



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

ENTERED

JUL 24 2009

Mr. Ronald A. Lancaster
Chief, Asset Management
27 SOCES/CEA
506 N DL Ingram Blvd
Cannon AFB NM 88103-5003

Ms. Patricia Stewart
Hazardous Waste Bureau
New Mexico Environment Department- Hazardous Waste Bureau
2905 Rodeo Park Drive East - Building 1
Santa Fe NM 87505-6063

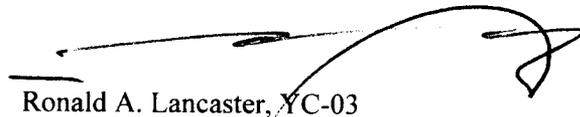


Dear Ms. Stewart

Cannon Air Force Base, NM is forwarding two hardbound and two electronic copies of the Accelerated Corrective Action Work Plan for SWMU 31, Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad, Cannon Air Force Base, New Mexico, Final, July 2009 for your review and approval.

If you have any questions, please contact Mr. Hugh G. Hanson, Asset Management Flight, at (575) 784-0490.

Sincerely



Ronald A. Lancaster, YC-03

cc:
NMED (D. Cobrain) w/o documents
EPA Region 6 (Bob Sturdivant) w/o documents

**Accelerated Corrective Action Work Plan
for SWMU 31, Aerospace Ground Equipment (AGE)
Maintenance Facility Shop Pad
Cannon Air Force Base, New Mexico**

**Final
July 2009**



**27 SOCES/CEAN
Cannon Air Force Base
New Mexico**

Accelerated Corrective Action Work Plan for SWMU 31, Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad Cannon Air Force Base, New Mexico

**Final
July 2009**



Prepared for:

27 SOCES/CEAN
Cannon Air Force Base, New Mexico

U.S. Army Corps of Engineers
Omaha District

Prepared by:

Tetra Tech EC, Inc.
143 Union Boulevard
Lakewood, CO 80228

Under Contract FA4890-04-D-0006, Task Order DK03



CONTENTS

Section	Page
1. INTRODUCTION	1-1
1.1 Project Objectives	1-1
1.2 Site Background.....	1-1
1.3 Work Plan Overview.....	1-2
2. SITE DESCRIPTION AND HISTORY.....	2-1
2.1 Cannon AFB Location and History.....	2-1
2.2 SWMU 31 Site Description and History.....	2-1
2.3 Site Geology and Hydrogeology.....	2-2
3. PROJECT PERSONNEL	3-1
3.1 Task Order Manager	3-1
3.2 Contractor Quality Control Systems Manager/Site Health and Safety Officer/Site Construction Manager.....	3-1
3.3 Construction Support	3-1
4. PROJECT IMPLEMENTATION PLAN/SCOPE OF WORK.....	4-1
4.1 Base Access and Site Security	4-1
4.2 On-Site Activities.....	4-1
4.2.1 Project Kick-Off Meeting.....	4-1
4.2.2 Mobilization.....	4-2
4.2.3 Construction Activities.....	4-2
4.2.4 Demobilization.....	4-3
4.2.5 Field Engineering and Quality Control	4-3
4.2.6 Health and Safety	4-4
4.3 Off-Site Activities	4-4
5. REGULATORY COMPLIANCE PLAN.....	5-1
5.1 Regulatory Framework.....	5-1
5.2 Regulated Site Activities	5-1
5.3 Regulatory Requirements	5-1
5.4 Waste Minimization	5-2
5.5 Project Waste Descriptions.....	5-2
5.6 Waste Management Activities.....	5-2
5.6.1 Waste Characterization/Classification.....	5-2
5.6.2 Hazardous Waste Management	5-5
5.6.3 New Mexico Special Waste Management	5-5
5.6.4 Waste Containerization and Storage	5-6
5.7 Reporting Spills and Releases	5-7
5.8 Training/Certification Requirements	5-8
5.9 Inspections by Regulatory Agencies and Third Parties.....	5-8
5.10 Documentation and Records Retention.....	5-8
5.10.1 Documentation	5-8
5.10.2 RCRA Records Retention.....	5-10

5.11 Updating the Regulatory Compliance Plan..... 5-10

6. FIELD SAMPLING PLAN 6-1

6.1 Sampling Objectives..... 6-1

6.2 Summary of Sampling and Analysis Program 6-1

6.3 Design of Data Collection Operations..... 6-2

6.3.1 Sample Locations and Frequency..... 6-2

6.3.2 Sample Designation 6-2

6.4 Disposal Characterization Sampling and Analysis 6-3

6.4.1 Characterization of Decontamination Water..... 6-3

6.4.2 Characterization of Contaminated Soils 6-3

6.5 Sampling Equipment and Procedures 6-3

7. QUALITY ASSURANCE PROJECT PLAN 7-1

7.1 (A2) Table of Contents 7-1

7.2 (A3) Distribution List 7-1

7.3 (A4) Project Organization and Responsibilities 7-1

7.4 (A5) Problem Background/Definition..... 7-1

7.5 (A6) Project Description 7-1

7.6 (A7) Quality Objectives 7-2

7.6.1 Data Quality Objectives..... 7-2

7.6.2 Analytical Support Levels 7-2

7.6.3 Data Quality Indicators..... 7-2

7.6.4 Level of Field Quality Control Effort..... 7-2

7.7 (A8) Project Narrative..... 7-2

7.8 (A9) Special Validation 7-2

7.9 (A10) Documentation and Records..... 7-2

7.10(B1) Sampling Design Process..... 7-3

7.11(B2) Sampling Method Requirements 7-3

7.12(B3) Sample Handling and Custody Requirements 7-3

7.13(B4) Analytical Methods Requirements..... 7-3

7.13.1 Toxicity Characteristic Leaching Procedure 7-4

7.13.2 Total Petroleum Hydrocarbons..... 7-4

7.13.3 Ignitability 7-4

7.14(B5) Quality Control Requirements 7-4

7.15(B6) Instrument/Equipment Testing and Maintenance Requirements 7-5

7.16(B7) Instrument Calibration..... 7-5

7.17(B8) Inspection/Acceptance Requirements for Supplies 7-5

7.18(B9) Data Acquisition Requirements 7-5

7.19(B10) Data Management..... 7-5

7.20(C) Assessment/Oversight..... 7-6

7.21(D) Data Validation and Usability..... 7-6

8. PROJECT SCHEDULE 8-1

9. REFERENCES..... 9-1

APPENDICES

Appendix A	Technical Specifications
Appendix B	Supporting Documentation
Appendix C	Analytical Methods, Reporting Limits, and Quality Control Criteria
Appendix D	Standard Operating Procedures
Appendix E	Contractor Quality Control Plan
Appendix F	Site-Specific Environmental Health and Safety Plan

LIST OF FIGURES

Figure	Page
Figure 2-1. Location Map—Cannon Air Force Base	2-3
Figure 2-2. Site Location Map—SWMU 31.....	2-5
Figure 2-3. SWMU 31 Sample Location Map.....	2-7
Figure 2-4. SWMU 31 Proposed Excavation Area	2-9
Figure 3-1. Project Organization Chart	3-3

LIST OF TABLES

Table	Page
Table 5-1. Waste Management Summary.....	5-3
Table 6-1. Cannon AFB Accelerated Corrective Action Sampling and Analysis Program for SWMU 31.....	6-2
Table 7-1. Sample Container, Preservation, and Holding Time Requirements	7-3
Table 7-2. Analytical Procedures for the Accelerated Corrective Action at SWMU 31.....	7-4

This page intentionally left blank.

LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFSOC	Air Force Special Operations Command
AGE	Aerospace Ground Equipment
bgs	below ground surface
°C	degrees Celsius
CFR	Code of Federal Regulations
COC	chemical of concern
CMI	Corrective Measure Implementation
C-O-C	chain-of-custody
CQAB	(USACE) Chemical Quality Assurance Branch
CQC	Contractor Quality Control
DOT	Department of Transportation
DPT	direct-push technology
DQCR	daily quality control report
DQO	Data Quality Objective
DRO	diesel range organics
EPA	United States Environmental Protection Agency
FCR	Field Change Request
FSP	Field Sampling Plan
ft	feet/foot
GRO	gasoline range organics
ICP	inductively coupled plasma
LDR	Land Disposal Restriction
LIMS	Laboratory Information Management System
MDL	Method Detection Limit
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
North Wind	North Wind, Inc.
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
ORO	oil range organics

LIST OF ACRONYMS AND ABBREVIATIONS (CONCLUDED)

PCS	petroleum-contaminated soil
PPE	personal protective equipment
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RCP	Regulatory Compliance Plan
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SHSO	Site Health and Safety Officer
SSHP	Site-Specific Environmental Health and Safety Plan
SOP	Standard Operating Procedure
sq ft	square feet
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TO	Task Order
TPH	Total petroleum hydrocarbon
TRPH	total recoverable petroleum hydrocarbons
TSDf	Treatment, Storage, and Disposal Facility
USACE	United States Army Corps of Engineers
USSOCOM	United States Special Operations Command

1. INTRODUCTION

This Accelerated Corrective Action Work Plan presents the objectives for the voluntary removal and disposal of petroleum-contaminated soil (PCS) at the Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad (Solid Waste Management Unit [SWMU] 31) at Cannon Air Force Base (AFB), New Mexico. This corrective action is being performed to achieve closure of the site per the Base's Resource Conservation and Recovery Act (RCRA) permit, issued by the New Mexico Environment Department (NMED) on behalf of the United States Environmental Protection Agency (EPA). North Wind, Inc. (North Wind), at the direction of the United States Army Corps of Engineers (USACE) and Cannon AFB, will excavate and dispose of the contaminated soil and restore the site to the condition prescribed by Cannon AFB.

This Work Plan meets the requirements stipulated within the USACE, Omaha District, Contract No. FA4890-04-D-0006, Task Order DK03; the project Scope of Work; and Base requirements. The Work Plan provides project objectives, descriptions, technical specifications, field procedures, and related plans that address all aspects of the proposed construction activities at SWMU 31. All field activities will be performed in accordance with the Site-Specific Environmental Health and Safety Plan (SSHP) (Appendix F) and USACE health and safety requirements (Section 4.2.6).

1.1 Project Objectives

This Work Plan is designed to achieve closure at SWMU 31 to minimize any threat to human health and the environment, without requiring maintenance, by accomplishing the following:

- Excavate contaminated soil at one area located in SWMU 31
- Verify removal of soil contamination
- Characterize excavated soils for disposal
- Perform site restoration (clean backfill and grading)

Confirmation samples will be analyzed and contaminant concentrations compared to regulatory screening levels to determine future site activities.

1.2 Site Background

Previous investigations conducted at SWMU 31 identified potential contaminants at the SWMU, including JP-4, oils, and diesel fuel. As reported in the Phase I and Phase II RCRA Facility Investigations (RFI) for the Appendix III SWMUs at Cannon AFB (Woodward Clyde, 1994; 1995), total recoverable petroleum hydrocarbons (TRPH) were detected at concentrations exceeding the 1,000-milligram per kilogram (mg/kg) NMED action level. Lead and chromium were detected in site soils at concentrations exceeding their respective background concentrations of 8.7 mg/kg and 13.3 mg/kg (Woodward Clyde, 1994; 1995). However, the Appendix I Remedial Investigation (RI) of the soils lining the SWMU 34 AGE Drainage Ditch to the northeast of SWMU 31 found negligible to nondetectable levels of the target contaminants in the soils sampled (Woodward Clyde, 1991; 1992).

PCS will be removed from one area in SWMU 31. The extent of contaminated soil to be excavated as determined from previous investigations is described in Section 4 of this Work Plan. Sampling

will be conducted within the excavated area to verify the removal of contamination. The excavated soil will be characterized to determine disposal options, and the site will be restored to a condition prescribed by Cannon AFB based on their projected use of the area. A completion report describing all work performed under this contract, including descriptions of tasks performed, supporting analytical data, daily quality control reports (DQCRs), and a site map showing the excavated area, will be submitted to the USACE and Cannon AFB.

1.3 Work Plan Overview

The Work Plan describes the methods that will be used to excavate the contaminated soil from SWMU 31, verify contamination removal, and characterize excavated soils for disposal. North Wind personnel, including subcontractors, will follow the procedures outlined within this Work Plan at all times.

The Work Plan is divided into nine sections and six appendices. The site description and history are presented in Section 2, and key project personnel are identified in Section 3. Section 4 includes the Project Implementation Plan and Scope of Work, which describe all site activities from mobilization through demobilization. The Regulatory Compliance Plan (RCP), including environmental procedures, permitting and approval requirements, and regulatory procedural and training requirements, is presented in Section 5. Section 6 presents the Field Sampling Plan (FSP), and Section 7 presents the Quality Assurance Project Plan (QAPP) for project activities. Section 8 includes the project schedule and planned meetings; references are provided in Section 9. Appendices A and B contain the technical specifications and supporting documentation, respectively. Laboratory precision and accuracy data and reporting limits for the analytical program are provided in Appendix C, and the standard operating procedures (SOPs) for sampling activities are contained in Appendix D. The Contractor Quality Control (CQC) Plan is presented in Appendix E, and the SSHP is provided in Appendix F.

2. SITE DESCRIPTION AND HISTORY

Site activities for this project consist of removing PCS at SWMU 31, performing verification and confirmation sampling and analysis, disposing of excavated soil, and completing site restoration. Brief descriptions of Cannon AFB and of SWMU 31 are provided below. The site history and detailed descriptions of previous site activities have been presented in previous investigation reports.

2.1 Cannon AFB Location and History

Cannon AFB occupies approximately 4,000 acres south of U.S. Highway 60/84 in Curry County, New Mexico. The Base is situated 6 miles west of the city of Clovis, near the New Mexico-Texas border (Figure 2-1). The area surrounding Cannon AFB is used mainly for farming and ranching. Cannon AFB also maintains several satellite facilities.

In 1942, the Department of Defense established the Clovis Army Air Base, a training facility for B-17, B-24, and B-29 air crews. The Base was renamed Clovis Army Airfield in 1945 and closed in 1947. In 1951, the Air Base was reopened and assigned to the Tactical Air Command as Clovis AFB. In 1957, the Base was renamed Cannon AFB. From the 1960s until 2007, Cannon AFB was part of the Tactical Air Command or Air Combat Command and home of the 27th Fighter Wing.

In May 2005, the Base Realignment and Closure Commission recommended to the Secretary of Defense to close Cannon AFB. Subsequently, a final report (September 2005) from the Commission to the President recommended Cannon AFB remain open as an enclave until at least December 2009 and that the 27th Fighter Wing be disestablished. In the interim, the Secretary was to seek other missions for assignment to Cannon AFB. As a result, the Air Force Special Operations Command (AFSOC), headquartered at Hurlburt Field, Florida, was designated as the new mission for Cannon AFB in 2007. AFSOC is a Major Command and the Air Force component of United States Special Operations Command (USSOCOM), a unified command located at MacDill AFB, Florida. AFSOC is responsible to USSOCOM for readiness of special operations forces for worldwide deployment, and is composed of highly trained, rapidly deployable airmen who are equipped with highly specialized aircraft. These forces provide global ability to conduct special operations missions ranging from precision application of firepower, to infiltration, exfiltration, resupply, and refueling of operational elements. Cannon AFB will provide AFSOC dedicated installation, range facilities, and training airspace for their forces to achieve and maintain skills.

2.2 SWMU 31 Site Description and History

SWMU 31, the AGE Maintenance Facility Shop Pad, is located in an open concrete area adjacent to the southeastern side of the AGE Maintenance Shop in Building 186. Figure 2-2 shows the location of SWMU 31 within Cannon AFB. As shown on the site plan, the pad is approximately 60 to 70 feet (ft) wide and 240 to 280 ft long (Figure 2-3). A wash rack is located in a 45-square ft (sq ft) area beyond the southeastern edge of the pad. The AGE Drainage Ditch (SWMU 34) carries runoff from the maintenance pad to the northeast.

The maintenance pad has been active since 1971. Wash water associated with site activities, along with surface and stormwater runoff, flows off the pad to the southeast and is potentially

contaminated with JP-4, oils, and diesel fuels. The Appendix I RI of the AGE Drainage Ditch northeast of the pad indicated negligible to nondetectable levels of target contaminants in the soils sampled (Woodward Clyde, 1991; 1992). As reported in the Phase I and II RFI reports, TRPH, lead, and chromium were detected at concentrations exceeding their respective background and screening levels (Woodward Clyde, 1994; 1995). The concentrations and distribution of chemicals detected at SWMU 31 during the 2008 investigation (Bay West, 2008) are provided in Appendix B; detections of TRPH, lead, and chromium reported in the area to be excavated are described below.

TRPH, lead, and chromium were detected in three Phase II RFI soil samples collected 0 to 2 ft below ground surface (bgs) in the area of the planned excavation (Appendix B). The TRPH concentrations at boreholes SB-3101 (3,180 mg/kg) and SB-3107 (2,500 mg/kg) exceeded the TRPH action level of 1,000 mg/kg. TRPH was also reported at SB-3105 (696 mg/kg). Lead concentrations at boreholes SB-3101 (930 mg/kg), SB-3105 (42.7 mg/kg), and SB-3107 (20.7 mg/kg) exceeded the background level of 8.7 mg/kg. Chromium was detected at concentrations of 11.3 mg/kg (SB-3105), 130 mg/kg (SB-3101), and 25.6 mg/kg (SB-3107). The background concentration for chromium at Cannon AFB is 13.3 mg/kg.

On February 17–18, 1999, excavation was completed at SWMU 31 in a localized area to remediate lead-contaminated soil that was identified during previous investigations. Approximately 4 cubic yards of soil was excavated adjacent to the entrance gate on the southern side of the AGE complex and disposed off site. The excavated soil was characterized as RCRA nonhazardous waste and was disposed at Safety Kleen's Lone Mountain Facility in Oklahoma (Foster Wheeler, 1999).

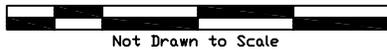
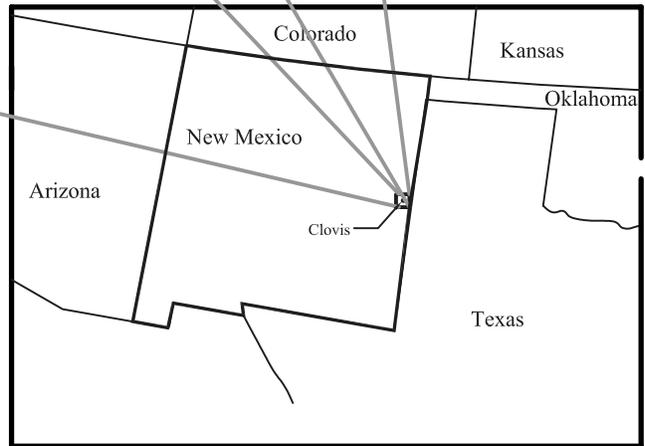
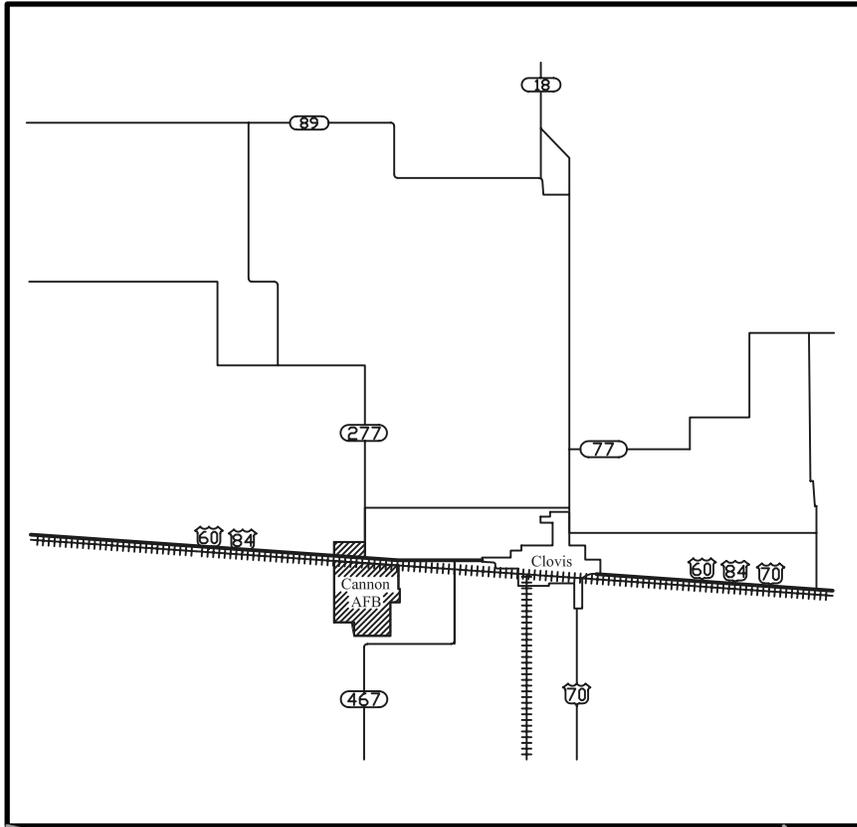
In February 2008 a direct-push technology (DPT) sampling program was conducted across the wash rack area along a 20-ft grid to a depth of 15 ft to delineate the extent of soil contamination at SWMU 31 and confirm the levels of total petroleum hydrocarbon (TPH) in soil at locations where previous investigations indicated elevated levels of contamination. An action level of 520 mg/kg based on NMED TPH screening guidance was used to determine the extent of contaminated soil requiring remediation at the SWMU.

Based on the analytical results for TPH detected during the 2008 sampling program, exceedances of the TPH guideline were reported at three soil boring locations. Based on the analytical data and field observations the report recommended excavating approximately 300 cubic yards of soil (Bay West, 2008). Figure 2-4 shows the 3,000-sq ft area where excavation should extend to a depth of 2 ft bgs once the concrete is removed. Within the central portion of the site an additional 2 ft should be excavated within an area of approximately 900 sq ft.

2.3 Site Geology and Hydrogeology

The geology and hydrogeology of SWMU 31 is described in detail in previous investigations (Woodward Clyde, 1995). A brief summary is provided below.

Soils at SWMU 31 consist of fine sandy clays and silts found 0.5 to 3.5 ft bgs. Interbedded white sandy clay and reddish-brown sandy clay underlie this layer. Surface water runoff from the northwestern area of the maintenance pad is directed along an expansion joint off site, while drainage for the rest of the area is carried by the AGE Drainage Ditch to the northeast. Groundwater under the site occurs 275 to 300 ft bgs.



Not Drawn to Scale



Accelerated Corrective Action Work Plan
 SWMU 31 AGE Maintenance Pad
 Cannon Air Force Base, New Mexico

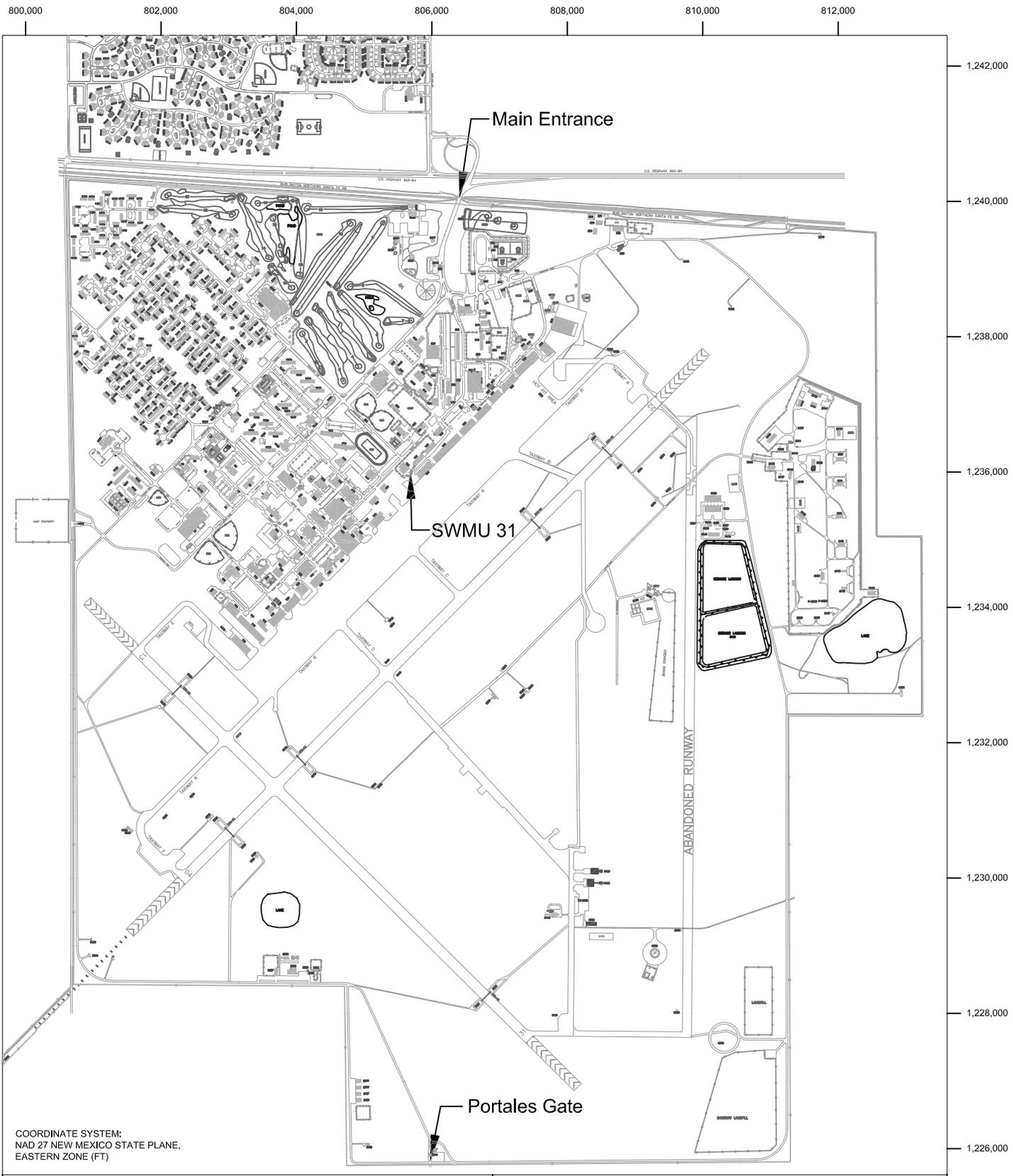
Location Map - Cannon Air Force Base

Date: 12-19-08

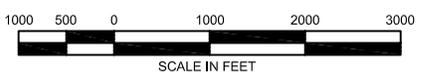
File Name:
 Figure 2-1.dwg

Figure 2-1

This page intentionally left blank.



COORDINATE SYSTEM:
 NAD 27 NEW MEXICO STATE PLANE,
 EASTERN ZONE (FT)



Accelerated Corrective Action Work Plan SWMU 31 AGE Maintenance Pad Cannon Air Force Base, New Mexico	
Site Location Map - SWMU 31	
Date: 12-19-08	<h2>Figure 2-2</h2>
File Name: Figure 2-2.dwg	

This page intentionally left blank.



Figure 2-3
SWMU 31 Sample Location Map

This page intentionally left blank.

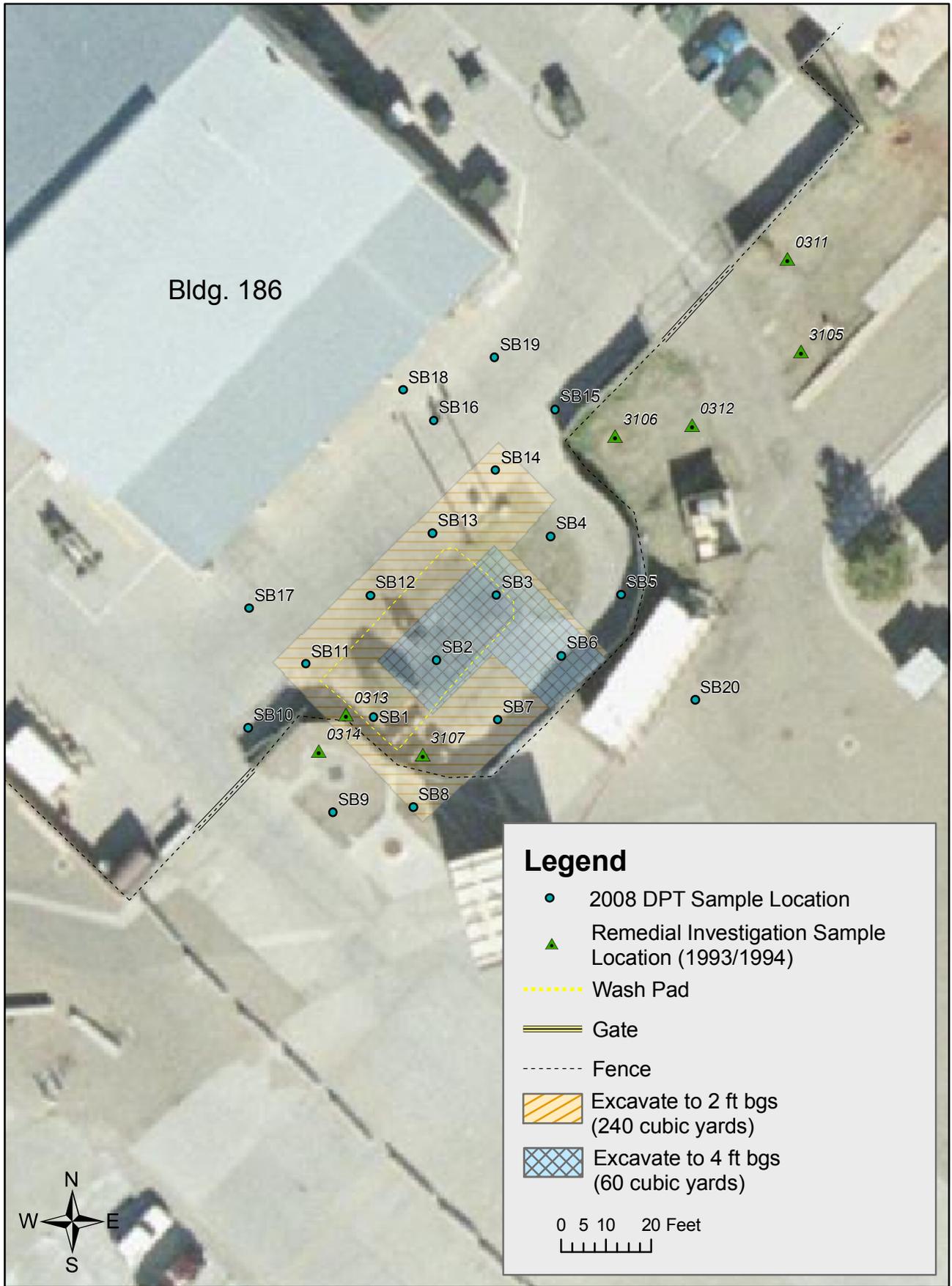


Figure 2-4
SWMU 31 Proposed Excavation Area

This page intentionally left blank.

3. PROJECT PERSONNEL

A team consisting of North Wind, USACE, and Cannon AFB will manage the corrective action implementation for this project. This section identifies the key personnel and their roles in the construction phase of the project. The project organization chart is presented in Figure 3-1.

3.1 Task Order Manager

Mr. Tom Matzen is the North Wind Task Order (TO) Manager for this project. A detailed description of this position, including responsibilities and authorities, is provided in the CQC Plan (Appendix E).

3.2 Contractor Quality Control Systems Manager/Site Health and Safety Officer/Site Construction Manager

Mr. Robert Sotler will be the Site Construction Manager in charge of field operations. He will also act as the project CQC Systems Manager and Site Health and Safety Officer (SHSO). A detailed description of these positions, including responsibilities and authorities, is provided in the CQC Plan (Appendix E).

3.3 Construction Support

North Wind will execute the concrete demolition, excavation, and restoration services, and will perform confirmation sampling, waste characterization, and disposal activities. Mr. Robert Sotler will also serve as North Wind's Site Superintendent. He is responsible for the daily execution of work at the site. Confirmation samples will be collected by qualified personnel delegated by the Site Superintendent.

Mr. Kishor Gala of North Wind will be the Project Chemist for the chemical analysis effort. The Project Chemist will be responsible for the daily execution of project sampling and analysis activities. He will also lend technical assistance to field personnel and the subcontractors to ensure work is performed in accordance with regulations, professional standards, and client expectations.

This page intentionally left blank.

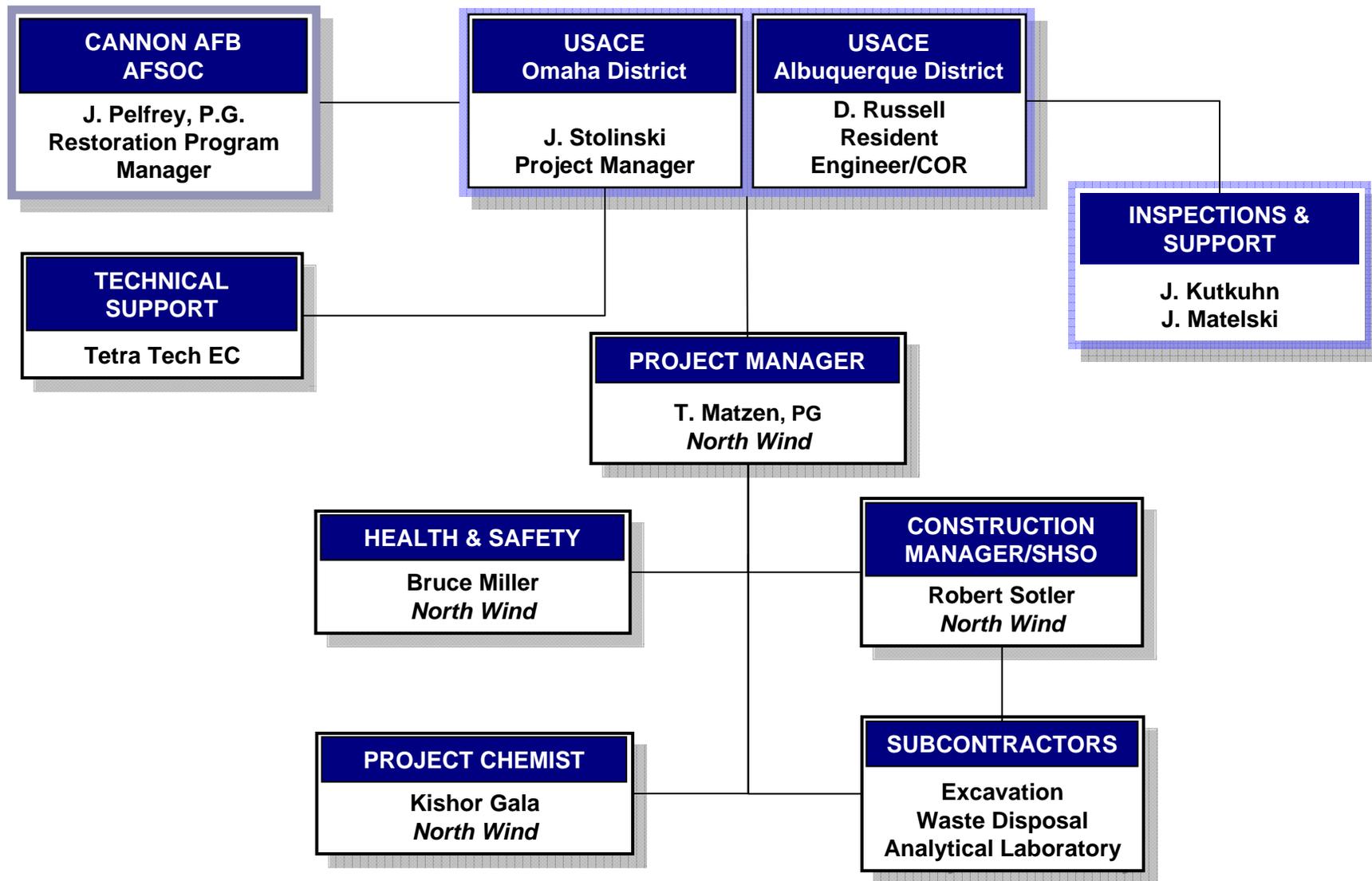


Figure 3-1
Project Organization Chart

This page intentionally left blank.

4. PROJECT IMPLEMENTATION PLAN/SCOPE OF WORK

This section describes the on- and off-site activities to complete the accelerated corrective action, including mobilization, Base access and site security, excavation activities, and demobilization.

4.1 Base Access and Site Security

Contractor and subcontractor vehicles will access sites at the Base via the main gate. All vehicles will travel along improved roads and will not enter areas marked as secure without receiving prior clearance. The Site Construction Manager, required North Wind personnel, subcontractors, and vendors will receive vehicle passes valid for the duration of the project. A valid driver's license, proof of vehicle insurance, and valid vehicle registration will be required to obtain a pass. The site security consists of procedures, structures, and personnel provided by Cannon AFB at the Base perimeter.

4.2 On-Site Activities

On-site activities will include the following:

- Project kick-off meeting
- Mobilization
- Excavation/removal activities
- Confirmation sampling and analysis
- Characterization and disposal of excavated soil
- Site restoration
- Demobilization
- Field engineering and quality control (QC)
- Health and safety monitoring

4.2.1 Project Kick-Off Meeting

North Wind will conduct a project kick-off meeting at the Base prior to initiation of construction, with participation, at a minimum, from North Wind, USACE, and Cannon AFB. The agenda for this conference will include the following topics:

- Introductions, roles, and responsibilities
- Review of Scope of Work
- Construction schedule
- Mobilization logistics
- Coordination of schedules
- Review of quality/health and safety programs
- Pending changes and substitutions

- Review of proposed changes for effects on construction, completion date, and other aspects of the project
- Other business

The agenda will be formalized prior to the project kick-off meeting.

4.2.2 Mobilization

Mobilization will consist of logistical planning and a personnel orientation meeting prior to startup of field activities. This meeting will include site-specific health and safety training covering site hazards, procedures, and contents of the SSHP; a review of intended operations; and training on pollution prevention and waste minimization procedures. USACE will mark with stakes the area to be excavated and the final location will be verified prior to initiation of excavation activities.

4.2.2.1 Utility Clearance

Cannon AFB will provide utility clearance for the construction site. North Wind will notify Mr. Jerry Pelfrey at Cannon AFB a minimum of 7 days prior to mobilization. Mr. Pelfrey will obtain the dig permit and utility clearance for the site.

4.2.2.2 Staging and Storage Areas

Staging and storage areas will be determined at the project kick-off meeting. These areas will be used for storage of equipment and supplies, maintenance operations, and general construction administration.

4.2.2.3 Miscellaneous Site Preparation

Construction and health and safety personnel will establish work zones for the project in accordance with the SSHP. The decontamination area for the project will be set up at the site.

4.2.3 Construction Activities

The following subsections describe the major construction activities that will be performed at the excavation area. Discussions of specific equipment, methods, and procedures are included in the technical specifications (Appendix A).

4.2.3.1 Excavation/Removal Activities

An excavator will be used to demolish the concrete and remove the concrete and contaminated soil from the excavation area. The excavation will be located in the southeastern portion of the concrete pad that comprises SWMU 31, and will focus on the area of the former wash pad, which measures approximately 45 square ft as specified by USACE and Cannon AFB. Based on the February 2008 DPT sampling program, an area measuring approximately 3,000 sq ft requires excavation to a depth of 2 ft below ground surface once the concrete is removed. Within the central portion of the site an additional 2 ft should be excavated within an area of approximately 900 sq ft. The total volume of excavated soil is approximately 300 cubic yards. The area requiring excavation is shown on Figure 2-4.

The excavation limits for SWMU 31 will be measured and depicted on the site map provided to North Wind by triangulating from existing site features. The excavated soil from the site will then be stockpiled for storage pending characterization sampling results. Once excavation is deemed complete, confirmation samples will be collected as described in the FSP (Section 6) for laboratory analysis.

Upon receipt of the confirmation sampling results, North Wind will determine disposal options for the excavated soils. Clean soil removed from the site during excavation will be used as backfill for the excavated area; backfill will be mechanically compacted in 1-ft lifts. No compaction criteria are required.

4.2.3.2 Segregation of Materials

It is anticipated that excavated soil will be directly stockpiled and stored until disposition is determined by characterization sampling and analysis. Once the excavation is complete, the volume of material in the stockpiles will be estimated by hand survey and recorded.

4.2.3.3 Backfill

Following approval from USACE and Cannon AFB, the excavation shall be backfilled with acceptable soil or clean gravel base course material compacted in 1-ft lifts. Clean soil and gravel base course material imported from an off-site source will also be used. The backfill materials will be brought above grade and sloped away from the excavation center.

4.2.3.4 Site Restoration Activities

Site restoration activities at the excavated area consist of backfilling and grading activities as described in Section 4.2.3.3. The remainder of the area will be returned to the condition prescribed by Cannon AFB.

4.2.4 Demobilization

Demobilization activities will include equipment decontamination, site cleanup, disposal, personnel and equipment demobilization, organization of field records, and notification to USACE on the status of the excavation area. USACE will be notified of the anticipated end date for field activities prior to departure of field personnel. The Site Construction Manager will ensure that the excavation area has been returned to the condition prescribed by Cannon AFB and will then complete the certificate of completion.

4.2.5 Field Engineering and Quality Control

Field engineering and QC include engineering and QC inspection. Field engineering will be performed under the direction of the Site Construction Manager. In accordance with the CQC Plan, required QC inspections will be conducted, and field change requests (FCRs), Design Change Notices, and nonconformance notices will be completed when discrepancies concerning constructed elements and associated drawings and specifications occur. In addition, DQCRs documenting each day's construction activities will be completed and maintained, and the approximate location of the excavation limits incorporated into the as-constructed drawings.

4.2.6 Health and Safety

Health and safety activities will be conducted in accordance with the SSHP (Appendix F); USACE Safety and Health Requirements Manual (EM 385-1-1) (2003); and USACE Appendix B, Safety and Occupational Health Requirements Manual (ER 385-1-1). The Site Construction Manager will ensure implementation of these programs and procedures, and all employees will be responsible for complying with these documents.

4.3 Off-Site Activities

The TO Manager will oversee the coordination of the entire project from North Wind's Lawrence, Kansas, office. The Site Construction Manager will serve as the Point of Contact for all field inquiries regarding engineering and will coordinate engineering efforts in compliance with USACE procedures and applicable professional standards.

During the project, home office personnel may be required to visit the site to provide routine inspection and technical assistance. Site visits and inspections will be coordinated through the TO Manager according to the needs of the project.

North Wind will procure subcontractors and major work items and will furnish the following administrative support functions:

- **Contract Compliance**—Administrator will assist project management with all issues pertaining to contract compliance.
- **Regulatory Compliance**—Compliance with permits and regulatory requirements will be overseen by designated home office personnel as described in the RCP (Section 5).
- **Safety Compliance**—Home office compliance officers will periodically monitor the Site Health and Safety Program.
- **Compliance Inspections**—Designated corporate representatives from the home office will periodically evaluate all issues regarding corporate, regulatory, health and safety, and project compliance.

Technical specifications (Appendix A) have been prepared to describe the general requirements for submittals, temporary facilities and utilities, dust control, erosion and sediment control, project record documents, project record drawings, and earthwork.

5. REGULATORY COMPLIANCE PLAN

The RCP was specifically developed to identify regulatory requirements applicable to the removal and disposal of contaminated soil generated during the closure of SWMU 31. The RCP details the corrective action requirements, waste management practices, documentation, and training requirements that are necessary for the closure activities. In addition, the RCP provides guidance regarding waste minimization practices to be followed during the project to reduce the volume of waste generated, stored, and removed from the site for disposal.

5.1 Regulatory Framework

Pursuant to the requirements of their RCRA permit, Cannon AFB is actively conducting corrective action activities for SWMUs identified at the Base. EPA has authorized NMED to implement the federal RCRA program and oversee corrective action program activities conducted in accordance with the Base's RCRA permit.

5.2 Regulated Site Activities

The corrective action for SWMU 31 involves the excavation of contaminated soil from a specified area. Previous investigations of the SWMU have indicated the presence of various contaminants, including petroleum hydrocarbons. PCS is regulated as a New Mexico special waste. Following excavation, the area will require confirmation sampling and analysis and site restoration to meet closure criteria. A more detailed discussion of the SWMU characteristics and the specific corrective action activities to be implemented during the project is presented in Section 4 of this Work Plan, the contaminant distribution at the SWMU is summarized in Section 2.2, and supporting information from the 2008 sampling program is provided in Appendix B.

The anticipated regulated activities are as follows:

- Excavating and storing PCS material
- Sampling and analyzing excavated soil for subsequent characterization, management, and disposal purposes
- Identifying appropriate transportation companies and disposal facilities for New Mexico-regulated special wastes (i.e., PCS) resulting from the SWMU closure-related activities
- Preparing materials, completing documentation, labeling, and placarding waste containers for transport to an appropriate disposal facility

5.3 Regulatory Requirements

Project activities can be expected to generate nonhazardous waste and NMED-regulated special wastes. The following federal and state regulations are therefore applicable and must be complied with during implementation of planned project activities:

- EPA Regulations for Identification and Management of Hazardous Waste, Title 40 of the Code of Federal Regulations (CFR) Parts 260–299

- Department of Transportation (DOT) Rules For Hazardous Materials Transport, 49 CFR Parts 100–178
- New Mexico Hazardous Waste Management Regulations 20 New Mexico Administrative Code (NMAC) 4.1
- New Mexico Special Waste Requirements 20 NMAC 9.1
- New Mexico Air Quality Control Regulations
- Applicable Cannon AFB permits, policies, and procedures

Appropriate Best Management Practices will be followed to control runoff/runoff and to minimize fugitive dust emissions during closure activities.

5.4 Waste Minimization

To minimize the volume of waste, contaminated materials will not be unnecessarily commingled with uncontaminated materials. When practicable, material and equipment will be decontaminated and reused. Volume reduction techniques will also be used.

5.5 Project Waste Descriptions

The potential waste streams associated with SWMU 31 closure activities can be categorized as follows:

- Contaminated soil
- Uncontaminated soil
- Decontamination fluids
- Personal protective equipment (PPE)

Table 5-1 presents a summary of the applicable waste management, transportation, and disposal requirements for each of the above waste streams.

5.6 Waste Management Activities

This section describes in detail how waste generated during closure activities will be characterized and classified.

5.6.1 Waste Characterization/Classification

To determine proper waste management requirements for waste generated during closure activities, hazardous waste characterization is necessary. All waste streams will be sampled and/or characterized in accordance with 40 CFR 262.11 and New Mexico Solid Waste Management Regulations (20 NMAC 9.1) relating to PCS. These regulations require the generator to determine whether a solid waste is a listed or characteristic hazardous waste or a New Mexico special waste. To meet these testing requirements, representative samples will be taken in accordance with federal and New Mexico Solid Waste Management Regulations. The decontamination water, if generated, will be allowed to evaporate at the decontamination site.

Table 5-1. Waste Management Summary

Characterization Requirements	Applicable Regulations	Allowable Containment	Storage Requirements	Transportation Requirements	Disposal Requirements
Excavated Soil					
<p>Soil excavated from each area will be characterized to determine if it is a RCRA hazardous waste or a NMED special waste.</p> <p>Representative samples will be collected from each stockpile containing excavated soil. Analysis should include ignitability, reactivity, TCLP metals, TCLP VOCs, and TPH. Existing soil analytical data for the SWMU will be reviewed and may be substituted for one or more of these analyses.</p>	<p>20 NMAC 4.1 "Identification & Listing of Hazardous Waste" and "Standards Applicable to Generators of Hazardous Waste"</p> <p>40 CFR 268.48–LDR-UTS</p> <p>40 CFR 262–Generator Requirements</p> <p>20 NMAC 9.1 Special Waste Requirements</p>	<p>Hazardous waste: Rolloffs must be kept sealed when not being loaded or unloaded.</p> <p>Special Waste: Store in rolloff or lined bermed unit meeting NMED requirements.</p>	<p>Hazardous Waste: 90-day storage limit if determined to be a hazardous waste and must be labeled with a completed hazardous waste label.</p> <p>Special Waste: PCS: Maximum on-site storage for PCS special waste is 45 days.</p> <p>NOTE: Storage clock starts from the date that waste is first put into the container.</p>	<p>Hazardous Waste: Hazardous waste manifest, DOT placarding. Must use an EPA-permitted transporter.</p> <p>Must also have LDR certifications as necessary.</p> <p>Special Waste: PCS shipped offsite must be accompanied by a NMED special waste manifest. Containers must be labeled indicating contents and the potential health, safety, and environmental hazards associated with the waste.</p>	<p>Hazardous Waste: Must be disposed of at an approved RCRA TSDF.</p> <p>PCS special waste can be disposed of only in an approved off-site solid waste facility authorized for special wastes.</p> <p>PCS special waste containing free liquid cannot be sent to a landfill and must pass the paint filter test before it can be landfilled.</p> <p>NOTE: USACE and Cannon AFB must approve TSDF and transporter prior to shipment of waste.</p>
Decontamination Water					
<p>Decon water will be characterized using the analytical data from associated soil samples. If necessary a representative sample will be taken from accumulation container or portable tanks. Analysis should include metals, VOCs, and TPH.</p>	<p>20 NMAC 4.1 "Identification & Listing of Hazardous Waste" and "Standards Applicable to Generators of Hazardous Waste"</p> <p>40 CFR 268.48–LDR-UTS</p> <p>40 CFR 262–Generator Requirements</p> <p>WQCC 82-1, Part 3-103</p>	<p>DOT-approved 55-gallon (bung-hole-type) metal drums (1A1) or DOT-approved portable tanks (DOT 51, 52, 53, 56, 57, and 60) that must be sealed when not being filled.</p>	<p>Hazardous Waste: 90-day storage limit if determined to be a hazardous waste and must be labeled with a completed hazardous waste label.</p> <p>NOTE: Storage clock starts from the date that waste is first put into the container.</p>	<p>Hazardous Waste: Hazardous waste manifest, DOT placarding. Must use an EPA-permitted transporter.</p> <p>Must have LDR certifications as necessary.</p>	<p>Hazardous Waste: Must be disposed of at an approved off-site RCRA TSDF.</p> <p>If not a hazardous waste and meets groundwater discharge standards, can discharge to the ground with approval of NMED.</p> <p>If above discharge levels, water may be disposed of, at the WWTF with approval and authorization of Cannon AFB.</p>

Table 5-1. Waste Management Summary (Concluded)

Characterization Requirements	Applicable Regulations	Allowable Containment	Storage Requirements	Transportation Requirements	Disposal Requirements
Disposable PPE					
Decontaminated PPE will be handled as solid wastes and no analysis is required.	20 NMAC 9.1 Solid Waste Management Regulations 20 NMAC 4.1 "Identification & Listing of Hazardous Waste" and "Standards Applicable to Generators of Hazardous Waste" 40 CFR 268.48-LDR-UTS 40 CFR 262-Generator Requirements	Double bagged in plastic bags	NA	NA	Nonhazardous solid waste to be disposed of at an approved solid waste landfill. NOTE: USACE and Cannon AFB must approve TSDF and transporter prior to shipment of waste.

- | | | | |
|------|---|-------|--|
| CFR | Code of Federal Regulations | SWMU | solid waste management unit |
| DOT | Department of Transportation | TCLP | toxicity characteristic leaching procedure |
| EPA | United States Environmental Protection Agency | TPH | total petroleum hydrocarbons |
| LDR | land disposal restriction | TSDF | treatment, storage, and disposal Facility |
| NA | not applicable | USACE | U.S. Army Corps of Engineers |
| NMAC | New Mexico Administrative Code | UTS | universal treatment standards |
| NMED | New Mexico Environment Department | VOC | volatile organic compound |
| PCS | petroleum-contaminated soils | WQCC | Water Quality Control Commission |
| PPE | personal protective equipment | WWTF | wastewater treatment facility |
| RCRA | Resource Conservation and Recovery Act | | |

Although unlikely, wastes are determined to be characteristically hazardous on the basis of their chemical constituents or physical properties. Listed wastes are specifically identified in 40 CFR Part 261, Subpart D. Characteristic hazardous wastes are those wastes that exhibit toxicity in excess of the values indicated in 40 CFR Part 261, Subpart C. An exceedance of a toxicity characteristic is generally determined by comparing the constituent concentration of the waste to listed Toxicity Characteristic Leaching Procedure (TCLP) regulatory levels.

Documentation of all proposed waste classifications will be provided to Cannon AFB for final waste stream characterizations. The Base is responsible for making all final waste characterizations and for signing waste manifests.

5.6.2 Hazardous Waste Management

RCRA Subtitle C and the New Mexico Hazardous Waste Management Regulations (20 NMAC 4.1) govern hazardous waste management from the point of generation, through storage and treatment (if necessary), to ultimate disposal. The NMED Hazardous Waste Bureau oversees management of the hazardous waste program in New Mexico.

Hazardous waste must comply with the following requirements:

- Hazardous waste must be managed in accordance with 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste.
- Hazardous waste transported off site must be manifested in accordance with 40 CFR Part 262, Subpart B, Manifests, and accompanied by land disposal restriction (LDR) certification notices as per 40 CFR 268.7, Waste Analysis and Recordkeeping.
- Hazardous waste must be stored in accordance with 40 CFR Part 265, Subpart I, Use and Management of Containers.
- All containers of hazardous waste to be stored or disposed will be clearly marked with a completed hazardous waste label, indicating the starting date of accumulation; EPA identification number; EPA waste code, etc; and DOT markings.
- Hazardous waste may be stored on site for a maximum of 90 days. The 90 days begin on the date that the waste is first generated and containerized (i.e., that day the first drop of waste is placed in a container).
- Hazardous waste must be disposed only at a hazardous waste disposal facility permitted for the disposal of the particular type of hazardous waste generated.

5.6.3 New Mexico Special Waste Management

New Mexico Special Waste Regulations are found in 20 NMAC 9.1. Management of special wastes is under the control of the NMED Solid Waste Bureau.

With regard to this project, New Mexico special wastes are defined as solid wastes, including PCS, that have unique handling, transportation, or disposal requirements necessary to ensure protection of the environment and the public's health and safety.

New Mexico has generally defined PCS as special waste if the petroleum hydrocarbon concentration is greater than 1,000 mg/kg and/or benzene is greater than 10 mg/kg. Special wastes must comply with the following requirements:

- Special wastes must be treated prior to disposal and/or isolated in their disposal to ensure a minimum of exposure to the public.
- All special wastes must be disposed only at solid waste facilities permitted for disposal of special wastes.
- All special wastes must be manifested in accordance with Section 712 of the New Mexico Special Waste Requirements Regulations.
- Storage of special wastes will occur only at an approved special waste storage area in a rolloff or bermed area containing an impermeable membrane liner. Special wastes will not be stored longer than 45 days, unless approved in advance by NMED.
- All containers of special wastes to be stored or disposed will be clearly labeled, indicating the contents and potential health, safety, and environmental hazards associated with the waste.
- The physical and chemical characteristics of all special wastes will be documented prior to storage, transportation, or disposal, by the following:
 - Records of the results of analysis performed in accordance with Section 704 as applicable
 - Detailed descriptions of the generator's knowledge of specific wastes.

Transporters of any type of regulated special waste must be registered with the NMED Solid Waste Bureau.

5.6.4 Waste Containerization and Storage

DOT-trained personnel will select containers based on type and quantity of waste to be generated. Containers may include either DOT-specification drums or rolloffs for regulated hazardous material. DOT-specification containers are not required for material that does not meet a DOT hazard class (e.g., PCS, which may be transported in a dump truck).

Prior to starting closure activities, the Construction Site Manager will, in conjunction with Cannon AFB personnel, select areas for the temporary staging and storage of excavated materials, decontamination fluids, and PPE.

Waste material must be classified according to EPA and DOT criteria before the labels are applied. Upon classification, each container will be marked and labeled as required by EPA and DOT, if applicable. Trained personnel will conduct all DOT functions as required by 49 CFR Part 172, Subpart H.

At the time of generation, all waste containers will be labeled, using indelible ink, with the following information:

- Source and location
- Contents and quantity of material in the container
- Potential health, safety, and environmental hazards
- Accumulation start date (the date the first drop of material was put in the container)
- Date container sampled
- Parameters analyzed

If necessary, containers determined to contain hazardous waste will immediately be labeled with a completed commercial EPA "HAZARDOUS WASTE" label, which will include the accumulation start date and other requested information.

Excavated soil rollofs and/or stockpiles containing confirmed PCS will be labeled using the following format:

“Petroleum-Contaminated Soil”
Origin: Soil Excavation—Petroleum Hydrocarbons
Contaminated Soil—Gasoline, Diesel, Jet Fuel (whichever applies)
Concentration: _____ parts per million TPH

All hazardous waste stored in drums will also be stored on wooden pallets and subsequently transported off site or to the Cannon AFB Defense Reutilization and Marketing Office. An inventory of waste containers will be maintained for later submittal to and inspection by both USACE and Cannon AFB personnel.

Containers of hazardous waste will be inspected and logged weekly while the field work is in progress. Inspections will encompass evaluation for proper labeling, secure closure, the condition of each container, number of containers, and condition of the storage area. Any signs of deterioration, leaking, or dents will be noted, and containers will be immediately overpacked, if necessary. Inspection results will be provided to the USACE and Cannon AFB.

5.7 Reporting Spills and Releases

Precautions will be taken to prevent oil and hazardous material spills, including daily inspection by the site personnel of equipment, structure(s), and containers. Personnel using hazardous materials will inspect containers before and after use. In the event of a spill/release, the Site Construction Manager will notify the Cannon AFB Fire Department and the USACE. Spill response will be conducted in accordance with federal, state, local, and Cannon AFB regulations. Emergency response procedures are specified in the SSHP.

The following chain of communications will be used in case of a spill:

- Mr. Hugh Hanson (575-784-0490) has been designated as the Spill and Release Reporting Site Representative. In the event of a spill or release Mr. Jerry Pelfrey, Cannon AFB (575-784-6391); Ms. Donna Russell, USACE (505-784-2740); and the Base Fire Department (505-784-2578) will be notified.
- Site personnel must contact the TO Manager. In addition, the TO Manager will immediately contact the USACE Project Manager:

- North Wind TO Manager: Tom Matzen
Telephone: (785) 838-3141
Facsimile: (785) 838-3155
- USACE Project Manager: Jerome Stolinski
Telephone: (402) 995-2731

5.8 Training/Certification Requirements

This section presents the DOT training and certification requirements for personnel involved in the remediation project. In addition to the DOT training, employees will be trained in Waste Management and Environmental Compliance policies and procedures to ensure that they are familiar with the program. These policies and procedures meet Department of Justice requirements for a sound environmental management program. The Occupational Safety and Health Administration training and certification requirements are contained in the SSHP (Appendix F).

All personnel who perform or oversee DOT-related activities will be DOT trained. DOT training records will be maintained in project files on site.

5.9 Inspections by Regulatory Agencies and Third Parties

The following section describes inspection procedures to be followed by field personnel in the event of a regulatory agency or third party on-site inspection.

