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MAR 2010

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

FEB 26 2010

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Dear Ms. Stewart

Cannon Air Force Base, NM is forwarding two hardbound and two electronic copies of the Remedy Completion Report for SWMU 31 AGE Maintenance Facility, Cannon Air Force Base, New Mexico, January 2010 for your consideration. Cannon Air Force Base requests SWMU 31 be granted Corrective Actions Complete without Controls status based on laboratory analysis for soil contamination results below State action levels.

If you have any questions, please contact Mr. Hugh G. Hanson, Natural Resources Management Element, at (575) 784-6391.

Sincerely

RONALD A. LANCASTER, YC-03

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

Air Commandos

Remedy Completion Report for SWMU 31 AGE Maintenance Facility Cannon Air Force Base, New Mexico

February 2010

27 SOCES/CEAN
Cannon Air Force Base
New Mexico

Remedy Completion Report
for SWMU 31 AGE Maintenance Facility
Cannon Air Force Base, New Mexico

February 2010

Prepared for:

27 SOCES/CEAN
Cannon Air Force Base, New Mexico

U.S. Army Corps of Engineers
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LIST OF ACRONYMS AND ABBREVIATIONS

AF	attenuation factor
AFB	Air Force Base
AGE	Aerospace Ground Equipment
Base	Cannon Air Force Base
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CMS	Corrective Measures Study
COPC	Chemical of Potential Concern
CQC	Construction Quality Control
DAF	dilution-attenuation factor
DPT	direct-push technology
DRO	diesel-range organics
DQCR	Daily Quality Control Report
EPA	United States Environmental Protection Agency
ft	foot or feet
GRO	gasoline-range organics
GSI	Groundwater Services, Inc.
HELP	Hydraulic Evaluation of Landfill Performance
MCL	maximum contaminant level
MDL	method detection limit
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
ml/g	milliliters per gram
MSSL	Medium-Specific Screening Level
MULTIMED	Multimedia Exposure Assessment
NMED	New Mexico Environment Department
North Wind	North Wind, Inc.
OWS	oil/water separator
PAH	polycyclic aromatic hydrocarbon
PARCC	precision, accuracy, representativeness, comparability, and completeness
PCS	petroleum-contaminated soil

LIST OF ACRONYMS AND ABBREVIATIONS (CONCLUDED)

QA	quality assurance
QC	quality control
RBCA	Risk-Based Corrective Action
RCR	Remedy Completion Report
RCRA	Resource Conservation and Recovery Act
RDA	recommended daily allowance
RFI	RCRA Facility Investigation
Rhino Environmental	Rhino Environmental, Inc.
RI	Remedial Investigation
SCEM	site conceptual exposure model
SSTL	site-specific target level
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
TAL	target analyte list
TCLP	Toxicity Characteristic Leaching Procedure
TtEC	Tetra Tech EC, Inc.
TRPH	total recoverable petroleum hydrocarbons
TPH	total petroleum hydrocarbon
USACE	U.S. Army Corps of Engineers
URS	URS Greiner Woodward Clyde
UTL	upper tolerance limit
VOC	volatile organic compound
Woodward-Clyde	Woodward-Clyde Consultants

EXECUTIVE SUMMARY

This Remedy Completion Report (RCR) documents the 2009 voluntary corrective action conducted at Solid Waste Management Unit (SWMU) 31, the Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad, at Cannon Air Force Base (AFB), New Mexico. This accelerated corrective action was performed to achieve remedy completion for 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, excavated and disposed of petroleum-contaminated soil (PCS).

To support a consideration of Corrective Action Complete status by the NMED, the RCR presents a comprehensive and detailed summary of all work completed at the site to date. Prior to the 2009 corrective action, work at SWMU 31 included RCRA Facility Investigations (RFIs), a Corrective Measures Study (CMS), limited contaminated soil removal, and supplemental data collection activities to support characterization of the site.

SWMU 31 is located immediately adjacent and southeast of Building 186, the former AGE maintenance facility. The AGE maintenance shop pad was active from 1971 until 2008, when the AGE maintenance operations moved to its current location in north of Building 186. The maintenance pad is an open concrete area adjacent to the southeastern side of the former AGE maintenance shop in Building 186.

The proposed remedy is described in detail in the *Final Accelerated Corrective Action Work Plan for SWMU 31, Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad* (Final Work Plan) (TtEC 2009). The revised remedy was initiated as an accelerated voluntary action to support planned new construction in the vicinity as part of the new mission operations at Cannon AFB.

The remedy was implemented from February through September 2009 following a Base-initiated risk-based management decision consisting of contaminated soil removal. Results of previous investigations, the CMS, and supplemental sampling activities indicated that the primary contamination at the site consisted of PCS in the vicinity of the former wash pad. Efforts during remedy implementation were focused on removing PCS with confirmation that no contamination remained in soil at levels greater than the 520 milligrams per kilogram (mg/kg) action level recommended by NMED in their *Total Petroleum Hydrocarbon Screening Guidelines* (NMED 2004).

A summary of the corrective action field activities and previous investigations is presented below to support the recommendation for the future of SWMU 31. The results of the investigations and corrective actions of the site are also summarized below:

- Results of the 1993 and 1994 RFIs indicated that soil had been impacted by activities associated with maintenance within the SWMU 31 pad area and the adjacent wash pad. Primary contaminants in soil included volatile organic carbons, polynuclear aromatic hydrocarbons, and metals (Woodward-Clyde 1994a, 1995b).

- Human health risk and ecological risk assessments were conducted. A Tier I evaluation for human health risk resulted in individual chemicals of concern being selected for the Tier II human health risk evaluation. The associated risk to human health was determined as acceptable based on the evaluation protocol (URS 2007). The initial evaluation of ecological risk determined that any receptors on site will have minimal or no exposure to potential contaminants present in soil. Therefore the risk to ecological receptors is negligible (URS 2007).

- Cannon AFB voluntarily conducted a corrective action in 1999 to remove soil contaminated with metals and PAHs at concentrations exceeding Tier II site-specific screening levels. The soil removal was confined to the area where soil boring 03101 was sampled during the Phase I RFI (Foster Wheeler 1999).

- The CMS evaluated corrective action alternatives for SWMU 31. Based on the results of the human health and ecological risk evaluations and the corrective measures evaluation criteria, the No Action alternative was selected (URS 2007).

- Considering the potential for petroleum contamination in soil beneath SWMU 31 and the adjacent AGE maintenance shop pad, Cannon AFB voluntarily conducted a corrective action at SWMU 31. In 2008, soil contamination was delineated utilizing direct-push technology sampling methodology for future removal and off-site disposal (Bay West and TtEC 2008).

- Utilizing the 2008 sample results, a corrective action at SWMU 31 was conducted by excavating contaminated soil in the area of the AGE maintenance shop pad and the adjacent wash pad. The contaminated soil was disposed off site and the excavation was backfilled with clean crushed concrete. The excavation area will be paved in early 2010.

Taking into consideration the results of previous investigations and risk evaluations and the completion of the remedy, a status of "Corrective Action Complete Without Controls" is recommended for SWMU 31.

