V10058	XG.2010.253.1	98-12-8	1,2-Dibromo-3-chloropropane	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10
V10058	XG.2010.253.1	106-93-4	1,2-Dibromoethane (EDB)	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10
V10058	XG.2010.253.1	95-50-1	1,2-Dichlorobenzene	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10
V10058	XG.2010.253.1	107-08-2	1,2-Dichloroethane (EDC)	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10
V10058	XG.2010.253.1	78-87-5	1,2-Dichloropropane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10

ARS Analytical, LLC

Certificate of Analysis

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Client: **DIAMONDBACK DISPOSAL SERVICES**
 Project: **CAFB- ST-26**
 Order: **10020322 DDS01** Receipt: **02-14-10**

Sample: **BACKFILL STOCK PILE** Collected: **02-12-10 6:00:00** By: **JR**
 Matrix: **GRAB**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Reporting Limit	Code	Prep Date	Run Date	
10020322-001B			SW846 5035B/8260C Purgeable VOCs by GC/MS						By: MR		
V10056	XG.2010.253.1	108-67-8	1,3,5-Trimethylbenzene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	541-73-1	1,3-Dichlorobenzene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	108-46-7	1,4-Dichlorobenzene	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	78-93-3	2-Butanone (MEK)	ND	mg/Kg	1	0.25	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	591-78-6	2-Hexanone (MBK)	ND	mg/Kg	1	0.25	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	108-10-1	4-Methyl-2-pentanone (MIBK)	ND	mg/Kg	1	0.25	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	67-64-1	Acetone	ND	mg/Kg	1	0.5	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	107-02-8	Acrolein	ND	mg/Kg	1	1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	107-13-1	Acrylonitrile	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	71-43-2	Benzene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	74-97-5	Bromochloromethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-27-4	Bromodichloromethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-25-2	Bromoform	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	74-83-9	Bromomethane	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-15-0	Carbon disulfide	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	56-23-5	Carbon tetrachloride	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	108-90-7	Chlorobenzene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-00-3	Chloroethane	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	67-66-3	Chloroform	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	74-87-3	Chloromethane	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	150-59-2	cis-1,2 dichloroethene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	10061-01-5	cis-1,3 Dichloropropene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	124-48-1	Dibromochloromethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	74-95-3	Dibromomethane	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	97-63-2	Ethyl methacrylate	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	100-41-4	Ethylbenzene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	76-13-1	Freon 113	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	76-71-8	Freon 12	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	1634-04-4	Methyl t-butyl ether (MTBE)	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-09-2	Methylene chloride	ND	mg/Kg	1	0.25	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	91-20-3	Naphthalene	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	95-47-6	o-Xylene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	108-38-3/106-42	p/m-Xylenes	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	100-42-5	Styrene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	156-60-5	t-1,2 Dichloroethene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	10061-02-6	t-1,3 Dichloropropene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	127-18-4	Tetrachloroethene (PCE)	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	108-88-3	Toluene	ND	mg/Kg	1	0.05	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	110-57-8	trans-1,4-Dichloro-2-butene	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	79-01-6	Trichloroethene	ND	mg/Kg	1	0.07	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-69-4	Trichlorofluoromethane	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	108-05-4	Vinyl acetate	ND	mg/Kg	1	0.2	2	02-17-10	02-17-10	
V10056	XG.2010.253.1	75-01-4	Vinyl chloride	ND	mg/Kg	1	0.1	2	02-17-10	02-17-10	

ARS Analytical, LLC

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Client: **DIAMONDBACK DISPOSAL SERVICES**
 Project: **CAFB- ST-26**
 Order: **10020322 DDS01** Receipt: **02-14-10**