Site personnel will respond to inspections by regulatory agencies and third parties in accordance with North Wind's environmental compliance requirements. The Site Construction Manager will be designated as the North Wind on-site representative for inspections by regulatory agencies. In the event that Cannon AFB is notified of an impending regulatory inspection, the Base personnel will notify North Wind as soon as possible. During any inspection, both a Base and USACE representative should be present.

5.10 Documentation and Records Retention

This section presents project requirements relating to documentation and records and their retention.

5.10.1 Documentation

The information contained in this section applies to all waste managed during project activities. Field records will be kept in a bound, numbered field logbook. Information to be recorded includes, but is not limited to, the following:

- Description of waste-generating activities
- Location of waste generation (including depth, if applicable)
- Type of waste
- Date and time of generation
- Name of person recording information
- Name of field manager at time of generation and at time of disposal

- Test results
- Inspection logs
- Waste documentation, including:
 - Waste profile sheets
 - LDR certification
 - Hazardous waste manifest
 - Trip tickets or bills of lading
 - Copies of any state or local permits or approvals

5.10.1.1 Transportation

Transportation documentation will comply with DOT regulations 49 CFR Parts 100–178 and will be prepared by appropriately trained field personnel. Containers will be marked, labeled, and/or placarded prior for off-site transport. Assigned site personnel will prepare the Treatment, Storage and Disposal Facility (TSDF) waste profile sheets, LDR notifications, waste manifests, and shipping documents for Cannon AFB officials to review and sign. Waste transporters used will be registered with NMED and approved by the Base.

5.10.1.2 Hazardous and Special Waste Manifests and LDR Certification

All hazardous waste transported from the site will be accompanied by a Hazardous Waste Manifest. New Mexico does not provide a standard state manifest, so the receiving state manifest must be used. If the receiving state does not have a state manifest, a Uniform Hazardous Waste Manifest may be used. Cannon AFB personnel will be responsible for reviewing and signing all waste documentation, including waste profiles, manifests, and LDR notifications (manifest packages). Prior to signing the manifest, the designated Cannon AFB official will ensure that pre-transport requirements of packaging, labeling, marking, and placarding are met according to 40 CFR 262.30–262.33 and 49 CFR Parts 100–177.

For special waste, a manifest containing the following information will accompany each load of special waste originating from or to be disposed in New Mexico, as specified in Section 702.C:

- Name, address, and telephone number of the generator
- Name, address, and telephone number of any and all transporters in the order each will be transporting the waste
- Name, site address, telephone number, and identification number of the solid waste facility to which the waste is to be delivered
- Type and proper name of waste being shipped
- Total weight or volume of waste prior to shipment from generator
- Total weight or volume of waste received at the solid waste facility
- Type and number of containers in shipment

- Any special handling instructions
- Date and location the waste was delivered
- Date of receipt from the generator and total weight or volume of the special wastes to be provided by the transporter

If more than one transporter is used, each transporter will provide the date of receipt and total weight or volume of said waste received from the previous transporter.

The manifest will be signed by the Cannon AFB personnel, each transporter of the special waste, and the solid waste facility operator. All signatories will be duly authorized agents of their organizations. Significant discrepancies will be reported to the NMED Solid Waste Bureau within 24 hours of discovery. Cannon AFB will receive one copy of the manifest; the remaining copies will be given to the transporter. The manifest will be returned to the Cannon AFB signatory official to be placed on file. Copies of all manifests for waste generated at the site will also be kept in a central project file. A copy of the manifest will be sent to the state by Cannon AFB.

An LDR form will accompany the shipment of hazardous waste to the TSDf. The TSDf must be notified prior to sending the waste. The following items must accompany the notification and are included in one of the following facility specific forms:

- EPA and New Mexico Hazardous Waste Generator identification number (provided by Cannon AFB)
- Manifest number, including state disposal application number
- Waste analysis data
- If the waste is also restricted, corresponding concentration-based or technology-based treatment standards or prohibition

5.10.2 RCRA Records Retention

The designated Cannon AFB manifest signatory official will be responsible for ensuring that all RCRA record keeping requirements are met according to 40 CFR 262.20–262.44, including retention of signed copies of manifests from the designated facility that received the waste. The copy must be maintained for a period of at least 3 years from the date the waste was accepted by the initial transporter. Additionally, biennial and exception reporting must be submitted, as necessary, according to 40 CFR 262.41 and 262.42, respectively. Additional reporting may be required according to 40 CFR 262.43.

5.11 Updating the Regulatory Compliance Plan

The RCP will be updated if changes in site activities or changes in applicable regulations occur.

6. FIELD SAMPLING PLAN

The FSP was developed according to USACE and NMED guidelines and provides an overview of the sampling program, methodologies, objectives, equipment, and procedures. This FSP specifically outlines the constituent sampling and analytical procedures/methodologies that will be used to verify that hazardous constituents have been removed and to characterize the excavated soil for disposal. The FSP prepared for these sites is intended to be used in tandem with the QAPP (Section 7) to provide specific rationales, protocols, and methodologies to be employed when performing field sampling or data collection activities during the project.

The FSP is divided into five sections. Sections 6.1 and 6.2 describe field sampling objectives and summarize the sampling and analysis program, respectively. Section 6.3 discusses design of data collection operations. Sections 6.4 and 6.5 outline characterization sampling and analysis procedures and equipment.

6.1 Sampling Objectives

Field sampling will be performed to (1) identify residual concentrations of chemical constituents in the soil that are above screening-level concentrations subsequent to excavation and (2) characterize soil generated during excavation activities to determine appropriate management and disposition. Based on the fact that jet fuel, gasoline, diesel, and motor oil were likely washed from vehicles in the wash rack at SWMU 31, a TPH action level of 520 mg/kg will be used for the accelerated corrective action based on NMED guidance, New Mexico Environment Department TPH Screening Guidelines, October 2006 (NMED, 2006). The FSP is designed to meet project objectives associated with the removal of contaminated soil to obtain closure at SWMU 31.

Specifically, the FSP will be used to generate analytical data for soil samples collected during remedial activities to ensure the following:

- Analytical quantitation limits are sufficient to enable detection of potential chemicals of concern (COCs) at concentrations sensitive to human health and ecological concerns. All data must support the possibility of a risk-based approach to closure.
- Closure can be achieved and performed in a safe manner.
- Material collection, treatment, storage, transport, discharge, and containment activities are in compliance with all federal, state, and local regulatory agency requirements.

6.2 Summary of Sampling and Analysis Program

The analytical parameters for the characterization soil samples were selected based on the results of the Appendix III SWMUs–Phase II RFI at SWMU 31 (Woodward Clyde, 1995). Detections of TRPH, lead, and chromium exceeding background levels or screening levels were reported at SWMU 31 and in February 1999 the lead- and chromium-contaminated soil was removed. Only PCS remains at SWMU 31 that requires removal.

Table 6-1 summarizes the number of samples to be collected and the associated analytical parameters for this project. A discussion of the sampling program is provided in Section 6.3.

Table 6-1. Cannon AFB Accelerated Corrective Action Sampling and Analysis Program for SWMU 31

Matrix	Sample No.	TPH-GRO	TPH-DRO/ORO	TCLP VOCs	TCLP Metals	Reactivity	Ignitability
Soil, Sidewalls	8	8	8	NA	NA	NA	NA
Soil, Excavation Floor	8	8	8	NA	NA	NA	NA
Soil, Field Duplicate	2	2	2	NA	NA	NA	NA
Waste Soil Characterization	3	3	3	3	3	3	3

DRO diesel range organics

GRO gasoline range organics

NA not applicable

ORO oil range organics

TCLP Toxicity Characteristic Leaching Procedure

TPH total petroleum hydrocarbons

VOC volatile organic compound

6.3 Design of Data Collection Operations

This section addresses project-specific requirements related to the location and frequency of sampling. Sample nomenclature to designate the various samples that will be acquired in the field is also detailed.

6.3.1 Sample Locations and Frequency

Sixteen confirmation soil samples will be collected using a stainless-steel trowel from the bottom and sidewalls of the excavation to verify that no COCs remain in the excavated area that are above background and screening-level concentrations. Samples will be collected at random locations from the excavation floor at a frequency of one per 400 sq ft and at a frequency of one per 50 linear ft from the sidewalls. The construction drawings to be provided in the completion report will show the sample locations. The SOPs presented in this Work Plan (Appendix D) will be used to collect the necessary data.

6.3.2 Sample Designation

The following sample nomenclature will be used for designating environmental samples:

NNN	AA	NN
SWMU	Sample	Sequential Sample
Number	Matrix	Number

Allowable nomenclature for this project is limited to the following:

NNN: SWMU31
 AA: S (soil), X (soil waste)
 NN: 01-18

The following is an example of the sample numbering system:

A soil sample collected from the excavation at SWMU 31 would be identified as SWMU31S01. A waste characterization sample will be identified as SWMU31X01.

The duplicate sample will be given a unique sequential sample number and will be submitted to laboratory as a blind QC sample. The field logbook will note the sample designated for duplicate analysis.

6.4 Disposal Characterization Sampling and Analysis

The following sections discuss characterization sampling and analysis needs for the potential waste streams resulting from excavation activities. Excavated soil will be sampled as indicated, and samples will be analyzed for the parameters specified in Table 6-1. The soil will be classified as either a hazardous or nonhazardous waste. Sampling and analysis will be performed in accordance with the latest revision of EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition (EPA, 1986) and updates.

6.4.1 Characterization of Decontamination Water

Decontamination water generated during the excavation activities will be allowed to evaporate and dried sediment remaining will be disposed along with excavated soil. Therefore, no analytical characterization will be required.

6.4.2 Characterization of Contaminated Soils

Excavated soil from SWMU 31 will be placed and stored in a stockpile until disposal options are determined based on the characterization analysis. Composite samples, at a frequency of one per 100 cubic yards of material, will be collected from the excavated soil by randomly taking sample aliquots from the middle of the selected stockpile area using a stainless-steel trowel; composited in a stainless-steel bowl; and placed in appropriate sample containers, labeled, and documented on chain-of-custody (C-O-C) records. The composite soil samples will be packaged, stored, and analyzed in accordance with appropriate requirements specified in this FSP, EPA SW-846, and the USACE General Chemistry Supplement to the Scope of Services for Studies (January 1996).

The SWMU 31 characterization soil sample will be analyzed for TCLP VOCs, TCLP metals; ignitability and reactivity; and TPH-diesel range organics (DRO), TPH-gasoline range organics (GRO), and TPH-oil range organics (ORO).

The characterization analysis will be appropriate to determine disposal at an approved TSDF.

6.5 Sampling Equipment and Procedures

The following SOPs contained in Appendix D will be followed to collect samples:

SOP D1	Wet Decontamination Methods
SOP D2	Soil Sampling
SOP D3	Soil Stockpile Sampling
SOP D4	Sample Handling and Documentation

This page intentionally left blank.

7. QUALITY ASSURANCE PROJECT PLAN

This QAPP has been prepared to follow the format provided in the General Chemistry Supplement to the Scope of Services for Studies (USACE, 1996). The “A” designations following the section heading number correspond to the designation found in the above-referenced document.

7.1 (A2) Table of Contents

The Table of Contents for the QAPP is contained within the Table of Contents for this Work Plan.

7.2 (A3) Distribution List

The distribution list is indicated on the transmittal letter for the submittal of this Work Plan.

7.3 (A4) Project Organization and Responsibilities

Mr. Kishor Gala (North Wind) will be the Project Chemist. In this capacity, he will be responsible for oversight of laboratory performance and for the validation of the analytical data prior to disposition of the waste. An analytical laboratory has not been selected as of the submittal date of the Draft Work Plan. Information pertaining to the subcontractor laboratory will be included in the final version of the Work Plan.

The CQC Systems Manager/SHSO/Site Construction Manager will be responsible for ensuring that sampling is conducted in accordance with prescribed procedures. All corrective actions will be provided to the North Wind Quality Assurance (QA) Manager and the TO Manager for concurrence. Additional information regarding the project organization, including an organization chart, is provided in Section 3 of this Work Plan.

7.4 (A5) Problem Background/Definition

Sample matrices generated during the accelerated corrective action at SWMU 31 consist of soil from excavation activities and soil samples collected from the sidewalls/bottom of the excavation. Potential site contaminants include petroleum hydrocarbons. A site description, including the site history and site contamination information, is contained in Section 2. The known contaminants were identified during the Phase I and Phase II RFIs for Appendix III SWMUs (Woodward Clyde, 1994; 1995) and the RCRA Facility Assessment (RFA) Visual Site Inspection (Kearney, 1987). Additional details regarding contaminants are contained in Section 2.2 and Appendix B.

7.5 (A6) Project Description

This QAPP has been prepared to address the specific chemical QA requirements for sampling and analysis conducted during the accelerated corrective action. A description of the Scope of Work is contained within Section 4.

The activities covered by this QAPP include a sampling and analysis investigation to identify residual concentrations of hazardous constituents subsequent to excavation and characterization of the excavated soil for disposal. The FSP (Section 6) contains detailed information on the number and types of samples to be collected and the sampling procedures to be used. QC activities for the closure operation are discussed in the CQC Plan (Appendix E).

7.6 (A7) Quality Objectives

7.6.1 Data Quality Objectives

Data quality objectives (DQOs) for this project are described in the USACE Scope of Services, August 26, 2004, and include the following:

- Excavation of contaminated soil at SWMU 31 consistent with NMED site closure criteria
- Sampling and analysis to ensure removal of PCS
- Sampling and analysis of excavated soil to determine the appropriate disposal option

7.6.2 Analytical Support Levels

The analytical support levels for the accelerated corrective action at SWMU 31 will include screening levels and definitive data levels as determined by the project DQOs. Definitive data will be generated by the off-site analytical laboratory for the analysis of the confirmation soil samples (TPH-DRO, -GRO, and -ORO) and the characterization analysis of the excavated soil (TPH-DRO, -GRO, and -ORO; TCLP VOCs, TCLP metals; reactivity; and ignitability).

7.6.3 Data Quality Indicators

Laboratory precision and accuracy data and reporting limits are provided in Appendix C. Method descriptions for each of the analyses required for the project are provided in Section 7.13.

7.6.4 Level of Field Quality Control Effort

Two field duplicate soil samples will be collected at SWMU 31 and sent to the analytical laboratory for TPH-DRO, -GRO, and -ORO analyses to assess sampling and analytical precision.

7.7 (A8) Project Narrative

Information required for the project narrative is contained throughout the Work Plan.

7.8 (A9) Special Validation

No special validation by USACE Chemical Quality Assurance Branch (CQAB) of the Waterways Experimentation Station Laboratory will be performed for this project.

7.9 (A10) Documentation and Records

Documentation and records generated during this project and the associated submittal schedule will consist of the following:

1. Field Investigation Logs—Maintained in the North Wind project files.
2. DQCRs—Submitted to USACE in the Accelerated Corrective Action Completion Report.
3. Definitive Level Analytical Data Packages—Submitted by the analytical laboratory to the Project Chemist within 21 days of sample receipt; submitted to USACE with the Accelerated Corrective Action Completion Report.

Additional documentation consisting of the field sampling logbooks will be maintained in the project files.

7.10 (B1) Sampling Design Process

The design of data collection operations is presented in Section 6.3. This section discusses the project-specific requirements related to the type and frequency of sampling, including QC samples, as well as establishment of nomenclature to designate the various samples that will be acquired in the field. Field procedures to be used during the project are provided in Appendix D.

7.11 (B2) Sampling Method Requirements

Sampling procedures for collection of soil samples and waste characterization samples are discussed in Section 6 of the Work Plan. These procedures are provided in Appendix D of this plan.

7.12 (B3) Sample Handling and Custody Requirements

Sample handling and custody requirements are contained in SOP D4. This SOP provides detailed information on the processes used for sample labeling, sample preservation, sample handling and shipping, sample documentation and tracking, and sample C-O-C. Sample containers, preservation requirements and holding times are presented in Table 7-1.

Table 7-1. Sample Container, Preservation, and Holding Time Requirements

Matrix	Parameter	Container ¹	Preservation ²	Maximum Holding Times ³	
				Extraction	Analysis
Soil	TPH	1 x 8-oz G			28 d
Soil	TCLP Metals	1 x 8-oz G	Ice to 4°C	180 d	180 d
Soil	TCLP VOCs	1 x 8-oz G	Ice to 4°C	14 d	14 d
Soil	Ignitability and Reactivity				NA

¹ All containers must have Teflon lined lids.

² Sample preservation will be done in the field immediately upon sample collection.

³ When only one holding time is given, it implies total holding time from sampling until analysis.

°C degrees Celsius

d day

G amber glass

oz ounce

NA not applicable

TCLP Toxicity Characteristic Leaching Procedure

TPH total petroleum hydrocarbons

VOC volatile organic compound

Soil samples received at the analytical laboratory will be documented and logged into their Laboratory Information Management System (LIMS) for tracking purposes. Each sample will be assigned a unique work order sample number and a label exhibiting the unique work order number will be attached to each sample container. Date and time of sample receipt, as well as identifying marks, are recorded on the sample receipt forms. Samples are tracked under C-O-C from the point of entry into the laboratory system until time of disposal and are checked into and out of secure storage areas by authorized personnel.

7.13 (B4) Analytical Methods Requirements

The methods and procedures that will be used to prepare and analyze samples are discussed in this section and summarized in Table 7-2. Chemical analyses will be performed according to EPA SW-846, Test Methods for Evaluating Solid Waste (EPA, 1986, with updates). The specific compounds to be analyzed with each method are listed in Appendix C.

Table 7-2. Analytical Procedures for the Accelerated Corrective Action at SWMU 31

Parameter	Technique	Extraction/Analysis Method
TCLP Metals	ICPES, GFAAS	1311/6010B, 7470A
TCLP VOCs	GC/MS	1311/8260B
TPH	IR	8015M
Reactivity	Reactive cyanide and sulfide	EPA SW-846, Chapter 7
Ignitability	Setaflash Tester	1020

Method EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, 1986 and Updates

GC/MS Gas Chromatography/Mass Spectrometry

GFAAS Graphite Furnace Atomic Absorption Spectroscopy

ICPES Inductively Coupled Plasma Emission Spectroscopy

IR Infrared Spectrophotometry

TCLP Toxicity Characteristic Leaching Procedure

TPH total petroleum hydrocarbon

The laboratory will perform instrument-specific demonstration of capability and method detection limit (MDL) studies to verify that project-specific reporting limits can be met. Analyses will only be performed on instruments with valid and current MDL studies. The MDL documentation is provided in Appendix C.

7.13.1 Toxicity Characteristic Leaching Procedure

Soil will be analyzed for TCLP metals. The waste soil is leached in accordance with SW-846 Method 1311, using an acetic acid solution. The extract obtained from the acidified leaching process is then analyzed for the RCRA toxicity list of metals using SW-846 Methods 6010B, Inductively Coupled Plasma (ICP) Emission Spectroscopy and 7470A, Graphite Furnace Atomic Absorption Spectroscopy. The resulting concentrations are compared to the RCRA toxicity values.

7.13.2 Total Petroleum Hydrocarbons

Soil samples will be analyzed for TPH-DRO, -GRO, and -ORO to determine the presence of fuels, oils, and lubricants. TPH analysis will be performed in accordance with SW-846 Method 8015M. The soil sample will be analyzed using infrared spectrophotometry.

7.13.3 Ignitability

Waste soil samples will be analyzed for ignitability in accordance with a modified SW-846 Method 1020 and EPA Method 7.3.3. The ignitability method uses the Setaflash Closed Tester to determine whether a material will flash at a specified temperature. Material that flashes at or below a temperature of 60 degrees Celsius (°C) will be determined as ignitable.

7.14 (B5) Quality Control Requirements

Two confirmation soil duplicate samples will be collected and analyzed for the same parameters as the associated field samples. No field duplicate sample will be collected for waste soil characterization samples.

Corrective actions will be conducted in accordance with the process identified in the CQC Plan (Appendix E). The CQC Systems Manager/SHSO will be responsible for identifying nonconforming conditions during sampling and shipping. The Laboratory QA Manager will be responsible for identifying nonconforming conditions in the laboratory. All nonconforming conditions and recommended corrective action will immediately be reported to the Project Chemist and the Project QA Manager.

The analytical laboratory will perform sample analysis in accordance with their internal QA program, which includes periodic review and inspection of laboratory procedures, followed by reports to management. The Laboratory QA Manager performs these reviews. The audits are used to ensure proper use of measurement systems, evaluate accuracy of analytical procedures, and to assume the laboratory is adhering to internal policies and procedures are set forth in their QA Plan and SOPs.

7.15 (B6) Instrument/Equipment Testing and Maintenance Requirements

All field and laboratory instruments will be tested to ensure proper functioning prior to sampling and analysis. The laboratory performs maintenance on all instruments as per an established schedule or based on the manufacturer's recommendation.

7.16 (B7) Instrument Calibration

Instrument calibration for health and safety monitoring is discussed in the SSHP (Appendix F).

7.17 (B8) Inspection/Acceptance Requirements for Supplies

Level I certified sample containers will be used for collection of field samples. The off-site laboratory will maintain certification.

Standard solutions used by the laboratory for analytical testing are obtained from reliable sources and prepared with calibrated glassware. Where possible, standards are used that are traceable to the National Institute of Standards and Technology through the stock standard supplier and the analytical laboratory's internal system of standards tracking.

7.18 (B9) Data Acquisition Requirements

Data used to determine the field sampling and analysis requirements were obtained from the Phase I and Phase II RFIs for Appendix III SWMUs and the RFA Visual Site Inspection. The data collected for the Phase II RFI has been determined as meeting the DQOs for that specific investigation.

7.19 (B10) Data Management

Definitive data deliverables are required for this project for the off-site laboratory analysis. Hard copies of the data deliverables will be provided to the Project Chemist within 21 days of receipt of samples at the laboratory. An electronic data submittal to USACE is not required for this project. The following information is to be included in the hardcopy data deliverables:

- Case narrative
- Sample results summary forms
- C-O-C documentation/sample receipt forms

- Holding time information
- Initial and continuing calibration information
- Method blank summary
- Laboratory control sample summary
- Matrix spike/matrix spike duplicate (MS/MSD) summary
- Laboratory duplicate sample summary
- Surrogate percent recovery data
- ICP interference check sample
- Raw instrument data

7.20 (C) Assessment/Oversight

The on-site CQC Systems Manager/SHSO will conduct soil sampling inspections during the closure operations. All inspections will be documented in the DQCR. In addition, one completion inspection will be conducted as indicated in the CQC Plan (Appendix E). The Laboratory QA Manager will conduct laboratory oversight as described in the QA Plan. Any deficiencies noted during inspection activity requiring corrective action will be documented in a Nonconformance Report generated by the laboratory and provided to the Project Chemist. The TO Manager and the Project QA Manager must approve all corrective actions.

7.21 (D) Data Validation and Usability

The Project Chemist or designee will validate analytical data generated by the analytical laboratory. This validation will be in accordance with the EPA guidance (1994a, 1994b) and will include a review of the C-O-Cs, holding times, instrument calibration, method blanks, verification of quantitation limits, laboratory corrective actions, analyte quantitation and identification, surrogate system monitoring compounds, MS/MSD recovery data, laboratory control sample data, duplicate sample analysis data, and data completeness. A brief summary of data usability will be included with the Accelerated Corrective Action Completion Report.

8. PROJECT SCHEDULE

This section presents the schedule for the major project phases.

The following table outlines the anticipated schedule for the accelerated corrective action at SWMU 31.

Pre-Construction Meeting	12/15/2008
Mobilization and Field Activities	02/10/2009 through 04/13/2009
Sample Analysis and Waste Characterization	02/10/2009 through 04/13/2009
Backfill/Site Restoration and Waste Disposal	05/11/2009
Draft Completion Report Submittal to USACE and Cannon AFB	08/26/2009
Final Submittal	10/23/2009

This page intentionally left blank.

9. REFERENCES

Bay West (Bay West, Inc.)

2008 Draft Letter Report, Voluntary Corrective Action, AGE Maintenance Facility Shop Pad (SWMU 31) and POL Wash Pad (SWMU 127), Cannon Air Force Base, New Mexico. Rev 00, May 2008.

EPA (United States Environmental Protection Agency)

1994a Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA ID No. 540/R-94/013.

1994b Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA ID No. 540/R-94/012.

1986 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition. Office of Solid Waste and Emergency Response. November.

Foster Wheeler (Foster Wheeler Environmental Corporation)

1999 TERC Contract No. DAcW45-94-D-0003, Delivery Order 21, WAD1; Draft Letter Report for Voluntary Corrective Measure Implementation—SWMU 31, Cannon Air force Base, New Mexico. August

Kearney, A.T.

1987 Preliminary Review/VSI Report, RCRA Facility Agreement Cannon Air Force Base, New Mexico. Radian Corporation Final Report for period 9/84 – 4/85, Vol. 1 and Appendices ABM.

NMED (New Mexico Environment Department)

2006 New Mexico Environment Department TPH Screening Guidelines. October.

USACE (United States Army Corps of Engineers)

1996 General Chemistry Supplement to the Scope of Services for Studies.

Woodward Clyde

1995 RCRA Facility Investigation, Appendix III SWMUs—Phase II, Cannon Air Force Base, New Mexico, Draft. Volume 1A, April 1995.

1994 RCRA Facility Investigation, Appendix III SWMUs—Phase I, Cannon Air Force Base, New Mexico, February.

1992 Remedial Investigation Report for 18 Solid Waste Management Units. Cannon Air Force Base; Clovis, New Mexico. October.

1991 Remedial Investigation Report for 18 Solid Waste Management Units, Cannon Air Force Base, New Mexico.

This page intentionally left blank.

Appendix A
Technical Specifications

SECTION 01005 DEFINITIONS, ABBREVIATIONS, AND REFERENCE STANDARDS

1.0 GENERAL

1.1 Definitions Used in the Technical Specifications

Contract Documents—Contract documents include the following:

- Technical Specifications
- Construction Work Plan
- Subcontract Agreements

Base—Cannon Air Force Base

USACE—United States Army Corps of Engineers

Contractor—North Wind, Inc.

Subcontractor or Vendor—A person, firm, or corporation with whom the Contractor has contracted with to perform the Work.

Work—Any and all obligations, duties, and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the Contractor or any Subcontractor or Vendor under the Contract Documents, including all labor, materials, equipment, permits, inspections, and other incidentals, and the furnishing thereof.

1.2 Abbreviations

%	percent
AFB	Air Force Base
SWMU	Solid Waste Management Unit

1.3 Reference Standards

Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to any Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or Laws or Regulations in effect at the time of execution of the Work, except as otherwise specifically stated. However, no provision of any referenced standard, specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner, Contractor, Subcontractor, Vendor, or any of their Consultants, agents, or employees from those set forth in the Contract Documents.

1.4 Clarifications

In the event of a discrepancy between the Work Plan, and Technical Specifications, the Construction Superintendent shall bring the discrepancy to the attention of the Site Construction Manager for resolution.

SECTION 01500 TEMPORARY FACILITIES AND UTILITIES

1.0 GENERAL

This section discusses the temporary facilities and utilities needed by the Contractor and Subcontractors during the execution of the Work. Water, power, and sanitary facilities, described below, will be made available to Subcontractors.

2.0 FACILITIES AND UTILITIES

2.1 Office

Temporary field office facilities will not be required for this project.

2.2 Water

All water required in connection with the Work to be performed shall be provided by the Base. The Contractor shall be responsible for coordinating acceptable points of connection, backflow prevention, pipe or hose connections, routing, and temporary storage tank locations, if needed, to the satisfaction of Base personnel.

2.3 Power

If electrical power is needed, it will be provided by portable generators supplied by the Contractor.

2.4 Sanitary Facilities

Sanitary facilities at Cannon AFB buildings adjacent to each site will be used by all construction workers and others performing Work or furnishing services on the project.

3.0 EXECUTION

3.1 Maintenance of Traffic

The Contractor and Subcontractor shall conduct all construction operations in a manner to minimize interference with vehicular or pedestrian Base traffic.

3.2 Barricades and Lights

All open excavations will be properly barricaded with wooden lathe and yellow caution tape. Obstructions such as material piles and equipment shall be provided with proper warning signs. All Work will be done during the day; therefore, no additional illumination is necessary.

3.3 Security

The Contractor shall be responsible for protection of the site, all Work, materials, equipment, and existing facilities against vandals and other unauthorized persons. No claim shall be made against the USACE for any act of an employee or trespasser, and the Contractor shall make good all damage of Base property resulting from his failure to provide security measures as specified.

3.4 Removal of Temporary Facilities

After the Work is completed, the Contractor shall remove all temporary facilities to the satisfaction of Base personnel.

SECTION 01562 DUST CONTROL

1.0 GENERAL

The Contractor shall conduct operations and maintain the project site so as to minimize the creation and dispersion of dust. The Contractor shall use watering equipment for dust control as necessary. Dust control shall be implemented throughout the Work.

2.0 MATERIALS AND EQUIPMENT

The Contractor shall have clean water available at the site, free from salt, oil, and other deleterious material, to be used for dust control at any area involved in the Work. The Contractor shall supply water spraying equipment capable of accessing all Work areas.

3.0 EXECUTION

The Contractor shall implement strict dust control measures during active excavation periods on site. These control measures will generally consist of water applications as necessary that shall be applied in the Work zone to prevent dust emissions. The water will be applied at a rate that will control the dust without causing the water to pond.

SECTION 01563 EROSION AND SEDIMENT CONTROL

1.0 GENERAL

The Contractor shall design, furnish, install, and maintain all temporary erosion control measures as specified in this section. This section provides the technical requirements for the design of erosion and sediment control systems to limit discharge of turbid or contaminated water into streams and waterways from construction operations in accordance with state and local ordinances. Existing earthen berms and trenches will be used for erosion and sediment control. If additional requirements are necessary, the Contractor shall provide additional berms at the perimeter of the trench or stockpile (if used).

2.0 MATERIALS

Materials shall conform to the requirements of the State of New Mexico Standard Specifications for Highway and Bridge Construction, Section 603. The Contractor shall design, furnish, install, and maintain all erosion control measures during the course of construction. Plastic sheeting and railroad ties shall be utilized by the Contractor, as necessary, to control erosion of stockpiled materials.

3.0 EXECUTION

The Contractor shall make every effort to minimize erosion from excavating, stockpiling (if used) and backfilling operations and be responsible for diverting all runoff from rainfall, directing it to natural drainage pathways.

The Contractor shall construct and maintain all temporary stockpile enclosures and covers. All required material shall be furnished and all necessary liners, berms, and covers installed, so as to minimize obstruction of the work. After having served their purpose, all temporary stockpile enclosures shall be removed to the satisfaction of the Base.

SECTION 02200 EARTHWORK

1.0 GENERAL

This section covers the excavation, stockpiling, and backfilling of soil. Excavation will be undertaken to remove contaminated soil from each site and to allow verification soil samples to be collected. After soil is excavated, it will be put into rolloffs until disposal options are determined based on the waste characterization analysis. Following receipt of confirmation soil sample analysis, each excavation will be backfilled.

The Contractor shall supply all materials, equipment, and services required for excavating, loading, storing material, placing, and compaction operations.

2.0 MATERIALS

SWMU 31 will be backfilled with clean gravel base course.

3.0 EXECUTION

3.1 On-site Excavation

On-site excavation shall consist of the excavation of all materials required to complete the Work. Excavation operations shall be conducted so material outside the Work zone will not be disturbed.

The Contractor shall contact Base personnel to field-locate all existing utilities with the Work zones and take all precautions to protect them during excavation activities. If active utility lines are encountered, necessary steps shall be taken to assure that any service interruptions, if required, are kept to a minimum.

All excavated materials shall be handled in accordance with the Construction Work Plan.

3.2 Rolloff/Stockpiling

Soil from each excavation shall be placed into a rolloff. Samples shall be taken from the rolloff for chemical analysis, as specified in the Sampling and Analysis Plan.

3.3 Backfilling

The excavated areas will be backfilled with backfill and stockpiled material. Soil and/or gravel base course will be placed in the excavations and mechanically compacted 90% standard proctor. No geotechnical testing will be required.

Appendix B
Supporting Information

**Draft Voluntary Corrective Action Letter Report
AGE Maintenance Facility Shop Pad (SWMU 31)
and POL Wash Pad (SWMU 127)
Cannon Air Force Base, New Mexico**

May 2008



Prepared for:

27 SOCES/CEVC
Cannon Air Force Base, New Mexico

U.S. Army Corps of Engineers
Omaha District

Prepared by:

Bay West, Inc. 5 Empire Drive St. Paul, MN 55103	Tetra Tech EC, Inc. 143 Union Boulevard Lakewood, CO 80228
--	--

Under Contract W9128F-04-D-0004, Task Order 9



CONTENTS

Section	Page
1. INTRODUCTION AND PROJECT BACKGROUND	1
1.1 Project Background.....	1
1.2 Site Investigation History	1
1.2.1 SWMU 31.....	1
1.2.2 SWMU 127.....	1
1.3 Voluntary Corrective Action at SWMUS 31 AND 127.....	2
1.4 Regulatory Framework.....	2
2. PROJECT FIELD ACTIVITIES	4
2.1 Direct-Push Technology (DPT) Soil Sampling.....	4
2.2 Investigation-Derived Waste (IDW) Management and Disposal.....	5
3. RESULTS AND RECOMMENDATIONS.....	5
3.1 SWMU 31	5
3.2 SWMU 127	6
4. REFERENCES.....	6

APPENDICES

Appendix A	HTW Boring Logs
Appendix B	Analytical Data
Appendix C	Waste Manifests

LIST OF FIGURES

- Figure 1-1. Location Map
- Figure 1-2. Site Map SWMUs 31 and 127
- Figure 2-1. SWMU 31 Sample Location Map
- Figure 2-2. SWMU 127 Sample Location Map
- Figure 3-1 SWMU 31 Proposed Excavation Area

LIST OF TABLES

- Table 1-1. Applicable TPH Soil Screening Guidelines
- Table 2-1. SWMU 31 Borehole and Sampling Summary
- Table 2-2. SWMU 127 Borehole and Sampling Summary
- Table 3-1. SWMU 31 TPH and Waste Characterization Data
- Table 3-2. SWMU 127 TPH and Waste Characterization Data
- Table 3-3. Risk Screening Evaluation of SWMU 127 PAH Data

LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AGE	Aerospace Ground Equipment
Bay West	Bay West, Inc.
bgs	below ground surface
CMS	Corrective Measures Study
cy	cubic yard/cubic yards
DOD QSM	Department of Defense Quality Systems Manual
DPT	direct-push technology
DRO	diesel-range organics
EMAX	EMAX Laboratories, Inc.
EPA	U.S. Environmental Protection Agency
ft	foot/feet
GRO	gasoline-range organics
IDW	investigation-derived waste
HTW	Hazardous and Toxic Waste
MADEP	Massachusetts Department of Environmental Protection
mg/kg	milligram per kilogram
NFA	No Further Action
NMED	New Mexico environment department
PAH	polycyclic aromatic hydrocarbons
POL	petroleum, oil, and lubricants
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RRO	residual-range organics
SVOC	semivolatile organic compound
SWMU	solid waste management unit

LIST OF ACRONYMS AND ABBREVIATIONS (CONCLUDED)

TCLP	Toxicity Characteristic Leaching Procedure
TPH	total petroleum hydrocarbons
TRPH	total recoverable petroleum hydrocarbon
TtEC	Tetra Tech EC, Inc.
URS	URS Greiner Woodward-Clyde
USACE	U.S. Army Corps of Engineers
VCA	voluntary corrective action
VOC	volatile organic compound

1. INTRODUCTION AND PROJECT BACKGROUND

The objective of this project was to delineate the extent of soil contamination at two solid waste management units (SWMUs) at Cannon Air Force Base (AFB) (Figure 1-1) that require remediation under a future voluntary corrective action (VCA) and site closure. This VCA letter report describes the activities conducted by Bay West, Inc. (Bay West) and its subcontractor Tetra Tech EC, Inc. (TtEC) for the sampling program at the SWMUs indicated below:

- SWMU 31—Aerospace Ground Equipment (AGE) Maintenance Shop Pad
- SWMU 127—Oil/Water Separator 4095, Sand Trap, and Leach Fields at the Petroleum, Oil, and Lubricants (POL) Wash Pad

The locations of these two SWMUs at Cannon AFB are shown on Figure 1-2.

All work was conducted under the direction of the U.S. Army Corps of Engineers (USACE) Omaha District and Cannon AFB. This letter report provides a narrative of the field work completed in February 2008, a summary of sampling results, the waste management activities completed, and recommendations for future action at each site.

1.1 Project Background

SWMUs 31 and 127 both have soil containing total petroleum hydrocarbons (TPH) and other contaminants at concentrations that pose a potential risk to human health through direct exposure. To support the future VCA, characterization of the extent of soil contamination is required to quantify the amount of soil requiring remediation. The rationale and methodology for the sampling program is presented in the February 2008 Work Plan, the October 2007 Technical Memorandum, and the November 2007 SWMU 127 Risk Screening Evaluation (Bay West, 2008). Additional supporting information on current site conditions and previous investigations is contained in the *Corrective Measures Study at SWMUs 31, 48A, 77, and 127, Cannon AFB, New Mexico* (Corrective Measures Study [CMS] Report) (URS Greiner Woodward-Clyde [URS], 2000).

1.2 Site Investigation History

1.2.1 SWMU 31

During the Remedial Investigations (RIs) conducted at SWMU 31, TPH was detected in soil at six of the seven locations sampled; regulatory exceedances occurred in four samples collected outside of the wash pad area. No soil samples have been collected within the wash pad area to comprehensively characterize releases due to operations at the wash pad. During a visit to the site on July 25, 2007, the wash pad area appeared heavily stained and oily sludge was observed in one of the drains within the wash pad. It is likely that this wash pad was in use at the AGE facility until May 2007, when operations moved to the new facility.

1.2.2 SWMU 127

During the RIs at conducted at SWMU 127, TPH was detected in soil at 16 of the 17 locations sampled; regulatory exceedances occurred in 2 samples. TPH exceeded the regulatory residential screening guideline of 520 milligrams per kilogram (mg/kg) in two soil samples: one collected

beneath the concrete inside of the wash pad (soil boring 12710), and one collected at a depth of 50 feet (ft) below ground surface (bgs) at the eastern end of the current leach field (soil boring 12716). The four sample locations within the wash pad were near the center and proximal to the drains, but no other soil samples have been collected within the wash pad to comprehensively determine whether any contamination exists below the concrete. During a visit to the site on August 6, 2007, the wash pad was inspected and an interview with Base personnel indicated that the wash pad has recently been in use. The presence of petroleum hydrocarbons in soil at depth within the former and current leach fields requires investigation, especially since the concentration of total recoverable petroleum hydrocarbon (TRPH) at 50 ft bgs (soil boring 12716) exceeds the regulatory standard.

1.3 Voluntary Corrective Action at SWMUS 31 AND 127

Based on the corrective measures alternative evaluation presented in the CMS Report (URS, 2000), the preferred corrective measures alternative for both SWMUs 31 and 127 was No Further Action (NFA). This alternative was selected because the earlier risk assessments for each site indicated that there was no unacceptable risk to human health and the environment. The risk assessments addressed volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals detected in soil, but did not address petroleum hydrocarbons detected at each site.

Future remedial action at SWMUs 31 and 127 should focus on the risk due to direct exposure to contaminated soil. Soil at a depth of 15 ft and shallower is considered “potentially accessible” because direct exposure is possible through excavation, drilling, or construction that brings it to the surface (MADEP, 1995). Soil deeper than 15 ft is considered “isolated” and is not of significant concern (MADEP, 1995) from an industrial or residential exposure standpoint. To characterize soil within the top 15 ft of each SWMU, exploratory soil borings can be completed to confirm known contamination and determine the lateral and vertical extent of contaminated soil requiring remediation.

The analytical data collected during the Phase I (1993) and Phase II (1994) RIs were used to select the remedial alternatives for both SWMUs. In order to define the current extent of petroleum contamination, additional characterization of TPH in soil at SWMUs 31 and 127 was conducted in February 2008. Results from the February 2008 sampling program were used to confirm the levels of TPH in soil at locations where previous investigations indicated elevated levels of contamination and at new locations to help define the lateral and vertical extent of contamination. In addition, associated polycyclic aromatic hydrocarbon (PAH) contamination in soil was investigated at SWMU 127.

1.4 Regulatory Framework

The New Mexico Environment Department (NMED) is authorized by the U.S. Environmental Protection Agency (EPA) to implement the federal Resource Conservation and Recovery Act (RCRA) hazardous waste program and oversee the corrective action program activities conducted in accordance with Cannon AFB’s Hazardous Waste Facility Permit (Permit). NMED issued a RCRA Permit to Cannon AFB on December 17, 1989, with a subsequent update in 2006. Cannon AFB’s RCRA Part B Permit Application (Operations Plan) refers to the status of various assessment, investigation, and remediation projects for a number of SWMUs on the Base. According to the Operations Plan, SWMUs 31, 48A, 77, and 127 were addressed together in the Phase I and Phase II RIs.

Previous investigations indicated that the primary chemicals of concern at these sites are VOCs, PAHs, metals, and petroleum hydrocarbons associated with the former operations. Risk assessments were conducted as part of the CMS to evaluate risk to human and ecological receptors from exposure to site contaminants other than TPH (URS, 2000). The risk assessments for SWMUs 31 and 127 concluded that human health and ecological risks associated with exposure to contamination are negligible under current conditions.

Based on comments received from NMED on the CMS, a screening-level evaluation of human health risk was performed in November 2007 to support developing a sampling approach for characterization of existing contamination in soil at SWMU 127 that will require remediation. The primary objective of the screening-level risk evaluation (Bay West, 2008) was to determine the analyte list for the characterization field program at SWMU 127. Besides TPH, PAHs were the only contaminants identified as risk drivers in soil at SWMU 127. A screening-level risk evaluation was not conducted for SWMU 31 since TPH is the only contaminant requiring corrective action at this regulated unit.

NMED requires standards for TPH to be met. In June 2003, the NMED Hazardous Waste Bureau issued *Total Petroleum Hydrocarbon (TPH) Screening Guidelines*, guidance for RCRA units on the evaluation and determination of cleanup levels for sites impacted by releases of petroleum hydrocarbons. Since the 2003 draft of the TPH guidelines, NMED issued updated guidelines in October 2006 (NMED, 2006), which were used in the October 2007 Technical Memorandum (Bay West, 2008) to address residual petroleum hydrocarbon contamination at SWMUs 31 and 127.

NMED provided a TPH screening guideline for each type of petroleum product based on the assumed composition of the products and the direct soil standards from the Massachusetts Department of Environmental Protection (MADEP) guidance document *Implementation of the MADEP VPH/EPH Approach Final Draft* (MADEP, 2001). NMED's TPH screening guidelines (NMED, 2006) are presented in Table 1-1.

Based on the fact that jet fuel, gasoline, diesel, and motor oil were likely washed from vehicles in the wash pads at SWMUs 31 and 127, the conservative residential screening for direct exposure to diesel of 520 mg/kg will be used to determine the extent of contaminated soil requiring remediation at the two SWMUs.

Table 1-1. Applicable TPH Soil Screening Guidelines

Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)
Diesel #2/Crankcase Oil	520	1,120
#3 and #6 Fuel Oil	440	890
Kerosene and Jet Fuel	760	1,810
Mineral Oil Dielectric Fluid	1,440	3,040
Unknown Oil	200	200
Waste Oil	2,500	5,000
Gasoline	Not applicable	Not applicable

2. PROJECT FIELD ACTIVITIES

Field sampling was performed to (1) identify the vertical and horizontal extent of TPH contamination in soil at SWMU 31 and TPH and associated PAH contamination in soil at SWMU 127 and (2) characterize soil generated during sampling activities to determine appropriate management and disposition.

Bay West performed the field work in accordance with the Work Plan (Bay West, 2008). The activities conducted at each SWMU are summarized in the following subsections.

2.1 Direct-Push Technology (DPT) Soil Sampling

Exploratory soil borings were drilled up to a depth of 15 ft using the DPT method to determine the extent of petroleum-contaminated soil at SWMUs 31 and 127 across the wash pad areas along a 20-ft grid. Field investigation also took place at the leach field associated with SWMU 127 based on previous releases. The field geologist implemented a phased approach in the field to delineate the extent of petroleum contamination. Boreholes were first placed at locations on the grid, with additional step-out boreholes drilled in visibly contaminated areas. Schematic diagrams of SWMUs 31 and 127 with sampling locations are presented on Figures 2-1 and 2-2, respectively. Hazardous and Toxic Waste (HTW) boring logs of the locations drilled and sampled are presented in Appendix A.

Based on visible staining and/or headspace screening of soil, samples were collected from each soil boring and analyzed for the following parameters:

- SWMU 31—TPH as diesel-range organics (DRO), gasoline-range organics (GRO), and residual-range organics (RRO) using EPA Method Modified 8015M
- SWMU 127—TPH as DRO, GRO, and RRO using EPA Method Modified 8015M and PAHs using EPA Method 8310

Laboratory analyses were performed in general accordance with USACE Chemistry Scope of Services and the Department of Defense Quality Systems Manual (DOD QSM). The subcontractor laboratory EMAX Laboratories, Inc. (EMAX) (Torrance, California) provided analytical support in accordance with the guidance documents.

The soil borings drilled, soil staining observations, headspace screening results, and samples collected at SWMUs 31 and 127 are summarized in Tables 2-1 and 2-2, respectively.

Following sampling, the boreholes were abandoned by hydrating bentonite pellets (or bentonite chips) in 2-ft increments to the surface. A concrete patch was constructed in areas that required coring of concrete or asphalt prior to drilling. Borehole abandonment materials and quantities and method for abandonment were documented in the field logbook and on the HTW boring log (Appendix A).

The analytical parameters for the field screening, confirmation, and waste characterization soil samples were selected based on the results of the Phase I and Phase II RIs (1993–1994) for SWMUs 31 and 127 and described in the CMS (URS, 2000), which identified TPH as contaminants at the

two SWMUs. As described in the October 2007 Technical Memorandum and November 2007 Risk Evaluation in Appendix A to the Work Plan (Bay West, 2008), PAHs were identified as chemicals of potential concern at SWMU 127. Up to three soil samples were collected from each soil boring based on visual observation and field screening results, and analyzed by the off-site laboratory to confirm contamination requiring remediation.

2.2 Investigation-Derived Waste (IDW) Management and Disposal

Used personal protective equipment and trash were placed in garbage bags and disposed in a designated Base dumpster. One drum of soil cuttings was generated at each SWMU. The cuttings were retained in a 55-gallon steel drum labeled with the appropriate collection and contact information and stored in a designated location at each SWMU indicated by the Base Restoration Program Manager. Decontamination fluids were allowed to evaporate. Residual solids from the decontamination fluid were combined with the IDW soil solids.

One sample was collected from each drum and analyzed for the following parameters for the purposes of waste characterization and disposal:

- TPH as DRO, GRO, and RRO using EPA Method Modified 8015M
- TCLP VOCs using EPA Method 1311/8260B
- TCLP RCRA Metals using EPA Method 1311/6010/7471
- Ignitability using EPA Method 1020

The analytical results for the waste characterization samples are summarized in Table 3-1 (SWMU 31) and Table 3-2 (SWMU 127). The complete analytical results are contained in Appendix B. The results indicated that the soil was RCRA nonhazardous and was suitable for disposal in a New Mexico-regulated special waste landfill. The waste manifests for disposal are contained in Appendix C.

3. RESULTS AND RECOMMENDATIONS

3.1 SWMU 31

The analytical results for TPH shown in Table 3-1 indicate exceedances of the TPH guideline of 520 mg/kg occurred at three soil boring locations. The complete analytical results are contained in Appendix B. Based on observations made on the HTW boring logs and in notes from the field geologist regarding soil staining and headspace screening results, an area of approximately 3,000 square feet (sq ft) requires excavation. After removing the concrete pad, the 3,000-sq ft area shown on Figure 3-1 should be excavated to a depth of 2 ft below ground surface. An additional 2 ft of soil should be excavated from an approximately 900-sq ft area within the central portion of the site. The total volume of excavated soil is approximately 300 cubic yards (cy).

The entire volume of soil excavated at SWMU 31 should be disposed off site, but soil that appears clean can be segregated and stockpiled separately during excavation activities. Sampling of the stockpiles should be conducted to verify that the soil is appropriate for disposal at a permitted New Mexico special waste landfill than can accept petroleum-contaminated soil. Stockpiled soil should be sampled at a frequency of one sample per 100 cy. Stockpile soil analyses required for disposal should

include TPH as DRO, GRO and ORO (EPA method 8015M); RCRA Ignitability (EPA method 1020); and TCLP VOCs (EPA methods 1311/8260B).

Once the excavation is completed, confirmation soil samples will be collected from the sidewalls and floor of the excavation. In order to comprehensively evaluate the potential for risk due to soil remaining at the site, confirmation soil samples will be analyzed for TPH as DRO, GRO and ORO (EPA method 8015M); VOCs (EPA method 8260B); SVOCs (EPA method 8270C); and Target Analyte List metals (EPA methods 6010/7471). Confirmation soil samples will be collected from the excavation floor at a frequency of one per 400 sq ft and at a frequency of one per 50 linear ft of wall for sidewalls. Based on confirmation sampling frequencies, up to 30 total confirmation samples should be collected.

3.2 SWMU 127

Based on the analytical results for TPH as shown in Table 3-2, there are no exceedances of the TPH guideline at SWMU 127. The complete analytical results are contained in Appendix B. PAHs were detected at the site, but the risk screening evaluation (Table 3-3) indicates there is no carcinogenic risk or noncarcinogenic hazard that exists at the site that could impact human health and the environment. Comparison of recent data to the results for samples collected within the central portion of the wash pad to those collected during the Phase I and II RIs conducted in 1993 and 1994 indicate that levels of TPH have decreased. SWMU 127 should be considered for clean closure and proposed for NFA to NMED.

4. REFERENCES

Bay West (Bay West, Inc.)

2008. *Voluntary Corrective Action Characterization Work Plan AGE Maintenance Facility Shop Pad (SWMU 31) and POL Wash Rack (SWMU 127)*, Cannon Air Force Base, New Mexico. February.

MADEP (Massachusetts Department of Environmental Protection)

1995. *Guidance for Disposal Site Risk Characterization*. In support of the Massachusetts Contingency Plan. WSC/ORS-95-141. July 1995.

2001. *Implementation of the VPH/EPH Approach Final Draft*, June 2001.

NMED (New Mexico Environment Department)

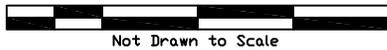
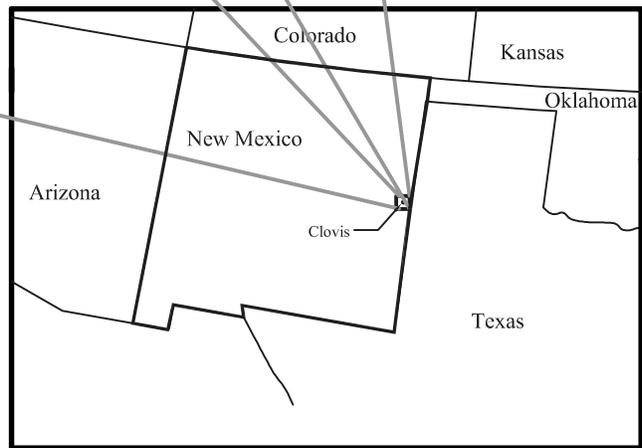
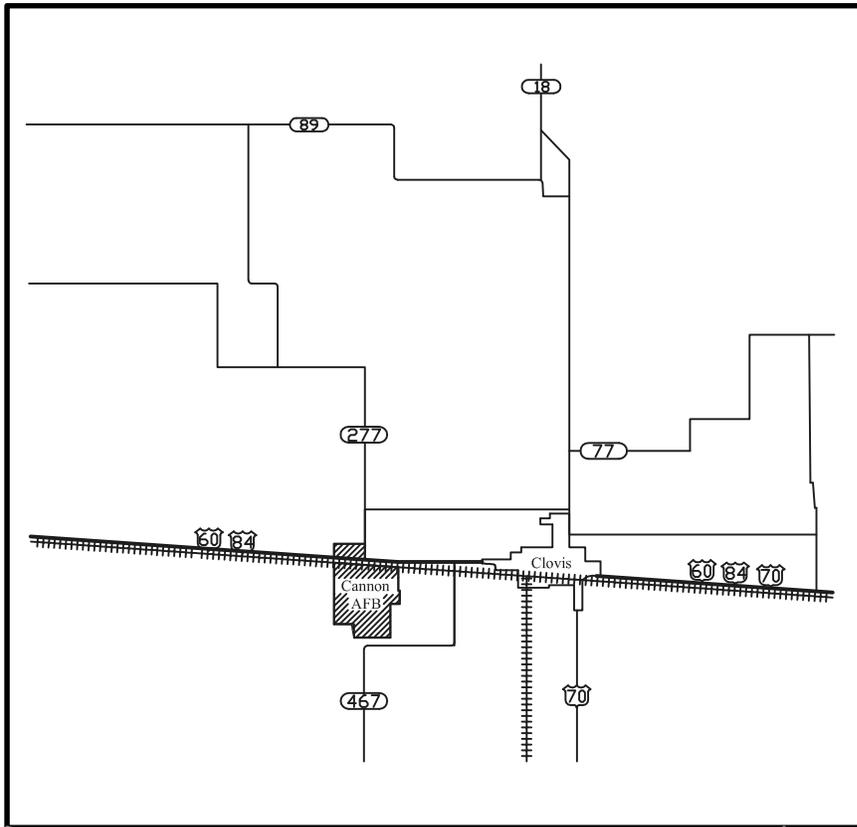
2003. *Total Petroleum Hydrocarbon (TPH) Screening Guidelines*, June 24, 2003.

2006. *Total Petroleum Hydrocarbon (TPH) Screening Guidelines*, October 2006 update.

URS (URS Greiner Woodward-Clyde)

2000. *Corrective Measures Study at SWMUs 31, 48A, 77, and 127*, Cannon AFB, New Mexico, June.