1. INTRODUCTION

1.1 Report Purpose and Scope

This Remedy Completion Report (RCR) documents the 2009 voluntary corrective action conducted at Solid Waste Management Unit (SWMU) 31, the Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad, Cannon Air Force Base (AFB), New Mexico. This accelerated corrective action was performed to achieve remedy completion for 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, excavated and disposed of petroleum-contaminated soil (PCS) and restored the site to the condition prescribed by Cannon AFB.

To support a consideration of Corrective Action Complete status by the NMED, the RCR presents a comprehensive and detailed summary of all work completed at the site to date. Prior to the 2009 corrective action, work at SWMU 31 included RCRA Facility Investigations (RFIs), a Corrective Measures Study (CMS), limited contaminated soil removal, and supplemental data collection activities to support characterization of the site. The locations of Cannon AFB and SWMU 31 are shown in Figures 1-1 and 1-2. The RCR was prepared for Cannon AFB and the USACE Omaha District under Contract No. FA4890-04-D-0006, Task Order DK03.

1.2 Regulatory Framework

NMED is authorized by the EPA to implement the federal RCRA hazardous waste program and oversee the corrective action program activities conducted in accordance with Cannon AFB's permit. NMED issued a RCRA permit to Cannon AFB on December 17, 1989 (revised in 2005). Cannon AFB's Draft RCRA Part B Permit Application, submitted in July 1999, refers to the status of various assessment, investigation, and corrective action projects for a number of SWMUs on the Base.

Based on the results of the site investigations, CMS, and data evaluations conducted to date, the primary chemicals of concern at SWMU 31 are petroleum hydrocarbons in soil associated with the AGE maintenance facility shop and adjacent wash pad activities. The risk assessment did not characterize potential risks associated with a residential use scenario of the site (URS 2007). The risk characterization was conducted as part of the CMS, and used EPA guidance available at the time (1997) to determine whether any chemicals were present at the site that required corrective action. Data from the RFIs conducted in 1993 and 1994 by Woodward-Clyde Consultants (Woodward-Clyde 1994a, 1995b) were used for the risk assessment and confirmed that there is no significant human health risk requiring further action at SWMU 31. Corrective action at SWMU 31 was later recommended by Cannon AFB as a proactive measure to remove contamination in soil at the site based on more recent NMED guidance addressing PCS. Additional soil sampling was performed at SWMU 31 in February 2008 (Bay West and TtEC 2008) to determine the extent of PCS requiring cleanup following NMED (2004) guidance (*Total Petroleum Hydrocarbon Screening Guidelines*).

1.3 Site History

Cannon AFB is located in Curry County, New Mexico, approximately 7 miles west of the city of Clovis (Figure 1-1). Cannon AFB occupies 4,320 acres, primarily consisting of the airfield and associated operations, maintenance, and support facilities that are located northwest of the airfield. Housing facilities are located in the former northwestern portion of the Base, west of U.S. Highway 277 and north of U.S. Highway 60. Additional Base support facilities, such as the munitions storage area and current fire department training area, are located south and east of the airfield.

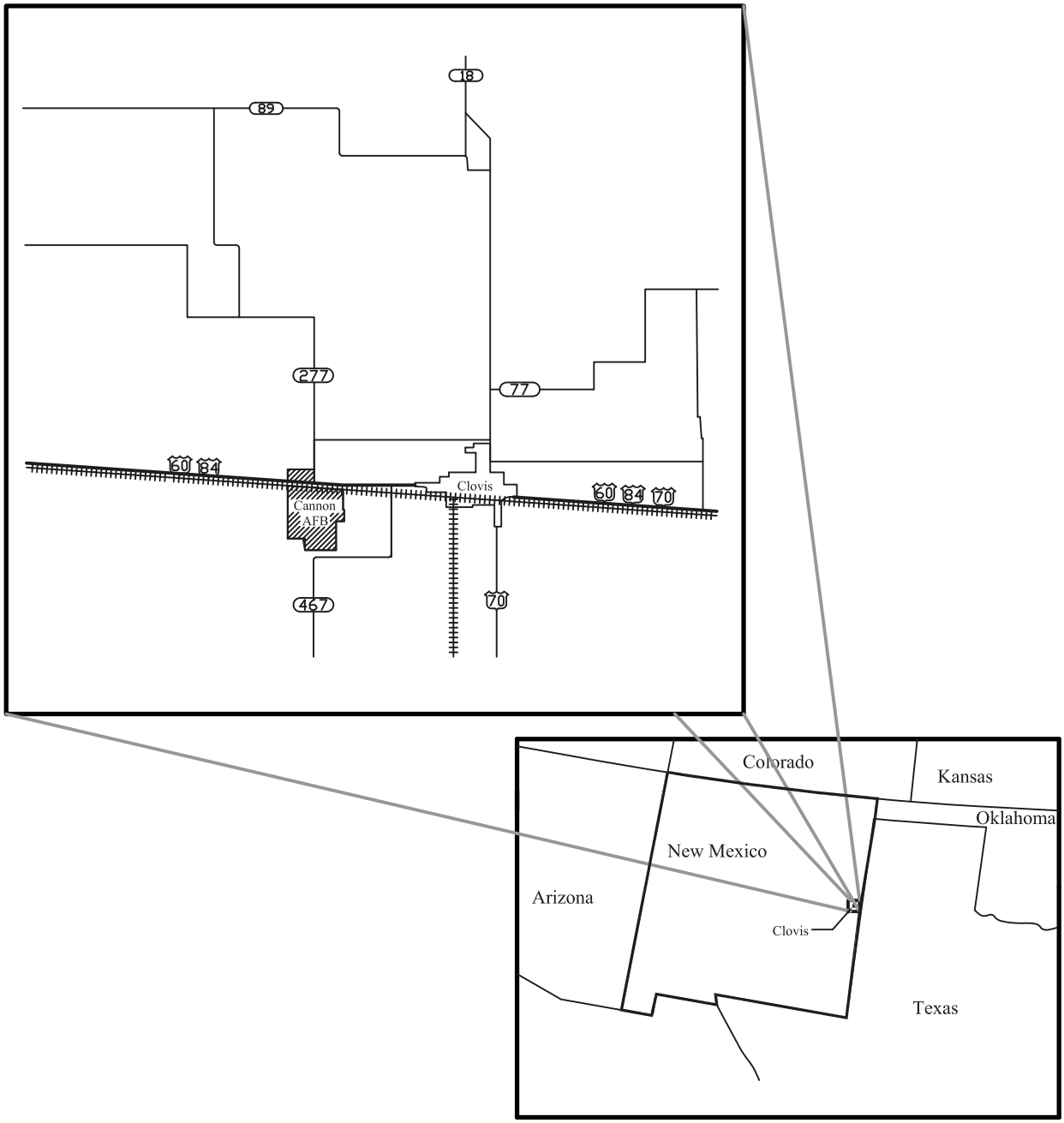
SWMU 31 is located immediately adjacent and southeast of Building 186, the former AGE maintenance facility, and is shown in Figure 1-2. The AGE maintenance shop pad was active from 1971 until 2008, when the AGE maintenance operations moved to its current location northeast of Building 186. Building 186 is now vacant. The maintenance pad is an open concrete area adjacent to the southeastern side of the former AGE maintenance shop in Building 186 (Figure 1-3). The maintenance pad is approximately 60 to 70 feet (ft) wide and 240 to 280 ft long. An open wash pad occupies a 45-square-ft area beyond the southeastern edge of the maintenance pad. The AGE Drainage Ditch (SWMU 34), investigated during the Appendix I Remedial Investigation (RI) (Woodward-Clyde 1991, 1992), is located southeast of the maintenance pad and conveys runoff to the northeast.