Sample: **BACKFILL STOCK PILE** Collected: **02-12-10 6:00:00** By: **JR**
 Matrix: **GRAB**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Reporting Limit	Code	Prep Date	Run Date	
10020322-001C		SW846 3550B/8270D SVOCs by GC/MS							By: CLL		
S10085	XG.2010.247.8	120-82-1	1,2,4-Trichlorobenzene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	95-50-1	1,2-Dichlorobenzene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	541-73-1	1,3-Dichlorobenzene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	108-46-7	1,4-Dichlorobenzene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	90-12-0	1-Methylnaphthalene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	58-90-2	2,3,4,6-Tetrachlorophenol	ND	mg/Kg	1	1.5		02-16-10	02-18-10	
S10085	XG.2010.247.8	95-95-4	2,4,5-Trichlorophenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	88-06-2	2,4,6-Trichlorophenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	120-83-2	2,4-Dichlorophenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	105-67-9	2,4-Dimethylphenol	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	51-28-5	2,4-Dinitrophenol	ND	mg/Kg	1	0.67		02-16-10	02-18-10	
S10085	XG.2010.247.8	121-14-2	2,4-Dinitrotoluene	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	606-20-2	2,6-Dinitrotoluene	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	91-58-7	2-Chloronaphthalene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	95-57-8	2-Chlorophenol	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	91-57-6	2-Methylnaphthalene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	95-48-7	2-Methylphenol	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	88-74-4	2-Nitroaniline	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	88-75-5	2-Nitrophenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	81-94-1	3,3-Dichlorobenzidine	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	108-39-4/106-44	3+4 Methylphenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	99-09-2	3-Nitroaniline	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	534-52-1	4,6-Dinitro-2-methylphenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	101-55-3	4-Bromophenyl phenyl ether	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	59-50-7	4-Chloro-3-methylphenol	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	106-47-8	4-Chloroaniline	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	7005-72-3	4-Chlorophenyl phenyl ether	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	100-01-6	4-Nitroaniline	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	100-02-7	4-Nitrophenol	ND	mg/Kg	1	0.6		02-16-10	02-18-10	
S10085	XG.2010.247.8	83-32-9	Acenaphthene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	208-96-8	Acenaphthylene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	62-53-3	Aniline	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	120-12-7	Anthracene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	103-33-3/122-66	Azobenzene&1,2-Diphenylhydrazine	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	58-55-3	Benzo (a) anthracene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	50-32-8	Benzo(a)pyrene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	205-99-2	Benzo(b)fluoranthene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	191-24-2	Benzo(g,h,i)perylene	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	207-08-9	Benzo(k)fluoranthene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	64-85-0	Benzoic acid	ND	mg/Kg	1	3		02-16-10	02-18-10	
S10085	XG.2010.247.8	100-51-6	Benzyl alcohol	ND	mg/Kg	1	1.5		02-16-10	02-18-10	
S10085	XG.2010.247.8	111-44-4	bis (2-Chloroethyl) ether	ND	mg/Kg	1	0.1		02-16-10	02-18-10	

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Client: **DIAMONDBACK DISPOSAL SERVICES**
 Project: **CAFB- ST-26**
 Order: **10020322 DDS01** Receipt: **02-14-10**

Sample: **BACKFILL STOCK PILE** Collected: **02-12-10 6:00:00** By: **JR**
 Matrix: **GRAB**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Reporting Limit	Code	Prep Date	Run Date	
10020322-001C			SW846 3550B/8270D SVOCs by GC/MS					By: CLL			
S10085	XG.2010.247.8	111-91-1	bis(2-Chloroethoxy)methane	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	108-60-1	bis(2-Chloroisopropyl)ether	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	117-81-7	bis(2-Ethylhexyl)phthalate	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	85-08-7	Butylbenzylphthalate	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	218-01-9	Chrysene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	53-70-3	Dibenz(a,h)anthracene	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	132-84-9	Dibenzofuran	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	84-86-2	Diethylphthalate	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	131-11-3	Dimethylphthalate	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	84-74-2	di-n-Butylphthalate	0.64	mg/Kg	1	0.3	B1	02-16-10	02-18-10	
S10085	XG.2010.247.8	117-84-0	di-n-Octylphthalate	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	206-44-0	Fluoranthene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	86737	Fluorene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	118-74-1	Hexachlorobenzene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	87-68-3	Hexachlorobutadiene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	77-47-4	Hexachlorocyclopentadiene	ND	mg/Kg	1	1.5		02-16-10	02-18-10	
S10085	XG.2010.247.8	67-72-1	Hexachloroethane	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	193-39-5	Indeno(1,2,3-cd)pyrene	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	78-59-1	Isophorone	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	91-20-3	Naphthalene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	98-95-3	Nitrobenzene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	62-75-0	n-Nitroso-dimethyl-amine	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	821-84-7	n-Nitroso-di-n-propylamine	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	86-30-6	n-Nitrosodiphenylamine	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	87-88-5	Pentachlorophenol	ND	mg/Kg	1	1.3		02-16-10	02-18-10	
S10085	XG.2010.247.8	85-01-8	Phenanthrene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	108-95-2	Phenol	0.49	mg/Kg	1	0.3	B1	02-16-10	02-18-10	
S10085	XG.2010.247.8	129-00-0	Pyrene	ND	mg/Kg	1	0.1		02-16-10	02-18-10	
S10085	XG.2010.247.8	110-86-1	Pyridine	ND	mg/Kg	1	0.3		02-16-10	02-18-10	
10020322-001D			SW846 3550B/8082 PCBs by GC/ECD					By: JMP			
S10091	XG.2010.239.9	12674-11-2	Aroclor 1016	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
S10091	XG.2010.239.9	11104-28-2	Aroclor 1221	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
S10091	XG.2010.239.9	11141-16-5	Aroclor 1232	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
S10091	XG.2010.239.9	53469-21-9	Aroclor 1242	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
S10091	XG.2010.239.9	12672-29-6	Aroclor 1248	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
S10091	XG.2010.239.9	11097-69-1	Aroclor 1254	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
S10091	XG.2010.239.9	11086-82-5	Aroclor 1260	ND	mg/Kg	1	0.01		02-16-10	02-17-10	
10020322-001E			SW846 3550B/8081A Pesticides by GC/ECD					By: JMP			
S10086	XG.2010.254.6	319-84-6	a-BHC	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	5103-71-9	a-Chlordane	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	309-00-2	Aldrin	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	319-85-7	b-BHC	ND	mg/Kg	1	0.01		02-16-10	02-18-10	