Figures



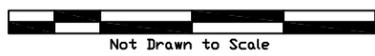
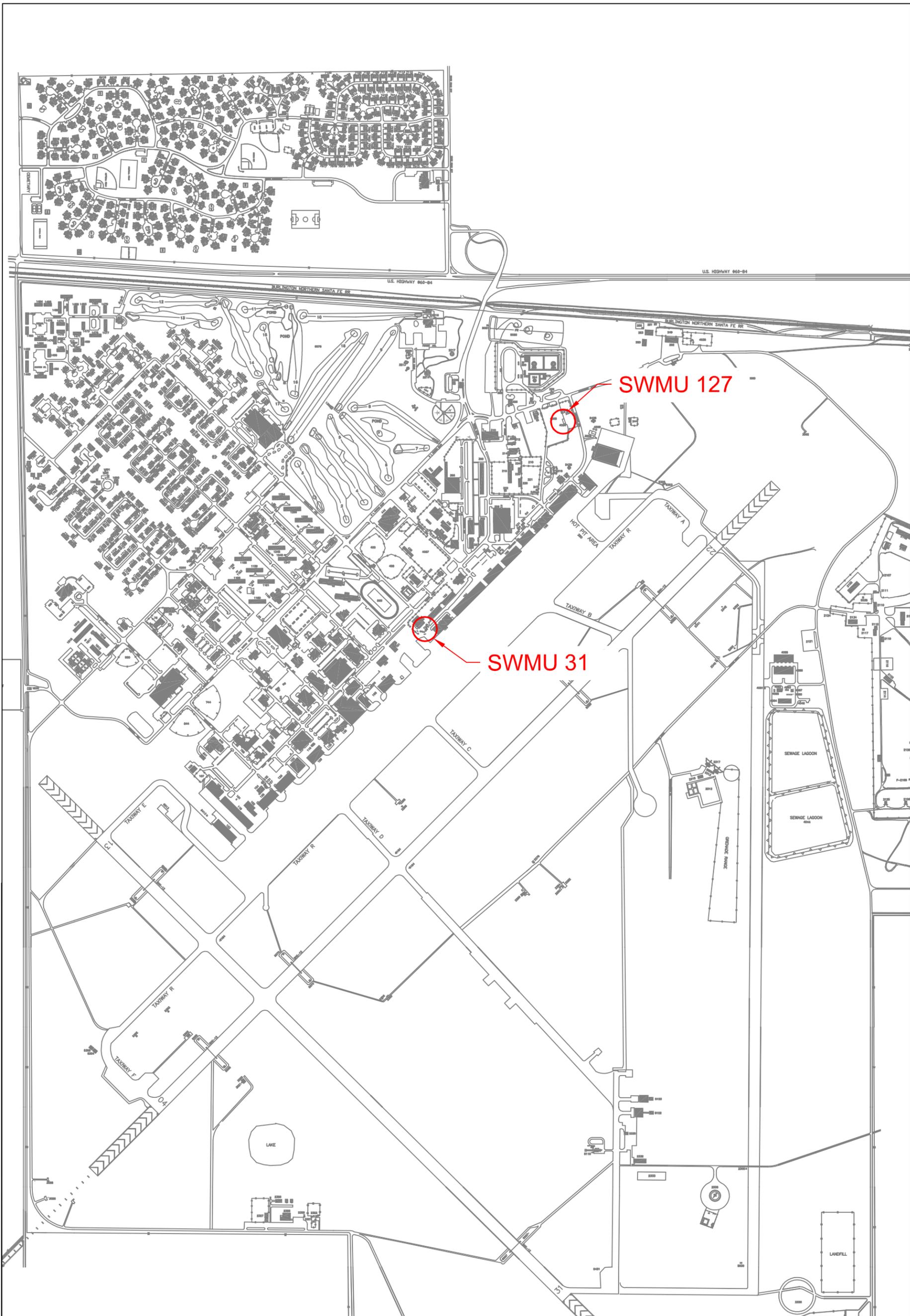
VCA Characterization of SWMUs 31 and 127
Cannon Air Force Base, New Mexico

Location Map - Cannon Air Force Base

Date: 02-05-08

File Name:
Figure 1-1.dwg

Figure 1-1



VCA Characterization of SWMUs 31 and 127
Cannon Air Force Base, New Mexico

Site Map - SWMUs 31 and 127

Date: 02-05-08

File Name:
Figure 1-2.dwg

Figure 1-2



Figure 2-1
 SWMU 31 Sample Location Map

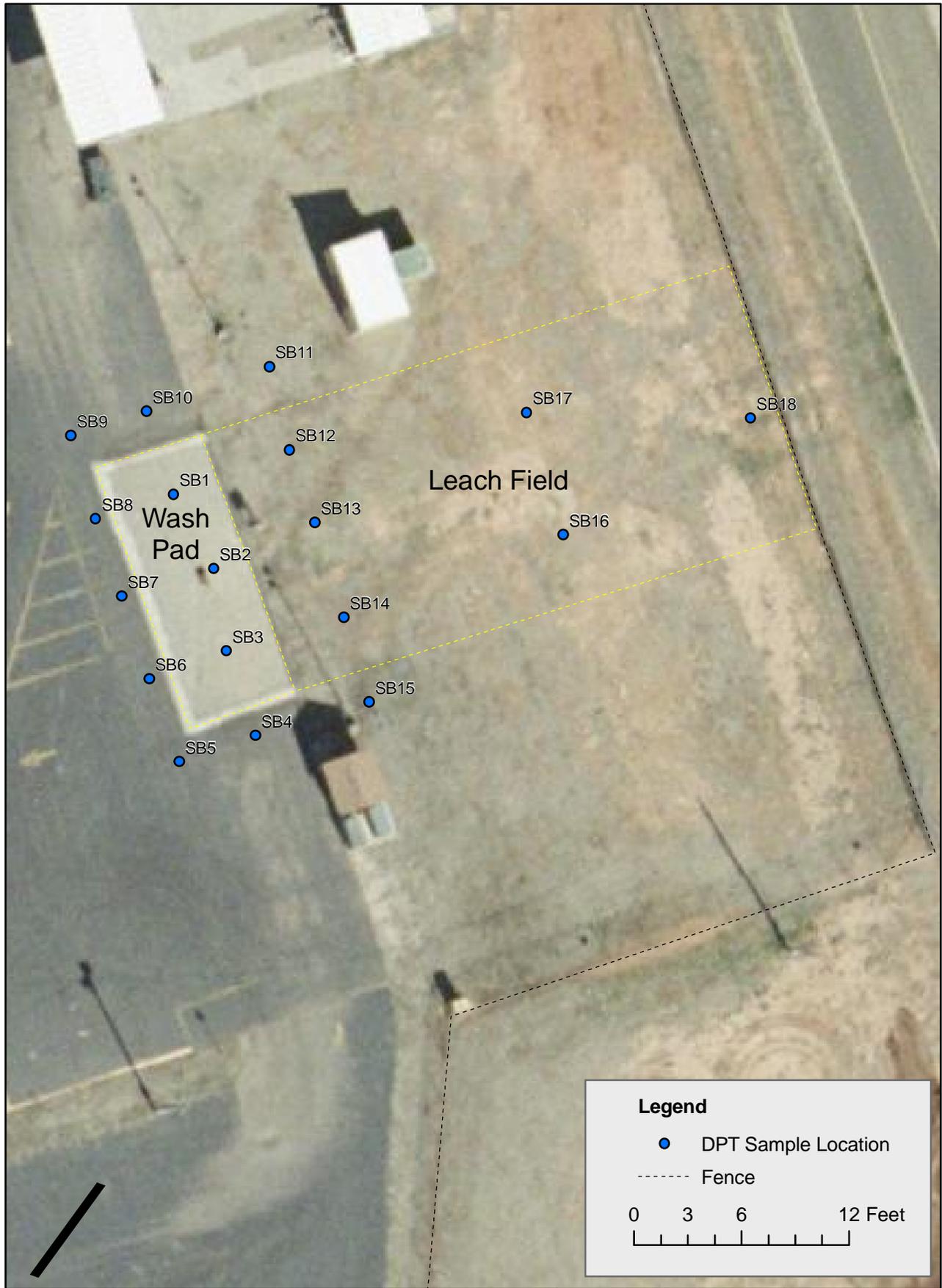


Figure 2-2
SWMU 127 Sample Location Map

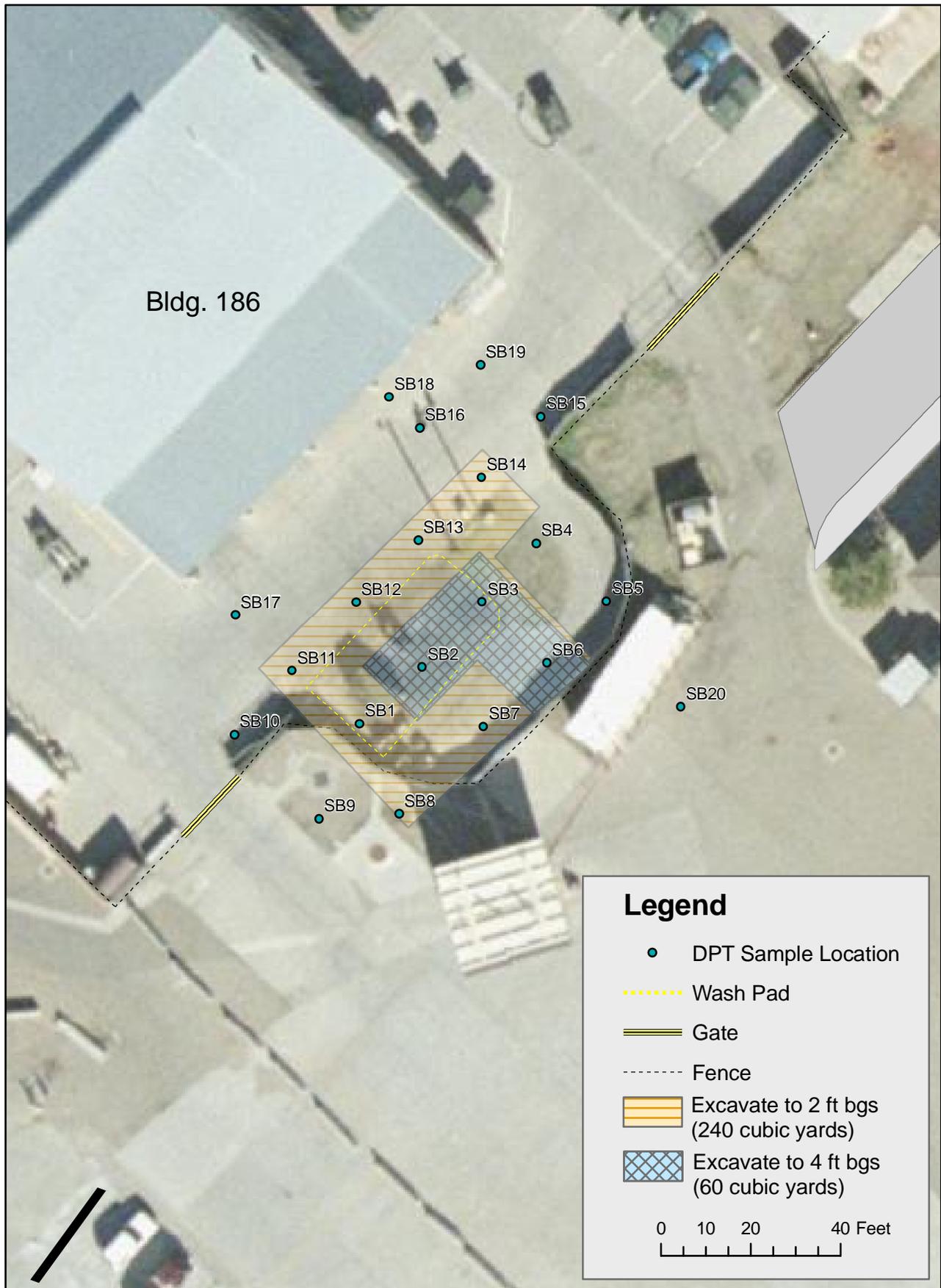


Figure 3-1
SWMU 31 Proposed Excavation Area

Tables

Table 2-1. SWMU 31 Borehole and Sampling Summary

Borehole ID	Borehole Depth (ft bgs)	Sample ID	HTWL Log Sample Depth (ft bgs)	Headspace Results (ppm)	Comments
031SB01	15	031SB0101	0–2.5	73.1	Staining observed at 1 ft bgs.
		031SB0102	2.5–5.0	59	No staining observed.
		031SB0105	5.0–7.5	13.1	No staining observed.
031SB02	15	031SB0200	0–2.5	15	Staining observed 0–3.5 ft bgs.
		031SB0202	2.5–5.0	2.8	Staining observed 0–3.5 ft bgs.
031SB03	8	031SB0300	0–2.5	8.4	Staining observed 0–2.5 ft bgs.
		031SB0302	2.5–5.0	1.7	No staining observed.
031SB04	15	031SB0402	2.5–5.0	1.4	No staining observed.
031SB05	9	031SB0500	0–2.5	1.0	No staining observed.
031SB06	15	031SB0600	0–3.0	946	Staining observed 0–3.0 ft bgs.
031SB07	15	031SB0700	0–3.0	5	No staining observed.
031SB08	15	031SB0800	0–2.5	3.1	Staining observed 0–2.0 ft bgs.
031SB09	15	031SB0900	0–3.0	0	Possible sewer stain/odor.
031SB10	15	031SB1000	0–2.0	3.3	Staining observed 1 ft bgs
031SB11	15	031SB1100	0–2.0	110	Staining observed 0–2.0 ft bgs.
031SB12	15	031SB1200	0–3.0	2	No staining observed.
031SB13	7	031SB1300	0–2.5	4.1	Staining observed 0–2.0 ft bgs.
031SB14	15	031SB1400	0–2.5	889	Staining observed 0–2.0 ft bgs.
		031SB1402	2.5–5.0	25.4	
031SB15	15	031SB1500	0–2.0	10.4	Staining observed 0–2.0 ft bgs.
031SB16	15	031SB1600	0–2.5	81	Staining observed 0–1.0 ft bgs.
031SB17	8	031SB1700	0–2.5	2	No staining observed.
031SB18	7	031SB1800	0–2.0	37.4	Staining observed 0–1.0 ft bgs.
031SB19	15	031SB1900	0–2.5	0	Staining observed 0–2.5 ft bgs.
031SB20	6	031SB2000	0–3.0	2.3	No staining observed.

Table 2-2. SWMU 127 Borehole and Sampling Summary

Borehole ID	Borehole Depth (ft bgs)	Sample ID	HTW Log Sample Depth (ft bgs)	Headspace Results (ppm)	Comments
127SB01	15	127SB0100	0–3.0	2.0	No staining observed.
127SB02	15	127SB0200	0–2.5	48.2	Staining observed 0–6 inches.
127SB03	15	127SB0300	0–2.5	1.2	Staining observed 0–6 inches.
1271SB04	15	127SB0400	0–2.5	1.2	No staining observed.
127SB05	15	127SB0500	0–3.0	3.4	Staining observed 0–4 inches.
127SB06	15	127SB0600	0–3.0	3.0	No staining observed.
127SB07	15	127SB0700	0–3.0	1.2	No staining observed.
127SB08	15	127SB0800	0–3.0	0	No staining observed.
127SB09	15	127SB0900	0–3.0	0	No staining observed.
127SB10	15	031SB1000	0–3.0	0	No staining observed.
127SB11	15	127SB1100	0–3.0	1.5	No staining observed.
127SB12	15	127SB1200	0–3.0	1.3	No staining observed.
127SB13	15	127SB1300	0–3.0	1.3	No staining observed.
127SB14	15	127SB1400	0–3.0	2.0	No staining observed.
127SB15	15	127SB1500	0–3.0	2.0	No staining observed.
127SB16	15	127SB1600	0–3.0	2.8	No staining observed.
127SB17	15	127SB1700	0–3.0	0	No staining observed.
127SB18	15	127SB1800	0–3.0	1.6	No staining observed.

Table 3-1. SWMU 31 TPH and Waste Characterization Data

Sample ID <i>Reporting limit</i>	GRO (1.0 mg/kg)	DRO (10 mg/kg)	Motor Oil (20 mg/kg)	TCLP VOCs (50 µg/L)	Ignitability (60 deg C)
031SB0100	ND	310	340	na	na
031SB0102	ND	69	15J	na	na
031SB0102D	ND	100	15J	na	na
031SB0105	ND	ND	ND	na	na
031SB0200	ND	120	72	na	na
031SB0202	ND	ND	ND	na	na
031SB0300	ND	160	64	na	na
031SB0302	ND	ND	ND	na	na
031SB0402	ND	ND	ND	na	na
031SB0402M	ND	ND	ND	na	na
031SB0500	ND	31	170	na	na
031SB0600	110	1,700	410	na	na
031SB0600D	160	2,000	240	na	na
031SB0603	ND	10J	ND	na	na
031SB0700	0.71J	ND	1,200J	na	na
031SB0800	ND	ND	130J	na	na
031SB0900	ND	ND	21J	na	na
031SB1000	ND	7.5J	14J	na	na
031SB1100	9	170	ND	na	na
031SB1100D	2.5	38	ND	na	na
031SB1200	ND	ND	13J	na	na
031SB1300	ND	ND	31	na	na
031SB1400	150	1,200	140	na	na
031SB1402	ND	ND	ND	na	na
031SB1500	ND	ND	ND	na	na
031SB1600	66	190	170	na	na
031SB1700	ND	ND	ND	na	na
031SB1800	15	110	ND	na	na
031SB1900	ND	ND	16J	na	na
031SB2000	ND	ND	ND	na	na
031WC01	na	na	na	ND	>60C

Note: Concentrations in bold exceed the TPH screening guideline of 520 mg/kg.

J Concentration reported below the method reporting limit

na Not analyzed

ND Analyte not detected

deg C Degrees Celcius

µg/L micrograms per liter

mg/kg milligrams per kilogram

Table 3-2. SWMU 127 TPH and Waste Characterization Data

Sample ID Reporting limit	GRO (1.0 mg/kg)	DRO (10 mg/kg)	Motor Oil (20 mg/kg)	TCLP VOCs (50 µg/L)	Ignitability (60 deg C)
127SB0100	ND	ND	ND	na	na
127SB0200	ND	26	17J	na	na
127SB0300	ND	ND	ND	na	na
127SB0400	ND	ND	ND	na	na
127SB0500	ND	ND	ND	na	na
127SB0600	ND	ND	ND	na	na
127SB0700	ND	ND	ND	na	na
127SB0800	ND	ND	ND	na	na
127SB0900	ND	ND	ND	na	na
127SB1000	ND	ND	ND	na	na
127SB1100	ND	ND	ND	na	na
127SB1200	ND	ND	ND	na	na
127SB1300	ND	ND	ND	na	na
127SB1300M	ND	ND	8.5J	na	na
127SB1300D	ND	ND	11J	na	na
127SB1400	ND	ND	ND	na	na
127SB1500	ND	ND	ND	na	na
127SB1600	ND	ND	5.4J	na	na
127SB1700	ND	ND	9.8J	na	na
127SB1800	ND	ND	16J	na	na
127SB1810	ND	ND	ND	na	na
127WC01	na	na	na	ND	>60C

Note: No detections of TPH exceed the TPH screening guideline of 520 µg/kg.

deg C Degrees celsius

J Concentration reported below the method reporting limit

ND Analyte not detected

µg/L micrograms per liter

mg/kg milligrams per kilogram

Table 3-3. Risk Screening Evaluation of SWMU 127 PAH Data

Reporting limit	Acenaphthylene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a) Anthracene	Chrysene	Benzo(b) Anthracene	Benzo(k) Anthracene	Benzo(a) Pyrene	Dibenzo(ah) Anthracene	Benzo(ghi) Perylene	Indeno(123cd) Pyrene
Sample ID	(0.220 mg/kg)	(0.010 mg/kg)	(0.010 mg/kg)	0.020 mg/kg)	(0.010 mg/kg)	(0.010 mg/kg)	(0.010 mg/kg)	(0.020 mg/kg)	(0.010 mg/kg)	(0.010 mg/kg)	(0.020 mg/kg)	(0.020 mg/kg)	(0.010 mg/kg)
127SB0100	ND	ND	ND	ND	ND	0.002 J	0.0033 J	ND	0.0023	0.0037 J	ND	0.0025 J	0.0031 J
127SB0200	ND	0.0006 J	ND	0.058	0.057	0.007 J	0.029	0.042	0.018	0.025	0.041	0.065	0.062
127SB0300	ND	ND	ND	ND	0.0054 J	0.0024 J	0.004 J	ND	0.0041	0.0073 J	ND	0.009 J	0.0099 J
127SB0400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
127SB0500	ND	ND	ND	ND	ND	ND	0.0017 J	ND	ND	ND	ND	ND	ND
127SB0600	ND	0.016	ND	0.033	0.025	0.0063 J	0.0084 J	ND	0.0033	0.005 J	ND	0.0034 J	0.0042 J
127SB0700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
127SB0800	ND	0.0029 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
127SB0900	ND	0.0088 J	ND	0.032	0.017	0.0063 J	0.0086 J	0.0086 J	0.0034	0.0067 J	ND	0.005 J	0.0062 J
127SB1000	ND	0.0089 J	ND	0.042	0.032	0.0095 J	0.015	0.013 J	0.005	0.0095 J	ND	0.0075 J	0.012
127SB1100	0.025 J	0.052	ND	0.25	0.17	0.053	0.089	0.084	0.033	0.068	0.045	0.083	0.078
127SB1200	0.036 J	ND	ND	0.014 J	0.0068 J	0.0026 J	0.005 J	ND	0.0022	0.0036 J	ND	0.004 J	0.0043 J
127SB1300	ND	0.091	ND	0.47	0.33	0.082	0.15	0.17	0.078	0.13	0.098	0.17	0.16
127SB1300M	ND	0.12	ND	0.51	0.35	0.11	0.18	0.17	0.065	0.14	0.094	0.17	0.16
127SB1300D	ND	0.12	ND	0.62	0.44	0.12	0.21	0.23	0.088	0.19	0.14	0.23	0.22
127SB1400	ND	0.0092 J	ND	0.03	0.025	0.0058 J	0.01 J	0.011 J	0.0045	0.0091 J	ND	ND	0.011
127SB1500	0.027 J	0.04	ND	0.16	0.12	0.029	0.054	0.056	0.031	0.044	0.031	0.059	0.052
127SB1600	0.047 J	0.062	ND	0.2	0.17	0.04	0.077	0.081	0.031	0.067	0.047	0.081	0.079
127SB1700	ND	0.035	ND	0.17	0.12	0.028	0.053	0.063	0.039	0.051	0.036	0.066	0.06
127SB1800	0.078 J	ND	0.0036 J	0.35	0.26	0.061	0.11	0.14	0.047	0.11	0.11	0.16	0.16
127SB1810	ND	ND	ND	ND	ND	ND	0.003 J	ND	0.002	0.0026 J	ND	ND	0.007 J
Maximum Detected Value	0.078 J	0.12	0.0036 J	0.62	0.44	0.12	0.21	0.23	0.088	0.19	0.14	0.23	0.22
NMED Soil Screening Level	3730	1830	22000	2290	2290	6.2	615	6.21	N/A	0.621	0.621	N/A	6.21
Toxicity Endpoint	nc	nc	nc	nc	nc	ca	ca	ca	--	ca	ca	--	ca
Risk Ratio	2.09E-05	6.56E-05	1.64E-07	2.71E-04	1.92E-04	1.94E-02	3.41E-04	3.70E-02	--	3.06E-01	2.25E-01	--	3.54E-02

Carcinogenic Risk Ratio Sum	6.24E-01	Less than 1.0, therefore no Carcinogenic risk exists at site for PAHs
Noncarcinogenic Hazard Index	5.50E-04	Less than 1.0, therefore no Noncarcinogenic hazard (risk) exists at site for PAHs

ca carcinogenic toxicity endpoint
 J Concentration reported below the method reporting limit
 N/A NMED soil screening level not available
 nc Noncarcinogenic toxicity endpoint
 ND Analyte not detected
 * MS/MSD sample not considered in risk evaluation
 mg/kg milligrams per kilogram

Appendix A
HTW Boring Logs

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **031SB01**

1. COMPANY NAME **Bay West, Inc** 2. DRILLING CONTRACTOR **Vista Geoscience** SHEET **1** OF **2** SHEETS

3. PROJECT **Cannon Air Force Base** 4. LOCATION **Clovis, NM**

5. NAME OF DRILLER **C. Grubbs** 6. MANUFACTURER'S DESIGNATION OF DRILL **Truck mounted Geoprobe**

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT **Geoprobe** 8. HOLE LOCATION **3,807,038.6 North 654,367.0 East**

2" Diameter Macrocore 9. SURFACE ELEVATION **1311.2'**
PID (in ppm)

10. DATE STARTED **2/11/2008** 11. DATE COMPLETED **2/11/2008**

12. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED **None**

13. DEPTH DRILLED INTO ROCK 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

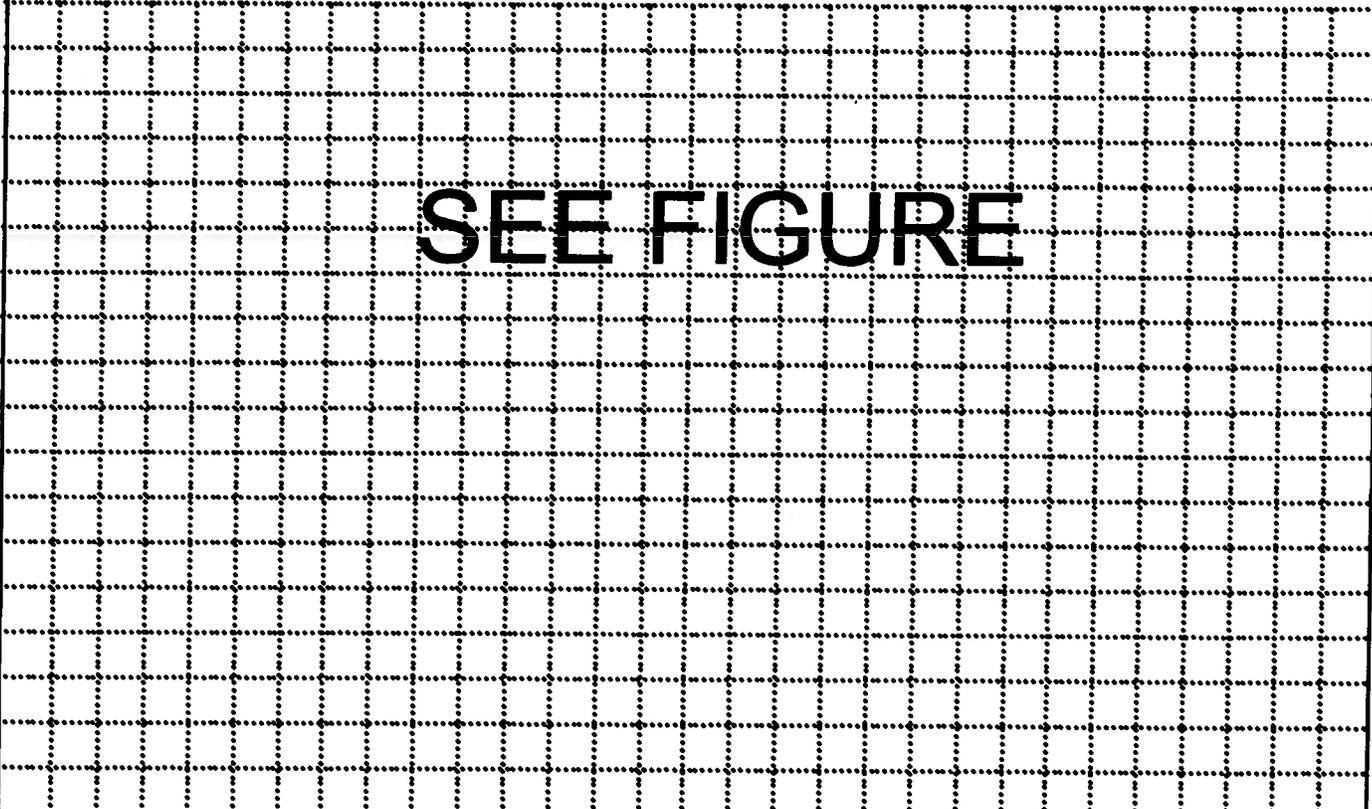
14. TOTAL DEPTH OF HOLE **15.0 FT** 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES **—** DISTURBED **—** UNDISTURBED **—** 19. TOTAL NUMBER OF CORE BOXES **—**

20. SAMPLES FOR CHEMICAL ANALYSIS VOC **—** METALS **—** OTHER (SPECIFY) **TPH** OTHER (SPECIFY) **—** OTHER (SPECIFY) **—** 21. TOTAL CORE RECOVERY **—** %

22. DISPOSITION OF HOLE **Cuttings drummed** BACKFILLED **—** MONITORING WELL **—** OTHER (SPECIFY) **Grouted** 23. SIGNATURE OF INSPECTOR *[Signature]*

LOCATION SKETCH/COMMENTS SCALE: 1" = 1'



PROJECT **Cannon Air Force Base Clovis, NM** HOLE NO **031SB01**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB01

PROJECT
Canon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.2	0	CONCRETE	73.1		031SB0100		
1310.2	1	FILL - Sand and gravel fill, brown, staining and odor at 1 ft					
1309.2	2						
1308.2	3		59		031SB0102		
1307.2	4	SILTY CLAY (CL-ML) - reddish-brown, moist					
1306.2	5	CALICHE - tan/light pink, dry					
1305.2	6		13.1		031SB0105		
1304.2	7	SILTY CLAY/CALICHE - reddish-brown, moist					
1303.2	8		8.1				
1302.2	9	SANDY SILT (MLS) - reddish-brown, moist					
1301.2	10		7.7				
1300.2	11						
1299.2	12						
1298.2	13		6.3				
1297.2	14	SANDY SILT (MLS) with CALICHE					
1296.2	15	CALICHE - rock fragments					
1295.2	16	END OF BORING at 15 ft bgs. Soil samples collected from 0-2.5 ft, 2.5-5 ft and 5-7.5 ft intervals for TPH.					
1294.2	17						
1293.2	18						
1292.2	19						
1291.2	20						

PROJECT
Canon Air Force Base Clovis, NM

HOLE NO
031SB01

HTRW DRILLING LOG

1. COMPANY NAME Bay West, Inc		DISTRICT Omaha District		HOLE NUMBER 031SB02	
2. DRILLING CONTRACTOR Vista Geoscience		SHEET 1 OF 2		SHEETS 2	
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM		
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		Geoprobe		8. HOLE LOCATION 3,807,042.5 North 654,371.3 East	
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED None		
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
14. TOTAL DEPTH OF HOLE 15.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)
SEE LOG		-	-	TPH	-
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
				Grouted	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB02
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB02

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.2	0	CONCRETE	15		031SB0200		
1310.2	1	FILL - Sand, clay, and gravel fill, dark brown, staining and odor					
1309.2	2						
1308.2	3		2.8		031SB0202		
1307.2	4	SANDY SILT (MLS) - reddish-brown, moist					
1306.2	5						
1305.2	6	SILTY CLAY (CL-ML) CALICHE - reddish-brown, moist-wet	2.1				
1304.2	7	CALICHE - light tan, dry					
1303.2	8	SILTY CLAY (CL-ML) CALICHE - light tan, dry	2.1				
1302.2	9						
1301.2	10	CALICHE - rock fragments	1.7				
1300.2	11	SANDY SILT (MLS) - reddish brown					
1299.2	12						
1298.2	13	SILTY CLAY (CL-ML) / CALICHE - light tan, dry	0.7				
1297.2	14						
1296.2	15	END OF BORING at 15 ft bgs. Soil samples collected from 0-2.5 ft and 2.5-5 ft intervals for TPH.					
1295.2	16						
1294.2	17						
1293.2	18						
1292.2	19						
1291.2	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB02

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB03	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore Geoprobe		8. HOLE LOCATION 3,807,046.9 North 654,375.3 East	
		9. SURFACE ELEVATION 1311.2'	
		10. DATE STARTED 2/11/2008	11. DATE COMPLETED 2/11/2008
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED None	
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 8.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES	DISTURBED -	UNDISTURBED -	19. TOTAL NUMBER OF CORE BOXES -
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC -	METALS -	OTHER (SPECIFY) TPH
21. TOTAL CORE RECOVERY %	OTHER (SPECIFY) -	OTHER (SPECIFY) -	OTHER (SPECIFY) -
22. DISPOSITION OF HOLE Cuffings drummed	BACKFILLED	MONITORING WELL	23. SIGNATURE OF INSPECTOR Grouded <i>[Signature]</i>
LOCATION SKETCH/COMMENTS		SCALE: 1" = 1'	
<h1>SEE FIGURE</h1>			
PROJECT Cannon Air Force Base Clovis, NM			HOLE NO 031SB03

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

031SB03

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.2	0	CONCRETE	8.4		031SB0300		
1310.2	1	FILL - Sand, clay, and gravel fill, dark brown, staining and odor					
1309.2	2						
1308.2	3	SILTY CLAY (CL-ML)/CALICHE - reddish-brown, moist	1.7		031SB0302		
1307.2	4	CALICHE - light tan, dry					
1306.2	5	SILTY CLAY (CL-ML)/CALICHE - reddish-brown, wet	1.4				
1305.2	6	CALICHE - light tan, dry					
1304.2	7						
1303.2	8	REFUSAL at 8 ft bgs. Soil samples collected from 0-2.5 ft and 2.5-5 ft intervals for TPH.					
1302.2	9						
1301.2	10						
1300.2	11						
1299.2	12						
1298.2	13						
1297.2	14						
1296.2	15						
1295.2	16						
1294.2	17						
1293.2	18						
1292.2	19						
1291.2	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB03

HTRW DRILLING LOG

DISTRICT Omaha District	HOLE NUMBER 031SB04
1. COMPANY NAME Bay West, Inc	2. DRILLING CONTRACTOR Vista Geoscience
SHEET 1 OF 2 SHEETS	

3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM			
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	Geoprobe	8. HOLE LOCATION 3,807,050.9 North 654,379.0 East			
	2" Diameter Macrocore	9. SURFACE ELEVATION 1311.3'			
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/11/2008		11. DATE COMPLETED 2/11/2008	
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED None			
14. TOTAL DEPTH OF HOLE 15.0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
DISTURBED -		UNDISTURBED -		-	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %		23. SIGNATURE OF INSPECTOR	
SEE LOG		-		-	
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED MONITORING WELL		OTHER (SPECIFY) Grouted	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB04
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB04

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.3	0	FILL - Sand, clay, and gravel fill, dark brown, no staining or odor	1.7		031SB0402		
1310.3	1						
1309.3	2						
1308.3	3	SILTY CLAY (CL-ML) - reddish-brown, moist	1.4				
1307.3	4	SILTY CLAY (CL-ML) /CALICHE - light tan/pink, moist, medium-stiff	1.4				
1306.3	5						
1305.3	6						
1304.3	7						
1303.3	8	SANDY SILT (MLS) - reddish brown	1.4				
1302.3	9						
1301.3	10						
1300.3	11	SILTY CLAY (CL-ML) /CALICHE - light tan/pink, moist, medium-stiff	1				
1299.3	12						
1298.3	13	CALICHE - rock fragments	1				
1297.3	14						
1296.3	15						
1295.3	16	END OF BORING at 15 ft bgs. Soil sample collected from 2.5-5 ft interval for TPH.					
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB04

HTRW DRILLING LOG

DISTRICT Omaha District	HOLE NUMBER 031SB05
1. COMPANY NAME Bay West, Inc	2. DRILLING CONTRACTOR Vista Geoscience
SHEET 1	SHEETS OF 2

3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		8. HOLE LOCATION 3,807,046.9 North 654,383.8 East	
		9. SURFACE ELEVATION 1311.3'	
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/11/2008	
13. DEPTH DRILLED INTO ROCK		11. DATE COMPLETED 2/11/2008	
14. TOTAL DEPTH OF HOLE 9.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED None	
18. GEOTECHNICAL SAMPLES		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
19. TOTAL NUMBER OF CORE BOXES		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB05
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB05

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.3	0	CONCRETE	1		031SB0500		
1310.3	1	SANDY CLAY (CL-ML), dark brown, moist, no staining or odor					
1309.3	2						
1308.3	3	- with gravel 3-3.5 ft - reddish brown 3.5-4.5 ft	1				
1307.3	4						
1306.3	5	SILTY CLAY (CL-ML) /CALICHE - light tan/pink, saturated 5 to 7 ft	1				
1305.3	6						
1304.3	7	CALICHE - light, dry, tan					
1303.3	8		1				
1302.3	9	REFUSAL at 9 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH.					
1301.3	10						
1300.3	11						
1299.3	12						
1298.3	13						
1297.3	14						
1296.3	15						
1295.3	16						
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB05

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB06	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore Geoprobe		8. HOLE LOCATION 3,807,042.8 North 654,379.7 East	
9. SURFACE ELEVATION 1311.3'		10. DATE STARTED 2/11/2008	
11. DATE COMPLETED 2/11/2008		12. OVERBURDEN THICKNESS	
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED None	
14. TOTAL DEPTH OF HOLE 15.0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)		18. GEOTECHNICAL SAMPLES	
19. TOTAL NUMBER OF CORE BOXES		DISTURBED	
20. SAMPLES FOR CHEMICAL ANALYSIS		UNDISTURBED	
SEE LOG		-	
21. TOTAL CORE RECOVERY %		-	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR	
Cuttings drummed		Grouted	
LOCATION SKETCH/COMMENTS		SCALE: 1" = 1'	
SEE FIGURE			
PROJECT Cannon Air Force Base Clovis, NM		HOLE NO 031SB06	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB06
SHEET SHEETS
2 OF 2

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

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)
1311.3	0	CONCRETE	946		031SB0300		
1310.3	1	FILL - Sand and gravel fill, brown, staining and odor					
1309.3	2	SILTY CLAY (CL-ML) - dark brown, staining, petro odor, medium-stiff					
1308.3	3	SANDY CLAY (CL) - reddish brown, moist, medium-stiff	17		031SB0300		
1307.3	4	CALICHE - light tan, dry					
1306.3	5	SILTY CLAY (CL-ML) - saturated	3				
1305.3	6	CALICHE - light, dry, tan					
1304.3	7						
1303.3	8						
1302.3	9						
1301.3	10		2.1				
1300.3	11						
1299.3	12						
1298.3	13						
1297.3	14						
1296.3	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH.					
1295.3	16						
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB06

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB07	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore Geoprobe		8. HOLE LOCATION 3,807,038.4 North 654,375.4 East	
		9. SURFACE ELEVATION 1311.3'	
		10. DATE STARTED 2/11/2008	11. DATE COMPLETED 2/11/2008
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED None	
13. DEPTH DRILLED INTO ROCK		18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 15.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES	DISTURBED -	UNDISTURBED -	19. TOTAL NUMBER OF CORE BOXES -
20. SAMPLES FOR CHEMICAL ANALYSIS SEE LOG	VOC -	METALS -	OTHER (SPECIFY) TPH
22. DISPOSITION OF HOLE Cuttings drummed	BACKFILLED	MONITORING WELL	OTHER (SPECIFY) Grouted
		21. TOTAL CORE RECOVERY % -	
		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB07
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB07

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

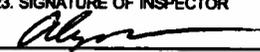
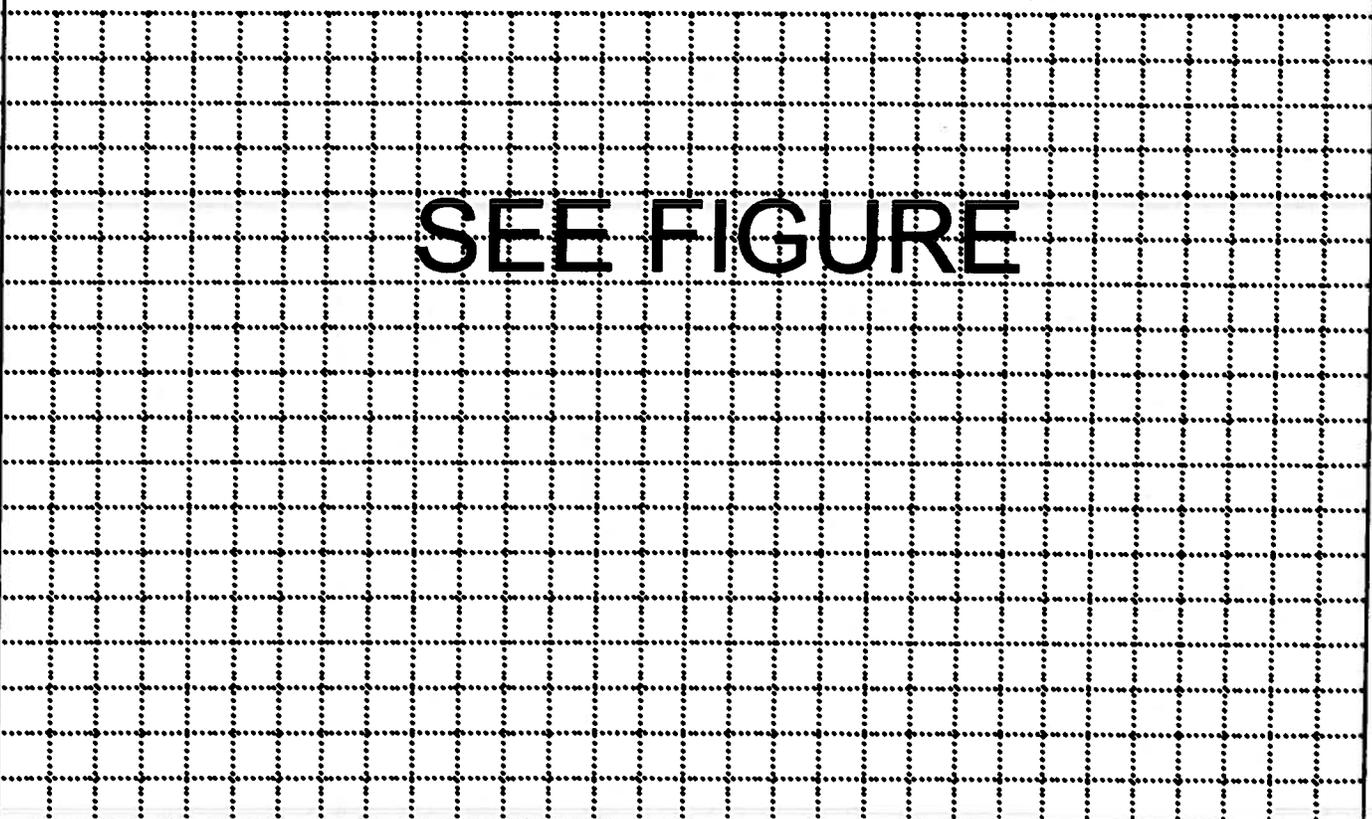
SHEET SHEETS
2 OF 2

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)
1311.3	0	CONCRETE	5		031SB0700		
1310.3	1	FILL - Sand and gravel fill, brown, no staining or odor					
1309.3	2						
1308.3	3	CALICHE - light tan, dry	1				
1307.3	4						
1306.3	5	SILTY CLAY (CL-ML)/CALICHE - moist, light tan	0				
1305.3	6	CALICHE - light tan, dry					
1304.3	7						
1303.3	8		0				
1302.3	9	SILTY CLAY (CL-ML)/CALICHE - moist, light tan, medium-stiff					
1301.3	10						
1300.3	11	CALICHE - tight, dry, tan					
1299.3	12						
1298.3	13	SANDY CLAY (CLS) - reddish brown, moist					
1297.3	14						
1296.3	15	CALICHE					
1295.3	16	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH.					
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB07

HTRW DRILLING LOG

HTRW DRILLING LOG		DISTRICT Omaha District			HOLE NUMBER 031SB08	
		1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience		SHEET 1 OF 2 SHEETS
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM			
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		Geoprobe		8. HOLE LOCATION 3,807,032.5 North 654,369.7 East		
12. OVERBURDEN THICKNESS			9. SURFACE ELEVATION 1311.0'			
13. DEPTH DRILLED INTO ROCK			10. DATE STARTED 2/12/2008		11. DATE COMPLETED 2/12/2008	
14. TOTAL DEPTH OF HOLE 15.0 FT			15. DEPTH GROUNDWATER ENCOUNTERED None			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES
-		-		-		-
20. SAMPLES FOR CHEMICAL ANALYSIS SEE LOG		VOC	METALS	OTHER (SPECIFY) TPH	OTHER (SPECIFY)	OTHER (SPECIFY)
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED	MONITORING WELL	OTHER (SPECIFY) Grouted	23. SIGNATURE OF INSPECTOR 	
21. TOTAL CORE RECOVERY %						-
LOCATION SKETCH/COMMENTS						SCALE: 1" = 1'
						
PROJECT Cannon Air Force Base Clovis, NM					HOLE NO 031SB08	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB08
SHEET **2** OF **2** SHEETS

PROJECT **Cannon Air Force Base
Clovis, NM**

INSPECTOR

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)
1311.0	0	ASPHALT	3.1		031SB0800		
1310.0	1	FILL - Sand and gravel fill, brown, slight odor 1-2 ft					
1309.0	2						
1308.0	3	SILTY CLAY (CL-ML) /CALICHE - reddish brown, moist, medium-stiff	0				
1307.0	4	SILTY CLAY (CL-ML) /CALICHE - pink-light tan, moist, with caliche nodules					
1306.0	5		0				
1305.0	6						
1304.0	7						
1303.0	8						
1302.0	9						
1301.0	10						
1300.0	11						
1299.0	12						
1298.0	13	SILTY SAND (MLS) - pink-light tan, fine grained, moist					
1297.0	14						
1296.0	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH.					
1295.0	16						
1294.0	17						
1293.0	18						
1292.0	19						
1291.0	20						

PROJECT **Cannon Air Force Base Clovis, NM**

HOLE NO **031SB08**

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB09	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		8. HOLE LOCATION 3,807,032.2 North 654,364.3 East	
		9. SURFACE ELEVATION 1311.1'	
		10. DATE STARTED 2/12/2008	
		11. DATE COMPLETED 2/12/2008	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED None	
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 15.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
DISTURBED -		UNDISTURBED -	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC SEE LOG		METALS -	
OTHER (SPECIFY) -		OTHER (SPECIFY) TPH	
OTHER (SPECIFY) -		OTHER (SPECIFY) -	
22. DISPOSITION OF HOLE Cuttings drummed		23. SIGNATURE OF INSPECTOR Grouted	
BACKFILLED		MONITORING WELL	
OTHER (SPECIFY)		OTHER (SPECIFY)	
LOCATION SKETCH/COMMENTS SCALE: 1" = 1'			
<h1>SEE FIGURE</h1>			
PROJECT Cannon Air Force Base Clovis, NM		HOLE NO 031SB09	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB09

PROJECT Cannon Air Force Base Clovis, NM INSPECTOR SHEET 2 OF 2 SHEETS

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)
1311.1	0	ASPHALT	0		031SB0900		
1310.1	1	SILTY CLAY (CL-ML) - dark gray, moist, medium-stiff, no petroleum odor, possible sewer odor, possible staining					
1309.1	2						
1308.1	3	- limestone rocks, 0.3 ft thick layer					
1307.1	4	SILTY CLAY (CL-ML)/CALICHE - pink-tan, moist-wet	0				
1306.1	5						
1305.1	6						
1304.1	7	CALICHE - pink-light tan					
1303.1	8						
1302.1	9						
1301.1	10						
1300.1	11						
1299.1	12						
1298.1	13	SILTY SAND (MLS) - pink-light tan, fine grained, moist					
1297.1	14						
1296.1	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH.					
1295.1	16						
1294.1	17						
1293.1	18						
1292.1	19						
1291.1	20						

PROJECT Cannon Air Force Base Clovis, NM HOLE NO 031SB09

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **031SB10**

1. COMPANY NAME **Bay West, Inc** 2. DRILLING CONTRACTOR **Vista Geoscience** SHEET **1** OF **2** SHEETS

3. PROJECT **Cannon Air Force Base** 4. LOCATION **Clovis, NM**

5. NAME OF DRILLER **C. Grubbs** 6. MANUFACTURER'S DESIGNATION OF DRILL **Truck mounted Geoprobe**

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT **Geoprobe** 8. HOLE LOCATION **3,807,037.9 North 654,358.5 East**

2" Diameter Macrocore 9. SURFACE ELEVATION **1311.1'**

10. DATE STARTED **2/12/2008** 11. DATE COMPLETED **2/12/2008**

12. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED **None**

13. DEPTH DRILLED INTO ROCK 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

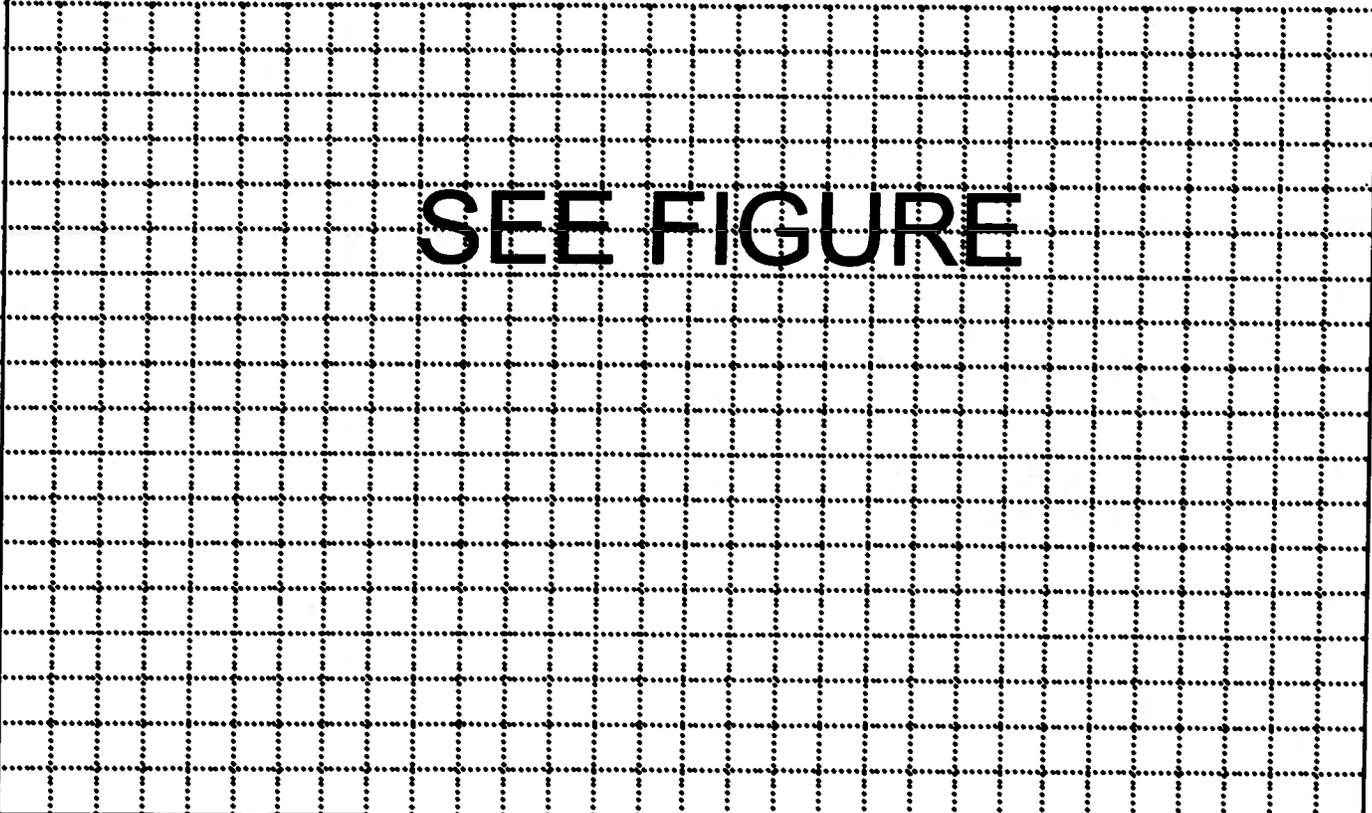
14. TOTAL DEPTH OF HOLE **15.0 FT** 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES DISTURBED **-** UNDISTURBED **-** 19. TOTAL NUMBER OF CORE BOXES **-**

20. SAMPLES FOR CHEMICAL ANALYSIS VOC **-** METALS **-** OTHER (SPECIFY) **TPH** OTHER (SPECIFY) **-** OTHER (SPECIFY) **-** 21. TOTAL CORE RECOVERY **-** %

22. DISPOSITION OF HOLE **Cuttings drummed** BACKFILLED **-** MONITORING WELL **-** OTHER (SPECIFY) **-** 23. SIGNATURE OF INSPECTOR *[Signature]*

LOCATION SKETCH/COMMENTS SCALE: 1" = ' SCALE: 1" = '



PROJECT **Cannon Air Force Base Clovis, NM** HOLE NO **031SB10**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB10

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.1	0	CONCRETE	3.3		031SB1000		
1310.1	1	FILL - Sand, clay, and gravel fill, brown, staining and slight odor top 1 ft					
1309.1	2	SILTY CLAY (CL-ML)CALICHE - reddish brown, medium-stiff, moist	0				
1308.1	3						
1307.1	4	SILTY CLAY (CL-ML)CALICHE - pink-light tan, caliche top 6"					
1306.1	5						
1305.1	6						
1304.1	7						
1303.1	8						
1302.1	9						
1301.1	10						
1300.1	11						
1299.1	12						
1298.1	13	SILTY SAND (MLS) - pink-light tan, fine grained, moist					
1297.1	14						
1296.1	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2 ft interval for TPH.					
1295.1	16						
1294.1	17						
1293.1	18						
1292.1	19						
1291.1	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB10

HTRW DRILLING LOG

DISTRICT: Omaha District
 HOLE NUMBER: 031SB11

1. COMPANY NAME: Bay West, Inc
 2. DRILLING CONTRACTOR: Vista Geoscience
 SHEET: 1 OF 2 SHEETS

3. PROJECT: Cannon Air Force Base
 4. LOCATION: Clovis, NM

5. NAME OF DRILLER: C. Grubbs
 6. MANUFACTURER'S DESIGNATION OF DRILL: Truck mounted Geoprobe

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe
 8. HOLE LOCATION: 3,807,042.2 North 654,362.5 East

9. SURFACE ELEVATION: 1311.2

10. DATE STARTED: 2/12/2008
 11. DATE COMPLETED: 2/12/2008

12. OVERBURDEN THICKNESS:
 15. DEPTH GROUNDWATER ENCOUNTERED: None

13. DEPTH DRILLED INTO ROCK:
 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:

14. TOTAL DEPTH OF HOLE: 15.0 FT
 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES: DISTURBED: - UNDISTURBED: -
 19. TOTAL NUMBER OF CORE BOXES: -

20. SAMPLES FOR CHEMICAL ANALYSIS: VOC: - METALS: - OTHER (SPECIFY): TPH: -
 OTHER (SPECIFY): - OTHER (SPECIFY): -

21. TOTAL CORE RECOVERY: %
 22. DISPOSITION OF HOLE: BACKFILLED: - MONITORING WELL: - OTHER (SPECIFY): -
 23. SIGNATURE OF INSPECTOR: *[Signature]*

22. DISPOSITION OF HOLE: Cuttings drummed
 OTHER (SPECIFY): Grouted

LOCATION SKETCH/COMMENTS SCALE: 1" = 1'

SEE FIGURE

PROJECT: Cannon Air Force Base Clovis, NM
 HOLE NO: 031SB11

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB11

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

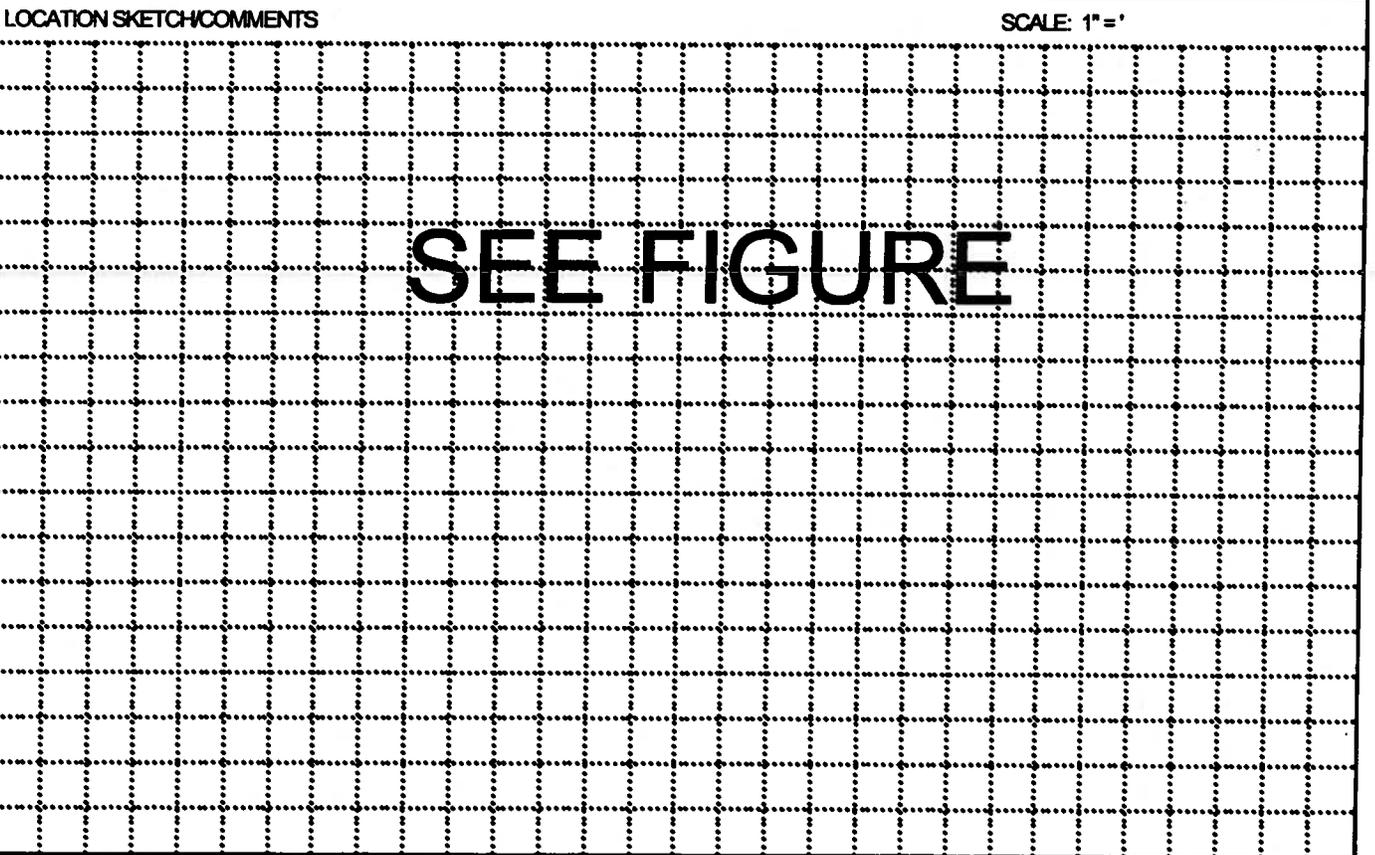
SHEET
2 OF 2

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)
1311.2	0	CONCRETE	110		031SB1100		
1310.2	1	SILTY CLAY (CL-ML) - dark gray, staining and odor					
1309.2	2	SILTY CLAY (CL-ML) - reddish brown grading to brown, no odor	2				
1308.2	3						
1307.2	4	CALICHE - pink-light tan					
1306.2	5	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1305.2	6						
1304.2	7						
1303.2	8						
1302.2	9						
1301.2	10	SILTY SAND (MLS) - light tan, fine grained, moist					
1300.2	11						
1299.2	12						
1298.2	13						
1297.2	14						
1296.2	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2 ft interval for TPH.					
1295.2	16						
1294.2	17						
1293.2	18						
1292.2	19						
1291.2	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB11

HTRW DRILLING LOG			DISTRICT Omaha District			HOLE NUMBER 031SB12		
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			SHEET 1 OF 2		
3. PROJECT Cannon Air Force Base				4. LOCATION Clovis, NM				
5. NAME OF DRILLER C. Grubbs				6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe		8. HOLE LOCATION 3,807,046.9 North 654,366.8 East				
2" Diameter Macrocore				9. SURFACE ELEVATION 1311.2				
				10. DATE STARTED 2/12/2008			11. DATE COMPLETED 2/12/2008	
12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED None				
13. DEPTH DRILLED INTO ROCK				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 15.0 FT				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES		
-		-		-		-		
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)
SEE LOG		-		-		TPH		-
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		21. TOTAL CORE RECOVERY %
Cuttings drummed						Grouted		-
23. SIGNATURE OF INSPECTOR						<i>[Signature]</i>		



PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB12
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB12

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.2	0	CONCRETE	2		031SB1200		
1310.2	1	CLAY AND GRAVEL - dark gray, no odor, stiff, moist					
1309.2	2						
1308.2	3						
1307.2	4	SILTY CLAY (CL-ML) - brown, medium-stiff, moist	0				
1306.2	5						
1305.2	6						
1304.2	7						
1303.2	8	CALICHE - pink-light tan					
1302.2	9	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1301.2	10						
1300.2	11						
1299.2	12	CALICHE - dry, tan					
1298.2	13						
1297.2	14						
1296.2	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH.					
1295.2	16						
1294.2	17						
1293.2	18						
1292.2	19						
1291.2	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB12

HTRW DRILLING LOG				DISTRICT		HOLE NUMBER	
1. COMPANY NAME Bay West, Inc				Omaha District		031SB13	
2. DRILLING CONTRACTOR Vista Geoscience				SHEET		SHEETS	
				1		OF 2	
3. PROJECT Cannon Air Force Base				4. LOCATION Clovis, NM			
5. NAME OF DRILLER C. Grubbs				6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe		8. HOLE LOCATION 3,807,051.1 North 654,371.0 East			
2" Diameter Macrocore				9. SURFACE ELEVATION 1311.2			
				10. DATE STARTED 2/12/2008		11. DATE COMPLETED 2/12/2008	
12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED None			
13. DEPTH DRILLED INTO ROCK				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 7.0 FT				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES	
-		-		-		-	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	
SEE LOG		-		-		TPH	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	
Cuttings drummed						23. SIGNATURE OF INSPECTOR	
						<i>[Signature]</i>	
LOCATION SKETCH/COMMENTS						SCALE: 1" = 1'	
SEE FIGURE							
PROJECT Cannon Air Force Base Clovis, NM						HOLE NO 031SB13	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB13

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.2	0	CONCRETE	4.1		031SB1300		
1310.2	1	CLAY AND GRAVEL (CLG) - dark gray, slight odor 0-2 ft, medium-stiff to stiff, moist					
1309.2	2						
1308.2	3		1.2				
1307.2	4	CALICHE/SILTY CLAY (CL-ML) - light tan, moist					
1306.2	5						
1305.2	6						
1304.2	7	CALICHE - dry, tan, rocky					
1303.2	8	REFUSAL at 7 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH.					
1302.2	9						
1301.2	10						
1300.2	11						
1299.2	12						
1298.2	13						
1297.2	14						
1296.2	15						
1295.2	16						
1294.2	17						
1293.2	18						
1292.2	19						
1291.2	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB13

HTRW DRILLING LOG

1. COMPANY NAME Bay West, Inc		DISTRICT Omaha District		HOLE NUMBER 031SB14	
2. DRILLING CONTRACTOR Vista Geoscience		3. PROJECT Cannon Air Force Base		SHEET 1 OF 2 SHEETS	
4. LOCATION Clovis, NM		5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		Geoprobe		8. HOLE LOCATION 3,807,055.4 North 654,375.3 East	
9. SURFACE ELEVATION 1311.3'		10. DATE STARTED 2/12/2008		11. DATE COMPLETED 2/12/2008	
12. OVERBURDEN THICKNESS		13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED None	
14. TOTAL DEPTH OF HOLE 15.0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES		DISTURBED -		UNDISTURBED -	
19. TOTAL NUMBER OF CORE BOXES -		20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
SEE LOG		VOC -		METALS -	
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED -		MONITORING WELL -	
23. SIGNATURE OF INSPECTOR <i>AK</i>		OTHER (SPECIFY) TPH		OTHER (SPECIFY) -	
GROUTED		OTHER (SPECIFY) -		OTHER (SPECIFY) -	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB14
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB14
SHEET **2** OF **2** SHEETS