Maintenance on aeronautical ground equipment was formerly performed in Building 186 and on the southern and eastern sections of the pad. The open wash pad was frequently used to wash and clean support vehicles and equipment. The wash pad was drained separately to an adjacent oil/water separator (OWS), which was a part of the Appendix II investigation (Woodward-Clyde 1995a). The original OWS was removed and replaced with a new OWS in February 1997. A portion of the drainage from the maintenance pad reportedly flowed into a sand trap at the northwestern corner of the wash pad and emptied into the OWS.

The Appendix I RI investigation of soils lining the AGE Drainage Ditch (SWMU 34), southeast of the AGE maintenance shop pad, found negligible to nondetectable levels of target contaminants in the soils sampled (Woodward-Clyde 1991, 1992). Subsequent to the Appendix I RI, Phase I and Phase II RFIs were completed at SWMU 31.

Soil boring samples collected during the Phase I and Phase II RFIs (Woodward-Clyde 1994a, 1995b) indicated that total petroleum hydrocarbon (TPH) concentrations exceeding the action level at the time (1,000 milligrams per kilogram [mg/kg]) were detected at three locations associated with SWMU 31 (Woodward-Clyde 1994a, 1995b) at concentrations ranging from 2,500–4,070 mg/kg in surface and near-surface samples (Woodward-Clyde 1994a, 1995b).

Because of the limited historical data, additional soil sampling was performed in February 2008. The associated data review and the sampling plan are presented in the *Draft Letter Report, Voluntary Corrective Action, AGE Maintenance Facility Shop Pad (SWMU 31) and POL Wash Pad (SWMU 127)* (Direct-Push Technology [DPT] Letter Report) (Bay West and TtEC 2008). The remedy selection was revisited in 2008 and it was confirmed that excavation and off-site disposal of PCS was warranted at SWMU 31. The DPT Letter Report is provided in Appendix C.



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Remedy Completion Report
SWMU 31 AGE Maintenance Facility Shop Pad
Cannon Air Force Base, New Mexico

Location Map - Cannon Air Force Base

Date: 01-21-10

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Figure 1-1

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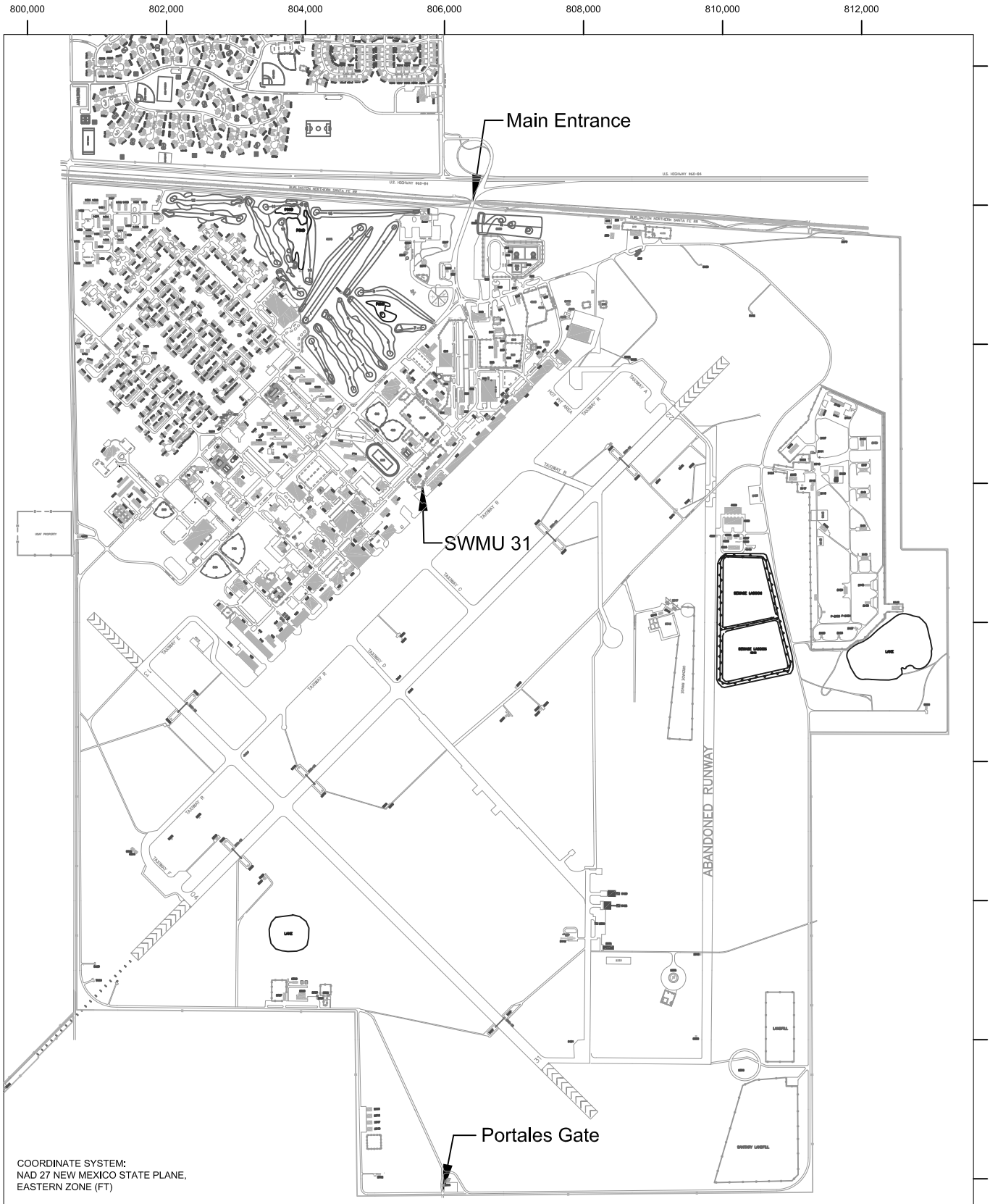

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Remedy Completion Report
SWMU 31 AGE Maintenance Facility Shop Pad
Cannon Air Force Base, New Mexico