ARS Analytical, LLC

Certificate of Analysis

All samples are reported on an "as received" basis, unless otherwise noted (i.e. - Dry Weight).

Client: **DIAMONDBACK DISPOSAL SERVICES**
 Project: **CAFB- ST-26**
 Order: **10020322 DDS01** Receipt: **02-14-10**

Sample: **BACKFILL STOCK PILE** Collected: **02-12-10 6:00:00** By: **JR**
 Matrix: **GRAB**

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Reporting Limit	Code	Prep Date	Run Date	
10020322-001E		SW846 3550B/8081A Pesticides by GC/ECD						By: JMP			
S10086	XG.2010.254.6	57-74-9	Chlordane, total	ND	mg/Kg	1	0.05		02-16-10	02-18-10	
S10086	XG.2010.254.6	319-86-8	d-BHC	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	60-57-1	Dieldrin	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	959-98-8	Endosulfan I	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	33213-65-9	Endosulfan II	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	1031-07-8	Endosulfan Sulfate	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	72-20-8	Endrin	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	7421-93-4	Endrin Aldehyde	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	53494-70-5	Endrin Ketone	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	58-89-9	g-BHC	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	5103-74-2	g-Chlordane	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	76-44-8	Heptachlor	ND	mg/Kg	1	0.005		02-16-10	02-18-10	
S10086	XG.2010.254.6	1024-57-3	Heptachlor Epoxide	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	72-43-5	Methoxychlor	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	6088-51-3	p,p-DDD	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	72-55-9	p,p-DDE	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	50-29-3	p,p-DDT	ND	mg/Kg	1	0.01		02-16-10	02-18-10	
S10086	XG.2010.254.6	8001-35-2	Toxaphene, total	ND	mg/Kg	1	0.05		02-16-10	02-18-10	

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Reporting Limit. Sample specific Reporting Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

- The Method Blank (MB) for 8270D was positive for the following compounds: Phenol, Isophorone, Diethylphthalate, Di-n-butylphthalate, and Bis(2-ethylhexyl)phthalate. These are attributed to laboratory contamination during extraction. All affected data was flagged with a "B" to denote potential bias for these compounds in reported results. Affected samples will be re-extracted and reanalyzed to confirm results.
- The sample was analyzed past the 12-Hour tune time criteria. Reported data was non-detect and is considered unaffected. Sample will be reanalyzed to verify reported data.