PROJECT **Cannon Air Force Base
Clovis, NM**

INSPECTOR

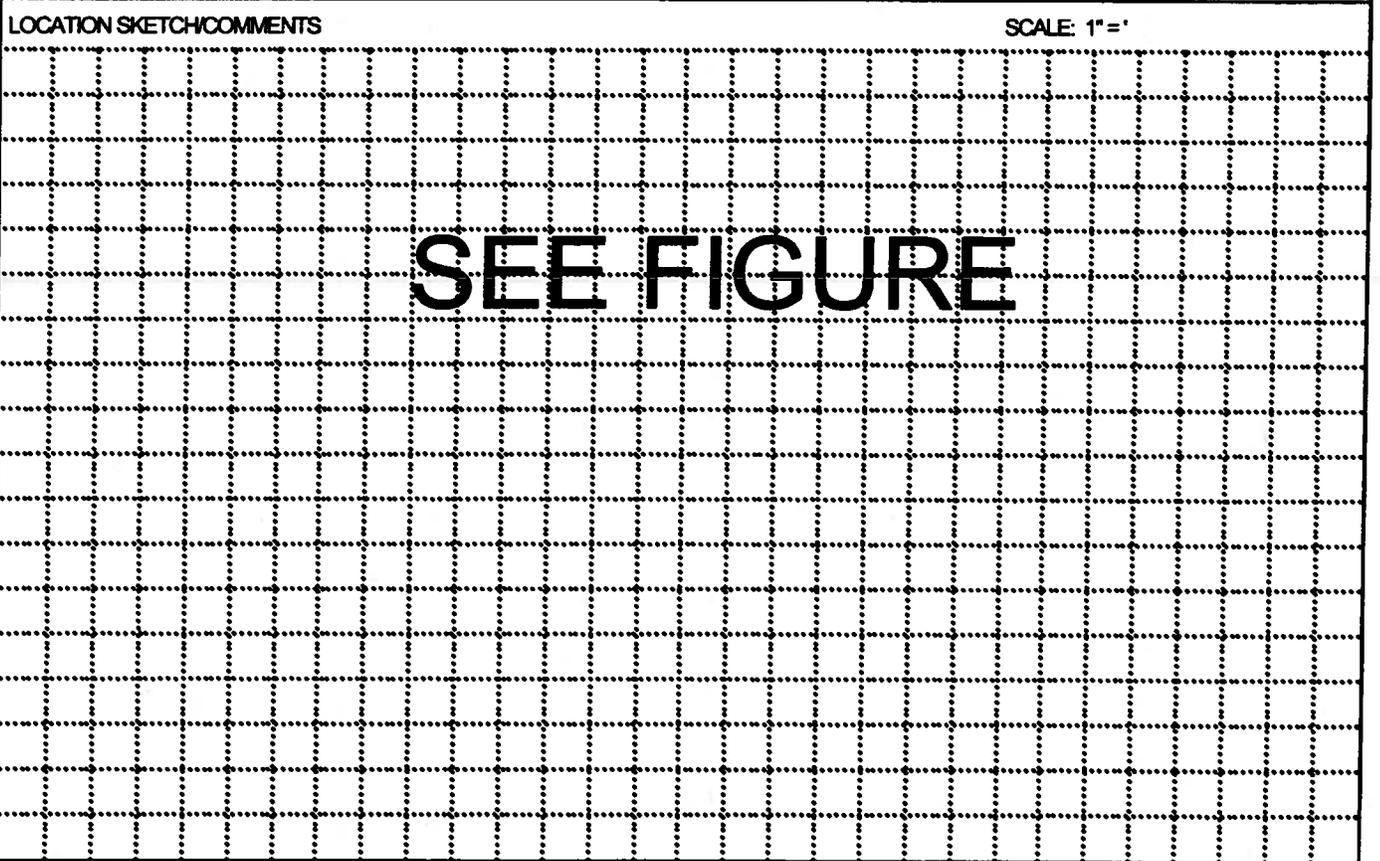
ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
1311.3	0	CONCRETE	889		031SB1400		
1310.3	1	CLAY AND GRAVEL (CLG) - dark gray, odor 0-2 ft, stiff, moist					
1309.3	2						
1308.3	3	SILTY CLAY (CL-ML) - reddish - brown, medium-stiff, moist	25.4		031SB1402		
1307.3	4	CALICHE - pink-light tan					
1306.3	5	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist	2				
1305.3	6						
1304.3	7						
1303.3	8	SILTY SAND (SM) - reddish brown, moist					
1302.3	9						
1301.3	10	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1300.3	11	CALICHE - dry, tan					
1299.3	12	SILTY SAND (SM) - reddish brown, moist					
1298.3	13	CALICHE - dry, tan					
1297.3	14	SILTY SAND (SM) - reddish brown, moist					
1296.3	15	END OF BORING at 15 ft bgs. Soil samples collected from 0-2.5 ft and 2.5-5 ft intervals for TPH.					
1295.3	16						
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT **Cannon Air Force Base Clovis, NM**

HOLE NO **031SB14**

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB15	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Canon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		8. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Geoprobe		8. HOLE LOCATION 3,807,059.5 North 654,379.3 East	
2" Diameter Macrocore		9. SURFACE ELEVATION 1311.3'	
		10. DATE STARTED 2/12/2008	11. DATE COMPLETED 2/12/2008
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED None	
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 15.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
-	DISTURBED -	UNDISTURBED -	-
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS
SEE LOG	-	-	OTHER (SPECIFY) TPH
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED	MONITORING WELL
			OTHER (SPECIFY) Grouted
		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	



PROJECT Canon Air Force Base Clovis, NM	HOLE NO 031SB15
--	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB15

PROJECT Cannon Air Force Base
Clovis, NM

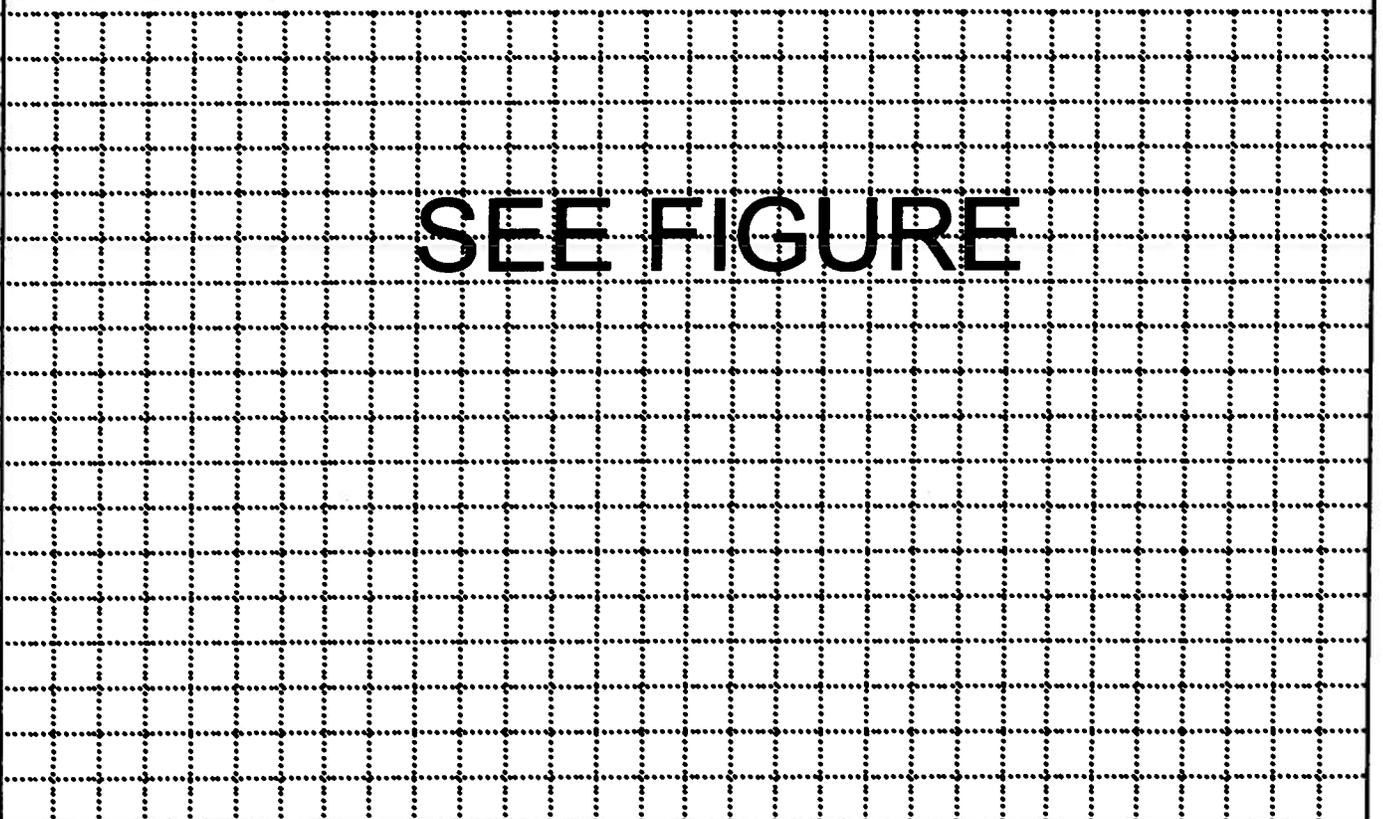
INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.3	0	CONCRETE	10.4		031SB1500		
1310.3	1	CLAY AND GRAVEL (CLG) - dark gray, slight odor 0-2 ft, stiff, moist					
1309.3	2	SILTY CLAY (CL-ML) - reddish - brown, medium-stiff, moist					
1308.3	3		2.5				
1307.3	4	CALICHE - pink-light tan					
1306.3	5	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1305.3	6						
1304.3	7						
1303.3	8						
1302.3	9	CALICHE - dry, tan					
1301.3	10						
1300.3	11						
1299.3	12						
1298.3	13	SILT (ML) - reddish brown					
1297.3	14	CALICHE - dry, tan					
1296.3	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2 ft interval for TPH.					
1295.3	16						
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB15

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER	
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			Omaha District 031SB16	
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM				
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe		8. HOLE LOCATION 3,807,058.7 North 654,371.1 East			
2" Diameter Macrocore				9. SURFACE ELEVATION 1311.3'			
				10. DATE STARTED 2/12/2008		11. DATE COMPLETED 2/12/2008	
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED None				
13. DEPTH DRILLED INTO ROCK			18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 15.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
-		-	-	-			
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
SEE LOG		-	-	TPH	-	-	
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
Cuttings drummed				Grouted			
LOCATION SKETCH/COMMENTS						SCALE: 1" = 1'	
							
PROJECT Cannon Air Force Base Clovis, NM						HOLE NO 031SB16	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB16

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1311.3	0	CONCRETE	81		031SB1600		
1310.3	1	SILTY CLAY (CL-ML) - dark brown, stiff, moist, odor 0-1 ft					
1309.3	2						
1308.3	3	- grading into reddish brown, medium-stiff at 3 ft	5.8				
1307.3	4	CALICHE - pink-light tan					
1306.3	5	CALICHE/SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist					
1305.3	6						
1304.3	7	CALICHE - pink-light tan, dry					
1303.3	8						
1302.3	9						
1301.3	10						
1300.3	11	SILT (ML) - reddish brown					
1299.3	12						
1298.3	13						
1297.3	14	CALICHE - dry, tan					
1296.3	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH.					
1295.3	16						
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB16

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB17	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Geoprobe		8. HOLE LOCATION 3,807,046.0 North 654,358.6 East	
2" Diameter Macrocore		9. SURFACE ELEVATION 1311.3'	
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/13/2008	
13. DEPTH DRILLED INTO ROCK		11. DATE COMPLETED 2/13/2008	
14. TOTAL DEPTH OF HOLE 8.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED None	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
DISTURBED —		UNDISTURBED —	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC SEE LOG		METALS —	
BACKFILLED Cuttings drummed		MONITORING WELL —	
OTHER (SPECIFY) TPH		OTHER (SPECIFY) —	
OTHER (SPECIFY) Grouted		OTHER (SPECIFY) —	
22. DISPOSITION OF HOLE		23. SIGNATURE OF INSPECTOR	
23. SIGNATURE OF INSPECTOR <i>[Signature]</i>			
LOCATION SKETCH/COMMENTS			
SCALE: 1" = 1'			
SEE FIGURE			
PROJECT Cannon Air Force Base Clovis, NM		HOLE NO 031SB17	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB17

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET
2 OF 2

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)
1311.3	0	CONCRETE	2		031SB1700		
1310.3	1	SILTY CLAY (CL-ML) - dark gray, stiff, moist, no odor - reddish brown at 1 ft					
1309.3	2						
1308.3	3		0				
1307.3	4	CALICHE - pink-light tan					
1306.3	5	CALICHE/SILTY CLAY (CL-ML) - pink, medium-stiff, moist					
1305.3	6						
1304.3	7	CALICHE - dry, tan, rocky					
1303.3	8	REFUSAL at 8 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH.					
1302.3	9						
1301.3	10						
1300.3	11						
1299.3	12						
1298.3	13						
1297.3	14						
1296.3	15						
1295.3	16						
1294.3	17						
1293.3	18						
1292.3	19						
1291.3	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB17

HTRW DRILLING LOG

DISTRICT: Omaha District
HOLE NUMBER: 031SB18

1. COMPANY NAME: Bay West, Inc
2. DRILLING CONTRACTOR: Vista Geoscience
SHEET: 1 OF 2 SHEETS

3. PROJECT: Cannon Air Force Base
4. LOCATION: Clovis, NM

5. NAME OF DRILLER: C. Grubbs
6. MANUFACTURER'S DESIGNATION OF DRILL: Truck mounted Geoprobe

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe
8. HOLE LOCATION: 3,807,060.8 North 654,369.0 East

2" Diameter Macrocore
9. SURFACE ELEVATION: 1311.4'

10. DATE STARTED: 2/13/2008
11. DATE COMPLETED: 2/13/2008

12. OVERBURDEN THICKNESS
15. DEPTH GROUNDWATER ENCOUNTERED: None

13. DEPTH DRILLED INTO ROCK
18. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE: 7.0 FT
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES: DISTURBED: - UNDISTURBED: -
19. TOTAL NUMBER OF CORE BOXES: -

20. SAMPLES FOR CHEMICAL ANALYSIS: VOC: - METALS: - OTHER (SPECIFY): TPH
21. TOTAL CORE RECOVERY: %

22. DISPOSITION OF HOLE: BACKFILLED: - MONITORING WELL: - OTHER (SPECIFY): Grouted
23. SIGNATURE OF INSPECTOR: *[Signature]*

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT: Cannon Air Force Base Clovis, NM
HOLE NO: 031SB18

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB18

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET
2 OF 2

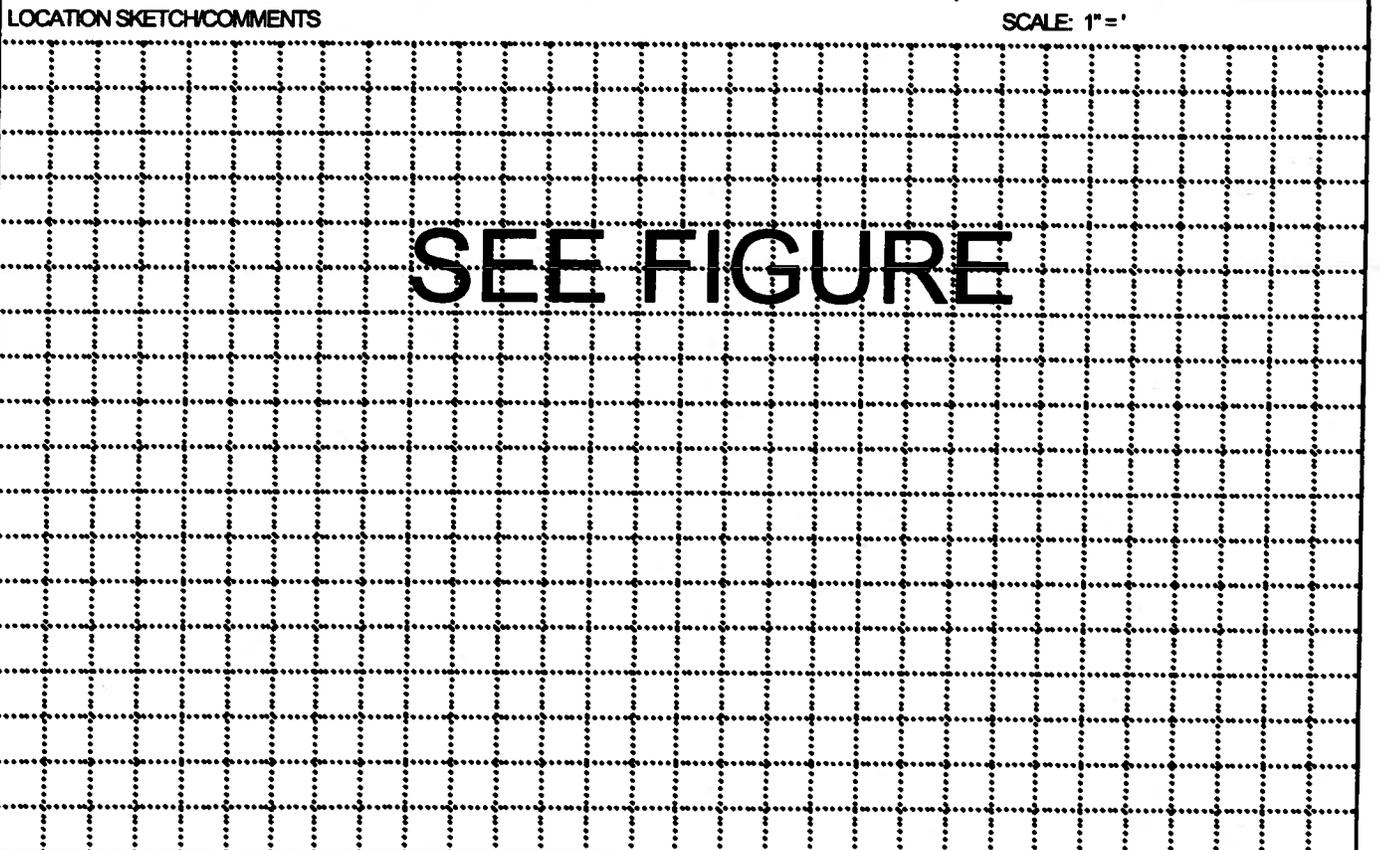
ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
1311.4	0	CONCRETE	37.4		031SB1800		
1310.4	1	SILTY CLAY (CL-ML) - dark gray, stiff, moist, odor 0-1 ft					
1309.4	2	CALICHE/SILTY CLAY (CL-ML)- reddish-brown, medium-stiff, moist	0				
1308.4	3						
1307.4	4	CALICHE - dry, tan, rocky					
1306.4	5	- with silty clay 5-6 ft					
1305.4	6						
1304.4	7	REFUSAL at 7 ft bgs. Soil sample collected from 0-2 ft interval for TPH.					
1303.4	8						
1302.4	9						
1301.4	10						
1300.4	11						
1299.4	12						
1298.4	13						
1297.4	14						
1296.4	15						
1295.4	16						
1294.4	17						
1293.4	18						
1292.4	19						
1291.4	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
031SB18

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 031SB19	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		8. HOLE LOCATION 3,807,063.0 North 654,375.2 East	
Geoprobe		9. SURFACE ELEVATION 1311.4'	
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/13/2008	
13. DEPTH DRILLED INTO ROCK		11. DATE COMPLETED 2/13/2008	
14. TOTAL DEPTH OF HOLE 15.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED None	
18. GEOTECHNICAL SAMPLES		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
DISTURBED -		UNDISTURBED -	
19. TOTAL NUMBER OF CORE BOXES -		20. SAMPLES FOR CHEMICAL ANALYSIS	
VOC -		METALS -	
OTHER (SPECIFY) -		OTHER (SPECIFY) -	
OTHER (SPECIFY) -		OTHER (SPECIFY) -	
21. TOTAL CORE RECOVERY %		22. DISPOSITION OF HOLE Cuttings drummed	
-		BACKFILLED -	
-		MONITORING WELL -	
-		OTHER (SPECIFY) -	
-		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	
-		Grouted	



PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 031SB19
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

031SB19

PROJECT

Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET

SHEETS

2 OF 2

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)
1311.4	0	CONCRETE	0		031SB1900		
1310.4	1	SILTY CLAY (CL-ML) - dark gray, medium-stiff to stiff, moist, no odor					
1309.4	2						
1308.4	3	- reddish brown, medium-stiff, moist at 2.5 ft	0				
1307.4	4						
1306.4	5	CALICHE - pink-light tan					
1305.4	6	CALICHE/SILTY CLAY (CL-ML) - pink, medium-stiff, moist					
1304.4	7						
1303.4	8	CALICHE - pink-light tan, dry, rocky, with silty clay					
1302.4	9						
1301.4	10						
1300.4	11						
1299.4	12	- silty sand lense, reddish-brown, at 12-12.5 ft					
1298.4	13						
1297.4	14						
1296.4	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH.					
1295.4	16						
1294.4	17						
1293.4	18						
1292.4	19						
1291.4	20						

PROJECT

Cannon Air Force Base Clovis, NM

HOLE NO

031SB19

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **031SB20**

1. COMPANY NAME **Bay West, Inc** 2. DRILLING CONTRACTOR **Vista Geoscience** SHEET **1** OF **2** SHEETS

3. PROJECT **Cannon Air Force Base** 4. LOCATION **Clovis, NM**

5. NAME OF DRILLER **C. Grubbs** 6. MANUFACTURER'S DESIGNATION OF DRILL **Truck mounted Geoprobe**

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT **Geoprobe** 8. HOLE LOCATION **3,807,039.8 North 654,388.8 East**

2" Diameter Macrocore 9. SURFACE ELEVATION **1311.0'**

10. DATE STARTED **2/13/2008** 11. DATE COMPLETED **2/13/2008**

12. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED **None**

13. DEPTH DRILLED INTO ROCK 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

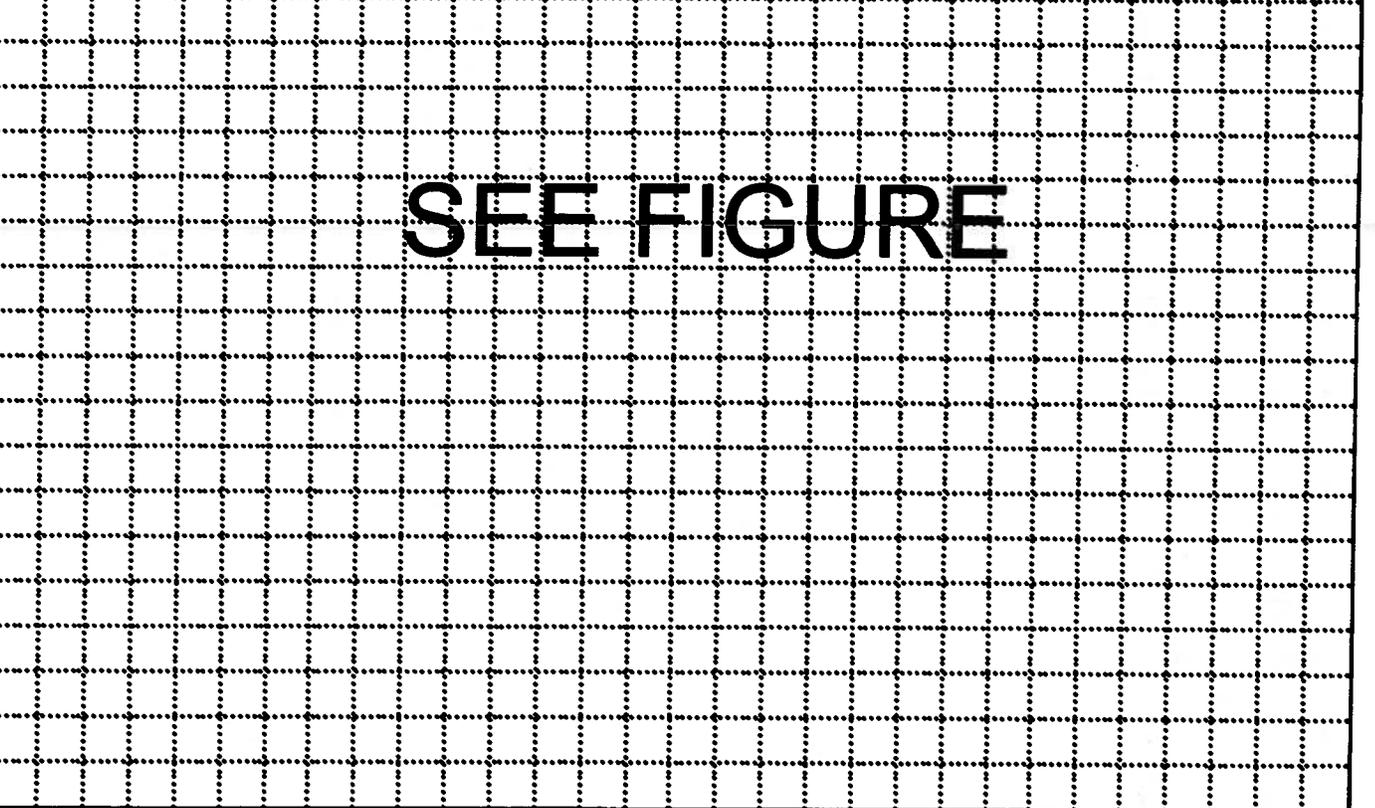
14. TOTAL DEPTH OF HOLE **6.0 FT** 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES **—** DISTURBED **—** UNDISTURBED **—** 19. TOTAL NUMBER OF CORE BOXES **—**

20. SAMPLES FOR CHEMICAL ANALYSIS VOC **—** METALS **—** OTHER (SPECIFY) **TPH** OTHER (SPECIFY) **—** OTHER (SPECIFY) **—** 21. TOTAL CORE RECOVERY **—** %

22. DISPOSITION OF HOLE **Cuttings drummed** BACKFILLED **—** MONITORING WELL **—** OTHER (SPECIFY) **Grouted** 23. SIGNATURE OF INSPECTOR *[Signature]*

LOCATION SKETCH/COMMENTS SCALE: 1" = 1'



PROJECT **Cannon Air Force Base Clovis, NM** HOLE NO **031SB20**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
031SB20

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

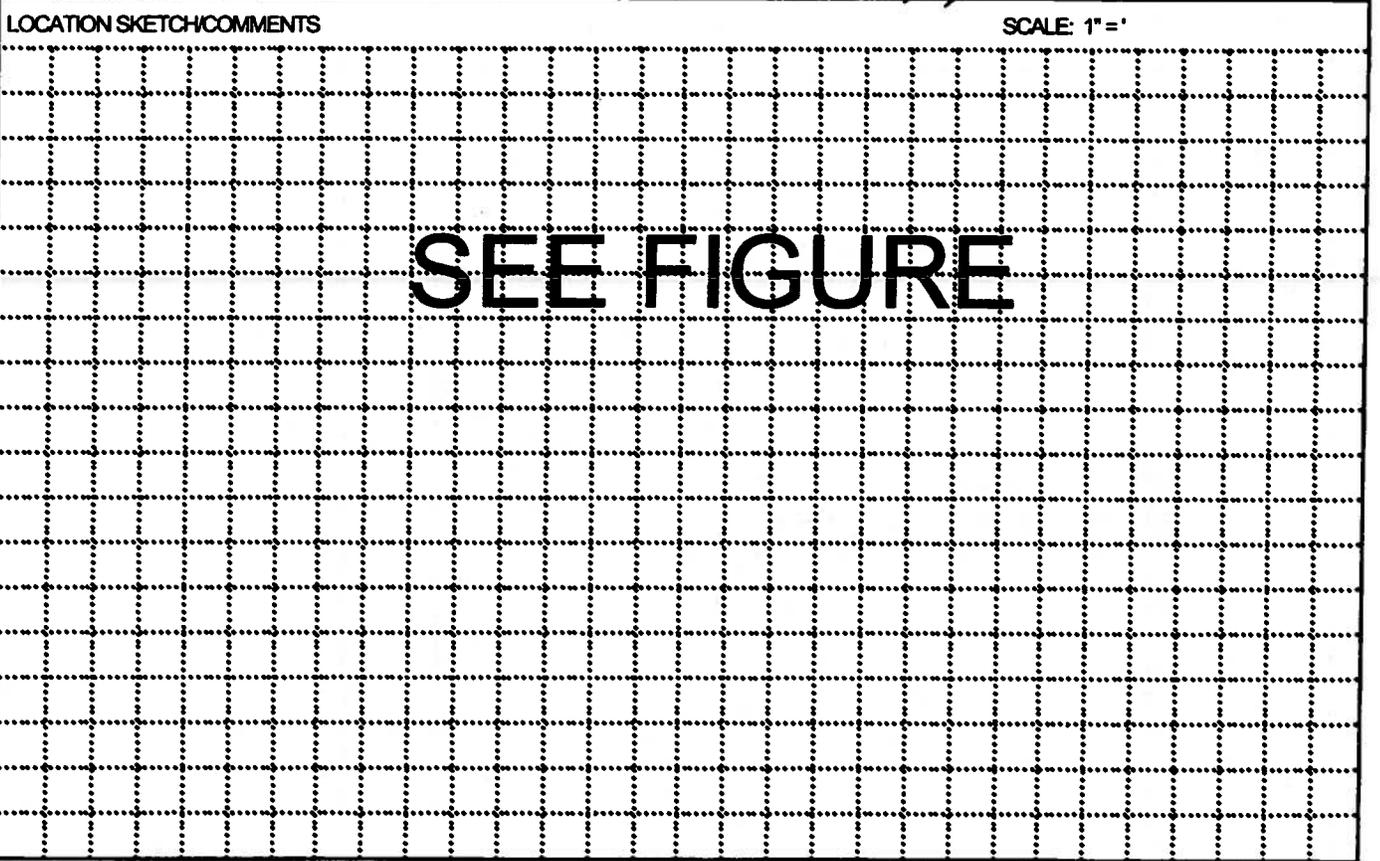
SHEET 2 OF 2 SHEETS

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)
1311.0	0	ASPHALT	2.3		031SB2000		
1310.0	1	FILL - sand and gravel, brown, dry, coarse					
1309.0	2	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist					
1308.0	3	CALICHE/SILTY CLAY (CL-ML) - pink to light tan, moist, medium-stiff					
1307.0	4						
1306.0	5						
1305.0	6	REFUSAL at 6 ft bgs. Soil sample collected from 0-3 ft interval for TPH.					
1304.0	7						
1303.0	8						
1302.0	9						
1301.0	10						
1300.0	11						
1299.0	12						
1298.0	13						
1297.0	14						
1296.0	15						
1295.0	16						
1294.0	17						
1293.0	18						
1292.0	19						
1291.0	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 031SB20

HTRW DRILLING LOG			DISTRICT Omaha District			HOLE NUMBER 127SB01		
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			SHEET SHEETS 1 OF 2		
3. PROJECT Cannon Air Force Base				4. LOCATION Clovis, NM				
5. NAME OF DRILLER C. Grubbs				6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			Geoprobe		8. HOLE LOCATION 3,807,847.1 North 654,898.8 East			
2" Diameter Macrocore			9. SURFACE ELEVATION 1313.8'					
					10. DATE STARTED 2/13/2008		11. DATE COMPLETED 2/13/2008	
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED None					
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 15.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES		
-		-		-		-		
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)
SEE LOG		-		-		TPH		PAH
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR
Cuttings drummed						Grouted		



PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 127SB01
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB01

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.8	0	CONCRETE	2		127SB0100		
1312.8	1	SILTY CLAY (CL-ML) - dark reddish brown, medium-stiff, moist, no staining or odor					
1311.8	2						
1310.8	3						
1309.8	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, with nodules	0				
1308.8	5						
1307.8	6	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1306.8	7						
1305.8	8	CALICHE - dry, rocky					
1304.8	9						
1303.8	10	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1302.8	11						
1301.8	12	SILTY SAND (SM) - pink, fine grained, dry					
1300.8	13						
1299.8	14						
1298.8	15	CALICHE - dry, rocky					
1297.8	16	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB01

HTRW DRILLING LOG				DISTRICT Omaha District			HOLE NUMBER 127SB02		
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			SHEET 1 OF 2		SHEETS 2	
3. PROJECT Cannon Air Force Base				4. LOCATION Clovis, NM					
5. NAME OF DRILLER C. Grubbs				6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore			Geoprobe			8. HOLE LOCATION 3,807,842.0 North 654,901.6 East			
				9. SURFACE ELEVATION 1313.7'					
				10. DATE STARTED 2/13/2008		11. DATE COMPLETED 2/13/2008			
12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED None					
13. DEPTH DRILLED INTO ROCK				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 15.0 FT				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES			
-		-		-		-			
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
SEE LOG		-		-		TPH	PAH	-	%
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR <i>[Signature]</i>		
						Grouted			
LOCATION SKETCH/COMMENTS							SCALE: 1" = 1'		
SEE FIGURE									
PROJECT Cannon Air Force Base Clovis, NM							HOLE NO 127SB02		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

127SB02

PROJECT

Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET

SHEETS

2 OF 2

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)
1313.7	0	CONCRETE	48.2		127SB0200		
1312.7	1	SILTY CLAY (CL-ML) - dark gray top 6", then reddish brown, medium-stiff, moist, slight odor					
1311.7	2						
1310.7	3	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist	0.5				
1309.7	4						
1308.7	5	CALICHE - dry, rocky with silty clay					
1307.7	6						
1306.7	7						
1305.7	8						
1304.7	9						
1303.7	10						
1302.7	11	SILTY SAND (SM) - pink, fine grained, dry					
1301.7	12						
1300.7	13						
1299.7	14						
1298.7	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH and PAH.					
1297.7	16						
1296.7	17						
1295.7	18						
1294.7	19						
1293.7	20						

PROJECT

Cannon Air Force Base Clovis, NM

HOLE NO

127SB02

HTRW DRILLING LOG

DISTRICT: Omaha District
HOLE NUMBER: 127SB03

1. COMPANY NAME: Bay West, Inc
2. DRILLING CONTRACTOR: Vista Geoscience
SHEET: 1 OF 2 SHEETS

3. PROJECT: Cannon Air Force Base
4. LOCATION: Clovis, NM

5. NAME OF DRILLER: C. Grubbs
6. MANUFACTURER'S DESIGNATION OF DRILL: Truck mounted Geoprobe

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: Geoprobe
8. HOLE LOCATION: 3,807,836.2 North 654,902.5 East

9. SURFACE ELEVATION: 1313.7

10. DATE STARTED: 2/13/2008
11. DATE COMPLETED: 2/13/2008

12. OVERBURDEN THICKNESS:
15. DEPTH GROUNDWATER ENCOUNTERED: None

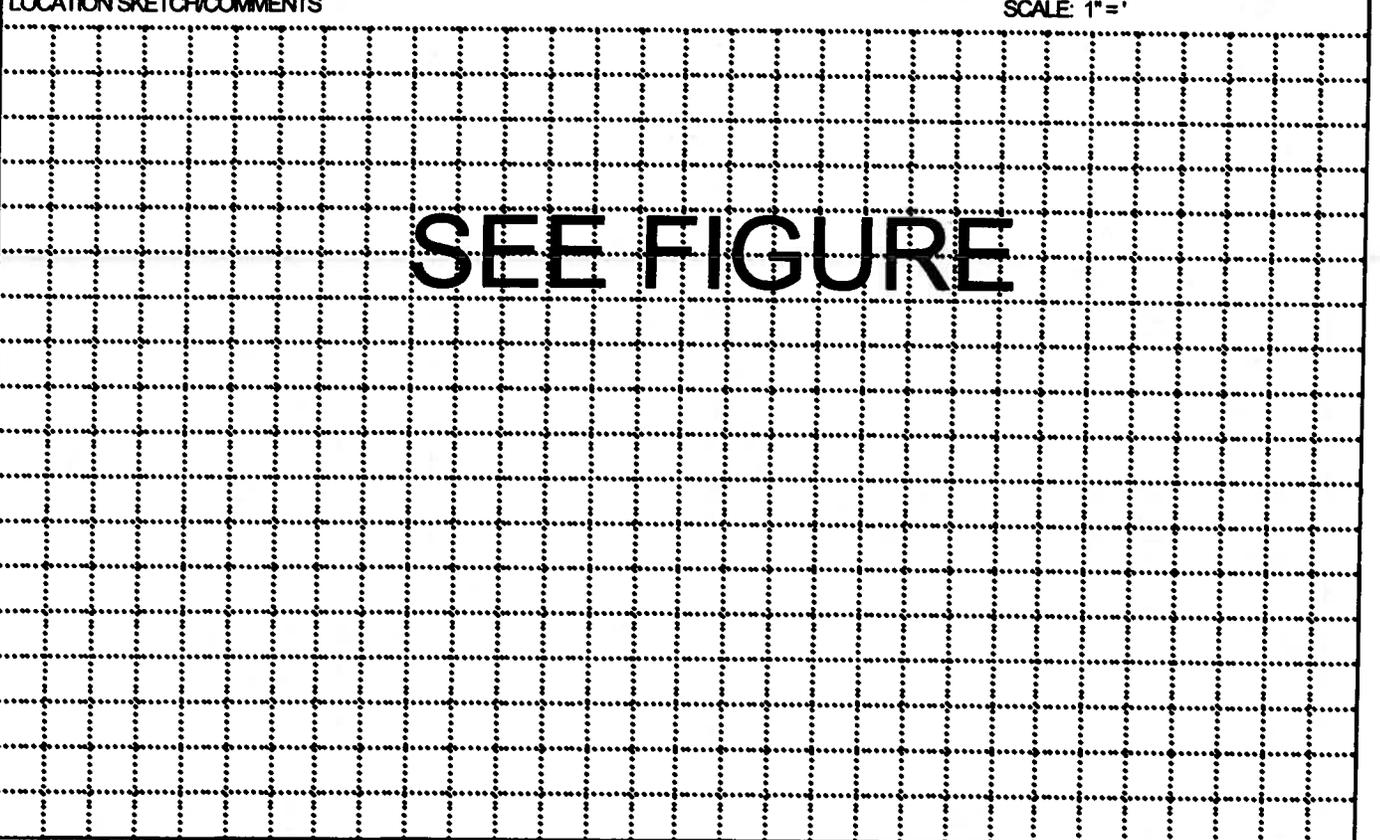
13. DEPTH DRILLED INTO ROCK:
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:

14. TOTAL DEPTH OF HOLE: 15.0 FT
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):

18. GEOTECHNICAL SAMPLES: DISTURBED: - UNDISTURBED: -
19. TOTAL NUMBER OF CORE BOXES: -

20. SAMPLES FOR CHEMICAL ANALYSIS: VOC: - METALS: - OTHER (SPECIFY): TPH: - OTHER (SPECIFY): PAH: -
21. TOTAL CORE RECOVERY: %

22. DISPOSITION OF HOLE: BACKFILLED: - MONITORING WELL: - OTHER (SPECIFY): Grouted
23. SIGNATURE OF INSPECTOR: *[Signature]*



PROJECT: Cannon Air Force Base Clovis, NM
HOLE NO: 127SB03

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB03
SHEET SHEETS
2 OF 2

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

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)
1313.7	0	CONCRETE	1.2		127SB0300		
1312.7	1	SILTY CLAY (CL-ML) - dark gray top 6", then reddish brown, medium-stiff, moist, no odor					
1311.7	2						
1310.7	3						
1309.7	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist	0.9				
1308.7	5						
1307.7	6						
1306.7	7						
1305.7	8	CALICHE - dry, rocky, light tan					
1304.7	9						
1303.7	10						
1302.7	11						
1301.7	12	SILTY SAND (SM) - pink, fine grained, dry					
1300.7	13						
1299.7	14						
1298.7	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH and PAH.					
1297.7	16						
1296.7	17						
1295.7	18						
1294.7	19						
1293.7	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB03

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **127SB04**

1. COMPANY NAME **Bay West, Inc** 2. DRILLING CONTRACTOR **Vista Geoscience** SHEET **1** OF **2** SHEETS

3. PROJECT **Cannon Air Force Base** 4. LOCATION **Clovis, NM**

5. NAME OF DRILLER **C. Grubbs** 6. MANUFACTURER'S DESIGNATION OF DRILL **Truck mounted Geoprobe**

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT **Geoprobe** 8. HOLE LOCATION **3,807,830.3 North 654,904.5 East**

2" Diameter Macrocore 9. SURFACE ELEVATION **1313.8'**

10. DATE STARTED **2/13/2008** 11. DATE COMPLETED **2/13/2008**

12. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED **None**

13. DEPTH DRILLED INTO ROCK 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

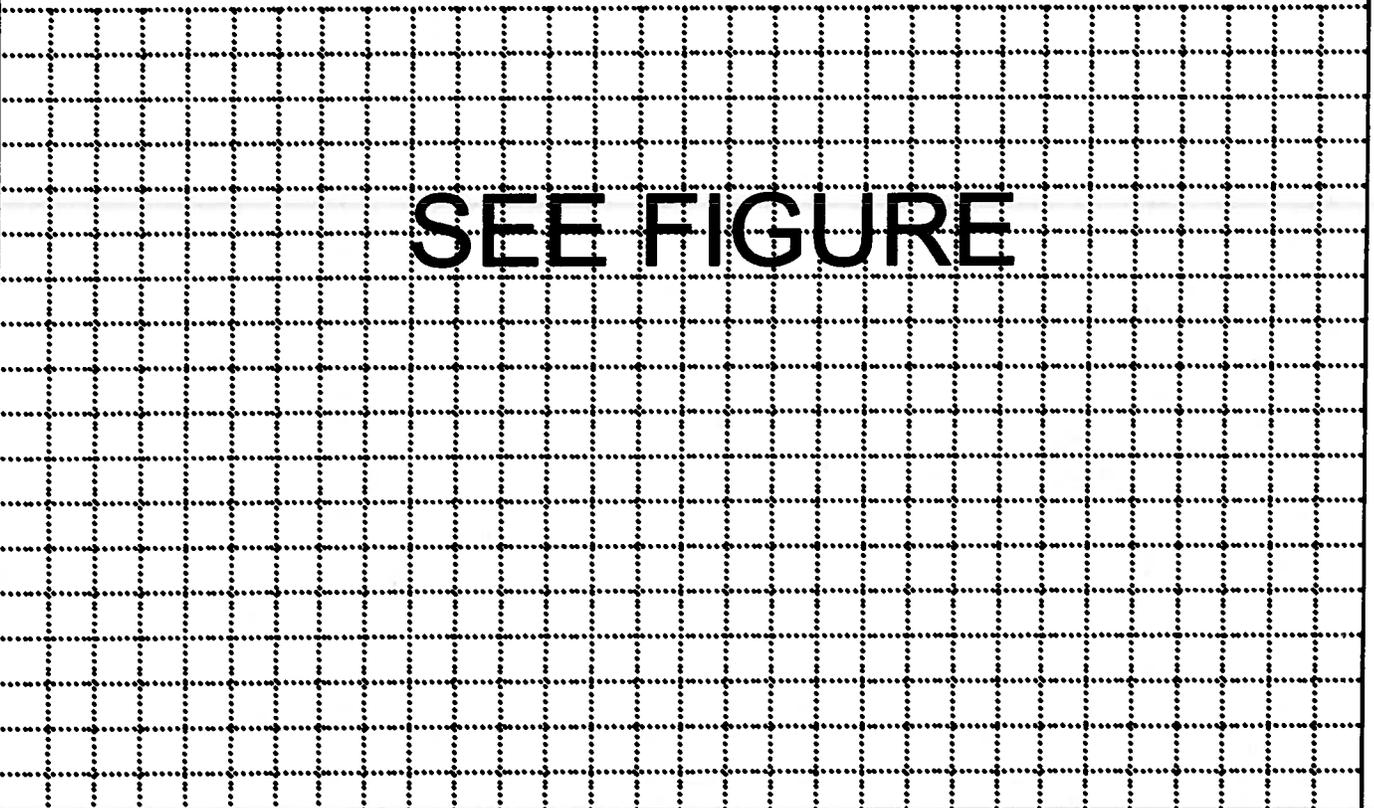
14. TOTAL DEPTH OF HOLE **15.0 FT** 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES DISTURBED **-** UNDISTURBED **-** 19. TOTAL NUMBER OF CORE BOXES **-**

20. SAMPLES FOR CHEMICAL ANALYSIS VOC **-** METALS **-** OTHER (SPECIFY) **TPH** OTHER (SPECIFY) **PAH** OTHER (SPECIFY) **-** 21. TOTAL CORE RECOVERY **-** %

22. DISPOSITION OF HOLE **Cuttings drummed** **BACKFILLED** **MONITORING WELL** OTHER (SPECIFY) **Grouted** 23. SIGNATURE OF INSPECTOR *[Signature]*

LOCATION SKETCH/COMMENTS SCALE: 1" = 1'



PROJECT **Cannon Air Force Base Clovis, NM** HOLE NO **127SB04**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB04

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.8	0	ASPHALT	1.2		127SB0400		
1312.8	1	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist, no odor or staining					
1311.8	2						
1310.8	3	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1309.8	4						
1308.8	5						
1307.8	6						
1306.8	7						
1305.8	8	CALICHE - dry, rocky, light tan					
1304.8	9						
1303.8	10						
1302.8	11						
1301.8	12						
1300.8	13						
1299.8	14						
1298.8	15						
1297.8	16	END OF BORING at 15 ft bgs. Soil sample collected from 0-2.5 ft interval for TPH and PAH.					
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB04

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 127SB05	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Geoprobe		8. HOLE LOCATION 3,807,828.4 North 654,899.2 East	
2" Diameter Macrocore		9. SURFACE ELEVATION 1313.8'	
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/13/2008	
13. DEPTH DRILLED INTO ROCK		11. DATE COMPLETED 2/13/2008	
14. TOTAL DEPTH OF HOLE 15.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED None	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
DISTURBED -		UNDISTURBED -	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC -		OTHER (SPECIFY) TPH	
METALS -		OTHER (SPECIFY) PAH	
OTHER (SPECIFY) SEE LOG		OTHER (SPECIFY) -	
22. DISPOSITION OF HOLE Cuttings drummed		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	
BACKFILLED		OTHER (SPECIFY) Grouted	
MONITORING WELL			

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB05

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB05

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

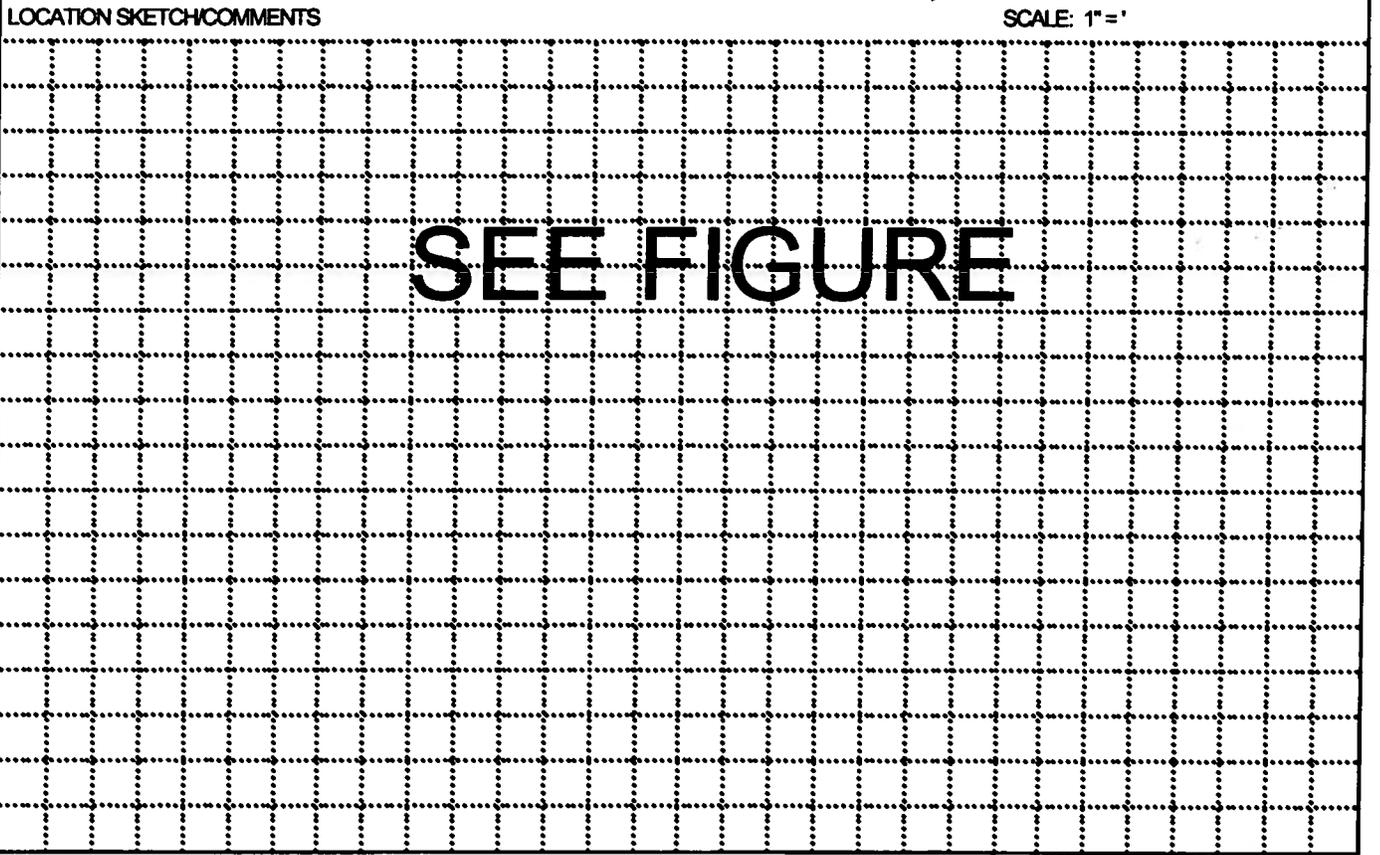
SHEET SHEETS
2 OF 2

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)
1313.8	0	ASPHALT	3.4		127SB0500		
1312.8	1	SILTY CLAY (CL-ML) - dark gray top 4", then reddish brown, medium-stiff, moist, no odor or staining					
1311.8	2						
1310.8	3						
1309.8	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1308.8	5						
1307.8	6						
1306.8	7						
1305.8	8						
1304.8	9						
1303.8	10	SILTY SAND (SM) - dry, pink					
1302.8	11						
1301.8	12						
1300.8	13						
1299.8	14						
1298.8	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.8	16						
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB05

HTRW DRILLING LOG			DISTRICT Omaha District			HOLE NUMBER 127SB06			
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			SHEET SHEETS 1 OF 2			
3. PROJECT Cannon Air Force Base				4. LOCATION Clovis, NM					
5. NAME OF DRILLER C. Grubbs				6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe			8. HOLE LOCATION 3,807,834.2 North 654,897.1 East				
2" Diameter Macrocore		9. SURFACE ELEVATION 1313.8'							
				10. DATE STARTED 2/13/2008		11. DATE COMPLETED 2/13/2008			
12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED None					
13. DEPTH DRILLED INTO ROCK				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 15.0 FT				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES			
-		-		-		-			
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
SEE LOG		-		-		TPH	PAH	-	%
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
Cuttings drummed						Grouted			



PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 127SB06
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB06

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

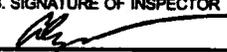
SHEET SHEETS
2 OF 2

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)
1313.8	0	ASPHALT	3		127SB0600		
1312.8	1	FILL - sand and gravel fill, brown					
1311.8	2	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist, no odor or staining					
1310.8	3						
1309.8	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1308.8	5						
1307.8	6						
1306.8	7						
1305.8	8	CALICHE - dry, light pink to light tan					
1304.8	9						
1303.8	10						
1302.8	11						
1301.8	12						
1300.8	13						
1299.8	14						
1298.8	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.8	16						
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB06

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 127SB07	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Geoprobe		8. HOLE LOCATION 3,807,840.0 North 654,895.2 East	
2" Diameter Macrocore		9. SURFACE ELEVATION 1313.9'	
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/13/2008	11. DATE COMPLETED 2/13/2008
13. DEPTH DRILLED INTO ROCK		15. DEPTH GROUNDWATER ENCOUNTERED None	
14. TOTAL DEPTH OF HOLE 15.0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
DISTURBED -		UNDISTURBED -	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC -		METALS -	
SEE LOG		OTHER (SPECIFY) TPH	
BACKFILLED		OTHER (SPECIFY) PAH	
MONITORING WELL		OTHER (SPECIFY) -	
Cuttings drummed		23. SIGNATURE OF INSPECTOR 	
Grouted			
LOCATION SKETCH/COMMENTS		SCALE: 1" = 1'	
<h1>SEE FIGURE</h1>			
PROJECT Cannon Air Force Base Clovis, NM		HOLE NO 127SB07	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB07

PROJECT Cannon Air Force Base
Clovis, NM

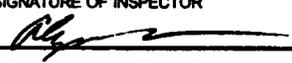
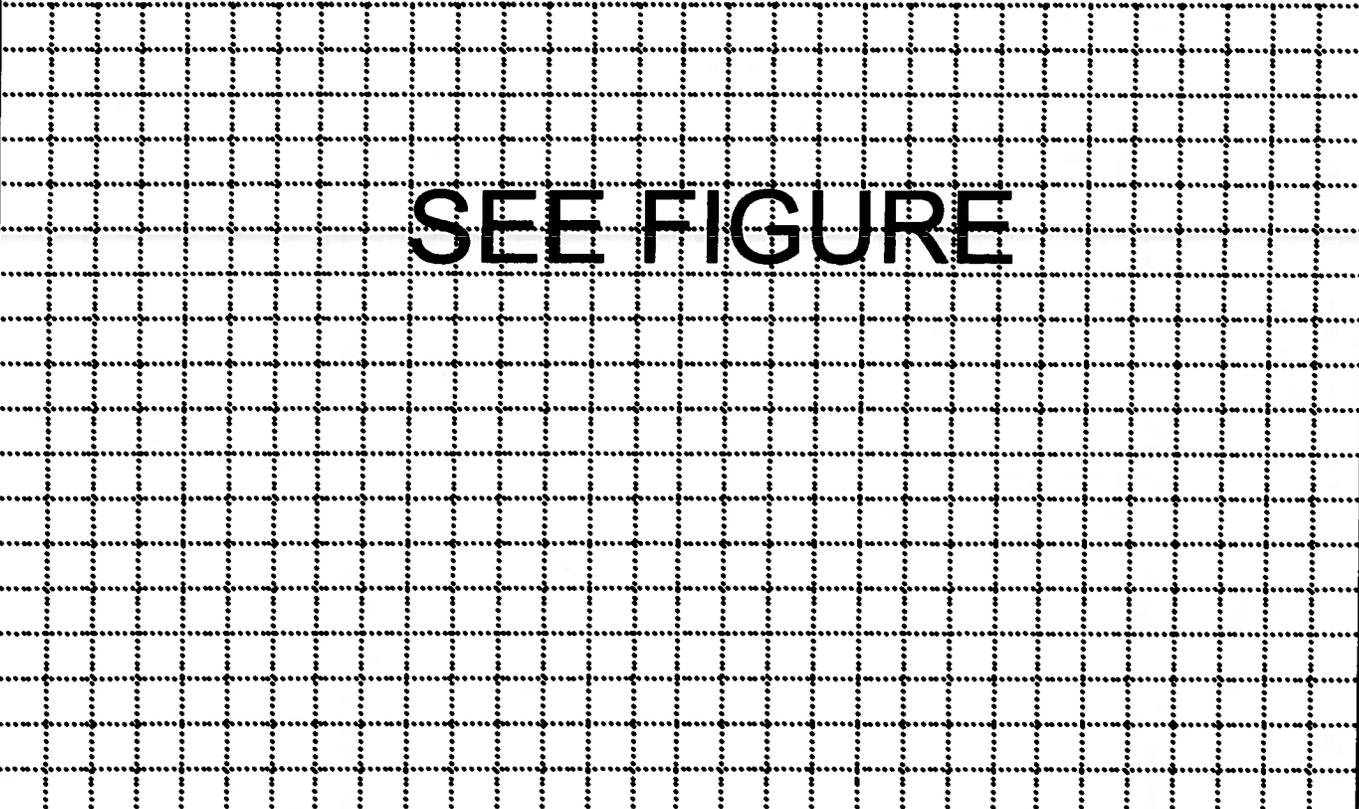
INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.9	0	ASPHALT	1.2		127SB0700		
		FILL - sand and gravel fill, brown					
1312.9	1	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist, no odor or staining					
1311.9	2						
1310.9	3						
1309.9	4						
1308.9	5	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist-dry					
1307.9	6						
1306.9	7						
1305.9	8	CALICHE - dry, rocky					
1304.9	9						
1303.9	10						
1302.9	11						
1301.9	12						
1300.9	13						
1299.9	14						
1298.9	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.9	16						
1296.9	17						
1295.9	18						
1294.9	19						
1293.9	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB07

HTRW DRILLING LOG				DISTRICT			HOLE NUMBER	
1. COMPANY NAME Bay West, Inc				2. DRILLING CONTRACTOR Vista Geoscience			127SB08	
3. PROJECT Cannon Air Force Base				4. LOCATION Clovis, NM				
5. NAME OF DRILLER C. Grubbs				6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT			Geoprobe		8. HOLE LOCATION 3,807,845.4 North 654,893.4 East			
2" Diameter Macrocore				9. SURFACE ELEVATION 1313.9'				
				10. DATE STARTED 2/14/2008		11. DATE COMPLETED 2/14/2008		
12. OVERBURDEN THICKNESS				15. DEPTH GROUNDWATER ENCOUNTERED None				
13. DEPTH DRILLED INTO ROCK				16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 15.0 FT				17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES		DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES		
-		-		-		-		
20. SAMPLES FOR CHEMICAL ANALYSIS			VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
SEE LOG			-	-	TPH	PAH	-	%
22. DISPOSITION OF HOLE			BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
Cuttings drummed					Grouted			
LOCATION SKETCH/COMMENTS							SCALE: 1" = 1'	
								
PROJECT Cannon Air Force Base Clovis, NM							HOLE NO 127SB08	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB08

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.9	0	ASPHALT	0		127SB0800		
		FILL - sand and gravel fill, brown					
1312.9	1	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist, no odor or staining					
1311.9	2						
1310.9	3						
1309.9	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist					
1308.9	5						
1307.9	6						
1306.9	7						
1305.9	8	CALICHE - dry, rocky, light tan					
1304.9	9						
1303.9	10	CALICHE/SILTY CLAY (CL-ML) - with nodules					
1302.9	11						
1301.9	12						
1300.9	13						
1299.9	14						
1298.9	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.9	16						
1296.9	17						
1295.9	18						
1294.9	19						
1293.9	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB08