Site Location Map - SWMU 31

Date: 01-21-10

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Figure 1-2

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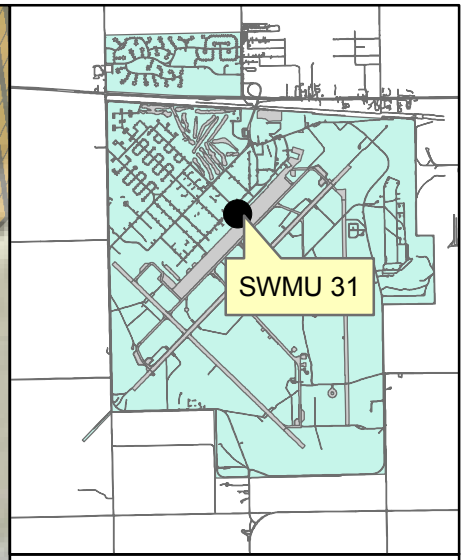

Legend

- SWMU 31
- SWMU 34
- Wash Pad Outline
- Fence

Remedy Completion Report
SWMU 31 AGE Maintenance
Facility Shop Pad
Cannon Air Force Base,
New Mexico

Figure 1-3

SWMU 31
Site Features Prior to
Corrective Actions

Revision Date: 2/23/2010

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The remedy as proposed is described in detail in the *Final Accelerated Corrective Action Work Plan for SWMU 31, Aerospace Ground Equipment (AGE) Maintenance Facility Shop Pad* (Final Work Plan) (TtEC 2009). The revised remedy was initiated as an accelerated voluntary action to support planned new construction in the vicinity as part of the new mission operations at Cannon AFB.

The remedy was implemented from February 2009 through February 2010 following a Base-initiated risk-based management decision consisting of contaminated soil removal. Results of previous investigations, the CMS, and supplemental sampling activities indicated that the primary contamination at the site consisted of PCS in the vicinity of the former wash pad. Efforts during remedy implementation were focused on removing PCS with confirmation that no contamination remained in soil at levels greater than the 520 mg/kg action level recommended by NMED in their *Total Petroleum Hydrocarbon Screening Guidelines* (NMED 2004).

1.4 Document Organization

The report is organized as follows:

- Section 1 contains the report purpose and organization.
- Section 2 provides a description of previous investigations and site activities.
- Section 3 documents the activities and results of the accelerated corrective action at SWMU 31.
- Section 4 presents the conclusion and recommendations for SWMU 31.
- Section 5 lists the references used to develop this report.

The following appendices to this report provide supporting documentation for the justification and implementation of the accelerated corrective action:

- Appendix A, Previous Investigations, provides an excerpted Section 4.0 from the CMS report (URS 2007) that presents the site description, history, and results of previous investigations at SWMU 31, including physical and analytical results, human and ecological risk assessments, fate and transport modeling, and discussion of corrective action alternatives.
- Appendix B, 1999 Voluntary Corrective Measure, Letter Report, details the limited contaminated soil removal conducted in early 1999 (Foster Wheeler 1999).
- Appendix C, 2008 DPT Letter Report, documents the sampling program to delineate the extent of PCS requiring excavation and off-site disposal (Bay West and TtEC 2008).
- Appendix D, Waste Manifests, presents copies of the waste manifests documenting off-site disposal of contaminated soil.
- Appendix E, Photograph Log, documents site activities and site conditions at SWMU 31 during the corrective action implementation.

- Appendix F, Confirmation Soil Sample Analytical Data, provides the analytical data reports for confirmation and waste characterization samples collected during and at the completion of corrective action.

2. PREVIOUS INVESTIGATIONS AND WORK AT SWMU 31

This section presents a comprehensive summary of previous investigations and work efforts conducted to achieve remedy completion for SWMU 31. Detailed information is provided describing the two previous RFIs, supplemental data evaluations, and the CMS completed for the site prior to corrective action activities initiated in 2009. The supplemental data evaluations were conducted as part of the CMS and consist of contaminant fate and transport modeling and human health and ecological risk assessments. Appendix A presents detailed information pertaining to SWMU 31 that was excerpted from the CMS and used to compile this section of the RCR. Finally, this section includes a brief synopsis of the limited contaminated soil removal activity conducted in 1999. The letter report detailing the 1999 voluntary corrective measure is contained in Appendix B.

2.1 Previous Investigations

2.1.1 Phase I RFI (1993)

The Phase I RFI (Woodward-Clyde 1994a) was conducted in 1993 to investigate potential impacts to soil associated with activities on and in the vicinity of the AGE maintenance shop pad. Surface and subsurface soil samples were collected from four 10-ft soil borings drilled in areas where wash-down water from the maintenance pad enters the AGE Drainage Ditch and along expansion joints or cracks in the pad to determine whether a release of SWMU-related chemicals posing a hazard to human health or the environment had occurred at these points. The Phase I RFI soil boring locations are shown in Figure 2-1. Appendix A provides a description of the location and rationale for the soil borings sampled during the Phase I RFI.

At soil borings 03101 and 03102 samples were collected from the 0- to 0.5-ft, 1.5- to 3.5-ft, 4- to 6-ft, and 8- to 10-ft depth intervals. At soil borings 03103 and 03104 samples were collected from the 0.5- to 2-ft, 2- to 4-ft, and 8- to 10-ft depth intervals.

Phase I RFI sample analyses included volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), target analyte list (TAL) metals, and total recoverable petroleum hydrocarbons (TRPH). SVOCs were analyzed only in surface soil samples and at selected depth intervals to support risk assessment. Surface samples were collected in areas of soil cover from 0.2 to 0.5 ft below ground surface (bgs) to provide data for risk characterization under a potential worst-case exposure scenario involving SVOC contamination, if present. In areas of pavement or concrete, soil sampling began immediately below the pavement-soil contact. Chemical results are summarized in Appendix A (Tables 4-1 and 4-2).

Analytical results for samples collected during the Phase I RFI indicted that tetrachloroethene was detected at low concentrations in surface soil in soil boring 03103. Polycyclic aromatic hydrocarbons (PAHs) including anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, carbazole, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, phenanthrene, and pyrene were detected in surface samples in soil borings 03101, 03102, and 03103 and at 3.5 ft bgs in soil boring 03102. Antimony, barium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, and zinc were detected at concentrations exceeding background values in surface and subsurface soil samples to a depth of 10 ft bgs in one or more of

the borings (Woodward-Clyde 1994a). TRPH was detected at concentrations ranging from 81 mg/kg to 4,070 mg/kg in four samples to depths varying from 0–2 ft bgs.

Evaluation of the distribution of soil contamination indicated that asphalt present across the site may have been the source of PAHs detected in the soil samples. It is likely that imported fill material present beneath the asphalt and concrete across the site may account for the elevated levels of metals. Barium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, cadmium, chromium, chrysene, indeno(1,2,3-cd)pyrene, lead, and TRPH exceeded the risk screening criteria available at the time of the Phase I RFI (Woodward-Clyde 1994a). These results are summarized in Appendix A (Figure 4-3).