Lydick Engineers & Surveyors
 205 East 2nd St.
 P.O. Box 1388
 Clovis NM, 88101

Field Densities

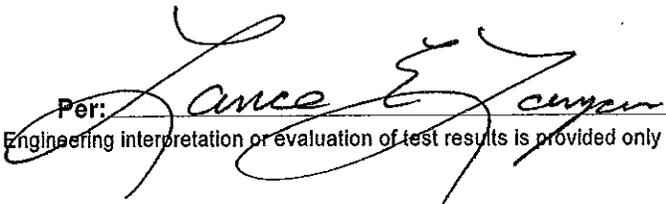
To: URS GROUP INC.
 SUITE 300 12120
 SHAMROCK PLAZA
 OMAHA, NEBRASKA 68154

Project: ST-26 @ CANNON AFB, NM

Project Number: 16170215
 Report Number: 1
 Report Date: 01-Mar-10
 Tested By: lance langan
 Depth: 6"
 Maximum Dry Density: 127.7
 Optimum Moisture: 9.3
 Field Method: ASTM D2922
 Lab Method: ASTM D698
 Test Date: 26-Feb-10
 % Compaction Required: 95
 % Moisture Tolerance: 3
 Contractor: DAIMOND BACK
 Page: 1 of 1

ID No.	Sample Location	Wet Density (lb./ft. ³)	Moist. Content (%)	Dry Density (lb./ft. ³)	Corrected Density (lb./ft. ³)	Percent of Max. (%)
1	ST-26	137.4	9.1	125.9	125.9	98.6
2	ST-26	138.3	9.7	126.1	126.1	98.7

CALICHE BASE COARSE

Per: 

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of test results is provided only on written request.

Lydick Engineers & Surveyors, Inc.

P. O. Box 728
205 E. 2nd Street
Clovis, NM 88101
505-762-3771

Proctor Report
Report Date 24-Feb-10
Project Number 16170215
Proctor Number 1
Sample Type BASE COARSE
Sampled By L.LANGAN
Source CURRY CO. CALICHE
Tested By LANCE LANGAN