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 127SB09	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Geoprobe		8. HOLE LOCATION 3,807,851.2 North 654,891.6 East	
2" Diameter Macrocore		9. SURFACE ELEVATION 1314.1'	
		10. DATE STARTED 2/14/2008	
		11. DATE COMPLETED 2/14/2008	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED None	
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	
14. TOTAL DEPTH OF HOLE 15.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
DISTURBED -		UNDISTURBED -	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC SEE LOG		METALS -	
OTHER (SPECIFY) -		OTHER (SPECIFY) TPH	
OTHER (SPECIFY) -		OTHER (SPECIFY) PAH	
22. DISPOSITION OF HOLE Cuttings drummed		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	
BACKFILLED		MONITORING WELL	
-		OTHER (SPECIFY) Grouted	

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 127SB09
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB09

PROJECT Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1314.1	0	ASPHALT	0		127SB0900		
		FILL - sand and gravel fill, brown					
1313.1	1	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist, no odor or staining					
1312.1	2						
1311.1	3						
1310.1	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist-dry					
1309.1	5						
1308.1	6						
1307.1	7						
1306.1	8	- with nodules					
1305.1	9						
1304.1	10	SILTY SAND (SM) - light pink					
		CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist-dry					
1303.1	11						
1302.1	12						
1301.1	13	SILT (ML) - reddish brown					
1300.1	14						
1299.1	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1298.1	16						
1297.1	17						
1296.1	18						
1295.1	19						
1294.1	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB09

HTRW DRILLING LOG

DISTRICT Omaha District		HOLE NUMBER 127SB10	
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience	
3. PROJECT Cannon Air Force Base		4. LOCATION Clovis, NM	
5. NAME OF DRILLER C. Grubbs		6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT Geoprobe		8. HOLE LOCATION 3,807,852.9 North 654,896.9 East	
2" Diameter Macrocore		9. SURFACE ELEVATION 1314.0'	
12. OVERBURDEN THICKNESS		10. DATE STARTED 2/14/2008	
13. DEPTH DRILLED INTO ROCK		11. DATE COMPLETED 2/14/2008	
14. TOTAL DEPTH OF HOLE 15.0 FT		15. DEPTH GROUNDWATER ENCOUNTERED None	
18. GEOTECHNICAL SAMPLES		19. TOTAL NUMBER OF CORE BOXES	
DISTURBED -		UNDISTURBED -	
20. SAMPLES FOR CHEMICAL ANALYSIS		21. TOTAL CORE RECOVERY %	
VOC -		OTHER (SPECIFY) TPH	
METALS -		OTHER (SPECIFY) PAH	
OTHER (SPECIFY) SEE LOG		OTHER (SPECIFY) -	
22. DISPOSITION OF HOLE Cuttings drummed		23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	
BACKFILLED		OTHER (SPECIFY) Grouted	
MONITORING WELL			

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB10

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB10

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1314.0	0	ASPHALT	0		127SB1000		
		FILL - sand and gravel fill, brown					
1313.0	1	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, moist, no odor or staining					
1312.0	2						
1311.0	3						
1310.0	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, moist-dry					
1309.0	5						
1308.0	6						
1307.0	7						
1306.0	8	- light tan					
1305.0	9						
1304.0	10						
1303.0	11						
1302.0	12	- with nodules					
1301.0	13						
1300.0	14	SILT (ML) - reddish brown					
1299.0	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1298.0	16						
1297.0	17						
1296.0	18						
1295.0	19						
1294.0	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB10

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **127SB11**

1. COMPANY NAME
Bay West, Inc

2. DRILLING CONTRACTOR
Vista Geoscience

SHEET **1** SHEETS **2**
OF

3. PROJECT
Cannon Air Force Base

4. LOCATION
Clovis, NM

5. NAME OF DRILLER
C. Grubbs

6. MANUFACTURER'S DESIGNATION OF DRILL
Truck mounted Geoprobe

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT

Geoprobe

8. HOLE LOCATION
3,807,856.1 North 654,905.5 East

2" Diameter Macrocore

9. SURFACE ELEVATION
1313.8'

12. OVERBURDEN THICKNESS

10. DATE STARTED
2/14/2008

11. DATE COMPLETED
2/14/2008

13. DEPTH DRILLED INTO ROCK

15. DEPTH GROUNDWATER ENCOUNTERED
None

14. TOTAL DEPTH OF HOLE
15.0 FT

16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

18. GEOTECHNICAL SAMPLES

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

—

DISTURBED
—

UNDISTURBED
—

19. TOTAL NUMBER OF CORE BOXES
—

20. SAMPLES FOR CHEMICAL ANALYSIS

VOC
—

METALS
—

OTHER (SPECIFY)
TPH

OTHER (SPECIFY)
PAH

OTHER (SPECIFY)
—

21. TOTAL CORE RECOVERY %

22. DISPOSITION OF HOLE
Cuttings drummed

BACKFILLED

MONITORING WELL

OTHER (SPECIFY)
Grouted

23. SIGNATURE OF INSPECTOR
[Signature]

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT **Cannon Air Force Base Clovis, NM**

HOLE NO **127SB11**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB11.
SHEET SHEETS
2 OF 2

PROJECT Cannon Air Force Base Clovis, NM

INSPECTOR

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)
1313.8	0	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, dry, no odor or staining	1.5		127SB1100		
1312.8	1						
1311.8	2						
1310.8	3						
1309.8	4	CALICHE/SILTY CLAY (CL-ML) - pink-light tan, medium-stiff, dry					
1308.8	5						
1307.8	6						
1306.8	7						
1305.8	8						
1304.8	9						
1303.8	10	CALICHE - dry, light tan					
1302.8	11	- pink					
1301.8	12						
1300.8	13						
1299.8	14						
1298.8	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.8	16						
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT Cannon Air Force Base Clovis, NM

HOLE NO 127SB11

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER						
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			DISTRICT Omaha District						
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM			HOLE NUMBER 127SB12						
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe			SHEET SHEETS 1 OF 2						
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe		8. HOLE LOCATION 3,807,850.2 North 654,906.9 East								
2" Diameter Macrocore		9. SURFACE ELEVATION 1313.9'			10. DATE STARTED 2/14/2008			11. DATE COMPLETED 2/14/2008				
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED None			13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 15.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			18. GEOTECHNICAL SAMPLES			19. TOTAL NUMBER OF CORE BOXES			
-			DISTURBED -		UNDISTURBED -		-			-		
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS		OTHER (SPECIFY)		OTHER (SPECIFY)		OTHER (SPECIFY)		21. TOTAL CORE RECOVERY %
SEE LOG		-		-		TPH		PAH		-		%
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL		OTHER (SPECIFY)		23. SIGNATURE OF INSPECTOR				
Cuttings drummed						Grouted						
LOCATION SKETCH/COMMENTS						SCALE: 1" = 1'						
PROJECT Cannon Air Force Base Clovis, NM						HOLE NO 127SB12						

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

127SB12

PROJECT

Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET

SHEETS

2 OF 2

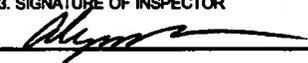
ELEV. (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
1313.9	0	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, dry, no odor or staining, with gravel 0-1 ft	1.3		127SB1200		
1312.9	1						
1311.9	2						
1310.9	3	CALICHE/SILTY CLAY (CL-ML) - pink to white, friable, dry					
1309.9	4						
1308.9	5						
1307.9	6						
1306.9	7						
1305.9	8						
1304.9	9						
1303.9	10						
1302.9	11	- pink					
1301.9	12						
1300.9	13						
1299.9	14						
1298.9	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.9	16						
1296.9	17						
1295.9	18						
1294.9	19						
1293.9	20						

PROJECT

Cannon Air Force Base Clovis, NM

HOLE NO

127SB12

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER		
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			Omaha District 127SB13		
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM			SHEET SHEETS 1 OF 2		
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe					
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe	8. HOLE LOCATION 3,807,845.2 North 654,908.7 East					
2" Diameter Macrocore			9. SURFACE ELEVATION 1313.9'					
			10. DATE STARTED 2/14/2008		11. DATE COMPLETED 2/14/2008			
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED None					
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED					
14. TOTAL DEPTH OF HOLE 15.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)					
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES				
-		-	-	-				
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	
SEE LOG		-	-	TPH	PAH	-		
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR			
Cuttings drummed				Grouted				
LOCATION SKETCH/COMMENTS						SCALE: 1" = 1'		
SEE FIGURE								
PROJECT Cannon Air Force Base Clovis, NM						HOLE NO 127SB13		

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB13

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

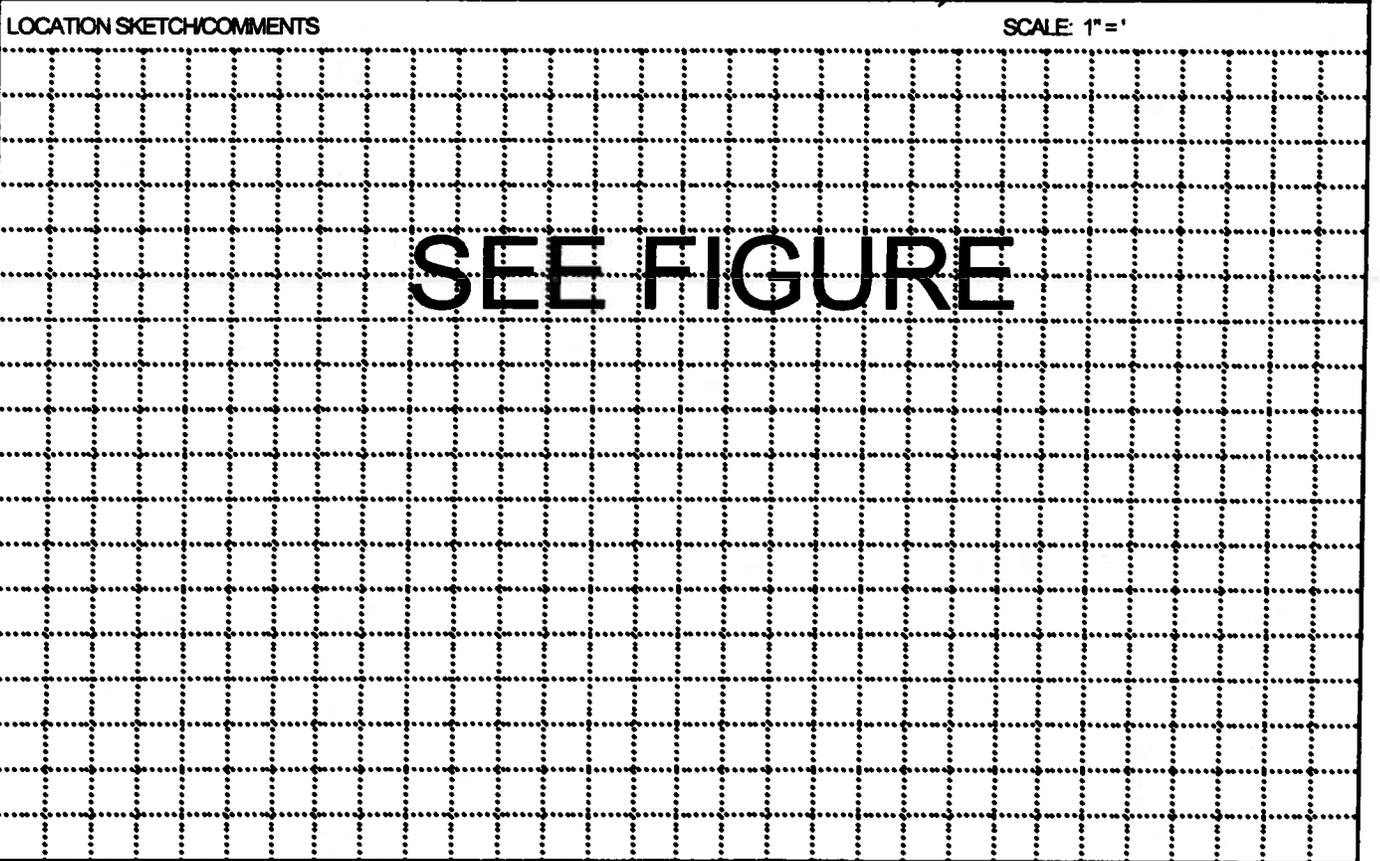
ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	FIELD SCREENING RESULTS (d)	GEOTECH SAMPLE OR CORE BOX NO. (e)	ANALYTICAL SAMPLE NO. (f)	BLOW COUNT (g)	REMARKS (h)
1313.9	0	SILTY CLAY (CL-ML) - brown, medium-stiff, moist 2.5-4 ft, no odor or staining, with gravel 0-1 ft	1.3		127SB1300		
1312.9	1						
1311.9	2						
1310.9	3						
1309.9	4	CALICHE/SILTY CLAY (CL-ML) - pink, moist - with nodules					
1308.9	5						
1307.9	6						
1306.9	7						
1305.9	8						
1304.9	9						
1303.9	10						
1302.9	11						
1301.9	12						
1300.9	13						
1299.9	14						
1298.9	15	SILTY SAND (SM) - reddish brown, moist					
1297.9	16	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1296.9	17						
1295.9	18						
1294.9	19						
1293.9	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB13

HTRW DRILLING LOG

1. COMPANY NAME Bay West, Inc		DISTRICT Omaha District		HOLE NUMBER 127SB14	
2. DRILLING CONTRACTOR Vista Geoscience		SHEET 1		SHEETS OF 2	
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM		
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		Geoprobe		8. HOLE LOCATION 3,807,838.5 North 654,910.7 East	
9. SURFACE ELEVATION 1313.8'			10. DATE STARTED 2/14/2008		
11. DATE COMPLETED 2/14/2008			12. OVERBURDEN THICKNESS		
13. DEPTH DRILLED INTO ROCK			15. DEPTH GROUNDWATER ENCOUNTERED None		
14. TOTAL DEPTH OF HOLE 15.0 FT			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED		
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			18. GEOTECHNICAL SAMPLES		
DISTURBED		UNDISTURBED		19. TOTAL NUMBER OF CORE BOXES	
-		-		-	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC		METALS	
OTHER (SPECIFY)		OTHER (SPECIFY)		OTHER (SPECIFY)	
SEE LOG		-		-	
21. TOTAL CORE RECOVERY %		TPH		PAH	
-		-		-	
22. DISPOSITION OF HOLE		BACKFILLED		MONITORING WELL	
Cuttings drummed		-		OTHER (SPECIFY)	
-		-		23. SIGNATURE OF INSPECTOR	
-		-		Grouted	



PROJECT Cannon Air Force Base Clovis, NM	HOLE NO 127SB14
---	--------------------

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB14
SHEET 2 OF 2 SHEETS

PROJECT Cannon Air Force Base Clovis, NM INSPECTOR

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)
1313.8	0	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, dry, no odor or staining, with gravel 0-0.5 ft	2		127SB1400		
1312.8	1						
1311.8	2						
1310.8	3	CALICHE/SILTY CLAY (CL-ML) - pink to light tan, dry, friable					
1309.8	4						
1308.8	5						
1307.8	6						
1306.8	7						
1305.8	8						
1304.8	9						
1303.8	10						
1302.8	11						
1301.8	12						
1300.8	13						
1299.8	14						
1298.8	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.8	16						
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT Cannon Air Force Base Clovis, NM HOLE NO 127SB14

HTRW DRILLING LOG

DISTRICT Omaha District			HOLE NUMBER 127SB15		
1. COMPANY NAME Bay West, Inc		2. DRILLING CONTRACTOR Vista Geoscience			SHEET 1 OF 2 SHEETS
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM		
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe		
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2" Diameter Macrocore		8. HOLE LOCATION 3,807,832.6 North 654,912.5 East			
		9. SURFACE ELEVATION 1313.7			
		10. DATE STARTED 2/14/2008		11. DATE COMPLETED 2/14/2008	
12. OVERBURDEN THICKNESS		15. DEPTH GROUNDWATER ENCOUNTERED None			
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED			
14. TOTAL DEPTH OF HOLE 15.0 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES		DISTURBED -		UNDISTURBED -	
19. TOTAL NUMBER OF CORE BOXES -					
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC -	METALS -	OTHER (SPECIFY) TPH	OTHER (SPECIFY) PAH
21. TOTAL CORE RECOVERY %		-			
22. DISPOSITION OF HOLE Cuttings drummed		BACKFILLED	MONITORING WELL	23. SIGNATURE OF INSPECTOR <i>[Signature]</i>	
				Grouted	
LOCATION SKETCH/COMMENTS					SCALE: 1" = 1'
PROJECT Cannon Air Force Base Clovis, NM				HOLE NO 127SB15	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB15

PROJECT
Cannon Air Force Base
Clovis, NM

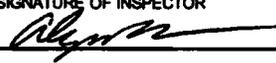
INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.7	0	SILTY CLAY (CL-ML) - reddish brown, medium-stiff, dry to moist, no odor or staining, with gravel 0-1 ft	2		127SB1500		
1312.7	1						
1311.7	2						
1310.7	3	CALICHE/SILTY CLAY (CL-ML) - pinkish brown, moist					
1309.7	4						
1308.7	5						
1307.7	6						
1306.7	7	CALICHE - light pink to light tan, moist					
1305.7	8						
1304.7	9						
1303.7	10	- dark pink with nodules					
1302.7	11						
1301.7	12						
1300.7	13						
1299.7	14						
1298.7	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.7	16						
1296.7	17						
1295.7	18						
1294.7	19						
1293.7	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB15

HTRW DRILLING LOG			DISTRICT			HOLE NUMBER	
1. COMPANY NAME Bay West, Inc			2. DRILLING CONTRACTOR Vista Geoscience			Omaha District 127SB16	
3. PROJECT Cannon Air Force Base			4. LOCATION Clovis, NM				
5. NAME OF DRILLER C. Grubbs			6. MANUFACTURER'S DESIGNATION OF DRILL Truck mounted Geoprobe				
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT		Geoprobe	8. HOLE LOCATION 3,807,844.3 North 654,926.0 East				
2" Diameter Macrocore			9. SURFACE ELEVATION 1313.8'				
			10. DATE STARTED 2/14/2008		11. DATE COMPLETED 2/14/2008		
12. OVERBURDEN THICKNESS			15. DEPTH GROUNDWATER ENCOUNTERED None				
13. DEPTH DRILLED INTO ROCK			16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED				
14. TOTAL DEPTH OF HOLE 15.0 FT			17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)				
18. GEOTECHNICAL SAMPLES		DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES			
-		-	-	-			
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
SEE LOG		-	-	TPH	PAH	-	
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR		
Cuttings drummed				Grouted			
LOCATION SKETCH/COMMENTS						SCALE: 1" = 1'	
SEE FIGURE							
PROJECT Cannon Air Force Base Clovis, NM						HOLE NO 127SB16	

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB16

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.8	0	SILTY CLAY (CL-ML) - brown, medium-stiff, dry, no odor or staining	2.8		127SB1600		
1312.8	1						
1311.8	2						
1310.8	3	CALICHE - light pink to white, soft powder					
1309.8	4						
1308.8	5						
1307.8	6						
1306.8	7						
1305.8	8						
1304.8	9						
1303.8	10						
1302.8	11						
1301.8	12						
1300.8	13						
1299.8	14						
1298.8	15	END OF BORING at 15 ft. bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.8	16						
1296.8	17						
1295.8	18						
1294.8	19						
1293.8	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB16

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **127SB17**

1. COMPANY NAME **Bay West, Inc** 2. DRILLING CONTRACTOR **Vista Geoscience** SHEET **1** OF **2** SHEETS

3. PROJECT **Cannon Air Force Base** 4. LOCATION **Clovis, NM**

5. NAME OF DRILLER **C. Grubbs** 6. MANUFACTURER'S DESIGNATION OF DRILL **Truck mounted Geoprobe**

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT **Geoprobe** 8. HOLE LOCATION **3,807,852.8 North 654,923.5 East**

2" Diameter Macrocore 9. SURFACE ELEVATION **1313.9**

10. DATE STARTED **2/14/2008** 11. DATE COMPLETED **2/14/2008**

12. OVERBURDEN THICKNESS **None** 15. DEPTH GROUNDWATER ENCOUNTERED **None**

13. DEPTH DRILLED INTO ROCK **None** 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

14. TOTAL DEPTH OF HOLE **15.0 FT** 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES **---** DISTURBED **---** UNDISTURBED **---** 19. TOTAL NUMBER OF CORE BOXES **---**

20. SAMPLES FOR CHEMICAL ANALYSIS VOC **---** METALS **---** OTHER (SPECIFY) **TPH** OTHER (SPECIFY) **PAH** OTHER (SPECIFY) **---** 21. TOTAL CORE RECOVERY **---** %

22. DISPOSITION OF HOLE **Cuttings drummed** BACKFILLED **---** MONITORING WELL **---** OTHER (SPECIFY) **Grouted** 23. SIGNATURE OF INSPECTOR *[Signature]*

LOCATION SKETCH/COMMENTS

SCALE: 1" = 1'

SEE FIGURE

PROJECT **Cannon Air Force Base Clovis, NM** HOLE NO **127SB17**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER
127SB17

PROJECT
Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET SHEETS
2 OF 2

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)
1313.9	0	SILTY CLAY (CL-ML) - brown, medium-stiff, dry, no odor or staining	0		127SB1700		
1312.9	1						
1311.9	2						
1310.9	3	CALICHE - pinkish brown to white, dry					
1309.9	4						
1308.9	5						
1307.9	6						
1306.9	7						
1305.9	8						
1304.9	9						
1303.9	10						
1302.9	11						
1301.9	12						
1300.9	13						
1299.9	14						
1298.9	15	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.					
1297.9	16						
1296.9	17						
1295.9	18						
1294.9	19						
1293.9	20						

PROJECT
Cannon Air Force Base Clovis, NM

HOLE NO
127SB17

HTRW DRILLING LOG

DISTRICT **Omaha District** HOLE NUMBER **127SB18**

1. COMPANY NAME **Bay West, Inc** 2. DRILLING CONTRACTOR **Vista Geoscience** SHEET **1** OF **2** SHEETS

3. PROJECT **Cannon Air Force Base** 4. LOCATION **Clovis, NM**

5. NAME OF DRILLER **C. Grubbs** 6. MANUFACTURER'S DESIGNATION OF DRILL **Truck mounted Geoprobe**

7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT **Geoprobe** 8. HOLE LOCATION **3,807,852.4 North 654,939.1 East**

2" Diameter Macrocore 9. SURFACE ELEVATION **1313.9'**

10. DATE STARTED **2/14/2008** 11. DATE COMPLETED **2/14/2008**

12. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED **None**

13. DEPTH DRILLED INTO ROCK 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED

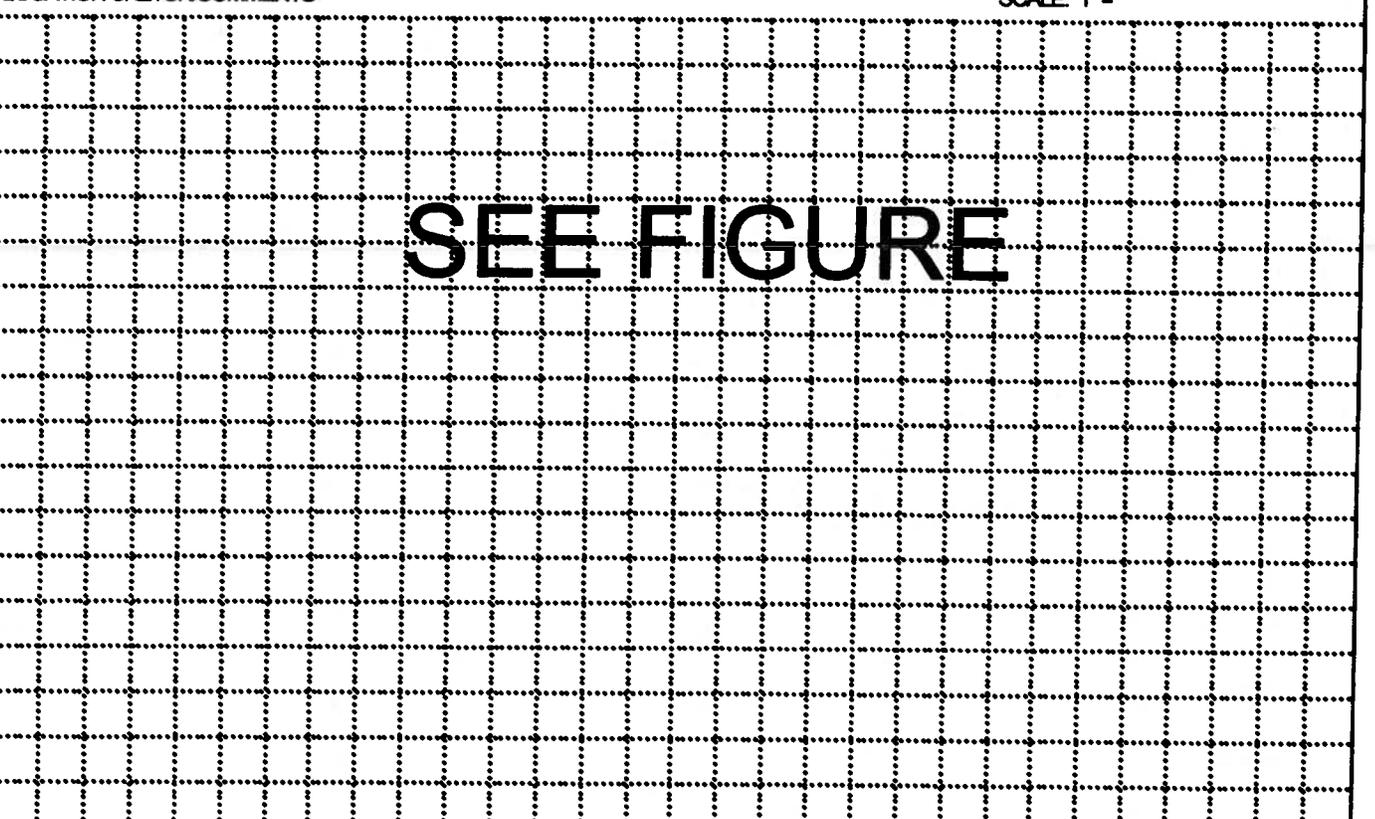
14. TOTAL DEPTH OF HOLE **15.0 FT** 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)

18. GEOTECHNICAL SAMPLES **DISTURBED: - UNDISTURBED: -** 19. TOTAL NUMBER OF CORE BOXES **-**

20. SAMPLES FOR CHEMICAL ANALYSIS **VOC: - METALS: - OTHER (SPECIFY): TPH PAH: -** 21. TOTAL CORE RECOVERY **%**

22. DISPOSITION OF HOLE **BACKFILLED: - MONITORING WELL: - OTHER (SPECIFY): Grouted** 23. SIGNATURE OF INSPECTOR *[Signature]*

LOCATION SKETCH/COMMENTS SCALE: 1" = 1'



PROJECT **Cannon Air Force Base Clovis, NM** HOLE NO **127SB18**

HTRW DRILLING LOG

(CONTINUATION SHEET)

HOLE NUMBER

127SB18

PROJECT

Cannon Air Force Base
Clovis, NM

INSPECTOR

SHEET

2 OF 2

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)
1313.9	0	SILTY CLAY (CL-ML) - brown, medium-stiff, dry, no odor or staining	1.6		127SB1800		
1312.9	1						
1311.9	2						
1310.9	3	CALICHE - pinkish brown to white, dry - with nodules 5.5 to 10 ft					
1309.9	4						
1308.9	5						
1307.9	6						
1306.9	7						
1305.9	8						
1304.9	9						
1303.9	10						
1302.9	11	END OF BORING at 15 ft bgs. Soil sample collected from 0-3 ft interval for TPH and PAH.	0		127SB1810		
1301.9	12						
1300.9	13						
1299.9	14						
1298.9	15						
1297.9	16						
1296.9	17						
1295.9	18						
1294.9	19						
1293.9	20						

PROJECT

Cannon Air Force Base Clovis, NM

HOLE NO

127SB18

Appendix B
Analytical Data

METHOD 3550B/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0100 Date Analyzed: 02/20/08 21:12
Lab Samp ID: B119-01 Dilution Factor: 1
Lab File ID: LB20013A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 12.0
Calib. Ref.: LB20003A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	310	11	5.7
MOTOR OIL	340	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	74	50-150
HEXACOSANE	146	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/11/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/13/08
Batch No.   : 08B119                       Date Extracted: 02/18/08 13:45
Sample ID   : 031SB0102                    Date Analyzed: 02/20/08 19:32
Lab Samp ID: B119-02                       Dilution Factor: 1
Lab File ID: LB20007A                      Matrix          : SOIL
Ext Btch ID: DSB023S                       % Moisture      : 12.2
Calib. Ref.: LB20003A                      Instrument ID   : GCT105
=====
    
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	69	11	5.7
MOTOR OIL	15J	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	78	50-150
HEXACOSANE	90	50-150

RL : Reporting Limit
 Parameter H-C Range
 Diesel C10-C24
 Motor Oil C24-C36

METHOD 3550B/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Subject : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0102D Date Analyzed: 02/20/08 19:48
Lab Samp ID: B119-03 Dilution Factor: 1
Lab File ID: LB20008A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 11.7
Calib. Ref.: LB20003A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	100	11	5.7
MOTOR OIL	15J	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	80	50-150
HEXACOSANE	94	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0105 Date Analyzed: 02/20/08 20:05
Lab Samp ID: B119-04 Dilution Factor: 1
Lab File ID: LB20009A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 15.6
Calib. Ref.: LB20003A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.9
MOTOR OIL	ND	24	5.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	83	50-150
HEXACOSANE	92	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/6015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0200 Date Analyzed: 02/20/08 21:28
Lab Samp ID: B119-05 Dilution Factor: 1
Lab File ID: LB20014A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 14.0
Calib. Ref.: LB20003A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	120	12	5.8
MOTOR OIL	72	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	78	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0300 Date Analyzed: 02/21/08 00:31
Samp ID: B119-07 Dilution Factor: 1
Lab File ID: LB20025A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 13.6
Calib. Ref.: LB20016A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	160	12	5.8
MOTOR OIL	64	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	91	50-150
HEXACOSANE	110	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0302 Date Analyzed: 02/20/08 20:38
Lab Samp ID: B119-08 Dilution Factor: 1
Lab File ID: LB20011A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 14.4
Calib. Ref.: LB20003A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	87	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0402 Date Analyzed: 02/20/08 20:55
Samp ID: B119-09 Dilution Factor: 1
File ID: LB20012A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 11.7
Calib. Ref.: LB20003A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.7
MOTOR OIL	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	97	50-150
HEXACOSANE	106	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/11/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/13/08
Batch No.   : 08B119                       Date Extracted: 02/18/08 13:45
Sample ID: 031SB0402M                     Date Analyzed: 02/20/08 22:35
Lab Samp ID: B119-10                      Dilution Factor: 1
Lab File ID: LB20018A                     Matrix          : SOIL
Ext Btch ID: DSB023S                      % Moisture     : 11.3
Calib. Ref.: LB20016A                     Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	11	5.6
MOTOR OIL	ND	23	5.6

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	79	50-150
HEXACOSANE	91	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0500 Date Analyzed: 02/21/08 00:48
Samp ID: B119-11 Dilution Factor: 1
Lab File ID: LB20026A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 14.4
Calib. Ref.: LB20016A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	31	12	5.8
MOTOR OIL	170	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	80	50-150
HEXACOSANE	116	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0603 Date Analyzed: 02/20/08 23:25
Lab Samp ID: B119-15 Dilution Factor: 1
Lab File ID: LB20021A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 13.4
Calib. Ref.: LB20016A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	10J	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	84	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0900 Date Analyzed: 02/21/08 00:15
Samp ID: B119-17 Dilution Factor: 1
Lab File ID: LB20024A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 14.4
Calib. Ref.: LB20016A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	21J	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	79	50-150
HEXACOSANE	95	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB1000 Date Analyzed: 02/21/08 03:01
Lab Samp ID: B119-18 Dilution Factor: 1
Lab File ID: LB20034A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 15.1
Calib. Ref.: LB20029A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	7.5J	12	5.9
MOTOR OIL	14J	24	5.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	84	50-150
HEXACOSANE	96	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB1100 Date Analyzed: 02/21/08 02:11
Samp ID: B119-19 Dilution Factor: 1
Lab File ID: LB20031A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 12.6
Calib. Ref.: LB20029A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	170	11	5.7
MOTOR OIL	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	80	50-150
HEXACOSANE	100	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB1100D Date Analyzed: 02/21/08 02:27
Lab Samp ID: B119-20 Dilution Factor: 1
Lab File ID: LB20032A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 12.4
Calib. Ref.: LB20029A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	38	11	5.7
MOTOR OIL	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	82	50-150
HEXACOSANE	98	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/12/08
Project    : SWMU 31 CANNON AFB           Date Received: 02/13/08
Sample No. : 08B119                       Date Extracted: 02/18/08 15:30
Sample ID  : 031SB1200                    Date Analyzed: 02/19/08 20:38
Sample ID  : B119-21                      Dilution Factor: 1
Lab File ID: LB19038A                     Matrix          : SOIL
Ext Btch ID: DSB024S                      % Moisture     : 12.2
Calib. Ref.: LB19028A                     Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	11	5.7
MOTOR OIL	13J	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	78	50-150
HEXACOSANE	98	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 15:30
Sample ID: 031SB1300 Date Analyzed: 02/19/08 20:55
Lab Samp ID: B119-22 Dilution Factor: 1
Lab File ID: LB19039A Matrix : SOIL
Ext Btch ID: DSB024S % Moisture : 13.4
Calib. Ref.: LB19028A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	31	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	71	50-150
HEXACOSANE	101	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 15:30
Sample ID: 031SB1400 Date Analyzed: 02/19/08 22:01
Samp ID: B119-23 Dilution Factor: 1
Lab File ID: LB19043A Matrix : SOIL
Ext Btch ID: DSB024S % Moisture : 13.5
Calib. Ref.: LB19041A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	1200	12	5.8
MOTOR OIL	140	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	80	50-150
HEXACOSANE	117	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 15:30
Sample ID: 031SB1402 Date Analyzed: 02/19/08 22:18
Lab Samp ID: B119-24 Dilution Factor: 1
Lab File ID: LB19044A Matrix : SOIL
Ext Btch ID: DSB024S % Moisture : 11.2
Calib. Ref.: LB19041A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.6
MOTOR OIL	ND	23	5.6

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	82	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 15:30
Sample ID: 031SB1500 Date Analyzed: 02/19/08 22:34
Samp ID: B119-25 Dilution Factor: 1
Lab File ID: LB19045A Matrix : SOIL
Ext Btch ID: DSB024S % Moisture : 20.6
Calib. Ref.: LB19041A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	13	6.3
MOTOR OIL	ND	25	6.3

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	83	50-150
HEXACOSANE	100	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 15:30
Sample ID: 031SB1600 Date Analyzed: 02/19/08 22:51
Lab Samp ID: B119-26 Dilution Factor: 1
Lab File ID: LB19046A Matrix : SOIL
Ext Btch ID: DSB024S % Moisture : 14.2
Calib. Ref.: LB19041A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	190	12	5.8
MOTOR OIL	170	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	79	50-150
HEXACOSANE	121	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/11/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/13/08
Batch No.   : 08B119                       Date Extracted: 02/18/08 13:45
Sample ID   : 031SB0600                    Date Analyzed: 02/21/08 01:04
Samp ID     : B119-12T                     Dilution Factor: 10
Lab File ID : LB20027A                     Matrix          : SOIL
Ext Btch ID : DSB023S                      % Moisture     : 16.7
Calib. Ref. : LB20016A                     Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	1700	120	60
MOTOR OIL	410	240	60

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	DO	50-150
HEXACOSANE	DO	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

DO: DILUTED OUT

METHOD 3550B/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0600D Date Analyzed: 02/21/08 02:44
Lab Samp ID: B119-13T Dilution Factor: 10
Lab File ID: LB20033A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 13.9
Calib. Ref.: LB20029A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	2000	120	58
MOTOR OIL	240	230	58

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	DO	50-150
HEXACOSANE	DO	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

DO: DILUTED OUT

METHOD 3550B/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0700 Date Analyzed: 02/20/08 23:41
Lab Samp ID: B119-14T Dilution Factor: 100
Lab File ID: LB20022A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 9.5
Calib. Ref.: LB20016A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	1100	550
MOTOR OIL	1200J	2200	550

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	DO	50-150
HEXACOSANE	DO	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

DO: DILUTED OUT

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: 031SB0800 Date Analyzed: 02/20/08 23:58
Lab Samp ID: B119-16T Dilution Factor: 10
Lab File ID: LB20023A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : 11.7
Calib. Ref.: LB20016A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	110	57
MOTOR OIL	130J	230	57

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	DO	50-150
HEXACOSANE	DO	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

DO: DILUTED OUT

METHOD 3550B/6015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 31 CANNON AFB Date Received: 02/18/08
Batch No. : 08B119 Date Extracted: 02/18/08 13:45
Sample ID: MBLK2S Date Analyzed: 02/20/08 18:58
Lab Samp ID: DSB023SB Dilution Factor: 1
Lab File ID: LB20005A Matrix : SOIL
Ext Btch ID: DSB023S % Moisture : NA
Calib. Ref.: LB20003A Instrument ID : GCT105

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	10	5.0
MOTOR OIL	ND	20	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	91	60-150
HEXACOSANE	101	60-140

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 31 CANNON AFB           Date Received: 02/18/08
Batch No.   : 08B119                       Date Extracted: 02/18/08 15:30
Sample ID   : MBLK1S                       Date Analyzed: 02/19/08 20:22
Lab Samp ID: DSB024SB                      Dilution Factor: 1
Lab File ID: LB19037A                      Matrix          : SOIL
Ext Btch ID: DSB024S                       % Moisture      : NA
Calib. Ref.: LB19028A                      Instrument ID   : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	10	5.0
MOTOR OIL	ND	20	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	89	60-150
HEXACOSANE	98	60-140

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Vial No. : 08B119 Date Extracted: 02/16/08 21:22
Sample ID: 031SB0100 Date Analyzed: 02/16/08 21:22
Samp ID: B119-01 Dilution Factor: 1
Lab File ID: EB15043A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 12.0
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	76	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/16/08 22:01
Sample ID: 031SB0102 Date Analyzed: 02/16/08 22:01
Lab Samp ID: B119-02 Dilution Factor: 1
Lab File ID: EB15044A Matrix : SOIL
Ext Btch ID: VMB0115 % Moisture : 12.2
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.57

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	84	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY FURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/16/08 22:39
Sample ID: 031SB0102D Date Analyzed: 02/16/08 22:39
Samp ID: B119-03 Dilution Factor: 1
Lab File ID: EB15045A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 11.7
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	81	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/16/08 23:18
Sample ID: 031SB0105 Date Analyzed: 02/16/08 23:18
Lab Samp ID: B119-04 Dilution Factor: 1
Lab File ID: EB15046A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 15.6
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.59
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	82	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/16/08 23:56
Sample ID: 031SB0200 Date Analyzed: 02/16/08 23:56
Samp ID: B119-05 Dilution Factor: 1
Sub File ID: EB15047A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 14.0
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	83	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/17/08 00:35
Sample ID: 031SB0202 Date Analyzed: 02/17/08 00:35
Lab Samp ID: B119-06 Dilution Factor: 1
Lab File ID: EB15048A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 12.0
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	82	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Samp No. : 08B119 Date Extracted: 02/17/08 01:14
Sample ID: 031SB0300 Date Analyzed: 02/17/08 01:14
Samp ID: B119-07 Dilution Factor: 1
Lab File ID: EB15049A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 13.6
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	77	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/17/08 01:52
Sample ID: 031SB0302 Date Analyzed: 02/17/08 01:52
Lab Samp ID: B119-08 Dilution Factor: 1
Lab File ID: EB15050A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 14.4
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	84	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/17/08 02:31
Sample ID: 031SB0402 Date Analyzed: 02/17/08 02:31
Samp ID: B119-09 Dilution Factor: 1
Lab File ID: EB15051A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 11.7
Calib. Ref.: EB15038A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.57

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	82	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 20:09
Sample ID: 031SB0402M Date Analyzed: 02/19/08 20:09
Lab Samp ID: B119-10 Dilution Factor: 1
Lab File ID: EB19016A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 11.3
Calib. Ref.: EB19013A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.56

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	82	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY FURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 22:04
Sample ID: 031SB0500 Date Analyzed: 02/19/08 22:04
Samp ID: B119-11 Dilution Factor: 1
Lab File ID: EB19019A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 14.4
Calib. Ref.: EB19013A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	71	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 22:42
Sample ID: 031SB0700 Date Analyzed: 02/19/08 22:42
Lab Samp ID: B119-14 Dilution Factor: 1
Lab File ID: EB19020A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 9.5
Calib. Ref.: EB19013A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	0.71J	1.1	0.55

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	80	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 15:38
Sample ID: 031SB0603 Date Analyzed: 02/19/08 15:38
Samp ID: B119-15 Dilution Factor: 1
Lab File ID: EB19009A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 13.4
Calib. Ref.: EB19002A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	79	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 16:16
Sample ID: 031SB0800 Date Analyzed: 02/19/08 16:16
Lab Samp ID: B119-16 Dilution Factor: 1
Lab File ID: EB19010A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 11.7
Calib. Ref.: EB19002A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	77	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 16:55
Sample ID: 031SB0900 Date Analyzed: 02/19/08 16:55
Samp ID: B119-17 Dilution Factor: 1
Lab File ID: EB19011A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 14.4
Calib. Ref.: EB19002A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	80	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY FURGE AND TRAP

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/12/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/13/08
Batch No.   : 08B119                       Date Extracted: 02/19/08 17:34
Sample ID   : 031SB1000                    Date Analyzed: 02/19/08 17:34
Lab Samp ID: B119-18                       Dilution Factor: 1
Lab File ID: EB19012A                      Matrix          : SOIL
Ext Btch ID: VMB011S                       % Moisture     : 15.1
Calib. Ref.: EB19002A                      Instrument ID  : GCT039
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.2	0.59
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	72	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/20/08 02:34
Sample ID: 031SB1100 Date Analyzed: 02/20/08 02:34
Lab Samp ID: B119-19 Dilution Factor: 1
Lab File ID: EB19026A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 12.6
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	9.0	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	79	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/12/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/13/08
Batch No.   : 08B119                       Date Extracted: 02/20/08 03:13
Sample ID   : 031SB1100D                  Date Analyzed: 02/20/08 03:13
Lab Samp ID: B119-20                       Dilution Factor: 1
Lab File ID: EB19027A                      Matrix          : SOIL
Ext Btch ID: VMB012S                       % Moisture      : 12.4
Calib. Ref.: EB19024A                      Instrument ID   : GCT039
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	2.5	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	79	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/20/08 03:51
Sample ID: 031SB1200 Date Analyzed: 02/20/08 03:51
Lab Samp ID: B119-21 Dilution Factor: 1
Lab File ID: EB19028A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 12.2
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.57

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	80	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/12/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/13/08
Batch No.   : 08B119                       Date Extracted: 02/20/08 04:30
Sample ID   : 031SB1300                   Date Analyzed: 02/20/08 04:30
Lab Samp ID: B119-22                       Dilution Factor: 1
Lab File ID: EB19029A                       Matrix          : SOIL
Ext Btch ID: VMB012S                         % Moisture      : 13.4
Calib. Ref.: EB19024A                       Instrument ID   : GCT039
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	75	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/20/08 05:47
Sample ID: 031SB1402 Date Analyzed: 02/20/08 05:47
Lab Samp ID: B119-24 Dilution Factor: 1
Lab File ID: EB19031A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 11.2
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.56
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	81	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/20/08 06:26
Sample ID: 031SB1500 Date Analyzed: 02/20/08 06:26
Lab Samp ID: B119-25 Dilution Factor: 1
Lab File ID: EB19032A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 20.6
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.3	0.63
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	79	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/MB015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 14:20
Sample ID: 031SB0600 Date Analyzed: 02/19/08 14:20
Lab Samp ID: B119-12T Dilution Factor: 20
Lab File ID: EB19007A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 16.7
Calib. Ref.: EB19002A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	110	24	12
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	DO	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00
DO: Diluted Out

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/11/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/19/08 14:59
Sample ID: 031SB0600D Date Analyzed: 02/19/08 14:59
Lab Samp ID: B119-13T Dilution Factor: 20
Lab File ID: EB19008A Matrix : SOIL
Ext Btch ID: VMB011S % Moisture : 13.9
Calib. Ref.: EB19002A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	160	23	12
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	DO	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/15/08 17:00
DO: Diluted Out

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/20/08 05:08
Sample ID: 031SB1400 Date Analyzed: 02/20/08 05:08
Lab Samp ID: B119-23T Dilution Factor: 20
Lab File ID: EB19030A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 13.5
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	150	23	12

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	DO	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00
DO: Diluted Out

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/12/08
Project : SWMU 31 CANNON AFB Date Received: 02/13/08
Batch No. : 08B119 Date Extracted: 02/20/08 14:50
Sample ID: 031SB1600 Date Analyzed: 02/20/08 14:50
Lab Samp ID: B119-26T Dilution Factor: 20
Lab File ID: EB19045A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 14.2
Calib. Ref.: EB19036A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	66	23	12
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	DO	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00
DO: Diluted Out

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 31 CANNON AFB Date Received: 02/19/08
Batch No. : 08B119 Date Extracted: 02/19/08 23:21
Sample ID: MBLK2S Date Analyzed: 02/19/08 23:21
Lab Samp ID: VMB012SB Dilution Factor: 1
Lab File ID: EB19021A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : NA
Calib. Ref.: EB19013A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.0	0.50

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	87	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 3550B/8015 MOD
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/16/08 16:30
Sample ID: 127SB0100 Date Analyzed: 02/20/08 14:29
Lab Samp ID: B141-01 Dilution Factor: 1
Lab File ID: LB19073A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : 13.2
Calib. Ref.: LB19065A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	88	50-150
HEXACOSANE	103	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client   : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project  : SWMU 127 CANNON AFB          Date   Received: 02/14/08
Batch No. : 08B141                      Date   Extracted: 02/16/08 16:30
Sample ID: 127SB0200                    Date   Analyzed: 02/20/08 14:45
Lab Samp ID: B141-02                     Dilution Factor: 1
Lab File ID: LB19074A                    Matrix      : SOIL
Ext Btch ID: DSB022S                     % Moisture  : 15.1
Calib. Ref.: LB19065A                    Instrument ID : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	26	12	5.9
MOTOR OIL	17J	24	5.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	84	50-150
HEXACOSANE	112	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : TETRA TECH EC, INC.
Project    : SWMU 127 CANNON AFB
Lab No.    : 08B141
Sample ID  : 127SB0300
Samp ID    : B141-03
Lab File ID: LB19075A
Ext Btch ID: DSB022S
Calib. Ref.: LB19065A
Date Collected: 02/13/08
Date Received: 02/14/08
Date Extracted: 02/16/08 16:30
Date Analyzed: 02/20/08 15:02
Dilution Factor: 1
Matrix     : SOIL
% Moisture : 13.0
Instrument ID : GCT105
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL			
MOTOR OIL	ND	11	5.7
	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	93	50-150
HEXACOSANE	108	50-150

RL : Reporting Limit
 Parameter H-C Range
 Diesel C10-C24
 Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/16/08 16:30
Sample ID: 127SB0400 Date Analyzed: 02/20/08 15:19
Lab Samp ID: B141-04 Dilution Factor: 1
Lab File ID: LB19076A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : 13.5
Calib. Ref.: LB19065A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	84	50-150
HEXACOSANE	98	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Samp No. : 08B141 Date Extracted: 02/16/08 16:30
Samp ID: 127SB0500 Date Analyzed: 02/20/08 16:26
Lab File ID: LB19080A Dilution Factor: 1
Ext Btch ID: DSB022S Matrix : SOIL
Calib. Ref.: LB19077A % Moisture : 12.9
Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.7
MOTOR OIL	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	94	50-150
HEXACOSANE	107	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 MOD
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.   : 08B141                       Date Extracted: 02/16/08 16:30
Sample ID   : 127SB0600                    Date Analyzed: 02/20/08 16:42
Lab Samp ID: B141-06                       Dilution Factor: 1
Lab File ID: LB19081A                      Matrix          : SOIL
Ext Btch ID: DSB022S                       % Moisture     : 12.6
Calib. Ref.: LB19077A                      Instrument ID  : GCT105
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.7
MOTOR OIL	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	89	50-150
HEXACOSANE	99	50-150

```

RL      : Reporting Limit
Parameter H-C Range
Diesel   C10-C24
Motor Oil C24-C36
  
```

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/16/08 16:30
Sample ID: 127SB0700 Date Analyzed: 02/20/08 16:59
Lab Samp ID: B141-07 Dilution Factor: 1
Lab File ID: LB19082A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : 13.3
Calib. Ref.: LB19077A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	90	50-150
HEXACOSANE	100	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 127 CANNON AFB          Date Received: 02/16/08
Batch No.   : 08B141                       Date Extracted: 02/16/08 16:30
Sample ID   : MBLK1S                       Date Analyzed: 02/20/08 09:12
Lab Samp ID: DSB022SB                      Dilution Factor: 1
Lab File ID: LB19054A                      Matrix           : SOIL
Ext Btch ID: DSB022S                       % Moisture      : NA
Calib. Ref.: LB19052A                      Instrument ID    : GCT105
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	10	5.0
MOTOR OIL	ND	20	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	101	60-150
HEXACOSANE	116	60-140

RL : Reporting Limit
 Parameter H-C Range
 Diesel C10-C24
 Motor Oil C24-C36

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/20/08 07:43
Sample ID: 127SB0100 Date Analyzed: 02/20/08 07:43
Lab Samp ID: B141-01 Dilution Factor: 1
Lab File ID: EB19034A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 13.2
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	81	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/20/08 08:21
Sample ID: 127SB0200 Date Analyzed: 02/20/08 08:21
Lab Samp ID: B141-02 Dilution Factor: 1
Lab File ID: EB19035A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 15.1
Calib. Ref.: EB19024A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.2	0.59
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	73	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/20/08 10:18
Sample ID: 127SB0300 Date Analyzed: 02/20/08 10:18
Lab Samp ID: B141-03 Dilution Factor: 1
Lab File ID: EB19038A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 13.0
Calib. Ref.: EB19036A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	84	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/MB015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.   : 08B141                       Date Extracted: 02/20/08 10:57
Sample ID   : 127SB0400                    Date Analyzed: 02/20/08 10:57
Lab Samp ID: B141-04                       Dilution Factor: 1
Lab File ID: EB19039A                      Matrix          : SOIL
Ext Btch ID: VMB012S                       % Moisture      : 13.5
Calib. Ref.: EB19036A                      Instrument ID   : GCT039
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	83	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/20/08 11:36
Sample ID: 127SB0500 Date Analyzed: 02/20/08 11:36
Lab Samp ID: B141-05 Dilution Factor: 1
Lab File ID: EB19040A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 12.9
Calib. Ref.: EB19036A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	81	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/20/08 12:15
Sample ID: 127SB0600 Date Analyzed: 02/20/08 12:15
Lab Samp ID: B141-06 Dilution Factor: 1
Lab File ID: EB19041A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 12.6
Calib. Ref.: EB19036A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.57

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
----- BROMOFLUOROBENZENE	85	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 127 CANNON AFB Date Received: 02/14/08
Batch No. : 08B141 Date Extracted: 02/20/08 12:54
Sample ID: 127SB0700 Date Analyzed: 02/20/08 12:54
Samp ID: B141-07 Dilution Factor: 1
Lab File ID: EB19042A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 13.3
Calib. Ref.: EB19036A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	85	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 127 CANNON AFB Date Received: 02/19/08
Batch No. : 08B141 Date Extracted: 02/19/08 23:21
Sample ID: MBLK1S Date Analyzed: 02/19/08 23:21
Lab Samp ID: VMB012SB Dilution Factor: 1
Lab File ID: EB19021A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : NA
Calib. Ref.: EB19013A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.0	0.50
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	87	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.  : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID  : 127SB0100                    Date Analyzed: 02/15/08 18:49
Samp ID   : B141-01                       Dilution Factor: 1
Lab File ID: RB15006A                     Matrix          : SOIL
Ext Btch ID: PAB004S                      % Moisture     : 13.2
Calib. Ref.: RB15002A                     Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(ND) ND	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	2.8J (ND)	23	2.3 2.3
PYRENE	2.3J (ND)	12	1.2 1.2
BENZO (A) ANTHRACENE	(2.0J) 1.7J	12	1.2 1.2
CHRYSENE	(3.3J) 3.8J	12	1.2 1.2
BENZO (B) FLUORANTHENE	4.0J (ND)	23	2.3 2.3
BENZO (K) FLUORANTHENE	(2.3J) 1.9J	12	1.2 1.2
BENZO (A) PYRENE	(3.7J) 4.5J	12	1.2 1.2
DIBENZO (A, H) ANTHRACENE	(ND) ND	23	4.6 4.6
BENZO (G, H, I) PERYLENE	(2.5J) 3.5J	23	2.3 2.3
INDENO (1, 2, 3-CD) PYRENE	(3.1J) 3.5J	12	1.2 1.2
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(108) 104	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client       : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project      : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.    : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID    : 127SB0200                    Date Analyzed: 02/15/08 21:09
Lab Samp ID  : B141-02                      Dilution Factor: 1
Lab File ID  : RB15012A                     Matrix          : SOIL
Ext Btch ID  : PAB004S                       % Moisture     : 15.1
Calib. Ref.  : RB15002A                     Instrument ID   : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	240	24 24
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	24	2.4 2.4
PHENANTHRENE	(9.6J) 8.5J	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	(58) 37	24	2.4 2.4
PYRENE	(57) 32	12	1.2 1.2
BENZO(A) ANTHRACENE	(7.0J) 5.2J	12	1.2 1.2
CHRYSENE	(29) 25	12	1.2 1.2
BENZO(B) FLUORANTHENE	(42) 34	24	2.4 2.4
BENZO(K) FLUORANTHENE	(18) 17	12	1.2 1.2
BENZO(A) PYRENE	(25) 29	12	1.2 1.2
DIBENZO(A, H) ANTHRACENE	(41) 11J	24	4.7 4.7
BENZO(G, H, I) PERYLENE	(65) 55	24	2.4 2.4
INDENO(1,2,3-CD) PYRENE	(62) 79	12	1.2 1.2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(96) 90	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/14/08
Sample No. : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID  : 127SB0300                     Date Analyzed: 02/15/08 19:13
Samp ID    : B141-03                       Dilution Factor: 1
Lab File ID: RB15007A                      Matrix          : SOIL
Ext Btch ID: PAB004S                        % Moisture     : 13.0
Calib. Ref.: RB15002A                      Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(ND) ND	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	3.9J (ND)	23	2.3 2.3
PYRENE	(5.4J) 4.9J	11	1.1 1.1
BENZO (A) ANTHRACENE	(2.4J) 1.3J	11	1.1 1.1
CHRYSENE	(4.0J) 4.9J	11	1.1 1.1
BENZO (B) FLUORANTHENE	8.7J (ND)	23	2.3 2.3
BENZO (K) FLUORANTHENE	(4.1J) 3.2J	11	1.1 1.1
BENZO (A) PYRENE	(7.3J) 7.0J	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	9.1J (ND)	23	4.6 4.6
BENZO (G, H, I) PERYLENE	(9.0J) 10J	23	2.3 2.3
INDENO (1, 2, 3-CD) PYRENE	(9.9J) 12	11	1.1 1.1

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(109) 102	50-140

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.  : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID  : 127SB0400                    Date Analyzed: 02/15/08 19:36
Lab Samp ID: B141-04                      Dilution Factor: 1
Lab File ID: RB15008A                     Matrix          : SOIL
Ext Btch ID: PAB004S                       % Moisture     : 13.5
Calib. Ref.: RB15002A                     Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(ND) ND	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	(ND) ND	23	2.3 2.3
PYRENE	(ND) ND	12	1.2 1.2
BENZO (A) ANTHRACENE	(ND) ND	12	1.2 1.2
CHRYSENE	(ND) ND	12	1.2 1.2
BENZO (B) FLUORANTHENE	(ND) ND	23	2.3 2.3
BENZO (K) FLUORANTHENE	(ND) ND	12	1.2 1.2
BENZO (A) PYRENE	(ND) ND	12	1.2 1.2
DIBENZO (A, H) ANTHRACENE	(ND) ND	23	4.6 4.6
BENZO (G, H, I) PERYLENE	(ND) ND	23	2.3 2.3
INDENO (1, 2, 3-CD) PYRENE	2.0 (ND)	12	1.2 1.2
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(101) 96	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.   : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID: 127SB0500                       Date Analyzed: 02/15/08 19:59
Samp ID: B141-05                           Dilution Factor: 1
Lab File ID: RB15009A                       Matrix          : SOIL
Ext Btch ID: PAB004S                         % Moisture     : 12.9
Calib. Ref.: RB15002A                       Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	1.5J (ND)	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	3.9J (ND)	23	2.3 2.3
PYRENE	(ND) ND	11	1.1 1.1
BENZO(A) ANTHRACENE	(ND) ND	11	1.1 1.1
CHRYSENE	(1.7J) 1.4J	11	1.1 1.1
BENZO(B) FLUORANTHENE	(ND) ND	23	2.3 2.3
BENZO(K) FLUORANTHENE	(ND) ND	11	1.1 1.1
BENZO(A) PYRENE	(ND) ND	11	1.1 1.1
DIBENZO(A,H) ANTHRACENE	(ND) ND	23	4.6 4.6
BENZO(G,H,I) PERYLENE	(ND) ND	23	2.3 2.3
INDENO(1,2,3-CD) PYRENE	1.8J (ND)	11	1.1 1.1
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(102) 99	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/14/08
Batch No.   : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID   : 127SB0600                    Date Analyzed: 02/15/08 20:23
Lab Samp ID: B141-06                       Dilution Factor: 1
Lab File ID: RB15010A                      Matrix          : SOIL
Ext Btch ID: PAB004S                        % Moisture     : 12.6
Calib. Ref.: RB15002A                      Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(16) 14	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	(33) 24	23	2.3 2.3
PYRENE	(25) 18	11	1.1 1.1
BENZO(A) ANTHRACENE	(6.3J) 7.6J	11	1.1 1.1
CHRYSENE	(8.4J) 9.1J	11	1.1 1.1
BENZO(B) FLUORANTHENE	6.8J (ND)	23	2.3 2.3
BENZO(K) FLUORANTHENE	(3.3J) 3.7J	11	1.1 1.1
BENZO(A) PYRENE	(5.0J) 5.8J	11	1.1 1.1
DIBENZO(A,H) ANTHRACENE	(ND) ND	23	4.6 4.6
BENZO(G,H,I) PERYLENE	(3.4J) 4.0J	23	2.3 2.3
INDENO(1,2,3-CD) PYRENE	(4.2J) 5.1J	11	1.1 1.1