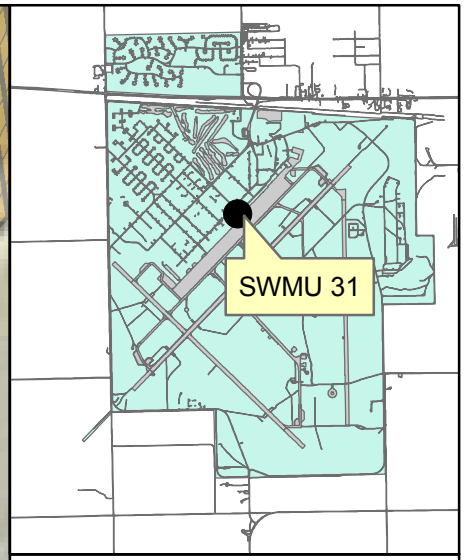
2.1.2 Phase II RFI (1994)

In 1994, the Phase II RFI was conducted to assess and define the extent of soil contamination at SWMU 31. Three soil borings were each drilled to a depth of 10 ft and soil samples were collected at the maintenance pad to further assess the lateral and vertical presence and extent of site-related soil contaminants at the 10-ft depth interval (Woodward-Clyde 1995b). Samples were analyzed for VOCs, SVOCs, TAL metals, and TRPH. The Phase II RFI soil boring locations are shown in Figure 2-1. Appendix A provides a description of the location and rationale for the soil boring locations sampled during the Phase II RFI.

A summary of the chemicals detected in soil samples collected during the Phase II RFI is provided in Appendix A (Figure 4-3 and Table 4-3). Other than acetone, which was determined to be associated with laboratory contamination, the only VOC reported in near-surface soil samples was total xylenes at a concentration of 130 micrograms per kilogram (µg/kg). Several SVOC compounds, mostly PAHs, were reported as detections in all three near-surface samples. Total PAHs were detected at concentrations ranging from 7,903 µg/kg in soil boring 3105 to 25,450 µg/kg in soil boring 3107. Additional SVOCs detected in near-surface soil samples included bis(2-ethylhexyl)phthalate, butyl benzyl phthalate, carbazole, dibenzofuran, and 4-methylphenol. Petroleum hydrocarbons were detected at concentrations of 696 mg/kg, 914 mg/kg, and 2,500 mg/kg in near-surface soil samples from soil borings 3105, 3106, and 3107, respectively. The Phase II RFI concluded that the asphalt present at the site was likely the source of PAHs detected in soil (Woodward-Clyde 1995b). It is likely that imported fill material present beneath the asphalt and concrete across the site may account for the elevated levels of metals.

Other than acetone, which was qualified as a nondetect after it was determined to be laboratory contamination, the only VOC reported in subsurface soil samples was toluene at concentrations up to 5.5 µg/kg (estimated) in soil boring 3107. Only one SVOC compound, fluoranthene, was detected in any of the subsurface samples as an isolated occurrence in soil boring 3107 at a concentration of 120 µg/kg (estimated). Petroleum hydrocarbons were not reported in any of the subsurface samples.

The maximum concentrations of cadmium, chromium, cobalt, copper, lead, manganese, nickel, and zinc detected in soil samples exceeded background levels during the Phase II RFI (Woodward-Clyde 1995b).



Legend

- 2008 DPT Sample Location
- 1993/94 RFI Sample Location
- SWMU 31
- SWMU 34
- Wash Pad Outline
- Fence

Remedy Completion Report
SWMU 31 AGE Maintenance
Facility Shop Pad
Cannon Air Force Base,
New Mexico

Figure 2-1

SWMU 31
Investigation
Sample Locations

Revision Date: 2/23/2010

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The maximum detected concentrations of TRPH reported for Phase I and Phase II RFI soil samples were 4,070 mg/kg and 2,500 mg/kg, respectively; these concentrations exceeded the NMED action level at the time of 1,000 mg/kg. The NMED action levels at the time of the RFIs for benzene, toluene, ethylbenzene, and xylenes (BTEX) (500 mg/kg) and benzene (as a single compound) (10 mg/kg) were not exceeded during either investigation.

2.2 Human Health Risk Assessment (1997)

A human health risk evaluation was conducted to support the draft CMS using data collected during the Phase I and Phase II RFIs and utilizing the assessment protocol available at that time from the EPA. The site conceptual exposure model (SCEM) developed for SWMU 31 included evaluation of the contaminant source areas, chemical release mechanisms, environmental transport media, potential human intake routes, and potential human receptors. The SCEM established for SWMU 31 identified complete exposure pathways that were then evaluated to determine potential human health risks. Evaluation of exposure pathways consisted of four necessary elements:

- A source and mechanism of chemical release to the environment
- An environmental transport medium for the released chemical (e.g., air, groundwater, or surface water)
- A point of potential human exposure to transported chemicals (e.g., a domestic drinking water well)
- A human intake mechanism (e.g., inhalation or ingestion) at the point of exposure

The SCEM developed for SWMU 31 is presented in Appendix A (Figure 4-4).

The primary contaminant source at SWMU 31 is waste fluids (e.g., fuels, oils, and solvents) that leaked or were spilled within the AGE maintenance shop pad area, or adjacent wash pad, and the surrounding surface soil.

Chemicals from the primary source may be transported away from the primary source areas, affecting other media that may in turn act as secondary sources. Mixing and infiltration of the wastes with the soil are shown as the primary chemical release mechanisms. Subsurface soils are an important secondary source of potential chemical release. Site-related chemicals in soils may infiltrate/percolate through the soil and be released to groundwater.

Other release mechanisms, such as direct contact (soil and dermal contact), surface runoff, wind erosion, or volatilization to the atmosphere, are also depicted in the SCEM. Transport by storm runoff is not considered a significant pathway for human exposure at SWMU 31 because runoff settles in the low spots located on the southeastern side of the SWMU, but is not transported off site.

Potential receptors at SWMU 31 include occupational receptors, hypothetical future construction workers, and hypothetical trespassers. SWMU 31 is located in the industrial area of the Base (Figure 1-2); therefore, residential development is not a likely future land use. Surface soil (upper 2 ft of soil column) and air emissions (particulate) from surface soil may provide exposures to occupational

receptors and hypothetical trespassers. Surface soil, subsurface soil, and air emissions (volatile and particulate) may provide exposures to hypothetical future construction workers during excavation activities.

Groundwater is used for domestic purposes on and off Base. However, potential groundwater exposures were not evaluated because fate and transport modeling indicates that groundwater will not be impacted (see Section 2.4).

In summary, the potentially complete human exposure pathways at SWMU 31 include occupational receptors, hypothetical construction workers, and hypothetical trespassers.

2.2.1 Site Classification

Site classification is a prioritization step that is used to judge the urgency of the need for initial response actions and maximizes the effectiveness of limited resources. SWMU 31 presents no explosive threat and contains no free product, and no threat to surface water or groundwater. There are no public facilities (i.e., daycares, parks, schools, dwellings) located on or near the site. The nearest potable groundwater aquifer is more than 250 ft bgs. Additionally, access to soils is limited primarily to Base personnel. Therefore, SWMU 31 was considered to be a Class 4 site because there is no demonstrable threat to human health and safety or sensitive environmental receptors (URS 2007).