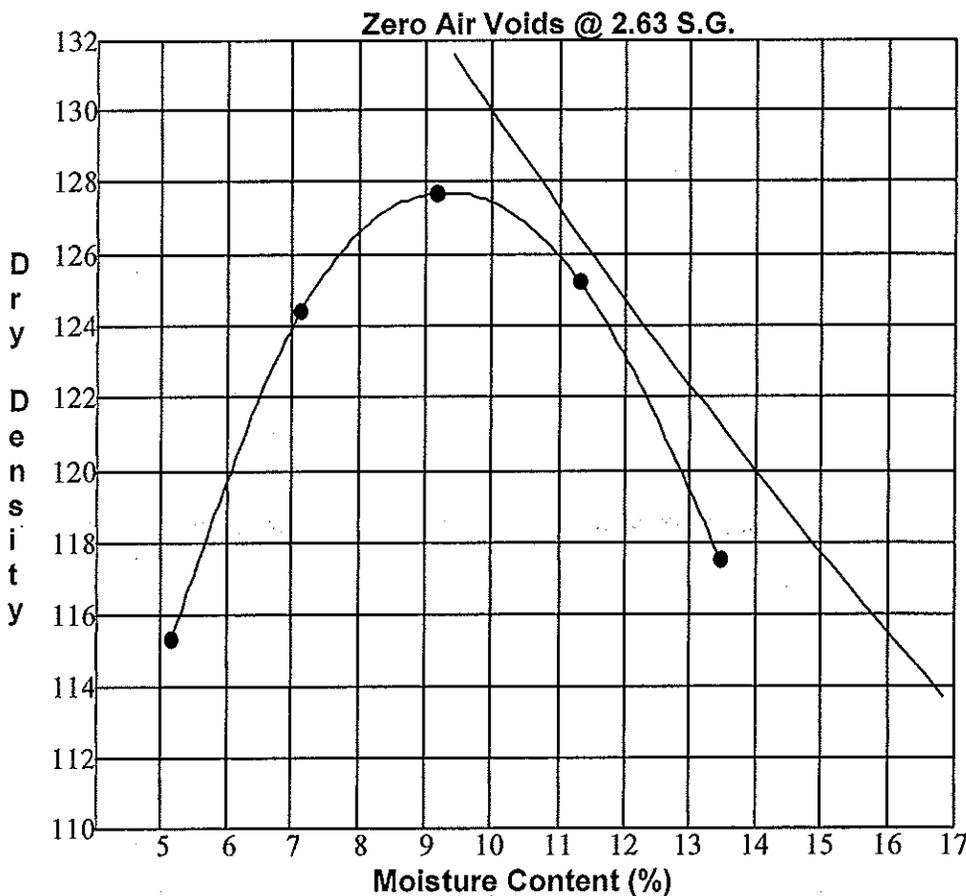
To: URS GROUP INC.
SUITE 300 12120 SHAMROCK PLAZA
OMAHA, NEBRASKA 68154

Proj:ST-26

Sample Date: 24-Feb-10

Date Tested: 24-Feb-10

Date Received: 23-Feb-10

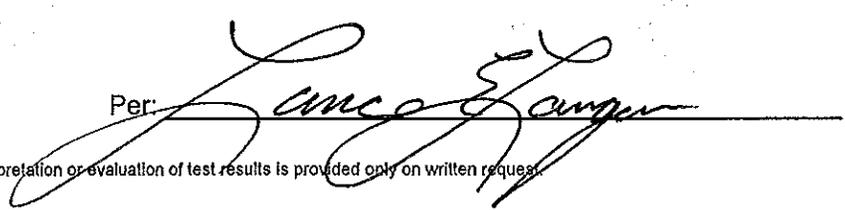


Max. Dry Density (pcf): 127.7
Optimum Moisture (%): 9.3

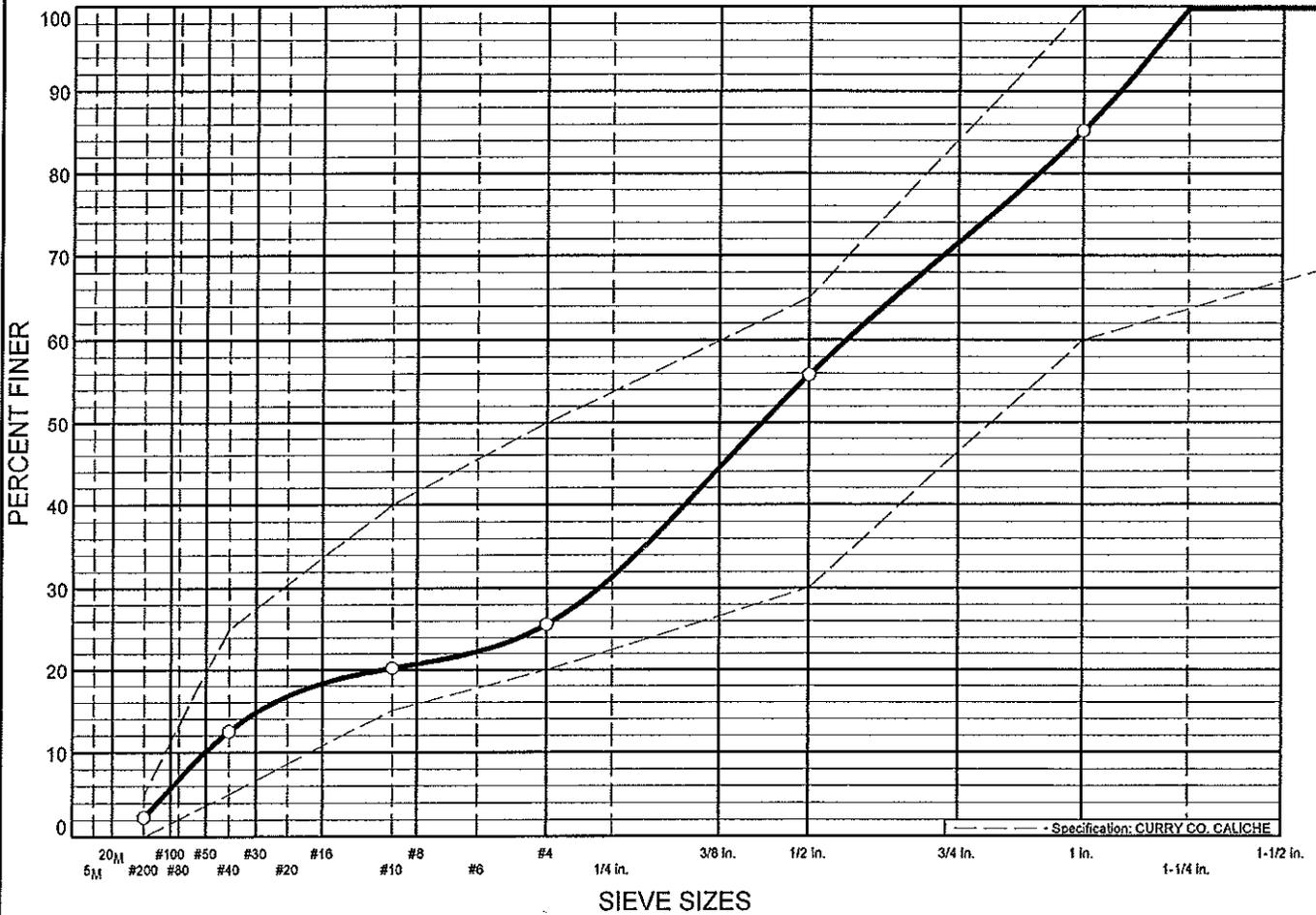
Moisture Content (%)	Dry Density (pcf)	Wet Density (pcf)
5.2	115.3	121.2
7.1	124.5	133.3
9.2	127.7	139.4
11.3	125.2	139.4
13.5	117.5	133.3