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(101) 96	50-140

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
 POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/14/08
Lab No.     : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID   : 127SB0700                    Date Analyzed: 02/15/08 20:46
Samp ID     : B141-07                      Dilution Factor: 1
Lab File ID : RB15011A                    Matrix          : SOIL
Ext Btch ID : PAB004S                      % Moisture     : 13.3
Calib. Ref. : RB15002A                    Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	1.3J (ND)	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	(ND) ND	23	2.3 2.3
PYRENE	(ND) ND	12	1.2 1.2
BENZO(A) ANTHRACENE	(ND) ND	12	1.2 1.2
CHRYSENE	(ND) ND	12	1.2 1.2
BENZO(B) FLUORANTHENE	(ND) ND	23	2.3 2.3
BENZO(K) FLUORANTHENE	(ND) ND	12	1.2 1.2
BENZO(A) PYRENE	(ND) ND	12	1.2 1.2
DIBENZO(A,H) ANTHRACENE	(ND) ND	23	4.6 4.6
BENZO(G,H,I) PERYLENE	(ND) ND	23	2.3 2.3
INDENO(1,2,3-CD) PYRENE	(ND) ND	12	1.2 1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(99) 96	50-140

Left of | is related to UV detector; Right of | related to FL detector
 Final result indicated by ()

METHOD 3550B/8310
 POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B141                       Date Extracted: 02/15/08 11:30
Sample ID   : MBLK1S                       Date Analyzed: 02/15/08 17:39
Lab Samp ID: PAB004SB                      Dilution Factor: 1
Lab File ID: RB15003A                     Matrix          : SOIL
Ext Btch ID: PAB004S                       % Moisture     : NA
Calib. Ref.: RB15002A                     Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	100	10 10
ACENAPHTHYLENE	(ND) NA	200	20 20
ACENAPHTHENE	(ND) ND	100	10 10
FLUORENE	(ND) ND	20	2.0 2.0
PHENANTHRENE	(ND) ND	10	1.0 1.0
ANTHRACENE	(ND) ND	10	1.0 1.0
FLUORANTHENE	(ND) ND	20	2.0 2.0
PYRENE	(ND) ND	10	1.0 1.0
BENZO (A) ANTHRACENE	(ND) ND	10	1.0 1.0
CHRYSENE	(ND) ND	10	1.0 1.0
BENZO (B) FLUORANTHENE	(ND) ND	20	2.0 2.0
BENZO (K) FLUORANTHENE	(ND) ND	10	1.0 1.0
BENZO (A) PYRENE	(ND) ND	10	1.0 1.0
DIBENZO (A, H) ANTHRACENE	(ND) ND	20	4.0 4.0
BENZO (G, H, I) PERYLENE	(ND) ND	20	2.0 2.0
INDENO (1, 2, 3-CD) PYRENE	(ND) ND	10	1.0 1.0
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(110) 106	70-130	

Left of | is related to UV detector; Right of | related to FL detector
 Final result indicated by ()

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Batch No. : 08B147 Date Extracted: 02/16/08 16:30
Sample ID: 031SB1700 Date Analyzed: 02/20/08 11:09
Samp ID: B147-01 Dilution Factor: 1
Lab File ID: LB19061A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : 11.6
Calib. Ref.: LB19052A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.7
MOTOR OIL	ND	23	5.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	92	50-150
HEXACOSANE	108	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Batch No. : 08B147 Date Extracted: 02/16/08 16:30
Sample ID: 031SB2000 Date Analyzed: 02/20/08 12:48
Lab Samp ID: B147-04 Dilution Factor: 1
Lab File ID: LB19067A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : 15.3
Calib. Ref.: LB19065A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	12	5.9
MOTOR OIL	ND	24	5.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	94	50-150
HEXACOSANE	108	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Batch No. : 08B147 Date Extracted: 02/16/08 16:30
Sample ID: 031SB1900 Date Analyzed: 02/20/08 13:05
Samp ID: B147-03W Dilution Factor: 1
Lab File ID: LB19068A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : 13.8
Calib. Ref.: LB19065A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	12	5.8
MOTOR OIL	16J	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	92	50-150
HEXACOSANE	110	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/13/08
Project     : SWMU 31 CANNON AFB           Date Received: 02/14/08
Batch No.   : 08B147                       Date Extracted: 02/16/08 16:30
Sample ID: 031SB1800                       Date Analyzed: 02/20/08 11:25
Lab Samp ID: B147-02T                       Dilution Factor: 2
Lab File ID: LB19062A                       Matrix          : SOIL
Ext Btch ID: DSB022S                         % Moisture     : 15.0
Calib. Ref.: LB19052A                       Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	110	24	12
MOTOR OIL	ND	47	12

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	92	50-150
HEXACOSANE	108	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 31 CANNON AFB Date Received: 02/16/08
Batch No. : 08B147 Date Extracted: 02/16/08 16:30
Sample ID: MBLK1S Date Analyzed: 02/20/08 09:12
Samp ID: DSB022SB Dilution Factor: 1
Lab File ID: LB19054A Matrix : SOIL
Ext Btch ID: DSB022S % Moisture : NA
Calib. Ref.: LB19052A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	10	5.0
MOTOR OIL	ND	20	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	101	60-150
HEXACOSANE	116	60-140

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Batch No. : 08B147 Date Extracted: 02/20/08 15:28
Sample ID: 031SB1700 Date Analyzed: 02/20/08 15:28
Lab Samp ID: B147-01 Dilution Factor: 1
Lab File ID: EB19046A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 11.6
Calib. Ref.: EB19036A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.1	0.57
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	82	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Batch No. : 08B147 Date Extracted: 02/20/08 17:25
Sample ID: 031SB1900 Date Analyzed: 02/20/08 17:25
Samp ID: B147-03 Dilution Factor: 1
Lab File ID: EB19049A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 13.8
Calib. Ref.: EB19048A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.2	0.58

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	81	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Batch No. : 08B147 Date Extracted: 02/20/08 18:03
Sample ID: 031SB2000 Date Analyzed: 02/20/08 18:03
Lab Samp ID: B147-04 Dilution Factor: 1
Lab File ID: EB19050A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 15.3
Calib. Ref.: EB19048A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.2	0.59

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
----- BROMOFLUOROBENZENE	83	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/13/08
Project : SWMU 31 CANNON AFB Date Received: 02/14/08
Lab No. : 08B147 Date Extracted: 02/20/08 18:42
Sample ID: 031SB1800 Date Analyzed: 02/20/08 18:42
Samp ID: B147-02T Dilution Factor: 2
Lab File ID: EB19051A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : 15.0
Calib. Ref.: EB19048A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	15	2.4	1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	78	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 31 CANNON AFB Date Received: 02/19/08
Batch No. : 08B147 Date Extracted: 02/19/08 23:21
Sample ID: MBLK1S Date Analyzed: 02/19/08 23:21
Lab Samp ID: VMB012SB Dilution Factor: 1
Lab File ID: EB19021A Matrix : SOIL
Ext Btch ID: VMB012S % Moisture : NA
Calib. Ref.: EB19013A Instrument ID : GCT039
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.0	0.50
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	87	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/18/08 11:00

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID   : 127SB0800                    Date Analyzed: 02/22/08 14:48
Samp ID     : B175-01                      Dilution Factor: 1
Lab File ID : LB22006A                     Matrix          : SOIL
Ext Btch ID : DSB028S                       % Moisture     : 14.0
Calib. Ref. : LB22002A                     Instrument ID   : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	78	50-150
HEXACOSANE	94	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client   : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project  : SWMU 127 CANNON AFB           Date Received: 02/15/08
Batch No. : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID: 127SB0900                     Date Analyzed: 02/22/08 15:04
Lab Samp ID: B175-02                     Dilution Factor: 1
Lab File ID: LB22007A                    Matrix : SOIL
Ext Btch ID: DSB028S                     % Moisture : 15.7
Calib. Ref.: LB22002A                    Instrument ID : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.9
MOTOR OIL	ND	24	5.9

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	73	50-150
HEXACOSANE	95	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1000 Date Analyzed: 02/22/08 15:21
Samp ID: B175-03 Dilution Factor: 1
Lab File ID: LB22008A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 13.7
Calib. Ref.: LB22002A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	82	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID: 127SB1100                       Date Analyzed: 02/22/08 15:37
Lab Samp ID: B175-04                       Dilution Factor: 1
Lab File ID: LB22009A                      Matrix          : SOIL
Ext Btch ID: DSB028S                       % Moisture     : 7.6
Calib. Ref.: LB22002A                      Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	11	5.4
MOTOR OIL	ND	22	5.4

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	88	50-150
HEXACOSANE	98	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1200 Date Analyzed: 02/22/08 15:54
Samp ID: B175-05 Dilution Factor: 1
Lab File ID: LB22010A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 8.2
Calib. Ref.: LB22002A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.4
MOTOR OIL	ND	22	5.4

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	81	50-150
HEXACOSANE	95	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID: 127SB1300                       Date Analyzed: 02/22/08 16:11
Lab Samp ID: B175-06                       Dilution Factor: 1
Lab File ID: LB22011A                      Matrix          : SOIL
Ext Btch ID: DSB028S                       % Moisture     : 8.6
Calib. Ref.: LB22002A                      Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.5
MOTOR OIL	ND	22	5.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	83	50-150
HEXACOSANE	95	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Lab No.    : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID  : 127SB1300M                   Date Analyzed: 02/22/08 17:51
Samp ID    : B175-07                      Dilution Factor: 1
Lab File ID: LB22017A                     Matrix          : SOIL
Ext Btch ID: DSB028S                      % Moisture     : 6.3
Calib. Ref.: LB22015A                     Instrument ID  : GCT105
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.3
MOTOR OIL	8.5J	21	5.3

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	84	50-150
HEXACOSANE	106	50-150

```

RL      : Reporting Limit
Parameter H-C Range
Diesel   C10-C24
Motor Oil C24-C36
  
```

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1300D Date Analyzed: 02/22/08 16:27
Lab Samp ID: B175-08 Dilution Factor: 1
Lab File ID: LB22012A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 10.5
Calib. Ref.: LB22002A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.6
MOTOR OIL	11J	22	5.6

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	80	50-150
HEXACOSANE	99	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====  
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08  
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08  
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00  
Sample ID: 127SB1400                       Date Analyzed: 02/22/08 16:44  
Lab Samp ID: B175-09                       Dilution Factor: 1  
Lab File ID: LB22013A                      Matrix          : SOIL  
Ext Btch ID: DSB028S                       % Moisture     : 8.7  
Calib. Ref.: LB22002A                      Instrument ID  : GCT105  
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.5
MOTOR OIL	ND	22	5.5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	85	50-150
HEXACOSANE	99	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1500 Date Analyzed: 02/22/08 18:41
Lab Samp ID: B175-10 Dilution Factor: 1
Lab File ID: LB22020A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 13.1
Calib. Ref.: LB22015A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	12	5.8
MOTOR OIL	ND	23	5.8

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	78	50-150
HEXACOSANE	96	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1600 Date Analyzed: 02/22/08 18:58
Samp ID: B175-11 Dilution Factor: 1
Lab File ID: LB22021A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 6.3
Calib. Ref.: LB22015A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.3
MOTOR OIL	5.4J	21	5.3

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	79	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
 PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID   : 127SB1700                   Date Analyzed: 02/22/08 19:14
Lab Samp ID: B175-12                      Dilution Factor: 1
Lab File ID: LB22022A                     Matrix          : SOIL
Ext Btch ID: DSB028S                      % Moisture     : 6.1
Calib. Ref.: LB22015A                     Instrument ID  : GCT105
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.3
MOTOR OIL	9.8J	21	5.3

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	86	50-150
HEXACOSANE	99	50-150

```

RL      : Reporting Limit
Parameter H-C Range
Diesel   C10-C24
Motor Oil C24-C36
  
```

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1800 Date Analyzed: 02/22/08 19:31
Samp ID: B175-13 Dilution Factor: 1
Sub File ID: LB22023A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 7.1
Calib. Ref.: LB22015A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.4
MOTOR OIL	16J	22	5.4

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	74	50-150
HEXACOSANE	95	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID: 127SB1810                       Date Analyzed: 02/22/08 19:48
Lab Samp ID: B175-14                        Dilution Factor: 1
Lab File ID: LB22024A                       Matrix          : SOIL
Ext Btch ID: DSB028S                         % Moisture     : 7.8
Calib. Ref.: LB22015A                       Instrument ID  : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.4
MOTOR OIL	ND	22	5.4

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	82	50-150
HEXACOSANE	94	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/20/08 14:00
Sample ID: 127SB1700D Date Analyzed: 02/22/08 20:04
Sample ID: B175-17 Dilution Factor: 1
Lab File ID: LB22025A Matrix : SOIL
Ext Btch ID: DSB028S % Moisture : 5.9
Calib. Ref.: LB22015A Instrument ID : GCT105
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
DIESEL	ND	11	5.3
MOTOR OIL	11J	21	5.3

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOBENZENE	85	50-150
HEXACOSANE	97	50-150

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 3550B/8015 Mod
PETROLEUM HYDROCARBONS BY EXTRACTION

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 127 CANNON AFB          Date Received: 02/20/08
Batch No.   : 08B175                       Date Extracted: 02/20/08 14:00
Sample ID   : MBLK1S                       Date Analyzed: 02/22/08 14:14
Lab Samp ID: DSB028SB                     Dilution Factor: 1
Lab File ID: LB22004A                     Matrix          : SOIL
Ext Btch ID: DSB028S                      % Moisture     : NA
Calib. Ref.: LB22002A                     Instrument ID   : GCT105
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
DIESEL	ND	10	5.0
MOTOR OIL	ND	20	5.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOBENZENE	81	60-150
HEXACOSANE	97	60-140

RL : Reporting Limit
Parameter H-C Range
Diesel C10-C24
Motor Oil C24-C36

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Ch No. : 08B175 Date Extracted: 02/21/08 12:52
Sample ID: 127SB0800 Date Analyzed: 02/21/08 12:52
Samp ID: B175-01 Dilution Factor: 1
Lab File ID: UB21006A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 14.0
Calib. Ref.: UB21002A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.2	0.58
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	90	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 13:26
Sample ID: 127SB0900 Date Analyzed: 02/21/08 13:26
Lab Samp ID: B175-02 Dilution Factor: 1
Lab File ID: UB21007A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 15.7
Calib. Ref.: UB21002A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.59

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	89	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 14:00
Sample ID: 127SB1000 Date Analyzed: 02/21/08 14:00
Lab Samp ID: B175-03 Dilution Factor: 1
Lab File ID: UB21008A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 13.7
Calib. Ref.: UB21002A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.2	0.58

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	88	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 14:35
Sample ID: 127SB1100 Date Analyzed: 02/21/08 14:35
Lab Samp ID: B175-04 Dilution Factor: 1
Lab File ID: UB21009A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 7.6
Calib. Ref.: UB21002A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.54
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	96	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 17:26
Sample ID: 127SB1200 Date Analyzed: 02/21/08 17:26
Samp ID: B175-05 Dilution Factor: 1
Lab File ID: UB21014A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 8.2
Calib. Ref.: UB21013A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.54
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	94	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 18:00
Sample ID: 127SB1300                       Date Analyzed: 02/21/08 18:00
Lab Samp ID: B175-06                       Dilution Factor: 1
Lab File ID: UB21015A                      Matrix          : SOIL
Ext Btch ID: VMB015S                       % Moisture     : 8.6
Calib. Ref.: UB21013A                      Instrument ID  : T-034
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.55
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	93	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Tch No. : 08B175 Date Extracted: 02/21/08 15:09
Sample ID: 127SB1300M Date Analyzed: 02/21/08 15:09
Samp ID: B175-07 Dilution Factor: 1
Lab File ID: UB21010A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 6.3
Calib. Ref.: UB21002A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.53
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	93	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 18:34
Sample ID   : 127SB1300D                   Date Analyzed: 02/21/08 18:34
Lab Samp ID: B175-08                       Dilution Factor: 1
Lab File ID: UB21016A                      Matrix          : SOIL
Ext Btch ID: VMB015S                       % Moisture     : 10.5
Calib. Ref.: UB21013A                      Instrument ID  : T-034
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.56
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	96	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Vial No. : 08B175 Date Extracted: 02/21/08 19:08
Vial ID: 127SB1400 Date Analyzed: 02/21/08 19:08
Samp ID: B175-09 Dilution Factor: 1
Lab File ID: UB21017A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 8.7
Calib. Ref.: UB21013A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.55
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	96	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 19:43
Sample ID   : 127SB1500                   Date Analyzed: 02/21/08 19:43
Lab Samp ID: B175-10                      Dilution Factor: 1
Lab File ID: UB21018A                     Matrix          : SOIL
Ext Btch ID: VMB015S                      % Moisture     : 13.1
Calib. Ref.: UB21013A                     Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.2	0.58

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
BROMOFLUOROBENZENE	91	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
  Ch No.    : 08B175                       Date Extracted: 02/21/08 20:17
  Sample ID: 127SB1600                     Date Analyzed: 02/21/08 20:17
  Samp ID   : B175-11                      Dilution Factor: 1
  Lab File ID: UB21019A                   Matrix          : SOIL
  Ext Btch ID: VMB015S                   % Moisture     : 6.3
  Calib. Ref.: UB21013A                   Instrument ID  : T-034
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.53
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	-----
BROMOFLUOROBENZENE	95	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 20:51
Sample ID: 127SB1700 Date Analyzed: 02/21/08 20:51
Lab Samp ID: B175-12 Dilution Factor: 1
Lab File ID: UB21020A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 6.1
Calib. Ref.: UB21013A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
----- GASOLINE	ND	1.1	0.53
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
----- BROMOFLUOROBENZENE	96	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 21:25
Sample ID: 127SB1800 Date Analyzed: 02/21/08 21:25
Lab Samp ID: B175-13 Dilution Factor: 1
Lab File ID: UB21021A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 7.1
Calib. Ref.: UB21013A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.54
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	95	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 21:59
Sample ID   : 127SB1810                   Date Analyzed: 02/21/08 21:59
Lab Samp ID: B175-14                       Dilution Factor: 1
Lab File ID: UB21022A                      Matrix          : SOIL
Ext Btch ID: VMB015S                       % Moisture      : 7.8
Calib. Ref.: UB21013A                      Instrument ID   : T-034
=====
```

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.54

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
-----	-----	-----
BROMOFLUOROBENZENE	95	70-140

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/21/08 22:33
Sample ID: 127SB1700D Date Analyzed: 02/21/08 22:33
Samp ID: B175-17 Dilution Factor: 1
Lab File ID: UB21023A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : 5.9
Calib. Ref.: UB21013A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
-----	-----	-----	-----
GASOLINE	ND	1.1	0.53
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
-----	-----	-----	
BROMOFLUOROBENZENE	95	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 127 CANNON AFB Date Received: 02/21/08
Batch No. : 08B175 Date Extracted: 02/21/08 11:06
Sample ID: MBLK1S Date Analyzed: 02/21/08 11:06
Lab Samp ID: VMB015SB Dilution Factor: 1
Lab File ID: UB21003A Matrix : SOIL
Ext Btch ID: VMB015S % Moisture : NA
Calib. Ref.: UB21002A Instrument ID : T-034
=====

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
GASOLINE	ND	1.0	0.50
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
BROMOFLUOROBENZENE	95	70-140	

Parameter H-C Range
Gasoline C6-C10
Methanol Extraction: 02/20/08 13:00

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.  : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID  : 127SB0800                    Date Analyzed: 02/22/08 14:12
Samp ID   : B175-01                       Dilution Factor: 1
Lab File ID: RB22007A                     Matrix          : SOIL
Ext Btch ID: PAB006S                      % Moisture     : 14.0
Calib. Ref.: RB22003A                     Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(2.9J) 1.8J	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	3.4J (ND)	23	2.3 2.3
PYRENE	(ND) ND	12	1.2 1.2
BENZO (A) ANTHRACENE	(ND) ND	12	1.2 1.2
CHRYSENE	(ND) ND	12	1.2 1.2
BENZO (B) FLUORANTHENE	(ND) ND	23	2.3 2.3
BENZO (K) FLUORANTHENE	(ND) ND	12	1.2 1.2
BENZO (A) PYRENE	(ND) ND	12	1.2 1.2
DIBENZO (A, H) ANTHRACENE	(ND) ND	23	4.7 4.7
BENZO (G, H, I) PERYLENE	(ND) ND	23	2.3 2.3
INDENO (1,2,3-CD) PYRENE	1.2J (ND)	12	1.2 1.2
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(98) 93	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.  : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID: 127SB0900                     Date Analyzed: 02/22/08 14:36
Lab Samp ID: B175-02                     Dilution Factor: 1
Lab File ID: RB22008A                    Matrix          : SOIL
Ext Btch ID: PAB006S                     % Moisture     : 15.7
Calib. Ref.: RB22003A                    Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	240	24 24
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	24	2.4 2.4
PHENANTHRENE	(8.8J) 7.9J	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	(32) 17J	24	2.4 2.4
PYRENE	(17) 13	12	1.2 1.2
BENZO(A) ANTHRACENE	(6.3J) 7.3J	12	1.2 1.2
CHRYSENE	(8.6J) 9.0J	12	1.2 1.2
BENZO(B) FLUORANTHENE	(8.6J) 5.3J	24	2.4 2.4
BENZO(K) FLUORANTHENE	(3.4J) 4.5J	12	1.2 1.2
BENZO(A) PYRENE	(6.7J) 6.7J	12	1.2 1.2
DIBENZO(A,H) ANTHRACENE	(ND) ND	24	4.7 4.7
BENZO(G,H,I) PERYLENE	(5.0J) 4.9J	24	2.4 2.4
INDENO(1,2,3-CD) PYRENE	(6.2J) 7.3J	12	1.2 1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(101) 96	50-140

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB           Date Received: 02/15/08
Batch No.  : 08B175                        Date Extracted: 02/21/08 15:15
Sample ID  : 127SB1000                     Date Analyzed: 02/22/08 15:22
Samp ID   : B175-03                        Dilution Factor: 1
Lab File ID: RB22010A                      Matrix          : SOIL
Ext Btch ID: PAB006S                       % Moisture     : 13.7
Calib. Ref.: RB22003A                      Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(ND) NA	230	23 23
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(8.9J) 7.4J	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	(42) 26	23	2.3 2.3
PYRENE	(32) 25	12	1.2 1.2
BENZO (A) ANTHRACENE	(9.5J) 11J	12	1.2 1.2
CHRYSENE	(15) 15	12	1.2 1.2
BENZO (B) FLUORANTHENE	(13J) 9.4J	23	2.3 2.3
BENZO (K) FLUORANTHENE	(5.0J) 6.3J	12	1.2 1.2
BENZO (A) PYRENE	(9.5J) 8.7J	12	1.2 1.2
DIBENZO (A, H) ANTHRACENE	(ND) ND	23	4.6 4.6
BENZO (G, H, I) PERYLENE	(7.5J) 8.0J	23	2.3 2.3
INDENO (1, 2, 3-CD) PYRENE	(12) 11J	12	1.2 1.2
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(95) 91	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.  : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID  : 127SB1100                   Date Analyzed: 02/22/08 20:03
Lab Samp ID: B175-04                     Dilution Factor: 1
Lab File ID: RB22022A                    Matrix       : SOIL
Ext Btch ID: PAB006S                     % Moisture   : 7.6
Calib. Ref.: RB22015A                    Instrument ID : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(25J) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	5.0J (ND)	22	2.2 2.2
PHENANTHRENE	(52) 49	11	1.1 1.1
ANTHRACENE	3.6J (ND)	11	1.1 1.1
FLUORANTHENE	(250) 150	22	2.2 2.2
PYRENE	(170) 110	11	1.1 1.1
BENZO(A) ANTHRACENE	(53) 35	11	1.1 1.1
CHRYSENE	(89) 80	11	1.1 1.1
BENZO(B) FLUORANTHENE	(84) 63	22	2.2 2.2
BENZO(K) FLUORANTHENE	(33) 38	11	1.1 1.1
BENZO(A) PYRENE	(68) 69	11	1.1 1.1
DIBENZO(A, H) ANTHRACENE	(45) 16J	22	4.3 4.3
BENZO(G, H, I) PERYLENE	(83) 58	22	2.2 2.2
INDENO(1,2,3-CD) PYRENE	(78) 71	11	1.1 1.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(104) 112	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.  : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID  : 127SB1200                     Date Analyzed: 02/22/08 14:59
Samp ID   : B175-05                       Dilution Factor: 1
Lab File ID: RB22009A                     Matrix          : SOIL
Ext Btch ID: PAB006S                      % Moisture     : 8.2
Calib. Ref.: RB22003A                     Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(36J) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	22	2.2 2.2
PHENANTHRENE	3.6J (ND)	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	(14J) 5.8J	22	2.2 2.2
PYRENE	(6.8J) 7.8J	11	1.1 1.1
BENZO (A) ANTHRACENE	(2.6J) 2.2J	11	1.1 1.1
CHRYSENE	(5.0J) 5.3J	11	1.1 1.1
BENZO (B) FLUORANTHENE	5.8J (ND)	22	2.2 2.2
BENZO (K) FLUORANTHENE	(2.2J) 2.6J	11	1.1 1.1
BENZO (A) PYRENE	(3.6J) 3.8J	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	(ND) ND	22	4.4 4.4
BENZO (G, H, I) PERYLENE	(4.0J) 3.6J	22	2.2 2.2
INDENO (1, 2, 3-CD) PYRENE	(4.3J) 6.3J	11	1.1 1.1
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(103) 100	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1300                    Date Analyzed: 02/22/08 20:26
Lab Samp ID : B175-06                       Dilution Factor: 1
Lab File ID : RB22023A                     Matrix          : SOIL
Ext Btch ID : PAB006S                      % Moisture     : 8.6
Calib. Ref. : RB22015A                     Instrument ID   : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	8.1J (ND)	22	2.2 2.2
PHENANTHRENE	(91) 92	11	1.1 1.1
ANTHRACENE	5.3J (ND)	11	1.1 1.1
FLUORANTHENE	(470) 270	22	2.2 2.2
PYRENE	(330E) 210	11	1.1 1.1
BENZO (A) ANTHRACENE	(82) 64	11	1.1 1.1
CHRYSENE	(150) 150	11	1.1 1.1
BENZO (B) FLUORANTHENE	(170) 150	22	2.2 2.2
BENZO (K) FLUORANTHENE	(78) 72	11	1.1 1.1
BENZO (A) PYRENE	(130) 140	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	(98) 29	22	4.4 4.4
BENZO (G, H, I) PERYLENE	(170) 130	22	2.2 2.2
INDENO (1, 2, 3-CD) PYRENE	(160) 170	11	1.1 1.1
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(108) 139	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
ent      : TETRA TECH EC, INC.           Date Collected: 02/14/08
ject     : SWMU 127 CANNON AFB          Date Received: 02/15/08
ch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID: 127SB1300M                   Date Analyzed: 02/22/08 15:46
Lab Samp ID: B175-07                     Dilution Factor: 1
Lab File ID: RB22011A                    Matrix          : SOIL
Ext Btch ID: PAB006S                     % Moisture     : 6.3
Calib. Ref.: RB22003A                    Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	210	21 21
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	21	2.1 2.1
PHENANTHRENE	(120) 110	11	1.1 1.1
ANTHRACENE	6.8J (ND)	11	1.1 1.1
FLUORANTHENE	(510) 300	21	2.1 2.1
PYRENE	(350E) 260	11	1.1 1.1
BENZO (A) ANTHRACENE	(110) 78	11	1.1 1.1
CHRYSENE	(180) 180	11	1.1 1.1
BENZO (B) FLUORANTHENE	(170) 140	21	2.1 2.1
BENZO (K) FLUORANTHENE	(65) 76	11	1.1 1.1
BENZO (A) PYRENE	(140) 140	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	(94) 31	21	4.3 4.3
BENZO (G, H, I) PERYLENE	(170) 140	21	2.1 2.1
INDENO (1, 2, 3-CD) PYRENE	(160) 170	11	1.1 1.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(168*) 158*	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1300D                  Date Analyzed: 02/22/08 20:49
Lab Samp ID: B175-08                      Dilution Factor: 1
Lab File ID: RB22024A                    Matrix          : SOIL
Ext Btch ID: PAB006S                     % Moisture     : 10.5
Calib. Ref.: RB22015A                    Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	22	2.2 2.2
PHENANTHRENE	(120) 130	11	1.1 1.1
ANTHRACENE	10J (ND)	11	1.1 1.1
FLUORANTHENE	(650E) 370	22	2.2 2.2
PYRENE	(450E) 290	11	1.1 1.1
BENZO(A)ANTHRACENE	(120) 99	11	1.1 1.1
CHRYSENE	(210) 220	11	1.1 1.1
BENZO(B)FLUORANTHENE	(230) 180	22	2.2 2.2
BENZO(K)FLUORANTHENE	(88) 100	11	1.1 1.1
BENZO(A)PYRENE	(190) 190	11	1.1 1.1
DIBENZO(A,H)ANTHRACENE	(140) 36	22	4.5 4.5
BENZO(G,H,I)PERYLENE	(230) 160	22	2.2 2.2
INDENO(1,2,3-CD)PYRENE	(220) 210	11	1.1 1.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(126) 174*	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client   : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project  : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.: 08B175                       Date Extracted: 02/21/08 15:15
Sample ID: 127SB1400                    Date Analyzed: 02/22/08 17:43
Lab File ID: RB22016A                   Dilution Factor: 1
Ext Btch ID: PAB006S                    Matrix       : SOIL
Calib. Ref.: RB22015A                   % Moisture   : 8.7
Instrument ID : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	22	2.2 2.2
PHENANTHRENE	(9.2J) 7.4J	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	(30) 22	22	2.2 2.2
PYRENE	(25) 16	11	1.1 1.1
BENZO (A) ANTHRACENE	(5.8J) 6.2J	11	1.1 1.1
CHRYSENE	(10J) 12	11	1.1 1.1
BENZO (B) FLUORANTHENE	(11J) 6.6J	22	2.2 2.2
BENZO (K) FLUORANTHENE	(4.5J) 6.1J	11	1.1 1.1
BENZO (A) PYRENE	(9.1J) 10J	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	6.4J (ND)	22	4.4 4.4
BENZO (G, H, I) PERYLENE	8.2J (ND)	22	2.2 2.2
INDENO (1, 2, 3-CD) PYRENE	(11) 9.0J	11	1.1 1.1
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(103) 101	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1500                    Date Analyzed: 02/22/08 18:29
Lab Samp ID : B175-10                      Dilution Factor: 1
Lab File ID : RB22018A                     Matrix          : SOIL
Ext Btch ID : PAB006S                      % Moisture     : 13.1
Calib. Ref. : RB22015A                     Instrument ID   : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	120	12 12
ACENAPHTHYLENE	(27J) NA	230	23 23
ACENAPHTHENE	(ND) ND	120	12 12
FLUORENE	(ND) ND	23	2.3 2.3
PHENANTHRENE	(40) 37	12	1.2 1.2
ANTHRACENE	(ND) ND	12	1.2 1.2
FLUORANTHENE	(160) 100	23	2.3 2.3
PYRENE	(120) 78	12	1.2 1.2
BENZO(A) ANTHRACENE	(29) 21	12	1.2 1.2
CHRYSENE	(54) 55	12	1.2 1.2
BENZO(B) FLUORANTHENE	(56) 43	23	2.3 2.3
BENZO(K) FLUORANTHENE	(31) 25	12	1.2 1.2
BENZO(A) PYRENE	(44) 47	12	1.2 1.2
DIBENZO(A,H) ANTHRACENE	(31) 12J	23	4.6 4.6
BENZO(G,H,I) PERYLENE	(59) 42	23	2.3 2.3
INDENO(1,2,3-CD) PYRENE	(52) 47	12	1.2 1.2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(102) 105	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Sample No.  : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID: 127SB1600                       Date Analyzed: 02/22/08 18:53
Sub File ID: B175-11                       Dilution Factor: 1
Sub File ID: RB22019A                      Matrix          : SOIL
Ext Btch ID: PAB006S                       % Moisture     : 6.3
Calib. Ref.: RB22015A                      Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(47J) NA	210	21 21
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	21	2.1 2.1
PHENANTHRENE	(62) 48	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	(200) 140	21	2.1 2.1
PYRENE	(170) 110	11	1.1 1.1
BENZO (A) ANTHRACENE	(40) 32	11	1.1 1.1
CHRYSENE	(77) 77	11	1.1 1.1
BENZO (B) FLUORANTHENE	(81) 64	21	2.1 2.1
BENZO (K) FLUORANTHENE	(31) 36	11	1.1 1.1
BENZO (A) PYRENE	(67) 69	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	(47) 16J	21	4.3 4.3
BENZO (G, H, I) PERYLENE	(81) 55	21	2.1 2.1
INDENO (1, 2, 3-CD) PYRENE	(79) 86	11	1.1 1.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(113) 121	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1700                    Date Analyzed: 02/22/08 19:16
Lab Samp ID: B175-12                       Dilution Factor: 1
Lab File ID: RB22020A                      Matrix          : SOIL
Ext Btch ID: PAB006S                       % Moisture     : 6.1
Calib. Ref.: RB22015A                      Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	210	21 21
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	21	2.1 2.1
PHENANTHRENE	(39) 35	11	1.1 1.1
ANTHRACENE	1.4J (ND)	11	1.1 1.1
FLUORANTHENE	(170) 110	21	2.1 2.1
PYRENE	(120) 82	11	1.1 1.1
BENZO(A)ANTHRACENE	(28) 9.7J	11	1.1 1.1
CHRYSENE	(53) 53	11	1.1 1.1
BENZO(B)FLUORANTHENE	(63) 84	21	2.1 2.1
BENZO(K)FLUORANTHENE	(39) 30	11	1.1 1.1
BENZO(A)PYRENE	(51) 54	11	1.1 1.1
DIBENZO(A,H)ANTHRACENE	(36) 9.8J	21	4.3 4.3
BENZO(G,H,I)PERYLENE	(66) 45	21	2.1 2.1
INDENO(1,2,3-CD)PYRENE	(60) 63	11	1.1 1.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(101) 107	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client       : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project      : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.    : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID    : 127SB1800                    Date Analyzed: 02/22/08 21:59
Samp ID     : B175-13                       Dilution Factor: 1
Lab File ID  : RB22027A                     Matrix          : SOIL
Ext Btch ID  : PAB006S                       % Moisture     : 7.1
Calib. Ref. : RB22026A                       Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(78J) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	7.5J (ND)	22	2.2 2.2
PHENANTHRENE	93 (ND)	11	1.1 1.1
ANTHRACENE	(3.6J) 13	11	1.1 1.1
FLUORANTHENE	350 (ND)	22	2.2 2.2
PYRENE	(260) 160	11	1.1 1.1
BENZO (A) ANTHRACENE	(61) 53	11	1.1 1.1
CHRYSENE	(110) 120	11	1.1 1.1
BENZO (B) FLUORANTHENE	(140) 120	22	2.2 2.2
BENZO (K) FLUORANTHENE	(47) 57	11	1.1 1.1
BENZO (A) PYRENE	(110) 110	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	(110) 28	22	4.3 4.3
BENZO (G, H, I) PERYLENE	(160) 120	22	2.2 2.2
INDENO (1, 2, 3-CD) PYRENE	(160) 150	11	1.1 1.1

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(115) 131	50-140

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1810                    Date Analyzed: 02/22/08 18:06
Lab Samp ID: B175-14                       Dilution Factor: 1
Lab File ID: RB22017A                      Matrix          : SOIL
Ext Btch ID: PAB006S                       % Moisture     : 7.8
Calib. Ref.: RB22015A                      Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	220	22 22
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	22	2.2 2.2
PHENANTHRENE	1.5J (ND)	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	5.9J (ND)	22	2.2 2.2
PYRENE	(ND) ND	11	1.1 1.1
BENZO(A)ANTHRACENE	(ND) ND	11	1.1 1.1
CHRYSENE	(3.0J) 3.3J	11	1.1 1.1
BENZO(B)FLUORANTHENE	5.8J (ND)	22	2.2 2.2
BENZO(K)FLUORANTHENE	(2.0J) 2.1J	11	1.1 1.1
BENZO(A)PYRENE	(2.6J) 3.5J	11	1.1 1.1
DIBENZO(A,H)ANTHRACENE	(ND) ND	22	4.3 4.3
BENZO(G,H,I)PERYLENE	7.0J (ND)	22	2.2 2.2
INDENO(1,2,3-CD)PYRENE	(7.0J) 8.6J	11	1.1 1.1

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(110) 106	50-140

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.  : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID  : 127SB1700D                   Date Analyzed: 02/22/08 19:39
Samp ID   : B175-17                       Dilution Factor: 1
Lab File ID: RB22021A                     Matrix          : SOIL
Ext Btch ID: PAB006S                      % Moisture     : 5.9
Calib. Ref.: RB22015A                     Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	110	11 11
ACENAPHTHYLENE	(ND) NA	210	21 21
ACENAPHTHENE	(ND) ND	110	11 11
FLUORENE	(ND) ND	21	2.1 2.1
PHENANTHRENE	(24) 22	11	1.1 1.1
ANTHRACENE	(ND) ND	11	1.1 1.1
FLUORANTHENE	(100) 64	21	2.1 2.1
PYRENE	(76) 49	11	1.1 1.1
BENZO (A) ANTHRACENE	(17) 13	11	1.1 1.1
CHRYSENE	(32) 35	11	1.1 1.1
BENZO (B) FLUORANTHENE	(36) 22	21	2.1 2.1
BENZO (K) FLUORANTHENE	(14) 16	11	1.1 1.1
BENZO (A) PYRENE	(30) 31	11	1.1 1.1
DIBENZO (A, H) ANTHRACENE	(22) 7.3J	21	4.3 4.3
BENZO (G, H, I) PERYLENE	(39) 25	21	2.1 2.1
INDENO (1,2,3-CD) PYRENE	(37) 35	11	1.1 1.1
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(104) 99	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1300DL                  Date Analyzed: 02/25/08 12:25
Lab Samp ID : B175-06T                     Dilution Factor: 2
Lab File ID : RB25003A                     Matrix          : SOIL
Ext Btch ID : PAB006S                       % Moisture     : 8.6
Calib. Ref. : RB25002A                     Instrument ID   : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	220	22 22
ACENAPHTHYLENE	(ND) NA	440	44 44
ACENAPHTHENE	(ND) ND	220	22 22
FLUORENE	(ND) ND	44	4.4 4.4
PHENANTHRENE	(ND) ND	22	2.2 2.2
ANTHRACENE	5.8J (ND)	22	2.2 2.2
FLUORANTHENE	(460) 270	44	4.4 4.4
PYRENE	(330) 210	22	2.2 2.2
BENZO(A)ANTHRACENE	(96) 69	22	2.2 2.2
CHRYSENE	(170) 160	22	2.2 2.2
BENZO(B)FLUORANTHENE	(170) 140	44	4.4 4.4
BENZO(K)FLUORANTHENE	(62) 72	22	2.2 2.2
BENZO(A)PYRENE	(120) 130	22	2.2 2.2
DIBENZO(A,H)ANTHRACENE	(95) 28J	44	8.8 8.8
BENZO(G,H,I)PERYLENE	(160) 130	44	4.4 4.4
INDENO(1,2,3-CD)PYRENE	(160) 170	22	2.2 2.2
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(109) 139	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
 POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1300MDL                 Date Analyzed: 02/25/08 12:49
Lab Samp ID: B175-07T                       Dilution Factor: 2
Lab File ID: RB25004A                       Matrix         : SOIL
Ext Btch ID: PAB006S                         % Moisture    : 6.3
Calib. Ref.: RB25002A                       Instrument ID  : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	210	21 21
ACENAPHTHYLENE	(ND) NA	430	43 43
ACENAPHTHENE	(ND) ND	210	21 21
FLUORENE	(ND) ND	43	4.3 4.3
PHENANTHRENE	(110) 92	21	2.1 2.1
ANTHRACENE	5.6J (ND)	21	2.1 2.1
FLUORANTHENE	(500) 300	43	4.3 4.3
PYRENE	(350) 220	21	2.1 2.1
BENZO (A) ANTHRACENE	(92) 25	21	2.1 2.1
CHRYSENE	(160) 160	21	2.1 2.1
BENZO (B) FLUORANTHENE	(170) 180	43	4.3 4.3
BENZO (K) FLUORANTHENE	(66) 77	21	2.1 2.1
BENZO (A) PYRENE	(130) 140	21	2.1 2.1
DIBENZO (A, H) ANTHRACENE	(95) 29J	43	8.5 8.5
BENZO (G, H, I) PERYLENE	(160) 120	43	4.3 4.3
INDENO (1, 2, 3-CD) PYRENE	(160) 150	21	2.1 2.1
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(116) 149*	50-140	

Left of | is related to UV detector; Right of | related to FL detector
 Final result indicated by ()

METHOD 3550B/8310
POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.   : 08B175                       Date Extracted: 02/21/08 15:15
Sample ID   : 127SB1300DDL                 Date Analyzed: 02/25/08 13:12
Lab Samp ID : B175-08T                     Dilution Factor: 2
Lab File ID : RB25005A                     Matrix          : SOIL
Ext Btch ID : PAB006S                      % Moisture     : 10.5
Calib. Ref. : RB25002A                     Instrument ID  : T-034
=====

```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	220	22 22
ACENAPHTHYLENE	(ND) NA	450	45 45
ACENAPHTHENE	(ND) ND	220	22 22
FLUORENE	13J (ND)	45	4.5 4.5
PHENANTHRENE	(120) 110	22	2.2 2.2
ANTHRACENE	11J (ND)	22	2.2 2.2
FLUORANTHENE	(620) 370	45	4.5 4.5
PYRENE	(440) 280	22	2.2 2.2
BENZO(A) ANTHRACENE	(140) 90	22	2.2 2.2
CHRYSENE	(240) 210	22	2.2 2.2
BENZO(B) FLUORANTHENE	(230) 220	45	4.5 4.5
BENZO(K) FLUORANTHENE	(130) 100	22	2.2 2.2
BENZO(A) PYRENE	(180) 180	22	2.2 2.2
DIBENZO(A,H) ANTHRACENE	(130) 42J	45	8.9 8.9
BENZO(G,H,I) PERYLENE	(220) 160	45	4.5 4.5
INDENO(1,2,3-CD) PYRENE	(220) 230	22	2.2 2.2
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
P-TERPHENYL-D14	(125) 169*	50-140	

Left of | is related to UV detector; Right of | related to FL detector
Final result indicated by ()

METHOD 3550B/8310
 POLYNUCLEAR AROMATIC HYDROCARBONS

```

=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project    : SWMU 127 CANNON AFB           Date Received: 02/21/08
Batch No.  : 08B175                        Date Extracted: 02/21/08 15:15
Sample ID  : MBLK1S                        Date Analyzed: 02/22/08 13:26
Lab File ID: RB22005A                     Dilution Factor: 1
Ext Btch ID: PAB006S                      Matrix       : SOIL
Calib. Ref.: RB22003A                    % Moisture  : NA
Instrument ID : T-034
=====
  
```

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
NAPHTHALENE	(ND) ND	100	10 10
ACENAPHTHYLENE	(ND) NA	200	20 20
ACENAPHTHENE	(ND) ND	100	10 10
FLUORENE	(ND) ND	20	2.0 2.0
PHENANTHRENE	(ND) ND	10	1.0 1.0
ANTHRACENE	(ND) ND	10	1.0 1.0
FLUORANTHENE	(ND) ND	20	2.0 2.0
PYRENE	(ND) ND	10	1.0 1.0
BENZO (A) ANTHRACENE	(ND) ND	10	1.0 1.0
CHRYSENE	(ND) ND	10	1.0 1.0
BENZO (B) FLUORANTHENE	(ND) ND	20	2.0 2.0
BENZO (K) FLUORANTHENE	(ND) ND	10	1.0 1.0
BENZO (A) PYRENE	(ND) ND	10	1.0 1.0
DIBENZO (A, H) ANTHRACENE	(ND) ND	20	4.0 4.0
BENZO (G, H, I) PERYLENE	(ND) ND	20	2.0 2.0
INDENO (1, 2, 3-CD) PYRENE	(ND) ND	10	1.0 1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
P-TERPHENYL-D14	(109) 104	70-130

Left of | is related to UV detector; Right of | related to FL detector
 Final result indicated by ()

SW1010
IGNITABILITY

=====
 Client : TETRA TECH EC, INC.
 Project : SWMU 127 CANNON AFB
 Batch No. : 08B175
 Matrix : SOIL
 Instrument ID : 128
 =====

SAMPLE ID	EMAX SAMPLE ID	RESULTS (OC)	DLF MOIST	RL (OC)	MDL (OC)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
LCS1S	IGB003SL	29.0	1	NA	NA	02/22/0810:15	NA	IGB00304	NA	IGB003S	NA	NA
127WC01	B175-15	>60.0	1	NA	NA	02/22/0810:20	NA	IGB00305	NA	IGB003S	02/14/0813:10	02/15/08
127WC01DUP	B175-15D	>60.0	1	NA	NA	02/22/0810:25	NA	IGB00306	NA	IGB003S	02/14/0813:10	02/15/08
031WC01	B175-16	>60.0	1	NA	NA	02/22/0810:30	NA	IGB00307	NA	IGB003S	02/14/0813:00	02/15/08

RL : Reporting Limit

METHOD 1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
Batch No. : 08B175 Date Extracted: 02/22/08 11:59
Sample ID: 127WC01 Date Analyzed: 02/22/08 11:59
Samp ID: B175-15 Dilution Factor: 10
Lab File ID: RBB347 Matrix : WATER
Ext Btch ID: VO03B33 % Moisture : NA
Calib. Ref.: RBB008 Instrument ID : T-003
=====

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	50	10
2-BUTANONE	ND	100	50
CARBON TETRACHLORIDE	ND	50	10
CHLOROBENZENE	ND	50	10
CHLOROFORM	ND	50	10
1,4-DICHLOROBENZENE	ND	50	10
1,2-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	ND	50	10
TETRACHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	50	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	70-140
4-BROMOFLUOROBENZENE	98	70-130
TOLUENE-D8	93	70-140

TCLP Extraction Date: 02/20/08 14:00

METHOD 1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project    : SWMU 127 CANNON AFB          Date Received: 02/15/08
Batch No.  : 08B175                       Date Extracted: 02/22/08 12:36
Sample ID  : 031WC01                      Date Analyzed: 02/22/08 12:36
Lab Samp ID: B175-16                      Dilution Factor: 10
Lab File ID: RBB348                       Matrix       : WATER
Ext Btch ID: V003B33                      % Moisture  : NA
Calib. Ref.: RBB008                       Instrument ID: T-003
=====
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	50	10
2-BUTANONE	ND	100	50
CARBON TETRACHLORIDE	ND	50	10
CHLOROBENZENE	ND	50	10
CHLOROFORM	ND	50	10
1,4-DICHLOROBENZENE	ND	50	10
1,2-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	ND	50	10
TETRACHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	50	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-140
4-BROMOFLUOROBENZENE	96	70-130
TOLUENE-D8	93	70-140

TCLP Extraction Date: 02/20/08 14:00

METHOD 1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 127 CANNON AFB          Date Received: 02/22/08
Batch No.   : 08B175                       Date Extracted: 02/22/08 07:39
Sample ID:  MBLK1S                          Date Analyzed: 02/22/08 07:39
Sample ID:  TVB001SB                        Dilution Factor: 10
Lab File ID: RBB340                         Matrix          : WATER
Ext Btch ID: V003B33                        % Moisture     : NA
Calib. Ref.: RBB008                         Instrument ID  : T-003
=====
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	50	10
2-BUTANONE	ND	100	50
CARBON TETRACHLORIDE	ND	50	10
CHLOROBENZENE	ND	50	10
CHLOROFORM	ND	50	10
1,4-DICHLOROBENZENE	ND	50	10
1,2-DICHLOROETHANE	ND	50	10
1,1-DICHLOROETHENE	ND	50	10
TETRACHLOROETHENE	ND	50	10
TRICHLOROETHENE	ND	50	10
VINYL CHLORIDE	ND	50	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	110	70-140
4-BROMOFLUOROBENZENE	98	70-130
TOLUENE-D8	94	70-130

TCLP Extraction Date: 02/20/08 14:00

METHOD 1311/5030B/8260B
TCLP VOLATILE ORGANICS BY GC/MS

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 127 CANNON AFB Date Received: 02/22/08
Batch No. : 08B175 Date Extracted: 02/22/08 07:02
Sample ID: MBLK1W Date Analyzed: 02/22/08 07:02
Lab Samp ID: VO03B33B Dilution Factor: 1
Lab File ID: RBB339 Matrix : WATER
Ext Btch ID: VO03B33 % Moisture : NA
Calib. Ref.: RBB008 Instrument ID : T-003
=====

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
BENZENE	ND	5.0	1.0
2-BUTANONE	ND	10	5.0
CARBON TETRACHLORIDE	ND	5.0	1.0
CHLOROBENZENE	ND	5.0	1.0
CHLOROFORM	ND	5.0	1.0
1,4-DICHLOROENZENE	ND	5.0	1.0
1,2-DICHLOROETHANE	ND	5.0	1.0
1,1-DICHLOROETHENE	ND	5.0	1.0
TETRACHLOROETHENE	ND	5.0	1.0
TRICHLOROETHENE	ND	5.0	1.0
VINYL CHLORIDE	ND	5.0	1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	112	70-140
4-BROMOFLUOROBENZENE	97	70-130
TOLUENE-D8	93	70-130

METHUEN
TCLP MERCURY

7470A

Client : TETRA TECH EC, INC.
Project : SWMU 127 CANNON AFB
Batch No. : 08B175A

Matrix : LEACHATE
Instrument ID : T1047

SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DLF	MOIST	RL (ug/L)	MDL (ug/L)	Analysis DATE/TIME	Extraction DATE/TIME	LFID	CAL REF	PREP BATCH	Collection DATE/TIME	Received DATE/TIME
MBLKIW	HGC033WB	ND	1	NA	0.500	0.100	03/25/0813:21	03/24/0817:30	M47C017035	M47C017032	HGC033W	NA	03/24/08
LCS1W	HGC033WL	4.81	1	NA	0.500	0.100	03/25/0814:36	03/24/0817:30	M47C017070	M47C017068	HGC033W	NA	03/24/08
LCD1W	HGC033WC	4.87	1	NA	0.500	0.100	03/25/0814:38	03/24/0817:30	M47C017071	M47C017068	HGC033W	NA	03/24/08
MBLKLS	TXC007SB	ND	10	NA	5.00	1.00	03/25/0813:27	03/24/0817:30	M47C017038	M47C017032	HGC033W	NA	03/24/08
031WC01	B175-16	ND	10	NA	5.00	1.00	03/25/0813:31	03/24/0817:30	M47C017040	M47C017032	HGC033W	02/14/08	02/15/08
031WC01DL	B175-16J	ND	50	NA	25.0	5.00	03/25/0813:33	03/24/0817:30	M47C017041	M47C017032	HGC033W	02/14/08	02/15/08
031WC01MS	B175-16M	50.6	10	NA	5.00	1.00	03/25/0813:36	03/24/0817:30	M47C017042	M47C017032	HGC033W	02/14/08	02/15/08
031WC01MSD	B175-16S	51.8	10	NA	5.00	1.00	03/25/0813:38	03/24/0817:30	M47C017043	M47C017032	HGC033W	02/14/08	02/15/08
127WC01	B175-15	ND	10	NA	5.00	1.00	03/25/0813:44	03/24/0817:30	M47C017046	M47C017044	HGC033W	02/14/08	02/15/08

TCLP Extraction Date: 03/20/08 16:00

METHOD 1311/3010A/60108
TCLP METALS BY ICP

```
=====
Client   : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project  : SWMU 127 CANNON AFB          Date Received: 02/15/08
SDG NO.  : 08B175A                      Date Extracted: 03/24/08 11:00
Sample ID: 127WC01                      Date Analyzed: 03/25/08 19:16
Lab Samp ID: B175-15                   Dilution Factor: 5
Lab File ID: I07C004031                Matrix          : LEACHATE
Ext Btch ID: IPC045W                   % Moisture      : NA
Calib. Ref.: I07C004020                Instrument ID   : EMAXTI07
=====
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Barium	1.84	0.0500	0.0100
Cadmium	ND	0.0500	0.0100
Chromium	ND	0.0500	0.0250
Silver	ND	0.0500	0.0250

TCLP Extraction Date: 03/20/08 16:00

METHOD 1311/3010A/6010B
TCLP METALS BY ICP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
G NO. : 08B175A Date Extracted: 03/24/08 11:00
Sample ID: 031WC01 Date Analyzed: 03/25/08 19:04
Lab Samp ID: B175-16 Dilution Factor: 5
Lab File ID: I07C004028 Matrix : LEACHATE
Ext Btch ID: IPC045W % Moisture : NA
Calib. Ref.: I07C004020 Instrument ID : EMAXTI07
=====

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Barium	1.97	0.0500	0.0100
Cadmium	ND	0.0500	0.0100
Chromium	ND	0.0500	0.0250
Silver	0.0499J	0.0500	0.0250

TCLP Extraction Date: 03/20/08 16:00

METHOD 1311/3010A/6010B
TCLP METALS BY ICP

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 127 CANNON AFB Date Received: 03/24/08
SDG NO. : 08B175A Date Extracted: 03/24/08 11:00
Sample ID: MBLK1W Date Analyzed: 03/25/08 18:39
Lab Samp ID: IPC045WB Dilution Factor: 1
Lab File ID: I07C004022 Matrix : WATER
Ext Btch ID: IPC045W % Moisture : NA
Calib. Ref.: I07C004020 Instrument ID : EMAXTI07
=====

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Barium	ND	0.0100	0.00200
Cadmium	ND	0.0100	0.00200
Chromium	ND	0.0100	0.00500
Silver	ND	0.0100	0.00500

METHOD 1311/3010A/6010B
TCLP METALS BY ICP

=====
Client : TETRA TECH EC, INC. Date Collected: NA
Project : SWMU 127 CANNON AFB Date Received: 03/24/08
LOG NO. : 08B175A Date Extracted: 03/24/08 11:00
Sample ID: MBLK1S Date Analyzed: 03/25/08 19:12
Lab Samp ID: TXC007SB Dilution Factor: 5
Lab File ID: I07C004030 Matrix : WATER
Ext Btch ID: IPC045W % Moisture : NA
Calib. Ref.: I07C004020 Instrument ID : EMAXTI07
=====

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Barium	ND	0.0500	0.0100
Cadmium	ND	0.0500	0.0100
Chromium	ND	0.0500	0.0250
Silver	ND	0.0500	0.0250

TCLP Extraction Date: 03/20/08 16:00

METHOD 1311/3010A/6010B
TCLP METALS BY TRACE ICP

=====
Client : TETRA TECH EC, INC. Date Collected: 02/14/08
Project : SWMU 127 CANNON AFB Date Received: 02/15/08
SDG NO. : 08B175A Date Extracted: 03/24/08 11:00
Sample ID: 127WC01 Date Analyzed: 03/26/08 13:43
Lab Samp ID: B175-15 Dilution Factor: 5
Lab File ID: I31C005027 Matrix : LEACHATE
Ext Btch ID: IPC045W % Moisture : NA
Calib. Ref.: I31C005018 Instrument ID : EMAXTI31
=====

PARAMETERS	RESULTS	RL	MDL
-----	(mg/L)	(mg/L)	(mg/L)
-----	-----	-----	-----
Arsenic	ND	0.0500	0.0250
Lead	ND	0.0500	0.0150
Selenium	ND	0.0500	0.0250

TCLP Extraction Date: 03/20/08 16:00

METHOD 1311/3010A/6010B
TCLP METALS BY TRACE ICP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: 02/14/08
Project     : SWMU 127 CANNON AFB          Date Received: 02/15/08
LOG NO.    : 08B175A                       Date Extracted: 03/24/08 11:00
Sample ID   : 031WC01                       Date Analyzed: 03/26/08 13:33
Lab Samp ID: B175-16                       Dilution Factor: 5
Lab File ID: I31C005025                    Matrix          : LEACHATE
Ext Btch ID: IPC045W                       % Moisture     : NA
Calib. Ref.: I31C005018                    Instrument ID  : EMAXTI31
=====
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Arsenic	0.0293J	0.0500	0.0250
Lead	ND	0.0500	0.0150
Selenium	ND	0.0500	0.0250

TCLP Extraction Date: 03/20/08 16:00

METHOD 1311/3010A/6010B
TCLP METALS BY TRACE ICP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 127 CANNON AFB          Date Received: 03/24/08
SDG NO.    : 08B175A                       Date Extracted: 03/24/08 11:00
Sample ID: MBLK1W                          Date Analyzed: 03/26/08 12:24
Lab Samp ID: IPC045WB                     Dilution Factor: 1
Lab File ID: I31C005012                   Matrix          : WATER
Ext Btch ID: IPC045W                       % Moisture     : NA
Calib. Ref.: I31C005010                   Instrument ID  : EMAXTI31
=====
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Arsenic	ND	0.0100	0.00500
Lead	ND	0.0100	0.00300
Selenium	ND	0.0100	0.00500

METHOD 1311/3010A/6010B
TCLP METALS BY TRACE ICP