2.2.2 Background Comparison

Metals are natural constituents of soils and water. Metals that occur at concentrations within background levels are not considered site-related chemicals of concern and are not evaluated further. To determine if the concentrations of metals detected in surface and subsurface soil at SWMU 31 exceeded background concentrations, the maximum detected concentrations at the site were compared to the calculated background upper tolerance limits (UTLs) (URS 2007). The UTLs used in this comparison were calculated as part of the background study for Cannon AFB. Maximum detected concentrations from surface soils were compared to surface soil UTLs. Maximum detected concentrations from subsurface soils were compared to subsurface UTLs. If the maximum detected concentration exceeded the background UTL, the metal was considered to exceed background and was evaluated in the Tier 1 screen.

The maximum detected concentrations of metals in surface soil were compared to background concentrations (URS 2007). Aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, nickel, sodium, and zinc were considered to exceed background. All other metals were considered to be within background levels. Appendix A (Table 4-4) summarizes the comparison results for metals detected in surface soil.

The maximum detected concentrations of metals in subsurface soil were compared to background concentrations (URS 2007). Barium, calcium, copper, lead, and zinc were considered to exceed background levels. All other metals were considered to be within background levels. Appendix A (Table 4-5) summarizes the comparison results for metals detected in subsurface soil.

The maximum detected concentrations of essential nutrients that exceeded background and did not have established EPA Region VI Medium-Specific Screening Levels (MSSLs) were compared to the

recommended daily allowances (RDAs) set by the National Research Council. At SWMU 31, calcium, magnesium, and sodium were compared to the RDAs. Appendix A (Table 4-6) shows that the maximum detected concentrations of calcium, magnesium, and sodium did not cause estimated potential site daily intake to exceed the RDAs. Therefore, these inorganic constituents would not pose a human health risk and were not evaluated further.

2.2.3 Tier 1 Evaluation

The Tier 1 evaluation involved the comparison of the maximum detected site concentrations in surface and subsurface soil combined to conservative, non-site-specific, risk-based screening levels to determine whether site conditions satisfy the criteria for regulatory closure or warrant a more site-specific evaluation.

Chemicals of Potential Concern (COPCs) were identified based on the chemical analytical data (Phase I and II RFI results) presented in Appendix A (Tables 4-1, 4-2, and 4-3). Metals that exceeded applicable background levels and RDAs and all detected organic compounds (except those considered to be laboratory contaminants) were evaluated as COPCs. TRPH was not considered to be a COPC because it is a complex chemical mixture with varying constituents. Therefore, individual constituents (e.g., BTEX, PAHs, etc.) were used to evaluate potential impacts from petroleum contamination at SWMU 31.

Maximum detected concentrations of COPCs were compared to the EPA Region VI Residential MSSLs. The comparison summary is shown in Appendix A (Table 4-7). The table shows that benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, arsenic, chromium, and lead exceeded the Tier 1 values. Therefore, these compounds were considered to be chemicals of concern at SWMU 31.

2.2.4 Tier 2 Evaluation

The Tier 2 evaluation provides an option to determine the target levels for the chemicals of concern identified in the Tier 1 comparison. This step uses site-specific information related to exposure parameters and soil properties to develop site-specific target levels (SSTLs).

At SWMU 31, the SSTLs were calculated using the *Risk-Based Corrective Action (RBCA) Tool Kit for Chemical Releases* developed by Groundwater Services, Inc. (GSI 1999). The site-specific information used to develop the SSTLs included the assumption of a commercial and construction worker exposure scenario. Tier 1 values assumed residential exposure, which is highly conservative for SWMU 31. SWMU 31 is located in an industrial area of the Base and the maintenance pad was operated by the former AGE maintenance shop. Therefore, industrial exposures are more appropriate for this site. The following exposure assumptions were used to calculate the SSTLs for chemicals of concern at SWMU 31.

An exposure frequency of 60 days per year was assumed for the commercial worker scenario. Although SWMU 31 was an active facility at the time of the CMS, the type of work performed on site did not require regular contact with soil and the area was predominantly covered by concrete. Therefore, worker exposures to contaminated soils were considered very limited. Additionally, the site would not require significant ground maintenance/landscaping where the concrete ground cover was present. Therefore, the assumption of 60 days per year (5 days per month) is conservative and

provides protection for Base workers. Standard default values were used for all other exposure parameters. The SSTLs for chemicals of concern at SWMU 31 and their maximum detected concentrations are discussed in Appendix A (Section 4.5.5).

The maximum detected concentrations for benzo(a)pyrene and benzo(b)fluoranthene exceeded their SSTLs. All other chemicals of concern were below their SSTLs. Lead does not have an EPA-established toxicity factor; therefore, an SSTL could not be calculated for it. However, EPA Region VI recommended a value of 2,000 mg/kg of lead for industrial exposure to soils. The maximum detected concentration of lead at SWMU 31 (930 mg/kg) did not exceed the industrial screening-level value.

Compounds with detections that exceeded SSTLs included benzo(a)pyrene in three surface soil samples and benzo(b)fluoranthene in one surface soil sample. Concentrations of these two chemicals of concern decreased with depth to nondetect levels in all soil borings (see Appendix A, Figure 4-3). The maximum concentrations of these chemicals of concern used for comparisons to SSTLs were those detected in samples collected during the Phase I RFI (Woodward-Clyde 1994a) and used in the Baseline Risk Assessment (Woodward-Clyde 1994b). The Baseline Risk Assessment included both human health and ecological risk evaluations and concluded that the human health risk was within acceptable levels. These conclusions were confirmed by the risk characterization performed to support the CMS (URS 2007). Results of the human health and ecological risk evaluations indicated that there is no unacceptable risk to human health and the environment based on the concentrations of chemicals of concern in soil at SWMU 31.

2.3 Ecological Risk Evaluation (1997)

An ecological risk evaluation was conducted to support the draft CMS using data collected during the Phase I and Phase II RFIs and utilizing the assessment protocol available at that time from the EPA. The initial step in ecological evaluation of SWMU 31 was to determine whether the site had an ecological component. The determination was based on the availability, within the SWMU, of ecological habitat. According to the results presented in the CMS, if no ecological habitat components are identified, it is concluded that the SWMU is not of potential ecological concern and no further ecological evaluation is warranted. Individual organisms that are occasionally present do not constitute an ecological component because these individuals are not appropriate as assessment endpoints for an ecological risk evaluation (URS 2007).

SWMU 31 covers a limited area associated with the former AGE maintenance shop at Building 186 and at the time of the risk evaluation contained a very limited area of manicured grass to support ecological habitat. The limited size of the SWMU, combined with the limited ecological value of unpaved open areas, suggests that no ecological community was present and, at best, only a few individuals of even the smallest organisms were present. Based on conditions at the site at the time of the risk evaluaton, SWMU 31 was concluded to not contain any significant ecological component such that a formal ecological risk assessment would be warranted (URS 2007).

2.4 Vadose Zone Fate and Transport Modeling (1997)

Using the mathematical models Hydraulic Evaluation of Landfill Performance (HELP) and Multimedia Exposure Assessment (MULTIMED), a conceptual unsaturated (vadose) zone was developed to simulate the fate and transport of chemicals present in soil that posed a potential risk

to human health. The HELP model was used to estimate a net infiltration rate through the vadose zone for input into MULTIMED. MULTIMED was then used to model contaminant migration through the vadose zone to the water table approximately 300 ft below SWMU 31.