Method: ASTM D1557
Rammer Type: manual
Preparation: dry

Sample Description: CALICHE BASE COARSE- FOR BACKFILL

Per: 

URS GROUP INC



CLAY SILT	% SAND	% GRAVEL
2.3	23.3	74.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 1/2 in.	100.0	100.0 - 100.0	
1 in.	85.2	60.0 - 100.0	
1/2 in.	55.8	30.0 - 65	
#4	25.6	20.0 - 50.0	
#10	20.2	15.0 - 40.0	
#40	12.5	5.0 - 25.0	
#200	2.3	0.0 - 5.0	

Soil Description

BASE COARSE

Atterberg Limits
 PL= N/A LL= N/A PI= N/A

Coefficients
 D₈₅= 25.3 D₆₀= 14.1 D₅₀= 11.0
 D₃₀= 6.00 D₁₅= 0.626 D₁₀= 0.295
 C_u= 47.98 C_c= 8.64

Classification
 USCS= SM AASHTO=

Remarks

LIMITS COULD NOT BE DETERMEND AS PER ASTM D 4318 L.A. WEAR= 36.2 18.7% FLAT & ELONGATED 94% F.F.1.3% FINER THAN #200

* CURRY CO. CALICHE

Sample No.: 2 Source of Sample:
 Location: DELIVERED TO LAB

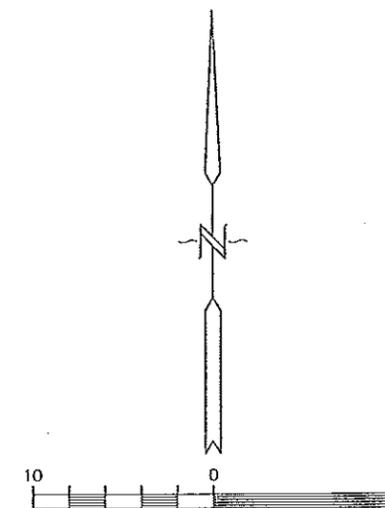
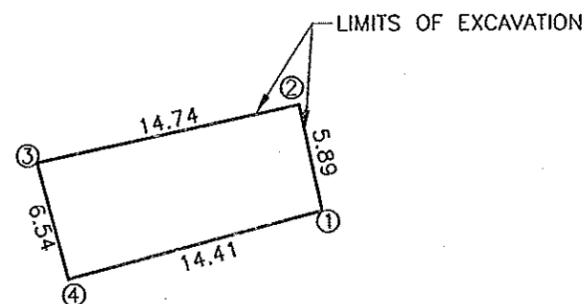
Date: 2-15-10
 Elev./Depth:

LYDICK ENGINEERS & SURVEYORS, INC.	Client: CCC Project: ST-26 Project No: CCC-11-09
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Figure

EXCAVATION LIMITS

NO.	NORTHING	EASTING	ELEV.
1	1236831.50	847444.02	4302.75
2	1236837.26	847442.79	4302.68
3	1236834.15	847428.38	4302.39
4	1236827.84	847430.09	4302.72



SCALES: HORIZ. 1" = 10'