```
=====
Client      : TETRA TECH EC, INC.           Date Collected: NA
Project     : SWMU 127 CANNON AFB          Date Received: 03/24/08
LOG NO.     : 08B175A                     Date Extracted: 03/24/08 11:00
Sample ID:  MBLK1S                        Date Analyzed: 03/26/08 13:06
Lab File ID: I31C005020                  Dilution Factor: 5
Ext Btch ID: IPC045W                     Matrix          : WATER
Calib. Ref.: I31C005018                  % Moisture     : NA
Instrument ID : EMAXTI31
=====
```

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Arsenic	ND	0.0500	0.0250
Lead	ND	0.0500	0.0150
Selenium	ND	0.0500	0.0250

TCLP Extraction Date: 03/20/08 16:00

This page intentionally left blank.

Appendix C
Waste Manifests

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone (800) 762-0241	4. Waste Tracking Number CAFB-08-001
5. Generator's Name and Mailing Address Cannon AFB Attn: Gerald Peifrey Cannon AFB, NM (575) 764-6391		Generator's Site Address (if different than mailing address) Vehicle Wash Rack Cannon AFB, NM			
Generator's Phone:		6. Transporter 1 Company Name Rhino Environmental Services, Inc., PO Box 310, Canutillo, TX 79835 - (915) 886-4355		U.S. EPA ID Number NA	
7. Transporter 2 Company Name NA		U.S. EPA ID Number NA		U.S. EPA ID Number NA	
8. Designated Facility Name and Site Address Rhino's DP-10S1 1.7 miles N. of NM/TX state line Hwy 54, Otero County, NM (915) 886-4355		U.S. EPA ID Number NA		U.S. EPA ID Number NA	
Facility's Phone:		10. Containers		11. Total Quantity	12. Unit WL/Vol.
9. Waste Shipping Name and Description		No.	Type		
1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil		2	Drum	110	Gal
2.					
3.					
4.					
13. Special Handling Instructions and Additional Information Cell: P Non-Hazardous Diesel Waste Oil Impacted Soil					
14. 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.					
Generator's/Officer's Printed/Typed Name Gerald Peifrey				Signature <i>Gerald Peifrey</i>	Month Day Year 04 14 08
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name <i>Danny Honer</i>		Truck # 318	Signature <i>Danny Honer</i>	Month Day Year 9 14 08	Month Day Year
Transporter 2 Printed/Typed Name		Signature			
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
Manifest Reference Number: _____ U.S. EPA ID Number					
17b. Alternate Facility (or Generator) Facility's Phone: _____ U.S. EPA ID Number					
17c. Signature of Alternate Facility (or Generator) _____ Month Day Year					
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a					
Printed/Typed Name <i>Danny Honer</i>				Signature <i>Danny Honer</i>	Month Day Year 9 15 08

Appendix C
Analytical Methods, Reporting Limits,
and Quality Control Criteria

Denver Reference Data Summary

Structured Analysis Code: A-4C-KJ-A4-04
 Matrix: SOLID
 Extraction: PURGE AND TRAP - Field MEOH Ext. (Solids or Wastes)
 Method: Hydrocarbons, Volatile Petroleum (8015B)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver
 Target Analyte List: All Analytes

Syn	Compound	RL	Detection Limits		Run Date	Check List 4100			Spike List 4100									
			Units	MDL		Units	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD		
2861	Gasoline Range Organics	1.0	mg/kg	0.325	20080415	C	Y	5.0	57	146	50	C	Y	5.0	mg/kg	57	146	50
521	Chlorobenzene					X	Y	10	64	148	0	X	Y	10	ug/kg	64	148	0

CO-610

Denver Reference Data Summary

Structured Analysis Code: A-88-IQ-A4-04
 Matrix: SOLID
 Extraction: NO SAMPLE PREPARATION PERFORMED / DIRECT INJ
 Method: Ignitability (SW7.1.2)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver
 Target Analyte List: All Analytes

Syn Compound	Analyte List	RL	Detection Limits		Run Date	Check List 4209			Spike List 4210								
			Units	MDL		T	A	Amt	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL
1534	Ignitability	--	--		0	C	Y	0	0	0	20	C	Y	0	0	0	20

Denver Reference Data Summary

Structured Analysis Code: A-06-HP-A4-04
 Matrix: SOLID
 Extraction: DISTILLATION, MICRO/MIDI - Acid
 Method: Cyanide, Total (9010B-dist/9012A Automated)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver

Target Analyte List: All Analytes

Syn	Compound	RL	Detection Limits		Run Date	Check List 4585			Spike List 4585									
			Units	MDL		T	A	Y	T	A	Y	Units	LCL	UCL	RPD			
667	Total Cyanide	0.5	mg/kg	0.103	20081002	C	Y	10	C	Y	10	mg/kg	75	125	30	75	125	30

Denver Reference Data Summary

Structured Analysis Code: A-06-TV-A4-04
Matrix: SOLID
Extraction: DISTILLATION, MICRO/MIDI - Acid
Method: Sulfides, Total (9030B-dist/9034-titrat.)
QC Program: AFCEE 4.0
Location: TestAmerica Denver
Target Analyte List: All Analytes

Syn	Compound	RL	Detection Limits		Run Date	Check List 4211			Spike List 4211												
			Units	MDL		T	A	Amt	T	A	Amt	Units	LCL	UCL	RPD						
2366	Total Sulfide	5.0	mg/kg	2.4	20080822	C	Y	50	C	Y	50	C	Y	50	mg/kg	47	100	35	47	100	35

Denver Reference Data Summary

Structured Analysis Code: I-58-QK-A4-04

Target Analyte List: DEN: 8260 EPA TCLP list

Matrix: WATER

Extraction: TCLP(1311-ZHE/filter) -> PURGE-AND-TRAP (Low Level)

Method: Volatile Organics, GC/MS (8260B)

QC Program: AFCEE 4.0

Location: TestAmerica Denver

REPORT
REGISTRY LIST

Target List 7031

Syn	Compound	RL	Detection Limits	Run Date	T	A	Amt	Units	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD	Spike List 4353
196	Benzene	0.010	mg/L	20070119	C	Y	0.50	mg/L	78	118	20	C	Y	0.50	mg/L	78	118	20	
372	2-Butanone	0.050	mg/L	20070119	C	Y	0.50	mg/L	48	134	41	C	Y	0.50	mg/L	48	134	41	
463	Carbon tetrachloride	0.010	mg/L	20070119	C	Y	0.50	mg/L	69	137	20	C	Y	0.50	mg/L	69	137	20	
521	Chlorobenzene	0.010	mg/L	20070119	C	Y	0.50	mg/L	79	119	27	C	Y	0.50	mg/L	79	119	27	
569	Chloroform	0.010	mg/L	20070119	C	Y	0.50	mg/L	79	120	20	C	Y	0.50	mg/L	79	120	20	
936	1,2-Dichloroethane	0.010	mg/L	20070119	C	Y	0.50	mg/L	66	130	20	C	Y	0.50	mg/L	66	130	20	
943	1,1-Dichloroethene	0.010	mg/L	20070119	C	Y	0.50	mg/L	72	134	28	C	Y	0.50	mg/L	72	134	28	
2445	Tetrachloroethene	0.010	mg/L	20070119	C	Y	0.50	mg/L	80	123	21	C	Y	0.50	mg/L	80	123	21	
2525	Trichloroethene	0.010	mg/L	20070119	C	Y	0.50	mg/L	81	124	35	C	Y	0.50	mg/L	81	124	35	
2613	Vinyl chloride	0.010	mg/L	20070119	C	Y	0.50	mg/L	55	135	35	C	Y	0.50	mg/L	55	135	35	
337	4-Bromofluorobenzene				X	Y	0.50	mg/L	78	121	0	X	Y	0.50	mg/L	78	121	0	
2735	1,2-Dichloroethane-d4				X	Y	0.50	mg/L	64	129	0	X	Y	0.50	mg/L	64	129	0	
2740	Toluene-d8				X	Y	0.50	mg/L	78	120	0	X	Y	0.50	mg/L	78	120	0	
2863	Dibromofluoromethane				X	Y	0.50	mg/L	79	119	0	X	Y	0.50	mg/L	79	119	0	

Check List 4353

Spike List 4353

Denver Reference Data Summary

Structured Analysis Code: A-59-QL-A4-04 **REPORT** **REGISTRY**
 Matrix: SOLID
 Extraction: TCLP(1311)-> LIQ/LIQ, CONT - Acid->Base
 Base/Neutrals and Acids (8270C)
 Method: AFCEE 4.0
 QC Program: TestAmerica Denver
 Location: TestAmerica Denver
REPORT **REGISTRY**
LIST

Syn	Analyte List	RL	Detection Limits			Check List 4017			Spike List 4017												
			Units	MDL	Units	Run Date	T	A	Amt	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD		
1	Acenaphthene	0.1	mg/L	0.0085	mg/L	20060101															
202	Benzo(a)anthracene	0.1	mg/L	0.0085	mg/L	20060101															
205	Benzo(b)fluoranthene	0.1	mg/L	0.00195	mg/L	20060101															
211	Benzo(a)pyrene	0.1	mg/L	0.0065	mg/L	20060101															
302	bis(2-Ethylhexyl) phthalate	0.1	mg/L	0.007	mg/L	20060101															
403	Butyl benzyl phthalate	0.1	mg/L	0.025	mg/L	20060101															
633	Chrysene	0.1	mg/L	0.005	mg/L	20060119															
2669	Dibenzo(a,h)anthracene	0.1	mg/L	0.007	mg/L	20060101															
891	Di-n-butyl phthalate	0.1	mg/L	0.025	mg/L	20060101															
910	1,4-Dichlorobenzene	0.1	mg/L	0.007	mg/L	20070104	C	Y	0.250	mg/L	36	120	44	C	Y	0.250	mg/L	36	120	44	
1120	7,12-Dimethylbenz(a)anthracene	0.2	mg/L	0.00410	mg/L	20060116															
1145	2,4-Dimethylphenol	0.1	mg/L	0.00283	mg/L	20060101															
1191	2,4-Dinitrotoluene	0.1	mg/L	0.025	mg/L	20060101															
1162	Di-n-octyl phthalate	0.1	mg/L	0.025	mg/L	20060101															
1308	2-Ethoxyethanol	1.0	mg/L	0.0188	mg/L	20060119															
1414	Fluoranthene	0.1	mg/L	0.025	mg/L	20060101															
1417	Fluorene	0.1	mg/L	0.005	mg/L	20060101															
1482	Hexachlorobenzene	0.1	mg/L	0.0105	mg/L	20070104	C	Y	0.250	mg/L	51	120	30	C	Y	0.250	mg/L	51	120	30	
1489	Hexachlorobutadiene	0.1	mg/L	0.0065	mg/L	20070104	C	Y	0.250	mg/L	30	120	30	C	Y	0.250	mg/L	30	120	30	
1497	Hexachloroethane	0.1	mg/L	0.0023	mg/L	20070104	C	Y	0.250	mg/L	30	120	30	C	Y	0.250	mg/L	30	120	30	
1535	Indeno(1,2,3-cd)pyrene	0.1	mg/L	0.0075	mg/L	20060101															
1851	2-Methylphenol	0.1	mg/L	0.007	mg/L	20070104	C	Y	0.25	mg/L	43	120	30	C	Y	0.25	mg/L	43	120	30	
1855	3-Methylphenol	0.1	mg/L	0.025	mg/L	20060101															
1857	4-Methylphenol	0.1	mg/L	0.025	mg/L	20060101															
2777	3-Methylphenol & 4-Methylphenol	0.1	mg/L	0.025	mg/L	20070104	C	Y	0.50	mg/L	43	120	30	C	Y	0.50	mg/L	43	120	30	
1932	Naphthalene	0.1	mg/L	0.0075	mg/L	20060101															
1972	Nitrobenzene	0.1	mg/L	0.025	mg/L	20070104	C	Y	0.250	mg/L	42	120	30	C	Y	0.250	mg/L	42	120	30	
2118	Pentachlorophenol	0.25	mg/L	0.10	mg/L	20060101	C	Y	0.50	mg/L	50	120	30	C	Y	0.50	mg/L	50	120	30	
2155	Phenol	0.1	mg/L	0.007	mg/L	20060101															
2252	Pyrene	0.1	mg/L	0.00185	mg/L	20060101															
2256	Pyridine	0.1	mg/L	0.0085	mg/L	20070104	C	Y	0.250	mg/L	16	120	30	C	Y	0.250	mg/L	16	120	30	
2555	2,4,5-Trichlorophenol	0.1	mg/L	0.0085	mg/L	20070104	C	Y	0.250	mg/L	44	120	30	C	Y	0.250	mg/L	44	120	30	
2559	2,4,6-Trichlorophenol	0.1	mg/L	0.025	mg/L	20070104	C	Y	0.250	mg/L	35	120	30	C	Y	0.250	mg/L	35	120	30	
1425	2-Fluorobiphenyl	0.1	mg/L	0.025	mg/L	20070104	X	Y	0.50	mg/L	43	120	0	X	Y	0.50	mg/L	43	120	0	
1426	2-Fluorophenol	0.1	mg/L	0.007	mg/L	20070104	X	Y	0.75	mg/L	54	120	0	X	Y	0.75	mg/L	54	120	0	
2512	2,4,6-Tribromophenol	0.1	mg/L	0.025	mg/L	20070104	X	Y	0.75	mg/L	53	120	0	X	Y	0.75	mg/L	53	120	0	
2736	Nitrobenzene-d5	0.1	mg/L	0.025	mg/L	20070104	X	Y	0.50	mg/L	55	120	0	X	Y	0.50	mg/L	55	120	0	

Structured Analysis Code: A-59-QL-A4-04

Target Analyte List: All Analytes

Matrix: SOLID
 Extraction: TCLP(1311) -> LIQ/LIQ, CONT - Acid->Base
 Method: Base/Neutrals and Acids (8270C)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver

Syn	Compound	RL	Detection Limits		Run Date	Check List 4017				Spike List 4017									
			Units	MDL		T	A	Amt	Units	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD
2737	Phenol-d5					X	Y	0.75	mg/L	56	120	0	X	Y	0.75	mg/L	56	120	0
2738	Terphenyl-d14					X	Y	0.50	mg/L	54	122	0	X	Y	0.50	mg/L	54	122	0

Denver Reference Data Summary

Structured Analysis Code: A-36-QJ-A4-04 Matrix: SOLID
 Extraction: TCLP(1311)-> LIQ/LIQ, SEP FUNNEL - Nominal
 Method: Pesticides (8081A)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver

REPORT REBUTRY
 UST

Target Analyte List: All Analytes

Syn	Compound	RL	Detection Limits			Run Date	Check List 4580			Spike List 4580							
			Units	MDL	Units		T	A	Amt	Units	T	A	Amt	Units	LCL	UCL	RPD
232	gamma-BHC (Lindane)	0.00050	mg/L	0.000061	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	59	123	50
497	alpha-Chlordane	0.0005	mg/L	0.000065	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	63	121	50
499	gamma-Chlordane	0.0005	mg/L	0.00009	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	48	124	50
1270	Endrin	0.0005	mg/L	0.000071	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	61	133	50
1470	Heptachlor	0.00050	mg/L	0.00007	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	51	140	50
1479	Heptachlor epoxide	0.00050	mg/L	0.00007	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	66	130	50
1741	Methoxychlor	0.02	mg/L	0.00013	mg/L	20070117	C	Y	0.0167	mg/kg	C	Y	0.0167	mg/kg	57	143	50
2499	Toxaphene	0.02	mg/L	0.00367	mg/L	20070723	C	Y	0.07	mg/kg	C	Y	0.07	mg/kg	31	136	50
2732	Decachlorobiphenyl						X	Y	0.0133	mg/kg	X	Y	0.0133	mg/kg	56	132	0
2739	Tetrachloro-m-xylene						X	Y	0.0667	mg/kg	X	Y	0.0667	mg/kg	69	124	0

Denver Reference Data Summary

Structured Analysis Code: A-64-QS-A4-04
 Matrix: SOLID
 Extraction: TCLP(1311) -> LIQ/LIQ, SEP FUNNEL - Acid -> DERIVATIZ
 Method: Herbicides (8151A)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver
 Target Analyte List: All Analytes

Syn	Compound	RL	Detection Limits		Run Date	T	A	Check List 4607			Spike List 4607								
			Units	MDL				Units	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD	
690	2,4-D	0.04	mg/L	0.0018	20060602	C	Y	4.6	ug/L	13	89	30	C	Y	4.6	ug/L	13	89	30
2291	2,4,5-TP (Silvex)	0.01	mg/L	0.0025	20060602	C	Y	4.6	ug/L	10	158	30	C	Y	4.6	ug/L	10	158	30
3183	DCAA					X	Y	5.0	ug/L	10	131	0	X	Y	5.0	ug/L	10	131	0

Denver Reference Data Summary

Structured Analysis Code: A-34-QO-A4-04
 Matrix: SOLID
 Extraction: TCLP(1311) -> METALS, TOTAL
 Method: Inductively Coupled Plasma (6010B)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver
REPORT
REF A 7

Syn	Compound	RL	Detection Limits			Check List 4077			Spike List 4077									
			Units	MDL	Units	T	A	Am	Units	LCL	UCL	RPD						
88	Aluminum	10	mg/L	0.090	mg/L	C	Y	2.0	87	111	20	C	Y	2.0	mg/L	87	111	20
128	Antimony	0.10	mg/L	0.0155	mg/L	C	Y	0.50	86	113	20	C	Y	0.50	mg/L	86	113	20
140	Arsenic	0.50	mg/L	0.022	mg/L	C	Y	4.0	89	119	20	C	Y	4.0	mg/L	89	119	20
194	Barium	1	mg/L	0.0025	mg/L	C	Y	12	89	110	20	C	Y	12	mg/L	89	110	20
222	Beryllium	0.50	mg/L	0.002	mg/L	C	Y	0.05	89	114	20	C	Y	0.05	mg/L	89	114	20
411	Cadmium	0.10	mg/L	0.002	mg/L	C	Y	1.10	90	113	20	C	Y	1.10	mg/L	90	113	20
413	Calcium	20	mg/L	0.1725	mg/L	C	Y	50	90	111	20	C	Y	50	mg/L	90	111	20
2952	Chromium	0.5	mg/L	0.003	mg/L	C	Y	5.2	90	112	20	C	Y	5.2	mg/L	90	112	20
637	Cobalt	0.10	mg/L	0.006	mg/L	C	Y	0.5	89	111	20	C	Y	0.5	mg/L	89	111	20
643	Copper	2.0	mg/L	0.0065	mg/L	C	Y	0.25	86	112	20	C	Y	0.25	mg/L	86	112	20
1539	Iron	10	mg/L	0.110	mg/L	C	Y	1	89	116	20	C	Y	1	mg/L	89	116	20
1605	Lead	0.5	mg/L	0.013	mg/L	C	Y	5.5	90	115	20	C	Y	5.5	mg/L	90	115	20
1618	Magnesium	20	mg/L	0.0535	mg/L	C	Y	50	90	113	20	C	Y	50	mg/L	90	113	20
1659	Manganese	1.0	mg/L	0.001	mg/L	C	Y	0.50	90	110	20	C	Y	0.50	mg/L	90	110	20
1906	Molybdenum	0.20	mg/L	0.0155	mg/L	C	Y	1.0	90	110	20	C	Y	1.0	mg/L	90	110	20
1956	Nickel	4.0	mg/L	0.006	mg/L	C	Y	0.50	89	112	20	C	Y	0.50	mg/L	89	112	20
2214	Potassium	30	mg/L	1.185	mg/L	C	Y	50	89	114	20	C	Y	50	mg/L	89	114	20
2281	Selenium	0.10	mg/L	0.024	mg/L	C	Y	3.0	87	120	20	C	Y	3.0	mg/L	87	120	20
2285	Silver	0.5	mg/L	0.0045	mg/L	C	Y	1.05	88	120	20	C	Y	1.05	mg/L	88	120	20
2315	Sodium	50	mg/L	0.458	mg/L	C	Y	50	90	117	20	C	Y	50	mg/L	90	117	20
2477	Thallium	0.10	mg/L	0.0245	mg/L	C	Y	2.0	85	111	20	C	Y	2.0	mg/L	85	111	20
2607	Vanadium	1.0	mg/L	0.0055	mg/L	C	Y	0.50	90	113	20	C	Y	0.50	mg/L	90	113	20
2649	Zinc	2.0	mg/L	0.0225	mg/L	C	Y	2.50	85	110	20	C	Y	2.50	mg/L	85	110	20

Denver Reference Data Summary

Structured Analysis Code: I-0M-O8-A4-04

Target Analyte List: All Analytes

Matrix: WATER

Extraction: TCLP(1311) -> METALS, TOTAL (Method exclusive)

Method: Mercury (7470A, Cold Vapor) - Liquid

QC Program: AFCEE 4.0

Location: TestAmerica Denver

Syn	Compound	Analyte List	RL	Detection Limits		Run Date	Check List 4108			Spike List 4108										
				Units	MDL		T	A	Units	T	A	Units	LCL	UCL	RPD					
1701	Mercury		0.002	mg/L	0.00002	20081226	C	Y	0.005	mg/L	83	120	10	C	Y	0.005	mg/L	83	120	10

Denver Reference Data Summary

Structured Analysis Code: A-71-QH-A4-04
 Matrix: SOLID
 Extraction: SONICATION w/ACID STRIP (PCB)
 Method: PCBs (8082)
 QC Program: AFCEE 4.0
 Location: TestAmerica Denver
 Target Analyte List: All Analytes

Syn	Compound	RL	Detection Limits		Units	Run Date	Check List 4611			Spike List 4611											
			Units	MDL			T	A	Amt	LCL	UCL	RPD	T	A	Amt	Units	LCL	UCL	RPD		
2082	Aroclor 1016	50	ug/kg	5.09	ug/kg	20090109	C	Y	66.7	ug/kg	41	138	50	C	Y	66.7	ug/kg	41	138	50	
2085	Aroclor 1221	50	ug/kg	15.6	ug/kg	20090109															
2088	Aroclor 1232	50	ug/kg	5.12	ug/kg	20090109															
2091	Aroclor 1242	50	ug/kg	9.12	ug/kg	20090109															
2094	Aroclor 1248	50	ug/kg	5.61	ug/kg	20090109															
2097	Aroclor 1254	50	ug/kg	5.52	ug/kg	20090109															
2100	Aroclor 1260	50	ug/kg	2.65	ug/kg	20090109	C	Y	66.7	ug/kg	61	131	50	C	Y	66.7	ug/kg	61	131	50	
2103	Aroclor 1262																				
3496	Aroclor 1268	33	ug/kg	11.6	ug/kg	20090109															
3497	Aroclors (Total)	33	ug/kg	3.95	ug/kg	20090109															
2732	Decachlorobiphenyl	50	ug/kg	2.65	ug/kg	20090109	X	Y	6.67	ug/kg	58	125	0	X	Y	6.67	ug/kg	58	125	0	

Appendix D
Standard Operating Procedures

SOP D1 WET DECONTAMINATION METHODS

Wet decontamination methods will consist of high-pressure steam cleaning or of a Liquinox wash followed by a potable water rinse. The stainless-steel sampling equipment will be decontaminated with a Liquinox wash and potable water rinse between sample locations. All visible dirt, grease, oil, and foreign particles will be removed during decontamination.

The contractor will construct a temporary decontamination pad at a site location approved by Cannon Air Force Base (AFB) and the United States Army Corps of Engineers (USACE) Resident Engineer. The decontamination pad will be bermed and sloped to a sump for water and sludge collection. The decontamination pad will be lined with 40-mil plastic sheeting. Any holes in the plastic sheeting will be repaired to water-tight conditions before use. The plastic sheeting will be secured to prevent fluttering or blowing away by high winds.

All equipment and tools will be decontaminated both upon arrival, and prior to departure from each site. All decontaminated equipment will be stored in a clean condition.

Residuals from decontamination activities will be managed in accordance with this Work Plan.

SOP D2 SOIL SAMPLING

The following procedure will be used for excavation confirmation sampling:

1. Wear appropriate health and safety equipment as required in the Site-Specific Environmental Health and Safety Plan (Appendix F).
2. Use a stainless steel trowel to collect the soil as discussed in Sections 4.2.3 and 6.3 of this Work Plan.
3. Use a stainless-steel scoop to composite soil and place in sample containers. Personnel should not enter the excavation.
4. If staining is present, extend the trench by approximately 1 foot at each sampling point and take notes on the depth of contamination and layers present.
5. If staining is present, extend the trench along the proposed length of the test pit based upon field observations and consultation with Base personnel. If visibly contaminated soils fade out, collect the last sample from "clean" soil at the end of the excavation. The total of samples per test pit will be specified in project-specific addenda, but may be determined in the field based on site conditions.
6. Empty trowel contents into a stainless-steel pan.
7. Fill jars with soil using stainless-steel spatulas or spoons. All soil samples for chemical analyses, except volatile organic compounds (VOCs), must be homogenized by vigorous mixing in stainless-steel pans with stainless-steel spoons prior to being put into containers. Collect VOC samples as discrete grab samples. These should be taken immediately from the hand auger and properly packaged. Homogenize the soil samples by first removing rocks, twigs, leaves, or other debris not considered part of the sample. Remove the soil/sediment from the sampling device and place it in a stainless-steel pan, thoroughly mixing it using a stainless-steel spoon. Scrape the sediment in the pan from the sides, corners, and bottom of the pan, roll it to the middle of the pan, and mix it. Once the initial mixing is complete, quarter the sample and move the quarters to the four corners of the pan. Mix each quarter of the sample individually, and then roll each to the center of the container and mix the entire sample again.
8. Place analytical samples in cooler and chill to 4 degrees Celsius (°C). Samples should be shipped within 24 hours.
9. Fill out field logbook, sample tag forms, custody seals, and Chain-of-Custody (C-O-C) forms. Example copies of these forms are included in the QAPP, Section 7 of this Work Plan.
10. A hand-sketch map of the excavation showing the stained soils and soil layers should be included in the field logbook. If contaminated soils and debris are located in the test pits (as proof of previous trenching), mark the area for future surveying purposes

SOP D3 SOIL STOCKPILE SAMPLING

Soil stockpile composite sampling will be performed using the following procedure:

1. Wear appropriate personal protective equipment (PPE) as specified in the Site-Specific Environmental Health and Safety Plan (Appendix F). In addition, don new sampling gloves at each location.
2. Collect one random sample from the stockpile using the backhoe bucket. The samples will be collected from the middle of the stockpile.
3. Use a decontaminated stainless-steel scoop/trowel to extract the soil sample from the interior of the backhoe bucket.
4. Record appropriate air monitoring results.
5. Obtain soil sample at six random locations using a decontaminated stainless-steel scoop/trowel and bowl. The number of random sample locations should be proportional to the size of the stockpile. For example, a large stockpile will require more than six random sample locations.
6. Empty the contents of the scoop/trowel into the decontaminated stainless-steel bowl for homogenization.
7. Homogenize the soil samples by first removing rocks, twigs, leaves and other debris (if they are not considered part of the sample). Thoroughly mix the soil in the bowl by scraping it from the sides, corners, and bottom of the pan and rolling it to the middle of the pan. Fill the sample jars with the homogenized soil using a stainless-steel spatula or spoon.
8. Place analytical samples in a cooler containing ice and chill to 4°C. Samples should be shipped within 24 hours to an appropriate laboratory.
9. Decontaminate scoop/trowel and bowl as specified in Standard Operating Procedure (SOP) D1.
10. Fill out field logbook, sample log sheet, custody seals, labels, and C-O-C forms.
11. Write out sample ID for each composite stockpile sample

SOP D4 SAMPLE HANDLING AND DOCUMENTATION

Sample handling and documentation procedures will be used to ensure the integrity of the sample from sample collection to receipt at the laboratory. Documentation of sample handling will be implemented to ensure the traceability and integrity of the sample.

Labeling

All sample containers will be labeled. Labels may be partially completed prior to sample collection. The date, time, and sampler's name should **NOT** be completed until the time of sample collection. Pre-printed, self-adhesive sample labels containing all appropriate sample information including sample identification, field sample number, sample type, and analyses requested will be used. Sample labels will be completed with waterproof ink. Sample labels should be completed and attached prior to sample collection for soil samples collected in jars and all decontamination samples collected in bottles.

At a minimum, each numbered label will contain the following information:

- Project/facility
- Sample type (e.g., grab, composite)
- Sampler's company affiliation
- Date and time of sample collection
- Analyses required
- Preservation used
- Sampler's initials
- Chemical Materials Quality Assurance Laboratory of the Waterways Experiment Station (CQAB) identified if sample is collected for the USACE laboratory (if required)
- Sample identification (see below)
- CQAB LIMS number (if required)

Sampling Containers

Certified, commercially clean sample containers will be obtained from the contract analytical laboratory. If appropriate, the bottles will be labeled by the laboratory to indicate the type of sample to be collected. Surface soil samples will typically be collected in wide-mouth sample jars or in stainless steel liners.

Sample Preservation

All samples will be stored on ice in an insulated cooler immediately following sample collection. Soil samples do not require additional preservation.

Sample Handling and Shipping

Sample containers will be placed in resealable plastic storage bags and wrapped in protective packing material (if appropriate). Ice (double bagged using plastic trash bags) will be placed on top of the samples in a cooler for shipment to the laboratory. The drain on the cooler will be taped shut. Samples collected in glass containers will be packed in foam liners and bubble packing or styrofoam peanuts to ensure that no breakage occurs during shipment. Samples will be shipped by overnight express carrier for delivery to the analytical laboratory and to the USACE laboratory (if used). The USACE laboratory will be notified prior to the arrival of the first shipment, after the final shipment, and prior to any Saturday delivery.

A completed C-O-C form for each cooler will be placed in a ziplock bag and taped to the inside of the cooler lid. Coolers will be wrapped with strapping tape at two locations to secure lids. Signed custody seals will be placed on the outside of each cooler. In addition, "Fragile" labels and "This Side Up" labels will be placed on the outside of each cooler containing glass bottles. Put "This Side Up" labels on all four sides and "Fragile" labels on at least two sides. Note that each cooler cannot exceed the weight limit set by the shipper.

Holding Times and Analyses

The holding time is specified as the maximum allowable time between sample collection and analysis and/or extraction, based on the analyte of interest, stability factors, and preservation methods. Allowable holding times are listed in Table 7-1 of the Quality Assurance Project Plan (QAPP). Samples should be sent daily by overnight courier service to the laboratory after collection.

Chemical constituents that will be analyzed have been identified in the Field Sampling Plan, Section 6.

Sample Documentation and Tracking

This section describes documentation required in the field logbook, Daily Quality Control Reports (DQCRs), and sample C-O-C requirements.

Field Logbook—Documentation of observations and data acquired in the field will provide information on the acquisition of samples and also provide a permanent record of field activities. The observations and data will be recorded with waterproof ink in a permanently bound weatherproof field book with consecutively numbered pages and, if applicable, on field sampling data sheets.

The information in the field logbook will include the following as a minimum. Additional information is included in the specific SOPs regarding the appropriate data sheets:

- Project name
- Location of sample
- Sampler's signature
- Date and time of sample collection
- Sample identification numbers
- Description of samples matrix, composite or grab sample
- Analysis to be performed

- Number and volume of samples
- Description of quality assurance/quality control (QA/QC) samples
- Sample methods or reference to the appropriate SOP
- Sample handling as appropriate for samples
- Field observations
- Personnel present

Changes or deletions in the field logbook should be lined out with a single strike mark, initialed, and dated by person making change, and remain legible. Sufficient information should be recorded to allow the sampling event to be reconstructed without relying on the collector's memory.

Each page of the field logbook will be signed by the person making the entry. Anyone making entries in another person's field book will sign and date those entries.

DQCR—To supplement the information recorded in the field logbook, DQCRs will also be maintained to document daily field activities and will note any nonconformances and corrective actions taken at every sampling location. DQCRs will be maintained by each field sampling team and cross-checked for completeness at the end of each day by a sampling team member. They will be signed and dated by the individual making entries and initialed by the reviewer upon completion. Copies of the DQCR will be forwarded to the USACE Resident Engineer and to the Base environmental office by noon of the following day. Copies of the DQCR will be forwarded to the Foster Wheeler QA Manager for review on a weekly basis.

Sample Chain-of-Custody—During field sampling activities, traceability of the sample must be maintained from the time the samples are collected until laboratory data are issued. Information on the custody, transfer, handling, and shipping of samples will be recorded on a C-O-C form. C-O-Cs will include site identification, field sample number, sample type, and analysis requested.

The sample handler will be responsible for completing the C-O-C form. The C-O-C will be signed by the sampler when the sampler relinquishes the samples to anyone else. It is not necessary for Federal Express to sign C-O-Cs; however, the airbill will be retained by the sample handler for tracking purposes. A C-O-C form will be completed for each set of samples collected daily, and will contain the following information:

- Sampler's signature and affiliation
- Project number
- Date and time of collection
- Sample identification number
- Sample type/matrix
- Grab or composite sample
- Preservative used
- Analyses requested
- Number of containers
- Signature of persons relinquishing custody, dates, and times
- Signature of persons accepting custody, dates, and times (laboratory)
- Method of shipment (e.g., Federal Express)

The person responsible for delivery of the samples to the air carrier will sign the C-O-C form, retain the last copy of the three-part C-O-C form, document the method shipment, and send the original and the second copy of the C-O-C form with the sample (taped in a ziplock bag to inner cooler lid). Upon receipt at the laboratory, the person receiving the samples will sign the C-O-C form and return the second copy to the Task Order Manager. Copies of the C-O-C forms and all custody documentation will be received and kept in the central files. The original C-O-C forms will remain with the samples until final disposition of the samples by the laboratory. The analytical laboratory will dispose of the samples in an appropriate manner 60 to 90 days after data reporting. After sample disposal, a copy of the original C-O-C will be sent to the Task Order Manager by the analytical laboratory to be incorporated into the central files.

This page intentionally left blank.

Appendix E
Contractor Quality Control Plan

TABLE OF CONTENTS

1. CONTRACTOR QUALITY CONTROL PLAN	E-1
1.1 Purpose	E-1
1.2 Scope	E-1
2. ORGANIZATION AND RESPONSIBILITIES.....	E-2
2.1 Quality Control Organization.....	E-2
2.2 Task Order Manager	E-2
2.3 Contractor Quality Control Systems Manager/Site Health and Safety Officer	E-2
2.4 Site Construction Manager.....	E-3
2.5 Subcontractors and Vendors	E-4
3. CONSTRUCTION INSPECTION PLAN.....	E-5
3.1 Preparatory Phase Inspections	E-5
3.2 Initial Phase Inspection	E-6
3.3 Additional Preparatory, Initial, and Followup Phases.....	E-6
3.4 Completion Inspection.....	E-7
3.4.1 Contractor's Quality Control Completion Inspection.....	E-7
3.4.2 Prefinal Inspection.....	E-7
3.4.3 Final Acceptance Inspection	E-7
3.4.4 Management Inspections	E-13
3.4.5 Inspection Documentation.....	E-13
4. PROJECT DOCUMENTS.....	E-14
4.1 Daily Quality Control Report	E-14
4.2 Meeting Notes and Confirmation Notices	E-15
4.3 Record Drawings	E-16
4.4 Final Submittals.....	E-16
4.5 Supporting Data and Calculations.....	E-16
4.6 Corrective Measure Report.....	E-16
5. NONCONFORMANCES.....	E-17
5.1 Nonconformance Report	E-17
5.2 IDENTIFICATION OF NONCONFORMING ITEMS.....	E-17
5.3 Control and Segregation	E-17
5.4 Disposition	E-17
5.5 Corrective Actions.....	E-17

LIST OF FIGURES

Figure 3-1. Inspection Checklist.....	E-8
Figure 3-2. Daily Quality Control Report	E-10
Figure 5-1. Nonconformance Report	E-18
Figure 5-2. Field Change Request	E-20

1. CONTRACTOR QUALITY CONTROL PLAN

This Contractor Quality Control (CQC) Plan establishes the procedures and methods North Wind, Inc. (North Wind) will implement during remediation of contaminated soil at Solid Waste Management Unit (SWMU) 31 on Cannon Air Force Base (AFB), New Mexico. This CQC Plan combines the quality assurance/quality control (QA/QC) requirements from the United States Army Corps of Engineers (USACE)-Omaha District with the procedural requirements that have been implemented on previous projects to form a set of common requirements commensurate with the scope and nature of services planned for the Accelerated Corrective Action at SWMU 31.

1.1 Purpose

The purpose of this CQC Plan is to establish the procedures and methods to be implemented during construction operations to complete a voluntary corrective action at the site with the USACE-Omaha District. This CQC Plan provides an effective QC system to ensure the quality of all work performed by describing the specific organization, personnel, procedures, controls, instructions, tests, records, submittals, and forms to be used to ensure that all work products comply with the contract requirements.

1.2 Scope

The CQC Plan is applicable to all on-site construction operations, including inspections and testing activities performed for this project. All work activities will be conducted in accordance with this Work Plan and its respective attachments. This CQC Plan will be implemented for the following activities:

- Required project meetings/teleconferences
- Mobilization
- Excavation/Removal of contaminated soil
- Verification/closure sampling and analysis
- Characterization sampling and analysis of excavated soil
- Backfilling
- Site Restoration
- Inspection and testing
- Demobilization
- Waste Disposal

2. ORGANIZATION AND RESPONSIBILITIES

2.1 Quality Control Organization

This section describes the responsibilities for project personnel performing QC of the on-site construction operations. Project organization chart is provided in Section 3 of the Accelerated Corrective Action Work Plan.

2.2 Task Order Manager

The Task Order (TO) Manager is Mr. Tom Matzen. The TO Manager oversees the coordination of the entire project and is responsible for the direction, execution, and successful completion of project tasks. Mr. Matzen is responsible for performing the following activities related to the specific task order:

- Prepare and approve all proposed task-specific work orders.
- Coordinate work activities of subcontractors and North Wind personnel and ensure that all personnel adhere to the administrative and technical requirements of the project.
- Monitor and report the progress of work and ensure that project deliverables are completed on time and within budget.
- Ensure performance of project management activities including procurement/purchase order preparation, monthly exposure reporting, invoicing, scheduling, and other contract requirements.
- Ensure adherence to the quality requirements of the contract, specifications of the TO, and the CQC Plan.
- Direct the Site Construction Manager to undertake and accomplish the required construction.
- Ensure that all task activities are conducted in a safe manner in accordance with the Site-Specific Environmental Safety and Health Plan (SSHP) in Appendix F of this Work Plan.
- Communicate as the primary contact between USACE-Construction Representative (CR) and North Wind for actions and information related to the TO.
- Communicate and interface with the CQC Systems Manager/Site Health and Safety Officer (SHSO).

2.3 Contractor Quality Control Systems Manager/Site Health and Safety Officer

The CQC Systems Manager/SHSO, Mr. Robert Sotler, is responsible for overall management of contractor quality control and health and safety. The CQC Systems Manager/SHSO will be on site at all times during construction. In the event of his absence, a qualified individual will be appointed

to serve as his replacement for periods of time not to exceed 2 weeks at any one time and not to exceed more than 30 work days during a calendar year. The requirements for the alternate will be the same for the designated CQC Systems Manager/SHSO.

The duties of the CQC Systems Manager/SHSO as they apply to this project include the following:

- Provide and maintain an effective QC system for all construction activities.
- Monitor QC activities to ensure conformance with authorized policies, procedures, contract specifications, and sound practices.
- Maintain sufficient staff to perform all QC activities appropriate to all work phases, work shifts, and work crews.
- Inspect the work performed each day for compliance with the plans and specifications and prepare the Daily Quality Control Report (DQCR).
- Ensure that required phases of inspection (preparatory, initial, and follow-up) are implemented for all definable phases of construction.
- Schedule and manage all submittals, as identified in the Submittal Register, including those of subcontractors providing monthly updates.
- Ensure that all required tests and inspections are performed and the results reported.
- Attend required meetings, including submittal review meetings and field review meetings.
- Review all submittals in detail and verify that they are correct and in strict compliance with contract drawings and specifications.
- Stop work that is not in compliance with the contract.
- Perform the duties of the SHSO as stated in the Basewide Health and Safety Plan.

2.4 Site Construction Manager

Mr. Robert Sotler will serve as the Site Construction Manager. The primary responsibility of the Site Construction Manager is the timely completion of all field activities as directed by the TO Manager. The duties of the Site Construction Manager as they apply to the project include the following:

- Establish a field base for operations and mobilize subcontractors and North Wind personnel.
- Procure equipment for work crews and health and safety personnel.
- Coordinate all personnel involved in task activities, including obtaining support services.
- Direct field leaders, support personnel, and subcontractors.

- Administer site access.
- Maintain work site, vehicles, and equipment.
- Coordinate and maintain logistics of all components of on-site tasks, including all personnel and equipment.
- Prepare weekly status reports and estimate future scheduling needs.
- Coordinate, prepare, and complete all required field reports.
- Evaluate relevant documents and permits for validity and current status.
- Acquire necessary permits, licenses, and rights-of-way.

2.5 Subcontractors and Vendors

Subcontractors and vendors will be required to conform to the project CQC Plan and any other approved procedures, technical specifications, or contract provisions.

The subcontractor's QC inspectors are responsible for field inspection of their construction and operating activities. North Wind will monitor, oversee, and make on-site observations and inspections of work in progress to determine whether the subcontractor's work is in accordance with the CQC Plan.

Subcontractor personnel are responsible for maintaining a daily log of the project activities they perform and for providing information needed to complete the DQCR. All inspection records, including inspection and deficiency reports and re-inspections of corrective actions, will be documented.

3. CONSTRUCTION INSPECTION PLAN

Contractor QC is the means by which North Wind ensures that all construction complies with the requirements of the contract. The Construction Inspection Plan establishes the measures required to verify both the quality of work performed and compliance with specified requirements, including the inspection of materials and workmanship before, during, and after each definable feature of work. Contractor QC includes implementation of the following four control phases for all aspects of the work specified:

- Preparatory phase
- Initial phase
- Follow-up phase
- Completion phase

Inspection requirements specific to this project are discussed throughout this section.

3.1 Preparatory Phase Inspections

Preparatory phase inspections will be conducted by the CQC Systems Manager/SHSO prior to starting the definable features of work listed in the technical specifications. At a minimum, these inspections will include the following:

- A review of each paragraph of applicable specifications
- A review of the contract plans
- A check to ensure that all materials and/or equipment have been tested, submitted, and approved
- A check to ensure that provisions have been made for required control inspection and testing
- An examination of the work area to ensure that all required preliminary work has been completed and is in compliance with the contract
- A physical examination of required materials, equipment, and sample work to ensure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored
- A review of the appropriate Activity Hazard Analyses (AHA) to ensure that safety requirements are met
- A discussion of procedures for constructing the work, including repetitive deficiencies
- Documentation of construction tolerances and workmanship standards for that phase of work

- A check to ensure that the portion of the CQC Plan for the work to be performed has been accepted by the USACE or designee

The Base Project Manager and USACE Resident Engineer/CR will be notified at least 48 hours in advance of any preparatory phase activity. This phase will include a meeting conducted by the CQC Systems Manager/SHSO that will be attended by other responsible construction personnel as applicable (e.g., the project superintendent, the construction foreman).

The preparatory phase meetings will be documented by item on the Inspection Checklist, as shown on Figure 3-1. Preparatory inspections will be reported on the DQCR with the checklist included as an attachment. An example of the DQCR is included as Figure 3-2. Personnel performing work activities will be directed by the CQC Systems Manager/SHSO as to the acceptable level of workmanship involved for the particular feature of work covered by the inspection.

3.2 Initial Phase Inspection

An initial inspection will be performed at the beginning of a definable feature of work and will include the following:

- A check of preliminary work to ensure that it is in compliance with contract requirements
- A review of the Inspection Checklist documenting results of the preparatory meeting
- Verification of full contract compliance, including required control inspection and testing
- Establishment of the required level of workmanship and verification that it meets minimum acceptable standard
- Resolution of all differences
- A check of safety requirements to include compliance with and upgrading of the safety plan and activity hazard analysis
- A review of the activity analysis with project personnel

The Base Project Manager and the USACE Resident Engineer/CR will be notified at least 48 hours in advance of any initial phase activity. The CQC Systems Manager/SHSO will document each item on the Inspection Checklist (Figure 3-1) during the initial inspection. This documentation will be attached to the DQCR. The exact location of the initial phase inspection will be indicated for future reference and to allow for comparison with follow-up inspections.

An initial phase inspection will be conducted each time a new crew arrives on site or any time acceptable specified quality standards are not being met.

3.3 Additional Preparatory, Initial, and Followup Phases

Additional followup, preparatory, and initial inspections may be conducted by the CQC Systems Manager/SHSO on the same definable features of work under several circumstances. These include when the quality of ongoing work is unacceptable as determined by the Base Project Manager or the

USACE Resident Engineer/CR; when staff, on-site supervision, or work crew changes; when work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.4 Completion Inspection

Completion inspections will be performed as summarized in this section.

3.4.1 Contractor's Quality Control Completion Inspection

The CQC Systems Manager/SHSO or designated North Wind QC Inspection personnel will conduct a detailed inspection when all of the work or an increment of work is substantially complete. This inspection will be conducted prior to the prefinal inspection. The Base Project Manager and the USACE Resident Engineer/CR may also participate; and will be notified in advance of the inspection date. The work will be inspected for conformance to plans, specifications, quality, workmanship, and completeness. The CQC Systems Manager/SHSO will prepare an itemized list of work not properly completed, inferior workmanship, or work that does not conform to plans and specifications. The list will also include outstanding administrative items such as record (as-built) drawings, operations and maintenance manuals, and spare parts. The list will be included in the QC documentation and submitted to the Base Project Manager or designee and the USACE Resident Engineer/CR with an estimated date for correction of each deficiency scheduled within 5 working days after the conduct of the inspection. The completion inspection will be documented on the Inspection Checklist, shown in Figure 3-1, and attached to the DQCR.

3.4.2 Prefinal Inspection

The prefinal inspection will be conducted by the Base Project Manager; the USACE Resident Engineer/CR, North Wind QC inspection personnel, CQC Systems Manager/SHSO, or other primary management representative, as applicable, will attend. The Base Project Manager or designee in response to notification from the CQC Systems Manager/SHSO prior to the planned inspection date will schedule the prefinal inspection. The CQC Systems Manager/SHSO is required to verify at this time that all specific items previously identified to North Wind as being unacceptable, along with all remaining project work, will be complete and acceptable by the date scheduled for the prefinal inspection. At this inspection, the Base Project Manager or designee will develop a specific list of incomplete and/or unacceptable work performed under the contract and will provide this list to North Wind.

3.4.3 Final Acceptance Inspection

The final acceptance inspection will be formally scheduled by the Base Project Manager based upon notification from the CQC Systems Manager/SHSO of readiness and will include the QC inspection personnel, CQC Systems Manager/SHSO and other primary management personnel as needed, the Base Project Manager, and the USACE Resident Engineer/CR. This notification will be provided prior to the planned final acceptance inspection date and must include verification that all specific items previously identified as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection.

Figure 3-1. Inspection Checklist (Example)

ITEM:				DATE:
Contract Specifications:				
MATERIAL	QTY	CONDITION	TESTING	COMMENTS
STORAGE CONDITIONS:				
SUBMITTALS:				

Figure 3-1. Inspection Checklist (Example) (Concluded)

MATERIAL/EQUIPMENT CERTIFICATIONS:																			
PREPARATORY SITE CONDITIONS:																			
CONTRACT VARIANCE:																			
COMMENTS:																			
ATTENDEES:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="height: 20px;"></td> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td style="height: 20px;"></td> <td>QC REPRESENTATIVE</td> <td>DATE</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td>CQC SYSTEMS MANAGER</td> <td>DATE</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> </tr> </table>					QC REPRESENTATIVE	DATE					CQC SYSTEMS MANAGER	DATE						
	QC REPRESENTATIVE	DATE																	
	CQC SYSTEMS MANAGER	DATE																	

Figure 3-2. Daily Quality Control Report (Example) (Continued)

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number).

4. Control Activities Performed:

- Preparatory Inspections: Identify features of work and attach minutes.
- Initial Inspections: Identify features of work and attach minutes.
- Follow-up Inspections: List inspections performed, results of inspections compared to specification requirements, and corrective actions taken when deficiencies are noted.

5. Tests Performed and Test Results: Identify test requirement by paragraph number in specifications and/or sheet number in plans.

6. Material Received: Note inspection results and storage provided.

Figure 3-2. Daily Quality Control Report (Example) (Concluded)

7. Submittals Reviewed:

(a) Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

8. Off-Site Surveillance Activities, Including Action Taken:

9. Job Safety: List items checked, results, instructions, and corrective actions taken.

10. Remarks: Instructions received or given. Conflict(s) in plans and/or specifications. Delays encountered.

Contractor's Verification: On behalf of the Contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

 CQC SYSTEMS MANAGER

 DATE

3.4.4 Management Inspections

In addition to the required QC field inspections, one internal management inspection will be performed to ensure adherence for the following:

- Possession and use of approved procedures, standards, and technical specifications
- Conformance with appropriate procedures, standards, and instructions
- Thoroughness of performance
- Identification and completeness of documentation generated during performance

3.4.5 Inspection Documentation

The CQC Systems Manager/SHSO is responsible for the maintenance of the inspection records. Inspection records will be legible and will provide all necessary information clearly to verify that the items or activities inspected conform to the specified requirements or, in the case of nonconforming conditions, provide evidence that the conditions were brought into conformance or otherwise accepted by North Wind.

All inspection records will be made available to Cannon AFB and USACE through the TO Manager.

4. PROJECT DOCUMENTS

Preparation, review, approval, and issuance of documents affecting quality will be controlled to the extent necessary to determine that the documents meet specified requirements. Project documents to be controlled include the following:

- Submittal Register (if required for this project)
- Inspection documentation
- DQCR
- Test results
- Nonconformance reports
- Project plans

Discussions of the required DQCR and records to be provided to document conferences are included in this section. The DQCR and required inspection documents are described in this CQC Plan in Section 3, Construction Inspection Plan. The Nonconformance Report is included in Section 5, Nonconformances.

4.1 Daily Quality Control Report

The CQC Systems Manager/SHSO is responsible for maintenance of current records of QC operation, activities, and tests performed, including the work of subcontractors and suppliers. The records will include factual evidence that required QC activities and tests were performed. A DQCR will be completed to document construction activities covered by the CQC Plan and will include the following information:

- Contractor/subcontractor(s) and their area of responsibility
- Operating equipment with hours worked, idle, or down for repair
- Work performed that day, giving location, description, and by whom
- Test and/or control activities performed with results and references to specifications/plan requirements, including the control phase (preparatory, initial, follow-up) and deficiencies (along with corrective action)
- Material received with statement as to its acceptability and storage
- Submittals reviewed, with contract reference, by whom, and action taken
- Off-site surveillance activities, including actions taken
- Job safety evaluations stating what was checked, results, and instructions or corrective actions
- A list of instructions given/received and conflicts in plans and/or specifications

- Contractor's verification statement
- Site visitors/purpose, deviations from plans, difficulties/resolution

The records will indicate a description of trades working on the project, the number of personnel working, weather conditions encountered, and any delays encountered. Both conforming and nonconforming features will be discussed with a statement that equipment and materials used during the work and workmanship comply with the contract. The original of this report shall be furnished to the USACE Resident Engineer/CR on the first work day following the date covered by the report, although reports need not be submitted for days on which no work is performed. At a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no-work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work will summarize work for that day only. Reports will be signed and dated by the CQC Systems Manager/SHSO and other appropriate personnel, including subcontractors responsible for completion of activities. The report from the CQC Systems Manager/SHSO will include copies of test reports and copies of reports prepared by all subordinate QC personnel.

4.2 Meeting Notes and Confirmation Notices

In addition to other required documentation, the TO Manager is responsible for taking notes and preparing reports for all meetings and teleconferences. Notes will be typed and the original report furnished to the USACE within 7 working days after the date of the meeting/biweekly teleconference for concurrence and subsequent distribution to all attendees. At a minimum, this report will include the following items:

- Air Force Project Number, date and time the meeting/teleconference was held, list of attendees, and agenda
- List of attendees, including name, organization, email address, and telephone number (for meetings)
- Written comments presented by attendees attached to each report with the conference action noted: "A" for an approved comment, "D" for a disapproved comment, "W" for a comment that has been withdrawn, and "E" for a comment that has an exception noted
- Comments made during the meeting/teleconference and decisions affecting criteria changes
- Conference notes that augment the written comments
- Documentation of any augmentation of written comments

Project meetings include the scope development meeting held at Cannon AFB, biweekly teleconferences to discuss work progress and project status, one site visit, and project kick-off meeting. The TO Manager or his designee is also responsible for providing a weekly record of all discussions, verbal directions, telephone conversations, etc., in which North Wind personnel or their representatives participated on matters relating to this contract and work. These records which are entitled confirmation notices, will be numbered sequentially and will fully identify participating

personnel, subject discussed, and any conclusions reached. The TO Manager or designee will forward to the Base Project Manager or designee and the USACE Resident Engineer/CR within 7 working days a reproducible copy of the confirmation notices.

4.3 Record Drawings

In addition to the basic requirements for record drawings, all drawings will be developed or modified using Auto-CADD for required submittals. All Auto-CADD drawings will be compatible with the Auto-CADD system used at Cannon AFB. After construction, North Wind will provide the Base Project Manager with a copy of the Auto-CADD drawing files (on disk) and prints (drawings), which will include the as-constructed site conditions.

4.4 Final Submittals

Specific requirements pertaining to final submittals are provided in this section. Final submittals will be reproduced and distributed by mail to all reviewers via a carrier service that will provide overnight service. All reports shall be printed on recyclable paper to the maximum extent possible.

Partial submittals will not be accepted unless prior approval is given in writing. A cover letter addressed to the Resident Engineer will accompany each final document and will indicate the following information: project, project number, project phase, date comments are due, to whom comments are to be submitted, and the date and location of the review conference, as appropriate. Depending on the recipient, all letters shall be coordinated with the USACE Resident Engineer/CR prior to the submittal date. The cover letter will not be bound into the document.

One unbound copy of each submittal will be provided to USACE and to Cannon AFB when the project is completed. This copy will be in addition to the quantities listed in the submittal register. All final submittals should be error free.

4.5 Supporting Data and Calculations

The tabulation of criteria, data, calculations, cost estimates, etc., that is performed but not included in detail in the report will be assembled as appendices. Criteria provided by the USACE-Omaha District shall be referenced as appropriate. Persons performing and checking calculations shall place their full names on the first page of all supporting calculations, estimates, etc. and initial the following sheets. The originator of the calculations may not also be the checker. Each sheet shall be dated and numbered in sequence.

4.6 Corrective Measure Report

All work performed under this delivery order shall be documented in a final letter report. This report shall include a description of tasks performed, supporting analytical data, DQCRs, and site maps showing the location of any excavated areas and sampling schematic. A draft letter report will first be provided to USACE and Cannon AFB for review; the final report shall incorporate all comments received on the draft report.

5. NONCONFORMANCES

5.1 Nonconformance Report

Any work or materials not conforming to the technical specifications or contract requirements will be identified and documented on a Nonconformance Report as indicated in Figure 5-1. The Nonconformance Report will detail the nonconforming condition, recommended corrective action(s), and disposition of the corrective action(s). The Nonconformance Report will remain open until the nonconforming condition has been satisfactorily resolved and verified by QC inspection staff. Upon receipt of notification of detected nonconformances from the USACE Base Project Manager, Nonconformance Reports for each item will be completed.

5.2 IDENTIFICATION OF NONCONFORMING ITEMS

Items identified as nonconforming will be documented on a Nonconformance Report that will include the following information:

- Description of nonconforming item or activity
- Detailed description of nonconformance
- Referenced criteria
- Recommended disposition and corrective action to prevent recurrence (as applicable)
- Affected organization

5.3 Control and Segregation

The nonconforming items will be controlled to prevent inadvertent use. All items identified as nonconforming will be clearly identified and segregated from acceptable items when practical.

5.4 Disposition

The disposition of Nonconformance Reports will include the necessary actions required to transform the nonconforming condition into an acceptable condition and may include reworking, replacing, retesting, or reinspecting. Implementation of the disposition may be done in accordance with the original procedural requirements, a specific instruction, or an FCR (Figure 5-2).

5.5 Corrective Actions

Upon detection of a nonconforming condition, the CQC Systems Manager/SHSO will immediately take corrective action. In addition to resolving identified nonconforming conditions, corrective action records will also address the initial cause of adverse conditions and establish methods and controls to prevent recurrence of the same or similar types of nonconformances. The CQC Systems Manager/SHSO will monitor the corrective actions to verify that they were properly implemented and accepted and that the Nonconformance Report was closed out.

Figure 5-1. Nonconformance Report (Example)

QUALITY ASSURANCE REPORT NO(1) _____
NONCONFORMANCE REPORT

Client Or Project (2)		Drawing No/Spec No. (3)	
Supplier, Construction Qc Or Contractor (4)	P. O. No. (5)		
Description Of Component, Part Or System (6)			
I. Description Of Nonconformance (7) <i>(Items Involved, Specifications, Code Or Standard To Which Items Do Not Comply, Submit Sketch (If Applicable))</i>			
Name And Signature Of Person Reporting Nonconformance (8)		Title/Company	Date (9)
II. Recommended Disposition (10) <i>(Submit Sketch If Applicable)</i>			
Name And Signature Of Person Recommending Disposition (11)		Title/Company	Date (12)
III. Evaluation Of Disposition By Contractor. Reason Of Disposition (13)			
IV. Corrective Action (14) <input type="checkbox"/> Required <input type="checkbox"/> Not Required			

Figure 5-1. Nonconformance (Report Example) (Continued)

QUALITY ASSURANCE REPORT NO(1) _____
NONCONFORMANCE REPORT

V. <input type="checkbox"/> Engineering	<input type="checkbox"/> Quality Assurance	<input type="checkbox"/> Construction	<input type="checkbox"/> Other
Name (Signature)	Name (Signature)	Name (Signature)	Name (Signature)
Date	Date	Date	Date
<input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted With Comments	<input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted With Comments	<input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted With Comments	<input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> Accepted With Comments

VI. VERIFICATION OF DISPOSITION REQUIRED NOT REQUIRED (16)

(17) BY _____
TITLE _____

SIGNATURE _____
DATE _____

Figure 5-2. Field Change Request (Example)

Project	Project No.	Field Change No.
---------	-------------	------------------

TO _____ DEPT _____ LOCATION _____
 DATE _____

RE: Drawing No. _____
 Title _____

Spec No. _____
 Title _____

Other _____

1. Description (Items involved, submit sketch if applicable)

2. Reasons for Change (If from disposition of nonconformance report, list report number) _____

3. Recommended Disposition Minor Change Major Change

4. Resident Engineer (Signature)	Date	Construction Manager Concurrence (Signature)	Date
----------------------------------	------	--	------

5. Disposition

NOT APPROVED (Give Reason)

CONSIDERED MINOR CHANGE - Approved per Recommended Disposition-Design documents will not be normally revised; field to maintain as-built records

CONSIDERED MAJOR CHANGE - Action will be taken as prescribed on DCN

Figure 5-2, Field Change Request (Example) (Concluded)

Lead Discipline Engineer or Designee (Signature)	Date	Project Engineer or Designee	Date
--	------	------------------------------	------

Project Engineer signs and returns to Lead Design Engineer for transmittal to Resident Engineer with copies to:

Project Manager _____