MULTIMED was run for each chemical of concern detected above chemical-specific MSSLs under steady-state, pulse source, and source decay conditions while considering both sorption and sorption-biodegradation as attenuation mechanisms. Results were used to calculate attenuation factors (AFs) and dilution-attenuation factors (DAFs), which were then used to predict concentrations, respectively, at the base of the unsaturated zone and at the water table after initial mixing in groundwater. The modeling was completed as part of the CMS (Appendix A), which provides a detailed description of the modeling approach, model documentation, input parameters, and model output for SWMU 31 (URS 2007).

Initial leachate concentrations were calculated for each chemical detected in soil greater than MSSLs using the equilibrium partitioning equation from the *Soil Screening Guidance; Technical Background Document* (EPA 1996). Specific values for input parameters and chemical-specific leachate calculations are presented in Appendix A, which is excerpted from the CMS report (URS 2007).

AFs and DAFs for each chemical derived from model runs were then applied to modeled initial leachate concentrations. The results of this analysis are shown in Appendix A (Table 4-9). Predicted concentrations that exceed EPA Region VI tap water MSSLs or maximum contaminant levels (MCLs) are shaded. For all modeled chemicals (SVOCs and metals), predicted concentrations for steady-state, nontransport decay analyses are greater than tap water MSSLs and/or MCLs. However, in general, both organic and inorganic contaminant source masses in soil are expected to decrease over time due to sorption, volatilization, biodegradation, precipitation, and/or ion exchange. Therefore, the assumption of a steady-state source is unrealistic and overly conservative (URS 2007).

The modeling effort predicted concentrations of PAHs for sorption-only analyses that are usually at least one order of magnitude lower than the tap water MSSL. When biodegradation is also considered, predicted groundwater concentrations are zero. Analyses for metals do not consider biodegradation. In addition, converse to results for organic compounds, the use of a 100-year pulse-source results in a greater source mass (and lower AFs/DAFs) than the use of a decaying source due to the increase in half-life from 10 years for SVOCs to 100 years for metals. For chromium and lead, predicted concentrations are below the tap water MSSL or MCL. However, for arsenic, the pulse-source analysis results in predicted concentrations at the base of the vadose zone (4.3×10^{-4} milligrams per liter [mg/L]) of one order of magnitude greater than found at the water table after initial mixing of groundwater (6.0×10^{-5} mg/L), where the resulting concentration exceeds the tap water MSSL (4.5×10^{-5} mg/L). Although the program would not compute a saturated zone concentration, results are similar for the decaying source analysis.

The distribution coefficient values used for both arsenic and chromium are based on the most mobile ionic species of those metals, 3+ and 6+, respectively. For arsenic, if a distribution coefficient of 50 milliliters per gram (ml/g) rather than 29 ml/g is used to account for the presence of the less mobile 5+ species, the initial leachate concentration is 0.092 mg/L, the concentration at the bottom of the vadose zone is 1.5×10^{-4} mg/L, and the concentration at water table after initial mixing is 2.0×10^{-5} mg/L, which is slightly less than the tap water MSSL of 4.5×10^{-5} mg/L.

The results of the vadose zone contaminant fate and transport modeling at SWMU 31 and predicted concentrations in groundwater are based on a conservative, analytical approach with many simplifying assumptions. The use of a more complex, numerical model would most likely produce results that are more representative of actual flow and transport processes than presumably occur at SWMU 31 taking into account the characteristics of the semiarid climate of the region. These processes include the effects of capillary forces and soil hysteresis. The use of a numerical model would potentially result in lower predicted concentrations at the water table for similarly assumed source conditions.

The results of the vadose zone fate and transport modeling for SWMU 31, assuming sorption, dispersion, and biodegradation occur, indicate that chemicals of concern will not reach groundwater above tap water screening levels.

2.5 Voluntary Corrective Measure (1999)

In February 1999 a limited soil removal activity was conducted at the location of soil boring 03101. Concentrations of benzo(a)pyrene and benzo(b)fluoranthene exceeded the SSTLs in surface soil samples collected at this location. In addition, elevated levels of TRPH, lead, and chromium were reported in soil samples from this boring. A backhoe was used to remove soil from this location resulting in an excavated area that measured 10 ft by 5 ft and was 2 ft deep (Foster Wheeler 1999, Appendix B). Confirmation samples collected from the excavation indicated that contaminated soils had been removed. The excavation was backfilled with clean fill and revegetated with cultivated grass.

2.6 Corrective Measures Study (2007)

Results of the human health and ecological risk evaluations indicated that there is no unacceptable risk to human health and the environment based on the concentrations of chemicals of concern in soil at SWMU 31. Furthermore, results of vadose zone fate and transport modeling, assuming sorption, dispersion, and biodegradation occur, show that chemicals of concern will not reach groundwater above allowable concentrations for tap water. In 1999, a voluntary corrective measure was implemented removing soil containing the highest concentrations of chemicals of concern. Based on the results of the evaluations of human health and ecological risk, along with the limited soil removal activity voluntarily conducted in 1999, "No Action" was the selected corrective measure alternative for SWMU 31 in the CMS (URS 2007). The rationale for the selection of the No Action alternative is provided below based on specific criteria:

Technical

- Performance—The alternative is effective at being protective of human health and the environment over extended periods of time. This was demonstrated through Tier I and Tier II human health and ecological risk evaluations, a baseline risk assessment, and fate and transport modeling.

- Reliability—The alternative does not require any operation or maintenance activities and has been proven to be effective for similar sites and conditions.

- Implementability—The alternative is easy to implement and will meet or exceed applicable standards.

- Safety—The alternative poses no threat to the safety of nearby workers.

Human Health

- The alternative was determined following the RBCA process outlined in the CMS and followed the guidance available at the time, American Society for Testing and Materials E1739-95, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*. The results of the RBCA process included:
  - Maximum concentrations of most chemicals of concern left in place were less than conservative Tier I EPA Region VI MSSLs and calculated Tier II SSTLs.
  - Those chemicals of concern that exceeded SSTLs were only present in surface soil samples. The maximum concentrations of these chemicals were used in a baseline risk assessment that concluded there was no unacceptable risk; and soils containing these maximum concentrations were removed.

Environmental

- No valued ecological resources are present.

Cost

- The alternative is protective of human health and the environment and at a lower cost than other corrective measure alternatives considered in the CMS.

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3. CORRECTIVE ACTION ACTIVITIES

Tetra Tech EC, Inc. (TtEC) and North Wind conducted the removal of PCS at SWMU 31 in accordance with the Final Work Plan. Field activities at the site were performed in three phases. Based on the results of the site investigations conducted by Woodward-Clyde in 1993 and 1994 (Woodward-Clyde 1994a, 1995b) and the subsequent CMS in 1997 (URS 2007), Cannon AFB voluntarily addressed petroleum contamination at the site based on more recent regulatory guidance concerning TPH in soil (NMED 2004).