REV. NO.	DATE	DRAWN	CHKD	REMARKS

DESIGNED BY: RC
 DRAWN BY: BCR
 SHEET CHKD BY:
 CROSS CHKD BY:
 APPROVED BY: RC
 DATE: MARCH 26, 2010



LYDICK
 ENGINEERS & SURVEYORS
 205 EAST SECOND STREET
 CLOVIS, NEW MEXICO 88101
 (505) 762-3771



CANNON AIR FORCE BASE
 CLOVIS, NEW MEXICO
SITE ST-26 EXCAVATION

AS-BUILT SURVEY

HORIZONTAL DATUM: NEW MEXICO STATE PLANE (EAST ZONE)
NAD 83 (CORS 96)
COMBINED SCALE FACTOR = 1.00018673
 VERTICAL DATUM: NAVD 88
CONTOURED ON 1.0' INTERVALS
 HORIZ. SCALE: 1" = 10'
 VERTICAL SCALE: NA

PLAT NO. 21855
 SHEET NO.
C-101

**CMI REMOVAL ACTION ANALYTICAL RESULTS FOR FIELD DUPLICATES
COLLECTED AT SITE ST-26 (SWMU 48A), CANNON AFB, NEW MEXICO**

FIELD ID DATE COLLECTED	C26-WEST-20 February 24, 2010				C26-WESTD-20 February 24, 2010				RPD	
	Result	RL	MDL	Qual	Result	RL	MDL	Qual		
VOLATILE ORGANIC COMPOUNDS (mg/kg)										
Benzene	<	2.00E-03	7.00E-04	U	<	2.00E-03	7.00E-04	U	< 2X	
Ethylbenzene	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U	< 2X	
m,p-Xylene (sum of isomers)	<	6.00E-03	4.00E-04	U	<	6.00E-03	4.00E-04	U	< 2X	
Naphthalene	<	6.00E-03	4.00E-04	U	1.00E-03	6.00E-03	4.00E-04	F	< 2X	
o-Xylene (1,2-Dimethylbenzene)	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	U	< 2X	
Toluene	<	6.00E-03	7.00E-04	U	<	6.00E-03	7.00E-04	UB	< 2X	
POLYNUCLEAR AROMATIC HYDROCARBONS (mg/kg)										
2-Methylnaphthalene	<	5.00E-03	9.40E-04	U	<	5.00E-03	9.40E-04	U	< 2X	
Benzo(a)anthracene	<	5.00E-03	9.10E-04	U	<	5.00E-03	9.10E-04	U	< 2X	
Benzo(a)pyrene	<	5.00E-03	9.30E-04	U	<	5.00E-03	9.30E-04	U	< 2X	
Benzo(b)fluoranthene	<	5.00E-03	1.11E-03	U	<	5.00E-03	1.11E-03	U	< 2X	
Benzo(k)fluoranthene	<	5.00E-03	1.04E-03	U	<	5.00E-03	1.04E-03	U	< 2X	
Chrysene	<	5.00E-03	8.50E-04	U	<	5.00E-03	8.50E-04	U	< 2X	
Dibenz(a,h)anthracene	<	5.00E-03	9.20E-04	U	<	5.00E-03	9.20E-04	U	< 2X	
Indeno(1,2,3-cd)pyrene	<	5.00E-03	9.00E-04	U	<	5.00E-03	9.00E-04	U	< 2X	
Naphthalene	<	5.00E-03	8.90E-04	U	<	5.00E-03	8.90E-04	U	< 2X	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)										
Diesel Range Organics	4.60E+02	1.00E+02	1.00E+01		4.90E+02	1.00E+02	1.00E+01		< 2X	
Gasoline Range Organics	<	1.10E+00	3.40E-01	U	<	1.10E+00	3.40E-01	U	< 2X	
Motor Oils	3.60E+02	1.00E+02	3.50E+01		3.70E+02	1.00E+02	3.50E+01		< 2X	

Notes:

RPD was calculated for results greater than 5X the reporting limit

mg/kg = milligram per kilogram

< = Less than the Reporting Limit

< 2X = Difference between sample results was less than two times the reporting limit

F = Result between MDL and RL

ID = identification

MDL = Method Detection Limit

Qual = Qualifier

RPD = Relative Percent Difference

RL = Reporting Limit

U = Nondetect

UB = Qualified nondetect due to method blank