Project Supt. _____

Project Files _____

This page intentionally left blank.

Appendix F
Site-Specific Environmental
Health and Safety Plan

APPENDIX F

SITE-SPECIFIC ENVIRONMENTAL HEALTH AND SAFETY PLAN

SITE NAME:	SWMU 31 – Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad
LOCATION:	Cannon AFB, New Mexico
DATE PREPARED:	December 23, 2008
REVISION / DATE:	
PROJECT DESCRIPTION:	<p>As established by the investigations conducted at SWMU 31, potential contaminants include JP-4, oils, and diesel fuel; however, the Appendix I Remedial Investigation (RI) found negligible to nondetectable levels of the target contaminants in the soils sampled. TRPH, lead, and chromium were detected at concentrations exceeding their respective screening levels. TRPH was detected at concentrations of 696 milligrams per kilogram (mg/kg) to 3,180 mg/kg, both at a depth of 0 to 2 feet (ft) below ground surface (bgs). Lead and chromium were each detected at two locations at the site at a depth of 0 to 2 ft bgs. The lead detections ranged from 42.7 mg/kg to 930 mg/kg, and chromium detections ranged from 11.3 mg/kg to 130 mg/kg, each exceeded their respective Region 6 EPA screening levels.</p> <p>The extent of contaminated soil to be excavated at SWMU 31 has been determined by the USACE as described in Section 4 of the work plan. One area in SWMU 31 will have petroleum-contaminated soil removed, the excavated areas sampled to verify the removal of contamination, and the excavated soil characterized to determine disposal options.</p> <p>Primary contaminants include TPH, polycyclic aromatic hydrocarbons (PAHs), and to a lesser extent, lead. The highest concentration of lead in soil were removed during the 1999 soil excavation activities at SWMU 31. No benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in samples collected during previous investigations in the area.</p>

WASTE TYPES PRESENT

(Attach applicable MSDSs in Attachment 1): TPH (associated hydrocarbons) in soil

UNUSUAL SITE FEATURES: None

STATUS (Active, Inactive, or Unknown): Inactive AGE facility

LOCATION CLASS: Industrial Commercial Urban/Residential
 Rural Other (specify): Military Installation

BACKGROUND REVIEW: Complete Preliminary

DOCUMENTS USED AS REFERENCES FOR THIS PLAN:

Appendix I Remedial Investigation by Woodward Clyde, Inc. reviewed by USACE to compile Scope of Services (Dated September 10, 1998) provided by USACE.

RCRA Facility Investigation, Appendix III SWMUs-Phase II, by Woodward Clyde, Inc. (1995).

Voluntary Corrective Action AGE Maintenance Facility Shop Pad (SWMU 31) and POL Wash Pad [Rack] (SWMU 127) Draft Letter Report, by Bay West, Inc. and Tetra Tech EC, Inc. Presents the results of a February 2008 investigation to determine the extent of contamination requiring excavation and removal.

PROJECT ORGANIZATION:

Client Contact: Jerome Stolinski – USACE Project Manager
Jerry Pelfrey – Cannon AFB Restoration Program Manager

Contractor Task Order Manager: Tom Matzen – North Wind, Inc.

Site Construction Manager: Robert Sotler – North Wind, Inc.

Project Environmental and Safety Manager (PESM): Bruce Miller – North Wind, Inc.

Site Health and Safety Officer (SHSO): Robert Sotler – North Wind, Inc.

Other (specify title/position): Carol Rieger – Tetra Tech EC, Inc., Technical Support

ACTIVITY HAZARD ANALYSIS (AHA)

SITE MOBILIZATION

**Removal of Contaminated Soil from SWMU 31 (AGE Maintenance Pad)
Cannon Air Force Base, New Mexico**

Developed By: Carol Rieger, 07/06/2007

Analyzed By: Sam Engelhard, CIH, 07/09/07

Principal Steps	Potential Safety/ Health Hazards	Recommended Controls
Set up work areas	Potential exposure to chemical hazards	<ul style="list-style-type: none"> • Delineate exclusion zones and use PPE specified in SSHP. • Visual observation shall be used to verify selection of PPE. • Identify all chemical hazards and receive training (MSDS, Attachment 1) regarding safe handling of chemicals. The SHSO will file copies of all MSDSs at the site.
	Noise exposure	<ul style="list-style-type: none"> • Hearing protection (as needed if noise inhibits verbal communication at normal speaking levels) will be worn by operators and site personnel with a noise reduction rating capable of maintaining personal exposure below 85 dBA (earmuffs or earplugs).
	Biological hazards such as snakes, insects, or spiders could cause injury or bites	<ul style="list-style-type: none"> • Wear PPE. • Look carefully for snakes, insects and spiders before stepping into any area or before placing hands near the ground. • Use insect repellent as necessary.
	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Work areas shall be visually inspected and slip, trip, and fall hazards shall be marked, barricaded, or eliminated, if feasible. Use care in work area; look for depressions and obstructions. • Employees shall only be allowed to work on walking/working surfaces that have the strength and integrity to support employees safely. Walking/working surfaces for this requirement include the edges of trenches. • Employees performing work on a walking/working surface with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems. • Openings of 18 inches or more in diameter must be covered and marked. All openings less than 18 inches in diameter and all holes must be marked or barricaded.
	Sharp objects/punctures	<ul style="list-style-type: none"> • Wear cut-resistant work gloves when sharp edges or other objects may cause the possibility of lacerations or other injury. When possible, sharp edges will be blunted. • Workers should not stand or walk on equipment or supplies.

Principal Steps	Potential Safety/ Health Hazards	Recommended Controls
Set up work areas (Continued)	Strains from manually moving materials and equipment	<ul style="list-style-type: none"> Personnel will be trained to use proper lifting techniques such as keeping the back straight, lifting with legs, limiting twisting, and getting help when moving bulky/heavy materials and equipment. Use of hand truck shall be encouraged. Employees will not lift more than 50 pounds. Surveys shall be performed by qualified persons to identify and evaluate tasks that might result in injuries due to ergonomic hazards. The focus of the surveys will be operations that involve the manual lifting and moving of objects of excessive weight or asymmetric size. Hand tools shall be selected to minimize the following stressors: chronic muscle contraction or steady force, extreme or awkward finger/hand/arm positions, repetitive forceful motions, excessive gripping, pinching, and pressing with hand and fingers.
	Exposure to extreme temperatures	<ul style="list-style-type: none"> Monitor for heat stress. Provide fluids and rest breaks during warm weather and while wearing impermeable protective clothing.
	Eye hazards	<ul style="list-style-type: none"> Safety glasses are the minimum required eye protection for all work areas.
	Lack of communication in widely dispersed areas	<ul style="list-style-type: none"> Ensure each work team has a telephone or a two-way radio or access to a telephone for communication. If more than one team at a time is working, ensure there is communication between the work teams and project management. Workers must work in teams of two or more. Each team must use the "buddy" system.
	Struck by or against vehicles	<ul style="list-style-type: none"> Wear high-visibility reflective vests at all times in work area. Make eye contact with operators of vehicles. Understand and review posted hand signals. Traffic barricades, signs, flags, and backup spotters will be used during field activities, as necessary.
	Power and hand tools	<ul style="list-style-type: none"> Inspect all tools before each use. Discard or tag out any tool that is not safe, has broken handles, patched handles, missing guards, and so forth. Personnel will be trained in the proper use of hand and power tools. If power tools are connected to power sources other than batteries, the tools will be grounded or double insulated and connected to a GFCI outlet.
	Material handling	<ul style="list-style-type: none"> Identify and avoid pinch points. Maintain communication with others involved in material handling. Use appropriate PPE.

Equipment to be Used	Inspection Requirements	Training Requirements
Vehicles, equipment, hand tools	Daily and before use	<ul style="list-style-type: none"> Only DOT-licensed personnel will operate vehicles. Specific training for power tools and hand tools will be provided.

dBA decibels, A-weighted scale
DOT Department of Transportation
GFCI ground fault circuit interrupter

MSDS
PPE

Material Safety Data Sheet
personal protective equipment

SHSO Site Health and Safety Officer
SSHP Site Safety and Health Plan

ACTIVITY HAZARD ANALYSIS (AHA)
EXCAVATION, BACKFILL, AND HAULING

Removal of Contaminated Soil from SWMU 31 (AGE Maintenance Pad)
Cannon Air Force Base, New Mexico

Developed By: Carol Rieger, 07/06/2007

Analyzed By: Sam Engelhard, CIH, 07/09/07

Principal Steps	Potential Safety/ Health Hazards	Recommended Controls
Excavation	Contact with underground utilities	<ul style="list-style-type: none"> • Physically verify the location and depth of existing utilities prior to starting excavation through geophysical and utility survey. • Contact One-Call for utility marking prior to any disturbance of ground. • Protect all existing utilities during excavation. • Perform excavation within 4 ft of existing utilities by hand and/or non-aggressive methods per EHS 3-15, <i>Underground Utilities</i>. • Protect all underground utilities as soil is removed around or under the utility line.
	Struck by or against heavy equipment	<ul style="list-style-type: none"> • Wear reflective warning vests when exposed to vehicular traffic. • Avoid equipment swing areas. • Make eye contact with operators before approaching equipment. • Understand and review posted hand signals. • Workers must always be in visual sight of the operators. • Use trained spotters.
	Exposure to chemical contaminants or potential gases, such as natural gas from a leaking gas line	<ul style="list-style-type: none"> • Conduct air monitoring for contaminants as excavation activities proceed according to the SSHP. • If odors are detected, immediately check for the presence of potentially explosive gas concentrations. • Wear PPE as required.
	Excavation hazards	<ul style="list-style-type: none"> • Follow EHS Procedure 6-3, <i>Excavation and Trenching</i>. • Ensure proper shoring or sloping. • Spoil banks and equipment must be at least 3 ft away from the excavation (EHS 6-3). • Use diversion ditches, dikes, or other means to prevent surface water from entering an excavation and to provide good drainage of the area adjacent to the excavation. • Daily inspections of excavation, the adjacent areas and protective systems shall be made by the project assigned competent person. The excavation/trenching permit must also be completed by the competent person each day.

Principal Steps	Potential Safety/ Health Hazards	Recommended Controls
Excavation (Continued)	Excavation hazards (Continued)	<ul style="list-style-type: none"> • Maintain eye contact with operators. Personnel must wear visible vests. • Avoid climbing on berms and stockpiles, if present. • Workers will not work under any equipment or loads. • Barricade all open excavations as required by the work plan. • Handle soil carefully to avoid dust generation.
	Failure to protect excavations as required by EM 385-1-1, Section 25 could cause injury to workers and local population	<ul style="list-style-type: none"> • Install barricade protection (for reference see EM 385-1-1, Section 25). • At a minimum, all excavations left open overnight will be fenced unless they are located in a secured fenced area where no persons other than workers have access. • Cover all open excavations with trench plate, if possible. Place barricades and signs as appropriate. • If excavations are located on roads that will be partially closed or off to the side of open roads, or are located in any area where vehicles may drive, the excavation will be barricaded and reflectors and/or flashing lights will be placed so that excavation activity is marked during hours of darkness. Verify that flashing lights are working at night.
	Falling into trench	<ul style="list-style-type: none"> • If walkover ramps are used they must meet the requirements for fall protection: Standard guard rails, designed for the weight of personnel and equipment, fixed (staked) to ground at both ends, inspected daily. • For excavations that are over 4 ft in depth, ladders will be placed in the excavation to provide access and egress within 25 ft lateral (for example, one ladder placed in center of 50 ft lateral provides egress within 25 ft on either side). • Ladder must extend 3 ft above edge of excavation and must be placed at an angle that is ¼ of the height.
	Strains from use of tools, such as shovels	<ul style="list-style-type: none"> • Maintain steady pace when using tools and take adequate rest periods. • If possible, rotate tasks among the workers. • Use appropriate tools for the task and maintain tools in good condition.
	Heavy equipment hazards	<ul style="list-style-type: none"> • Equip all heavy equipment on this project with rollover protection systems and backup alarms. • Stay clear of moving equipment unless necessary. (If working near equipment workers must be in visual contact with the operator.) • Inspect all equipment daily before use to ensure proper maintenance is being performed. • Make eye contact with operator, heavy equipment has right-of-way.

Principal Steps	Potential Safety/ Health Hazards	Recommended Controls
Shoring, if used to protect employees, if employees must enter the excavation	Improper construction or installation leading to collapse of excavation wall	<ul style="list-style-type: none"> • Insure support system is installed according to specifications and is capable of supporting sidewall of excavation. • All support systems are to be inspected by a qualified engineer.
Backfilling	Struck by or against heavy equipment or trucks	<ul style="list-style-type: none"> • Wear reflective warning vests. • Avoid equipment swing areas. • Make eye contact with operators before approaching equipment or trucks. • Always use spotters when backing up. • Understand and review posted hand signals.
	Damage to utilities	<ul style="list-style-type: none"> • Ensure that utilities are protected from the fill material as it is being placed. • Be sure fill materials had no rocks or objects that could damage the utilities. • Follow work plan for proper placement and compaction of backfill.
Hauling, material must be hauled from the excavation and backfill must be hauled to the excavation	Struck by or against heavy equipment or trucks	<ul style="list-style-type: none"> • Establish and follow a traffic control plan. • Wear reflective warning vests. • Avoid equipment swing areas, and designated traffic routes. • Make eye contact with operators before approaching equipment or trucks. • Understand and review posted hand signals. • Use spotters and flaggers as necessary to direct trucks as well as any nearby traffic.
	Loading trucks	<ul style="list-style-type: none"> • Prohibit truck drivers from standing near trucks as they are being loaded. • Prohibit truck drivers from sitting in the cab of trucks as they are being loaded, unless the truck is equipped with a cab protector (FOPS).
	Dirt and dust can accumulate on roads used for transport of material	<ul style="list-style-type: none"> • Brush off trucks before they enter a paved road. • Tarp truck or load truck in such a manner to prevent dirt and dust from getting on to paved roads.

Equipment to be Used	Inspection Requirements	Training Requirements
Heavy equipment, dump trucks	Daily and before use	Only trained equipment operators may operate heavy equipment; only DOT-licensed personnel will operate trucks.

DOT Department of Transportation
EM Engineer Manual
EHS Environmental Health and Safety

FOPS Falling Object Protective System
ft foot/feet

PPE personal protective equipment
SSHP Site Safety and Health Plan

ACTIVITY HAZARD ANALYSIS (AHA)

DEMOBILIZATION

**Removal of Contaminated Soil from SWMU 31 (AGE Maintenance Pad)
Cannon Air Force Base, New Mexico**

Developed By: Carol Rieger, 07/06/2007

Analyzed By: Sam Engelhard, CIH, 07/09/07

Principal Steps	Potential Safety/Health Hazards	Recommended Controls
Decontaminate equipment	Atmospheric and contact hazards	<ul style="list-style-type: none"> • Wear required PPE. • Use ambient air monitoring and visual monitoring to verify PPE selection.
	Slip, trip, and fall hazards	<ul style="list-style-type: none"> • Visually inspect work areas and slip, trip, and fall hazards will be marked, barricaded, or eliminated as feasible. • Maintain proper illumination in all work areas. • Refer to EHS Procedure 3-8, Fall Protection.
	Exposure to high temperatures	<ul style="list-style-type: none"> • Monitor for heat stress in accordance with EHS Procedure 4-6, Temperature Extremes. • Maintain fluid intake and take breaks, as needed.
	Strains from manually moving materials and equipment	<ul style="list-style-type: none"> • Use proper lifting techniques such as keeping back straight, lifting with legs, limiting twisting, and getting help when moving bulky/heavy materials and equipment. • Use of lifting devices whenever possible. • Surveys shall be performed by qualified persons to identify and evaluate tasks that might result in injuries due to ergonomic hazards. The focus of the surveys will be operations that involve the manual lifting and moving of objects of excessive weight or asymmetric size. • Hand tools shall be selected to minimize the following stressors: chronic muscle contraction or steady force, extreme or awkward finger/hand/arm positions, repetitive forceful motions, excessive gripping, pinching, and pressing with hand and fingers. • Do not lift more than 50 pounds without help.
Demobilization and site restoration	Struck by or against heavy equipment	<ul style="list-style-type: none"> • Wear high visibility reflective vests when exposed to vehicle traffic. Make eye contact with operators before approaching equipment. • Understand and review posted hand signals. • Use traffic barricades, signs, flags, and backup spotters during demobilization.
	Electrocution	<ul style="list-style-type: none"> • Allow only qualified electricians to disconnect electrical circuits. Follow lockout, tag-out protocols. • Inspect all extension cords daily for structural integrity, ground continuity, and damaged areas.

Principal Steps	Potential Safety/ Health Hazards	Recommended Controls
Demobilization and site restoration (Continued)	Electrocution (Continued)	<ul style="list-style-type: none"> • Document extension cord inspection. • Use GFCIs on all outdoor 115- to 120-volt, 20 ampere or less, circuits. • Cover or elevate electric wire or flexible cord passing through work area to protect it from damage by foot traffic, vehicles, sharp corners, projections, or pinching. • Keep plugs and receptacles out of water unless they are approved- submersible types. • Ground all electrical circuits in accordance with the National Electrical Code or other applicable regulations or standards. • Temporary wiring is not allowed to pass through walls, doors, or windows (extension cords are one type of temporary wiring). • If a generator is used, be sure it is a type that does not require grounding. If it requires grounding, follow manufacturer's directions. Table 11-2 or NEC 250-6 lists the exceptions for grounding portable and vehicle mounted generators. • If electricity is used from nearby buildings- verify that it is acceptable to the base to use those sources. In all cases ensure that all connections meet NEC requirements. Ensure that voltage, amperage and circuit breakers are rated for the equipment to be used.
	Struck by or against heavy equipment	<ul style="list-style-type: none"> • Wear high visibility reflective vests when exposed to vehicle traffic. • Make eye contact with operators before approaching equipment. • Understand and review posted hand signals. • Use traffic barricades, signs, flags, and backup spotters during demobilization
	Material handling	<ul style="list-style-type: none"> • Identify and avoid pinch points. • Maintain communication with others involved in material handling. • Use appropriate PPE.

Equipment to be Used	Inspection Requirements	Training Requirements
Heavy equipment, hand tools, power tools	Daily and before use	Only trained equipment operators may operate heavy equipment; only DOT-licensed personnel will operate trucks. Specific training for power tools, hand tools, and electrical safety.

CMC
DOT

Corporate Medical Consultant
Department of Transportation

EHS
GFCI

Environmental Health and Safety
ground fault circuit interrupter

NEC
PPE
National Electrical Code
personal protective equipment

PHYSICAL SAFETY HAZARDS TO PERSONNEL

- Hot Work Line Breaking Boating Drill Rigs Excavation
- Heat Cold Precipitation Confined Space Terrain
- Walking/Working Surfaces Fire and Explosion Oxygen Deficiency
- Underground Utilities Overhead Utilities Heavy Equipment
- Unknowns in Drums, Tanks, Containers Ponds, Lagoons, Impoundments
- Rivers, Streams Pressurized Containers, Systems Noise
- Illumination Nonionizing Radiation Ionizing Radiation

BIOLOGICAL HAZARDS TO PERSONNEL

- Infectious/Medical/Hospital Waste Non-domesticated Animals
- Insects Poisonous Plants/Vegetation Raw Sewage

TRAINING REQUIREMENTS

- 40-Hour General Site Worker Course with three days supervised experience
- 24-Hour Course for limited, specific tasks with one day supervised experience
- 24-Hour Course for Level D Site with one day supervised experience
- 8-Hour Annual Refresher Health and Safety Training
- 8-Hour Management/Supervisor Training in addition to basic training course
- Site-Specific Safety, Health and Environmental Training (Includes EMS Goals and P2)
- Pre-entry training for emergency response skilled support personnel
- 4-Hour DOT Training
- 4-Hour Waste Management Training
- Other (specify): _____

MEDICAL SURVEILLANCE REQUIREMENTS

- Baseline initial physical examination with physician certification for hazardous waste operations and respirator use
- Annual medical examination with physician certification for hazardous waste operations and respirator use
- Site-specific medical monitoring protocol (Radiation, Pesticide, PCB, Metals)
Specify: _____
- Asbestos Worker medical protocol
- Exempt from medical surveillance (specify): _____
- Examination required in event of chemical exposure or trauma

CHEMICAL CONTAMINANT DATA

Compound	Contaminant Concentration /Media	CAS #	ACGIH TLV	OSHA PEL	Routes of Exposure	Symptoms of Exposure	Target Organs	First Aid	Applicable Physical Data
TPH as Jet fuel (JP-4)	up to 2,400 ppm/soil	N/A	300 ppm as gasoline	none	Inhalation Ingestion Absorption	Dizziness, nausea, slurred speech, convulsions	Eyes, skin, respiratory system, CNS, liver, kidneys	Soap flush immediately, respiratory support, medical attention	Clear liquid with hydrocarbon odor. Flammable

ABBREVIATIONS

CNS central nervous system
 mg/m³ milligrams per cubic meter
 ppm parts per million

PERSONAL PROTECTIVE EQUIPMENT

Task		Type of Chemical Protective Coverall	Inner Glove	Outer Glove	Head	Eyes/Face	Feet	Respirator Type	Respirator Cartridge and Change Schedule
1	Excavation	NA	NA	Leather	Hard Hat	Safety Glasses	Steel Toe Boots	NA	NA
2	Sampling	NA	NA	Nitrile	Hard Hat	Safety Glasses	Steel Toe Boots	NA	NA
3	Decontamination (Dry)	NA	NA	Nitrile	Hard Hat	Safety Glasses	Steel Toe Boots	NA	NA
4	Decontamination (Wet)	Coated Tyvek	NA	Nitrile	Hard Hat	Safety Glasses/Face shield for use with pressure washer	Steel Toe Boots	NA	NA

AIR MONITORING

Task		Instrument	Frequency	Action Level	Action
1	Excavation	<input type="checkbox"/> CGI/O ₂ <input checked="" type="checkbox"/> PID Probe: <u>10.4</u> eV <input type="checkbox"/> FID <input type="checkbox"/> Aerosol monitor <input type="checkbox"/> Detector tube(s) Type: _____ <input type="checkbox"/> Radiation meter	Routinely during excavation and soil disturbance	5 ppm (sustained in breathing zone)	Upgrade to Level C respiratory protection (not expected to occur)
2		<input type="checkbox"/> CGI/O ₂ <input type="checkbox"/> PID Probe: _____ eV <input type="checkbox"/> FID <input type="checkbox"/> Aerosol monitor <input type="checkbox"/> Detector tube(s) Type: _____ <input type="checkbox"/> Radiation meter			
3		<input type="checkbox"/> CGI/O ₂ <input type="checkbox"/> PID Probe: _____ eV <input type="checkbox"/> FID <input type="checkbox"/> Aerosol monitor <input type="checkbox"/> Detector tube(s) Type: _____ <input type="checkbox"/> Radiation meter			

CALIBRATION: All instruments will be calibrated according to manufacturers instructions before and after use (daily). The results will be documented in the SHSO logbook or calibration sheets.

**HAZARDOUS WASTE SITE
AND ENVIRONMENTAL SAMPLING/MONITORING ACTIVITIES**

Off-site: Yes No
 On-site: Yes No

Description of types of sampling and methods used to obtain samples:

Grab samples of soil from excavation limits. Waste characterization samples will be collected from backhoe/excavation bucket.

DECONTAMINATION

Dry Decontamination: Bucket of the backhoe, equipment, tools
 Wet Decontamination: Non-disposable tools

DESCRIPTION OF SITE-SPECIFIC DECONTAMINATION PROCEDURE

Dry decontamination for all equipment, tools, and the backhoe bucket will be performed at each site.

Wet decontamination for all non-disposable tools and equipment will be performed at site or at the Cannon AFB specified decontamination area. If wet conditions exist due to precipitation accumulating during excavation activities, wet decontamination may be required on heavy equipment.

ADEQUACY OF DECONTAMINATION DETERMINED BY

Visual inspection by Construction Manager

SITE WORK ZONES

Site work zones will be detailed in the final SSHP on site maps to be provided by USACE. Each site will generally require an exclusion zone around the excavation and a contamination reduction zone (CRZ) at least 10 feet from the exclusion zone. The zones will be clearly demarcated by orange traffic cones and/or yellow tape.

WASTE MANAGEMENT PLAN: Provided in body of work plan.

COMMUNICATION

List communication method/system to be used for each task and work zone.

Task	Work Zone	Communication Method	Special Instructions
All Field Activities	All	Cellular telephone	

EMERGENCY INFORMATION

Emergency Coordinator Robert Sotler, 850-420-0526

First Aid/CPR Trained Personnel SHSO/Construction Manager – Robert Sotler

Emergency Signals/Communication Hand signals as agreed upon (and documented) by all site personnel during the initial site health and safety briefing.
 Air Horn

Emergency Response Procedures: See Attachment 2

Emergency Equipment and Location Cellular phone, air horn, first aid kit, fire extinguisher, portable eye wash station. All emergency equipment will be located in the Site Construction Manager’s and TtEC Site Superintendent’s field vehicles.

Emergency PPE Same PPE as required for sampling task.

Location Construction Manager’s/Site Superintendent’s field vehicle(s)

Medical Data Sheets: See Attachment 1

EMERGENCY CONTACT	LOCATION	TELEPHONE NUMBER	NOTIFIED
Civilian Hospital <i>Plains Regional Medical Center</i>	2100 N Thomas St, Clovis, NM	575-769-2141	
Ambulance	Same as Hospital	575-769-2141 or 911 from hard wired telephone	
Police	Cannon AFB	575-784-4111 or 911 from hard wired telephone	
Fire Department	Cannon AFB	575-784-2578 or 911 from hard wired telephone	

DIRECTIONS TO CIVILIAN HOSPITAL

Route verified by: Carol Rieger Date: 11 / 17 / 2006

Civilian hospital is 2100 N Thomas St., Clovis, NM on the west side of Clovis. All personnel will be shown the location of the hospital by the SHSO. See Attachment 4.

ADDITIONAL EMERGENCY PHONE CONTACTS

Contact	Telephone Number(s)
North Wind Task Order Manager, Tom Matzen	785-838-3141 (cell)
North Wind Safety Manager, Bruce Miller	208-577-7900 (cell)
North Wind Construction Manager/SHSO, Robert Sotler	850-420-0526 (cell)
Chemtrec	800-424-9300
ATSDR	800-639-0615
ATF (explosives information)	800-424-9555
National Response Center	800-424-8802
National Poison Control Center	800-942-5969
Client Contact, Jerry Pelfrey, Cannon AFB Project Manager	575-784-6391
Jerome Stolinski, USACE Project Manager	402-995-2731
Donna Russell, USACE Project Engineer	575-784-2740

MAJOR SPILL CONTAINMENT PROCEDURES

Material	Containers	Describe Containment Facility and Procedures
Soil	NA	Removal of any contaminated soil into site roll off. Construct soil berms as needed to contain spill

THIS PLAN WAS PREPARED FOR WORK TO BE CONDUCTED BY NORTH WIND, INC. USE OF THIS PLAN BY NORTH WIND AND ITS SUBCONTRACTORS IS INTENDED TO FULFILL THE OSHA REQUIREMENTS FOUND IN 29 CFR 1910.120.

DUE TO THE NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS WHICH MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE ENVIRONMENTAL HEALTH AND SAFETY GUIDELINES IN THIS PLAN WERE PREPARED SPECIFICALLY FOR THIS SITE AND SHOULD NOT BE USED ON ANY OTHER SITE WITHOUT PRIOR RESEARCH AND EVALUATION BY TRAINED HEALTH AND SAFETY SPECIALISTS.

ATTACHMENT 1

Material Safety Data Sheets

This page intentionally left blank.

MSDS Document

Product JP-4

1. Chemical Product and Company Identification

Trade Name of this Product JP-4

Synonyms: Jet B

MSDS ID MSDS00013

Manufacturer

Petro Star Inc. North Pole Refinery
1200 H & H Lane
North Pole, AK 99705

Contact Name

Mark Reischke

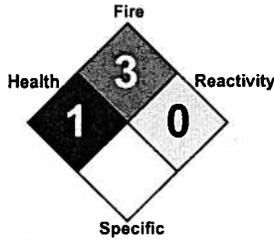
Phone Number

(907) 488-1288

Emergency Phone

(800) 633-8253

Revision Date 00/00/00



Health:	2
Fire:	3
Reactivity:	0
Specific	

2. Composition and Information on Ingredients

Ingredient	CAS Number	Weight %	ACGIH TLV	PEL	STEL
C5- 11 Naphtha, Solvent Extract	64741-84-0				
A COMPLEX COMBINATION OF C9-C16 HYDROCARBONS PRODUCE BY DISTILLATION OF CRUDE	8008-20-6		NE	500	
n-Hexane	110-54-3		50	500	
Cumene	98-82-8		50	50	
1,2,4-Trimethylbenzene	95-63-6		25	25	

Napthalene	91-20-3	52	50	15
Ethylbenzene	100-41-4	125	100	
Benzene	71-43-2	0.5	1	
Toluene	108-88-3	0	200	
Cyclohexane	110-82-7			
Xylene (mixed)	1330-20-7	100	100	150

3. Hazard Identification

EMERGENCY OVERVIEW WARNING!

HEALTH HAZARDS
MAY BE HARMFUL IF SWALLOWED
ASPIRATION HAZARD IF SWALLOWED-CAN ENTER LUNGS AND CAUSE DAMAGE
MAY CAUSE CARDIAC SENSITIZATION
MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT
OVEREXPOSURE MAY CAUSE CNS DEPRESSION
MAY BE HARMFUL IF ABSORBED THROUGH SKIN
CONTAINS MATERIAL WHICH CAN CAUSE REPRODUCTIVE EFFECTS
DANGER-CONTAINS BENZENE-CANCER HAZARD
MAY CAUSE BLOOD DISORDERS
SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION

FLAMMABILITY HAZARDS
FLAMMABLE LIQUID
PER OSHA GUIDELINES, 29 cfr 1910.1200(c)

REACTIVITY HAZARDS
STABLE

POTENTIAL HEALTH EFFECTS, SKIN
MODERATE TO SEVERELY IRRITATING. Contact may cause reddening, pain, itching, inflammation and possible tissue damage.

Defatting agent. Repeated or prolonged contact may result in drying, reddening, itching, pain, inflammation, cracking and possible secondary infection with tissue damage.

Absorption from prolonged or repeated skin contact may cause systemic toxicity.

POTENTIAL HEALTH EFFECTS, EYE
SLIGHTLY IRRITATING. May cause slight transient irritation, lacrimation (tears) and a burning sensation in the eyes

Exposure to vapors, fumes or mists may cause irritation.

Prolonged or repeated exposure may cause irritation and conjunctivitis.

POTENTIAL HEALTH EFFECTS, INHALATION

Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure.

May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

May cause cardiac sensitization, including arrhythmia (irregular heart beat) and death due to cardiac arrest.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

POTENTIAL HEALTH EFFECTS, INGESTION

May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Exposure may also cause central nervous system symptoms similar to those listed under "Inhalation" (see Inhalation section).

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

4. First Aid Information

SKIN

Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

EYE

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing.

Get medical attention if irritation persists.

INHALATION

Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION

Do not induce vomiting because of danger of aspirating liquid into lungs,, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Gastric lavage should be performed only by qualified medical personnel.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN

Gastric lavage may be indicated if ingested. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

In cases of acute poisoning, artificial respiration with administration of oxygen may be useful for support. DO NOT GIVE EPINEPHRINE, EPHEDRINE OR SIMILAR ADRENERGIC DRUGS. THEY MAY INDUCE FATAL VENTRICULAR FIBRILLATION. Electrocardiographic monitoring should be carried out with severely ill patients to anticipate possible cardiac arrest.

Anemia may require the usual supportive measures. Medical evaluation of acute overexposure should include hematological determinations until stable. In severe acute and chronic poisoning, both renal and hepatic damage may occur and should be anticipated in such cases. Respiratory and pulmonary problems may require special attention. After severe acute symptoms have been alleviated, it may be advisable to consider periodic monitoring of the patient until such time as the likelihood of other adverse effects can be discounted.

5. Fire Fighting Measures

Flash Point <-20 F (<-29 C)

HAZARDOUS COMBUSTION PRODUCTS

Combustion may produce hazardous combustion products.

EXTINGUISHING MEDIA

Use water spray, dry chemical, carbon dioxide or fire-fighting foam for Class B fires to extinguish fire.

BASIC FIRE FIGHTING PROCEDURES

Evacuate area and fight fire from a safe distance.

If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak.

Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

UNUSUAL FIRE & EXPLOSION HAZARDS

Vapors may form explosive mixture with air. Vapors can travel to a source of ignition and flash back.

Explosion hazard is exposed to extreme heat or to physical or thermal shock.

Flash Point: <-20 F (<29 C) TAG CLOSED CUP (ASTM D56)

Autoignition Temperature: ND

Flammability Limits in Air, Lower, % by Volume: ND

Flammability Limits in Air, Upper, % by Volume: ND

6. Accidental Release Measures

EMERGENCY ACTION

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 800 meters (1/2 mile) in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See Exposure Controls/Personal Protection, Section 8.)

ENVIRONMENTAL PRECAUTIONS

Eliminate all sources of ignition. Isolate hazard area and deny entry.

If material is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local authorities and the National Response Center, if required.

SPILL OR LEAK PROCEDURE

Keep unnecessary people away. Isolate area for at least 25 to 50 meters (80 to 160 feet) to preserve public safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet.)

Keep ignition sources out of area and shut off all ignition sources. Absorb spill with inert material (e.g. dry sand or earth) then place in a chemical waste container. Large Spills: Dike far ahead of liquid spill for later disposal.

Use a vapor suppressing foam to reduce vapors. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

7. Handling and Storage

HANDLING

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or

reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink or smoke in areas of use or storage.

STORAGE

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers.

Empty containers may contain material residue. Do not reuse without adequate precautions.

Do not eat, drink or smoke in areas of use or storage.

8. Exposure Controls and Personal Protection

ENGINEERING CONTROLS

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles, and/or face shield. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling. Additional protective clothing may be necessary.

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination.

RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH approved air purifying respirator with an appropriate cartridge or canister, such as an organic vapor cartridge, may be used in circumstances where airborne concentrations may exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

9. Physical and Chemical Properties

Physical State	Liquid
Specific Gravity	0.75
Density lbs/Gal.	6.26
Color/Appearance	Clear
Odor	ND
pH	ESSENTIALLY NEUTRAL
Boiling/Cond. Point	162 F
Melting/Freezing Point	-85 F

Solubility	NEGLIGIBLE
Evaporation Rate	ND
VOC %	ND
Percent Volatile	ND
Molecular Formula	ND
Viscosity	ND
Vapor Density	ND
Vapor Pressure	2.5 psi at 100 F

10. Stability and Reactivity

STABILITY/INCOMPATIBILITY

Incompatible with oxidizing agents. See precautions under Handling & Storage (Section 7).

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce hazardous combustion products and other decomposition products in the case of incomplete combustion.

11. Toxicological Information

ROUTES OF EXPOSURE

Inhalation, ingestion, skin and eye contact.

LD50

LD50 - >5 g/kg (rats, oral) - similar material

LD50 - >2 g/kg (rats, dermal) - similar material

LC50

LC50 - No specific information

TOXICOLOGICAL DATA

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: anemia.

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: skin, blood elements, liver, kidney, cardiovascular, nervous and respiratory system.

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as solvent or painter's syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

This material may contain n-hexane. n-Hexane is a skin, eye and respiratory tract irritant. It is a cardiac sensitizer, central nervous system depressant and a neurotoxin. Acute exposure may result in dizziness, asphyxia, anesthesia, brain damage and cardiac arrest at high concentrations. Repeated or prolonged exposure may result in peripheral neuropathy,

characterized by progressive weakness, facial and limb numbness, color vision abnormalities and paralysis of the limbs. It has been observed to cause damage to the testes and fetal effects in a two-generation animal study. NTP has reported it to cause liver tumors in female mice. Persons with skin, lung, liver or kidney disorders may be at increased risk.

This material may contain toluene. Toluene is an eye, skin, and respiratory tract irritant as well as a central nervous system depressant. Overexposure may result in damage to the brain, liver, kidney, cardiovascular, respiratory and neurological systems. Prolonged and repeated exposure may result in behavioral effects, anemia, and color vision abnormalities, blindness and hearing loss. It has been shown to produce reproductive effects in both humans and laboratory animals. It has also been reported to produce cardiac sensitization. Repeated or prolonged exposure to toluene may result in skin absorption, which may result in toxic effects. IARC has determined that there is inadequate evidence for the carcinogenicity of toluene in humans and experimental animals (IARC Class 3).

This material may contain benzene. Acute benzene poisoning causes central nervous system depression. Chronic exposure affects the hematopoietic system causing blood disorders including anemia and pancytopenia.

This material may contain naphthalene. Naphthalene can be harmful by any route of exposure. Humans may be more sensitive to naphthalene than laboratory animals. Naphthalene can cause skin and eye irritation and acute central nervous system effects. It can also cause blood effects, including hemolytic and aplastic anemia, cataracts, liver and kidney damage. Following maternal exposure, naphthalene has also been reported to cause fetal blood system, liver and possibly eye damage. In a 2-year lifetime inhalation bioassay, female mice showed a significantly increased incidence of pulmonary alveolar and bronchiolar adenomas. On this basis, NTP has determined that there is some evidence of naphthalene carcinogenicity in female mice. Both male and female mice showed evidence of chronic inflammation and its associated response in the respiratory system.

CARCINOGENICITY

This material may contain benzene. Benzene is carcinogenic to laboratory animals when given to intubation or by inhalation. There is an association between occupational exposure to benzene and human leukemia. Carcinogenic determinations: IARC human positive and animal suspected carcinogen (IARC Class 1); NTP known carcinogen; ACGIH suspected carcinogen; OSHA carcinogen.

This material may contain ethylbenzene. IARC has determined that there is sufficient evidence for the carcinogenicity of ethylbenzene in experimental animals and inadequate evidence for the carcinogenicity of ethylbenzene in humans. (IARC Class 2B)

This material may contain naphthalene. IARC has determined that there is sufficient evidence for the carcinogenicity of naphthalene in experimental animals and inadequate evidence for the carcinogenicity of naphthalene in humans. (IARC Class 2B)

TERATOGENICITY, MUTAGENICITY, OTHER REPRODUCTIVE EFFECTS

This material may contain components which may cause adverse reproductive and/or development effects.

This material may contain benzene. Mutagenic and clastogenic in mammalian and

non-mammalian test systems. Reproductive or developmental toxicant only doses that are maternally toxic, based on tests with animals.

Pregnant women may be at increased risk from exposure.

Consumption of alcoholic beverages may enhance toxic effects.

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE

Preexisting medical conditions which may be aggravated by exposure include skin, liver, kidney, blood, respiratory, cardiovascular and nervous system.

SYNERGISTIC MATERIALS

ND

12. Ecological Information

ECOTOXICOLOGICAL INFORMATION

ND

13. Disposal Considerations

WASTE DISPOSAL

This material, as supplied, when discarded or disposed of, is a hazardous waste according to Federal Regulations due to the material exhibiting a hazardous characteristic under Subpart C of 40 CFR 261. Under RCRA, it is the responsibility of the user of the material to determine, at the time of disposal, whether the material meets RCRA criteria for hazardous waste.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

14. Transportation Information

BILL OF LADING - BULK (U.S. DOT)

Fuel, Aviation, Turbine Engine, 3, UN1863, PG II

BILL OF LADING - NON-BULK (U.S. DOT)

Fuel, Aviation, Turbine Engine, 3, UN1863, PG II

U.S. DEPARTMENT OF TRANSPORTATION (DOT) REQUIREMENTS

General Transportation Information for Bulk Shipments

Proper Shipping Name: Fuel, Aviation, Turbine Engine
Hazard Class: 3 UN/NA Code: UN1863
Packaging Group: PG II
Labels Required: None
Placards Required: Combustible Liquid, UN1863
Reportable Quantity: See Regulatory Information (Section 15)

General Transportation Information for Non-Bulk Shipments

Proper Shipping Name: Fuel, Aviation, Turbine Engine
Hazard Class: 3 UN/NA Code: UN1863
Packaging Group: PG II
Labels Required: None
Placards Required: Combustible Liquid, UN1863
Reportable Quantity: See Regulatory Information (Section 15)

Comments

The above description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information.

15. Regulatory Information

FEDERAL REGULATIONS

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

Consult OSHA's Benzene standard 29 CFR 1910.1028 for provisions on air monitoring, employee training, medical monitoring, etc.

A release of this material, as supplied, may be exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA - 40 CFR 302) by the petroleum exclusion. Releases may be reportable to the National Response Center (800-424-8802) under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5).

This material may contain toxic chemical(s) in excess of the applicable de minimis concentration that are subject to the annual toxic chemical release reporting requirements of the Super fund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

This material contains one or more substances listed as hazardous air pollutants under Section 112 of the Clean Air Act.

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

STATE REGULATIONS

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

SARA 311/312 HAZARD CATEGORIES

Immediate Hazard: X Delayed Hazard: X Fire Hazard: X Pressure Hazard: - Reactivity Hazard: -

NFPA RATINGS

Health: 1 Flammability: 3 Reactivity: 0 Special Hazards: -

HMIS RATINGS

Health: 2* Flammability: 3 Reactivity: 0

Following ingredients of this material are listed in SARA 313 above the deminimis concentration

SARA Listed ingredient Name / CAS Number

N-Hexane / 110-54-3
CYCLOHEXANE / 110-82-7
XYLENES / 1330-20-7
TOLUENE / 108-88-3
BENZENE / 71-43-2
ETHYLBENZENE / 100-41-4
NAPHTHALENE / 91-20-3
1,2,4-TRIMETHYLBENZENE / 95-63-6
CUMENE / 98-82-8

16. Other Information

DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, an MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

MSDS SUMMARY SHEET

Manufacturer:

Name: PHILLIPS PETROLEUM COMPANY

Address 1:

Address 2:

Address 3:

CSZ: BARTLESVILLE **State:** OK **Zipcode:** 74004

Emergency phone: (800) 424-9300

Business phone: 800-762-0942

Product:

Ferndale MSDS#: 1354 **Version # :** 6

Manufacturer MSDS#: 0041

Current? : 2002

Name:

NO. 2 DIESEL FUEL

Synonyms:

CARB Diesel TF3

CARB Diesel

CARB Diesel 10%

Diesel Fuel Oil

EPA Low Sulfur Diesel Fuel

EPA Low Sulfur Diesel Fuel – Dyed

EPA Off Road High Sulfur Diesel – Dyed

Fuel Oil No. 2 – CAS # 68476-30-2

No. 2 Diesel Fuel Oil

No. 2 Fuel Oil – Non Hiway – Dyed

No. 2 High Sulfur Diesel – Dyed

No. 2 Low Sulfur Diesel - Dyed

No. 2 Low Sulfur Diesel - Undyed

Crude column 3rd IR

Crude column 3rd side cut

Atmospheric tower 3rd side cut

Ultra Low Sulfur Diesel No. 2

Finished Diesel

DHT Reactor Feed

Straight Run Diesel

Diesel

Middle Distillate

Product/Catalog Numbers:

MSDS Date: 01/01/2002 (received: 01/14/2002)

NFPA codes:

Health: 0 **Flammability:** 2 **Reactivity:** 0

MATERIAL SAFETY DATA SHEET
No. 2 Diesel Fuel

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple
SAP Code:
Synonyms: 1354
CARB Diesel TF3
CARB Diesel
CARB Diesel 10%
Diesel Fuel Oil
EPA Low Sulfur Diesel Fuel
EPA Low Sulfur Diesel Fuel – Dyed
EPA Off Road High Sulfur Diesel – Dyed
Fuel Oil No. 2 – CAS # 68476-30-2
No. 2 Diesel Fuel Oil
No. 2 Fuel Oil – Non Hiway – Dyed
No. 2 High Sulfur Diesel – Dyed
No. 2 Low Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel – Undyed
No. 2 Ultra Low Sulfur Diesel – Dyed
No. 2 Ultra Low Sulfur Diesel - Undyed
Fuel

Intended Use:

Chemical Family:

Responsible Party: Phillip's Petroleum Company
Bartlesville, Oklahoma 74004

For Additional MSDSs: 800-762-0942

Technical Information:

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident

California Poison Control System: 800-356-3120

Call CHEMTREC

North America: (800) 424-9300

Others: (703) 527-3887 (collect)

Health Hazards/Precautionary Measures: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Straw-colored to dyed red
Physical Form: Liquid
Odor: Characteristic petroleum

HFPA Hazard Class:
 Health: 0 (Least)
 Flammability: 2 (Moderate)
 Reactivity: 0 (Least)

HMIS Hazard Class
 Not Evaluated

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>HAZARDOUS COMPONENTS</u>	<u>% VOLUME</u>	<u>Limits</u>	<u>EXPOSURE GUIDELINE</u>	
			<u>Agency</u>	<u>Type</u>
Diesel Fuel No. 2 CAS# 68476-34-6	100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10ppm	ACGIH	TWA
		15ppm	ACGIH	STEL
		10ppm	OSHA	TWA
		250ppm	NIOSH	IDLH

All components are listed on the TSCA inventory

Tosco Low Sulfur No. 2 Diesel meets the specifications of 40 CFR 60.41 for low sulfur diesel fuel.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not actually toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. **ASPIRATION HAZARD** – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard; Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: >125°F/>52°

OSHA Flammability Class: Combustible liquid

LEL %: 0.3 / UEL %; 10.0

Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharged. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing or high pressure hydraulic oil equipment.

“Empty” containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. “Empty” drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSIZ49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area “No Smoking or Open Flame.” Store only in approved containers. Keep away from incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentration below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge maybe used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrants a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eyes/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1atm).

Appearance: Straw-colored to dyed red

Physical State: Liquid

Odor: Characteristic petroleum

pH: unavailable

Vapor Pressure (mm Hg): 0.40

Vapor Density (air=1):>3

Boiling Point/Range: 320-700°F /160-371°C

Freezing/Melting Point: No Data

Solubility in Water: Negligible

Specific Gravity: 0.81-0.88 @ 60°F

Percent Volatile: Negligible

Evaporation Rate (nBuAc=1): <1

Viscosity: 32.6-40.0 SUS @ 100°F

Bulk Density: 7.08 lbs/gal

Flash Point: >125°F / >52°C

Flammable/Explosive Limits (%): LEL: 0.3 / UEL: 10.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. ACGIH has included a TLV of 0.05 mg/m³ TWA for diesel exhaust particulate on its 1999 Notice of Intended Changes. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel No. 2.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has not been identified as a carcinogen by IARC or OSHA.

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container insate? could be considered a RCRA hazardous waste and must be disposed of with care and in compliance with federal, state and local regulations. Large empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Diesel Fuel, NA1983
Non-Bulk Package Marking: Diesel Fuel, 3, NA 1993, III

15. REGULATORY INFORMATION**EPA SARA 311/312 (Title III Hazard Categories):**

Acute Health: Yes
 Chronic Health: Yes
 Fire Hazard: Yes
 Pressure Hazard: No
 Reactive Hazard: No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
-----------	------------	----------

-- None known --

California Proposition 65:

Warning: This material contains the following chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as carcinogen by IARC.

EPA (CERCLA Reportable Quantity): None

16. OTHER INFORMATION

Issue Date: 01/01/02
Previous Issue Date: 05/15/01
Product Code: Multiple
Revised Sections: None
Previous Product Code: Multiple
MSDS Number: 0041

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Data Safety Sheet is based on data believed to be accurate as of the date this Material Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THE PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Tosco Refining Company

Ferndale Refinery

UltraLow Sulfur Diesel Product Specification

Ferndale Product Code:34380xx (5) Product Code: ULSD2

(COMETS)

Specification	Unit	Limit	Test Procedure	Typical
Appearance Water & Sediment Color Haze Rating	Vol % Number Rating	0.05 Max 3.0 Max 2 Max	D 2709 D 1500 D 4176	
Composition Carbon Residue (Ramsbottom)	Wt %	0.35 Max	D 524, D 189	
Volatility 90% Recovered Flash Point Gravity	Deg; F Deg; F Deg; F API	540 Min 640 Min 125 Min (1) 30 Min	D 86 D 86 D 93 D 287, D4052	130 F
Fluidity Pour Point Cloud Point Viscosity @ 104F	Deg; F Deg; F cSt cSt	See Season Table (6) See Season Table (6) 1.9 Min 4.1 Max	D 97 D 2500 D 445 D 445	10 F
Lubricity, SLBOCLE	grams	3100 Min	D 6078	3300gm
Lubricity, HFRR	mm	.45	D 6079	
Combustion Cetane Index or Cetane Number (3,4)	Number	40.0 Min	D 976, D613	47.0
Corrosion Copper Strip, 3hr @ 50 deg C	Number	3 Max (2)	D 130	
Aromatics (4)	Vol %	35 Max	D 1319	25 %
Contaminants Total Sulfur Water & Sediment Ash	PPM Vol % Wt %	30 Max 0.05 Max 0.01 Max	D 2622, D4294 D 1796 D 482	15-20ppm
Additives Cetane Improver Dye	Lb/MBbl	675 Max Undyed		

1. Minimum release specification is 125 deg. F. The refinery should target 135 deg. F.
2. Test result reported as a number and letter (e.g. 1a). Any letter is allowable as long as the number meets the spec shown.
3. Either specification must be met.
4. Either cetane index minimum or aromatics maximum must be met.
5. Winter cloud and pour specifications may be relaxed to the summer specifications by agreement with the customer.
6. Season Table

Month	Product Code	Pour Point	Cloud Point
Jan, Feb, Nov, Dec	WI	0 max (5)	14 max (5)
Mar - Oct	SU	15 max	24 max

ATTACHMENT 2

Emergency Response Procedures

EMERGENCY	PROCEDURES
Injury	Emergency first aid may be applied on site as deemed necessary. Personnel trained in first aid and CPR will be identified to all field personnel and respond to personal injuries when they occur. Off-site emergency medical facilities will be contacted by the Emergency Coordinator to provide transport for injured personnel. A copy of the Medical Data Sheet Form will be transported with that individual to the medical facility. Before injured personnel are allowed to return to work, the occupational physician will provide a written release for return to work.
Chemical Exposure	
Inhalation	See chemical specific first aid reported in chemical data table (page F-11 of SSHP)
Skin contact	See chemical specific first aid reported in chemical data table (page F-11 of SSHP)
Eye Contact	See chemical specific first aid reported in chemical data table (page F-11 of SSHP)
Fire	<p>Site personnel will follow the guidance presented in the TtEC Corporate Health and Safety Manual when reporting a fire. All personnel must know the location of fire extinguishers and emergency communications as fire can occur at any time and virtually any place on-site.</p> <p>The site will be immediately evacuated. Notify the Cannon AFB Fire Department and other appropriate emergency response groups if an actual fire or explosion has taken place.</p> <p>The Emergency Coordinator will designate a person to meet and direct the emergency personnel to the location of the fire and evacuate the area if necessary. In no case are untrained personnel to fight a fire. Only those personnel trained in the use of fire fighting equipment (such as fire extinguishers) will use such equipment. The locations of all fire extinguishers will be clearly identified. All heavy equipment will have a fire extinguisher placed inside the operator's cab.</p> <p>An explosion is likely to be accompanied by severe trauma or death, fire, unstable structures, secondary explosions, toxic clouds or fumes, and destruction of emergency response and communications equipment. Panic and confusion often result and must be controlled. The Emergency Coordinator performs the following response measures as appropriate when responding to an explosion:</p> <ul style="list-style-type: none"> • Initiates evacuation procedures • Notifies appropriate response agencies (fire, ambulance, police) • Assesses the situation and decides whether secondary emergencies are likely • Attends to the injured • Turns off/removes sources of explosive gases or flammable liquids • Checks for exposed live utilities • Contact the Cannon AFB Project Manager, North Wind Task Order Manager, and PESM to apprise them of the situation <p>When explosive atmospheres are present, the Emergency Coordinator coordinates the following response measures with the SHSO as appropriate:</p> <ul style="list-style-type: none"> • Initiates evacuation procedures if action levels dictate • Notifies the Cannon AFB fire department of potentially explosive condition • Removes sources of ignition • Ventilates the area • Continues monitoring for explosive atmosphere condition

EMERGENCY	PROCEDURES
Vapor/Gas Release	<p>Initiate evacuation in an upwind direction. Notify response agencies (fire, ambulance, police). Assess the scene and decide whether secondary emergencies are possible. Attend to injured. Determine if source of release can be safely shut off or covered. Contact the Cannon AFB Project Manager, North Wind Task Order Manager, and PESM to apprise them of the situation.</p>
Major Spill	<p>Unless dictated by a project-specific requirement, the policy for responding to large spills and significant environmental releases will be to immediately notify the Cannon AFB Fire Prevention and Protection Branch, Environmental Compliance Branch, and the Safety Health and Environment Office. When a spill occurs, only those trained personnel involved in overseeing or performing emergency operations will be allowed by the Emergency Coordinator within designated hazard areas. If necessary, the area will be roped or otherwise blocked off.</p> <p>If the spill results in the formation of a toxic vapor cloud (by reaction with surrounding materials or by outbreak of fire), site evacuation will be performed.</p> <p>The Emergency Coordinator will perform the following seven steps when responding to a spill or environmental release:</p> <ol style="list-style-type: none"> 1. Determine the nature and major components of the spill. 2. Make sure all unnecessary persons are removed from the spill area. 3. Notify the Cannon AFB Fire Prevention and Protection Branch; the Safety, Health, and Environment Office; and the Base Environmental Office for large spills and significant environmental releases. 4. If a flammable liquid, gas, or vapor is involved, remove all ignition sources, and use spark-and explosion-proof equipment and clothing to contain or clean up the spill or release. 5. If possible, try to control the leak or spill with the materials that are kept on hand for such instances. 6. Remove all surrounding materials that could react with materials in the spill.
Off-site Emergency (e.g. Client or neighbor facility emergency)	<ul style="list-style-type: none"> • Determine if emergency affects operations or operations affects emergency. • Contact appropriate agencies (fire, police, Cannon AFB Project Manager, and follow their directions. • Evacuate as appropriate. • Assist if requested and it is approved by Cannon AFB Project Manager, North Wind Task Order Manager and/or Program Manager. Inform PESM if assistance is to be provided so that a rapid hazard assessment can be performed (telephone walk-through of planned tasks).
Other (Evacuation):	<p>In the event an evacuation of site personnel and/or the public is required (e.g., fire, explosion, or significant release of toxic gases), an air horn will be sounded for approximately 10 seconds to indicate initiation of evacuation procedures. When two-way radios are used, instructions will be given for evacuation over the radio. All unnecessary conversations will be suspended until the emergency is over. All field personnel in both the controlled and uncontrolled areas will evacuate and assemble in the CRZ, other safe area as identified by the Emergency Coordinator, or as designated in each project-specific addendum. The location will be upwind of the situation if at all possible. As the safety of all field personnel is being established, appropriate emergency services will be contacted by the Emergency Coordinator via telephone to respond to the emergency.</p> <p>For efficient and safe site evacuation and assessment of the emergency situation, the Emergency Coordinator will coordinate with the Cannon AFB Installation On-Scene Coordinator if outside services are required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The Emergency Coordinator must designate a person to immediately notify the Cannon AFB Fire Department, see that access for emergency equipment is provided, and verify that all combustion apparatuses have</p>

EMERGENCY	PROCEDURES
	<p>been shut down after the alarm has been sounded.</p> <p>Emergency response groups should be provided with the following information:</p> <ol style="list-style-type: none">1. Is an explosion or fire involved?2. What kind of an emergency is it and where is it located?3. What type of material is involved? Was contamination released?4. What is the nature of any injuries? <p>Personnel will not re-enter an evacuated area until instructed to do so by the Emergency Coordinator. In addition, if site operations are halted in response to an emergency, the Emergency Coordinator will see to it that valves, pipes, and other equipment are monitored for leaks, pressure buildup, gas generation, or ruptures.</p>

This page intentionally left blank.

ATTACHMENT 3

MEDICAL DATA SHEET

The brief medical data sheet shall be completed by all on-site personnel and will be kept in the Support Zone by the Site Health and Safety Officer as a project record during the conduct of site operations. It accompanies any personnel when medical assistance is needed or if transport to a hospital is required.

Project: _____

Name: _____ Home Telephone: _____

Address: _____

Age: _____ Height: _____ Weight: _____ Blood Type: _____

Name and Telephone Number of Emergency Contact: _____

Drug or Other Allergies: _____

Particular Sensitivities: _____

Do You Wear Contacts? _____

Provide A Check List Of Previous Illnesses: _____

What Medications Are You Presently Using? _____

Do You Have Any Medical Restrictions? _____

Name, Address, And Phone Number Of Personal Physician: _____

This page intentionally left blank.

ATTACHMENT 4

Hospital Route Map

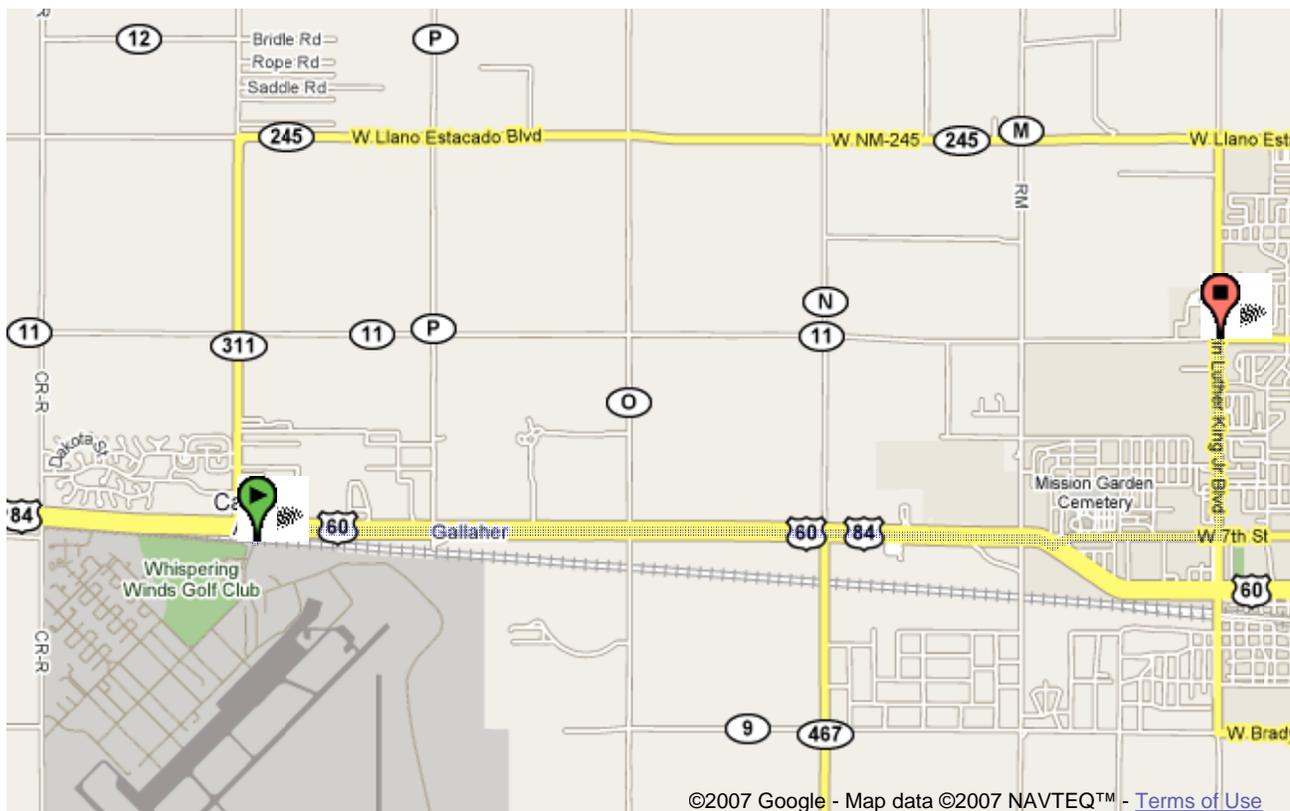
Search Results My Maps [New!](#) [Print](#) [Email](#) [Link to this page](#)



Start **Cannon Air Force Base, NM**

End **2100 N Thomas St
Clovis, NM 88101**

Travel **6.0 mi – about 10 mins**



Cannon Air Force Base, NM

Directions provided from Cannon AFB Main Gate to Plains Regional Medical Center, 2100 N. Thomas St., Clovis, NM, 88101. Route verified by Carol Rieger.

Drive: 6.0 mi – about 10 mins

- | | |
|---|------------------|
| 1. Head north | 82 ft |
| ➔ 2. Slight right to merge onto US-60 E/US-84 S | 4.1 mi
5 mins |
| ⬅ 3. Turn left at W 7th St | 0.9 mi
3 mins |
| ⬅ 4. Turn left at N Martin Luther King Jr Blvd | 1.0 mi
3 mins |



**2100 N Thomas St
Clovis, NM 88101**

These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

Map data ©2007 NAVTEQ™