Prior to implementation of the corrective action at SWMU 31, a limited field sampling program took place in 2008 to delineate the extent of PCS at the site (Bay West and TtEC 2008). Based on the 2008 sampling results the Final Work Plan was developed (TtEC 2009) and implemented. North Wind conducted field mobilization, soil characterization, excavation, confirmation sampling activities, off-site disposal, backfilling, and demobilization activities during 2009 and the first quarter of 2010. Table 3-1 below presents the schedule of corrective action field activities that took place in 2009. Photographs taken during sampling and excavation are presented in Appendix E.

Table 3-1. Corrective Action Field Schedule

Task	Start Date	End Date	Duration
Waste characterization sample collection	02/11/09	02/11/09	1 day
Mobilization of equipment	03/17/09	03/17/09	1 day
PCS excavation	03/18/09	04/09/09	23 days
Confirmation sample collection	04/08/09	04/10/09	2 days
Over-excavation in areas of elevated petroleum hydrocarbons based on first round of confirmation samples	09/16/09	09/22/09	7 days
Collection of additional confirmation samples	09/16/09	09/16/09	1 day
Excavation backfilling and compaction	09/17/09	09/23/09	6 days
Final site restoration (pavement emplacement)	To be completed during the first quarter 2010		

3.1 Field Activities

The purpose of the field activities was to remove PCS in the vicinity and beneath the concrete pad comprising SWMU 31 and the wash pad adjacent to the SWMU. Figure 3-1 presents a map depicting the proposed extent of the soil excavation. The location of the soil borings sampled during the Phase I and Phase II RFIs and the delineation borings sampled in 2008 are also depicted in Figure 3-1. Corrective action-related field activities were conducted in two phases.

For the first phase of the corrective action implementation in February 2008, 20 soil borings were drilled and sampled using DPT to delineate the extent of contamination. Sample locations were based on the results of the Phase I and Phase II RFIs. Samples were collected to a depth of 15 ft and continued deeper if visible staining in the soil core persisted (Bay West and TtEC 2008).

PCS excavation was implemented utilizing a work plan that was based on the results of the 2008 contamination delineation effort (TtEC 2009). Corrective action took place February through September 2009 and included the following activities:

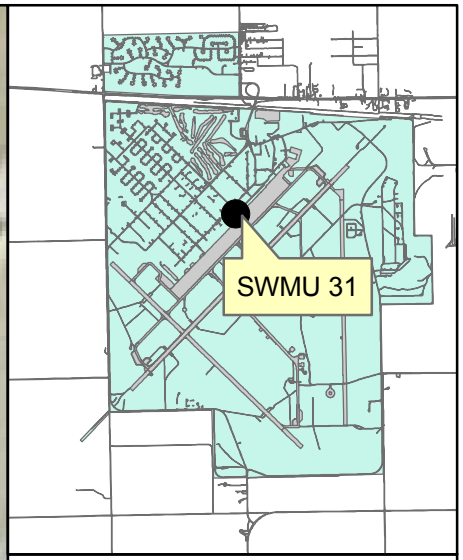
- Site mobilization.
- Collection of waste characterization samples—PCS determined not to be RCRA hazardous waste. PCS was characterized as New Mexico "Special Waste" suitable for disposal at a state-permitted landfill.
- Excavation of approximately 340 cubic yards of PCS and 100 cubic yards of concrete debris from the area of SWMU 31 and the adjacent former wash pad.
- Off-site transportation and disposal of PCS and concrete debris.
- Confirmation sampling of the excavation sidewalls and floor—The results of a few samples indicated that there were exceedances of the 520 mg/kg screening level showing PCS still remained in localized areas within the excavation.
- Over-excavation of approximately 61 cubic yards of contaminated soil that remained within the excavation and subsequent collection of confirmation samples—Additional confirmation samples were collected within the over-excavated area and the results indicated there were no exceedances of the 520 mg/kg screening level. There were no visible signs of stained soil or elevated headspace screening results for soil remaining within the excavation floor or sidewalls.
- Excavation backfilling, compaction, and grading—Clean crushed concrete from a source at Cannon AFB was used within the excavation. Compaction requirements for subsequent paving of the site were met based on in-place testing results.
- Site restoration—The site will be restored by paving the area with asphalt per Base specifications. Paving will be completed during the first quarter 2010.
- Site demobilization—Demobilization will take place upon completion of all field activities.

All field activities were performed in accordance with the Final Work Plan (TtEC 2009). Figure 3-2 presents a map showing the completed extent of excavation of PCS.

3.1.1 Excavation and Waste Characterization

Prior to excavating, one sample was collected from 0 to 2 ft using a hand auger within the excavation footprint where the highest levels of contamination were expected to exist. The purpose of this sample was to provide data for waste characterization of the PCS. The waste characterization sample was analyzed for the following parameters:

- TPH as diesel-range organics (DRO) and gasoline-range organics (GRO)—EPA SW-846 method modified 8015B
- Toxicity characteristic leaching procedure (TCLP) VOCs—EPA SW-846 method 1311/8260B
- TCLP SVOCs—EPA SW-846 method 1311/8270C



Legend

Fence

Proposed Excavation to 2ft bgs

Proposed Excavation to 4ft bgs

Remedy Completion Report
SWMU 31 AGE Maintenance Facility Shop Pad
Cannon Air Force Base, New Mexico

Figure 3-1

SWMU 31
Proposed Extent of Excavation

Revision Date: 2/23/2010

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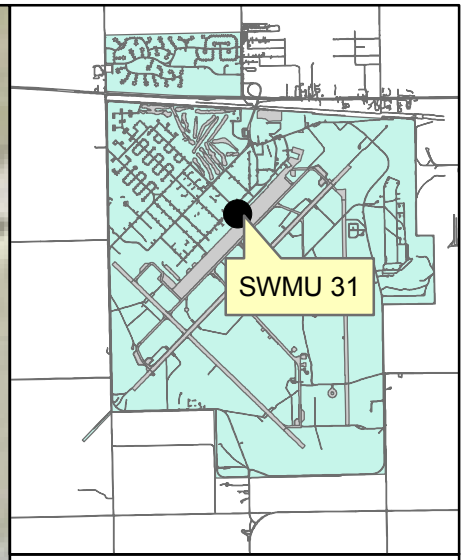

Legend

Confirmation Soil Samples

Fence

Excavation Bound

Remedy Completion Report
SWMU 31 AGE Maintenance Facility Shop Pad
Cannon Air Force Base, New Mexico

Figure 3-2

SWMU 31 Completed Extent of Excavation

Revision Date: 2/23/2010

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- TCLP pesticides—EPA SW-846 method 1311/8081A
- TCLP herbicides—EPA SW-846 method 1311/8151A
- TCLP metals—EPA SW-846 methods 6010B and 7470A
- Ignitability—EPA SW-846 method Section 7
- Polychlorinated biphenyls—EPA SW-846 method 8082
- Reactivity (cyanide and sulfide)—EPA SW-846 methods 9010B/901 and 9030B/903

Based on the analytical results of the waste sample, the PCS was characterized as nonhazardous waste and eligible for disposal at the permitted Rhino Environmental Inc. (Rhino Environmental) landfarm facility in Hobbs, New Mexico.

PCS was excavated to a depth of 4 ft by Rhino Environmental with oversight from North Wind from within the delineated footprint of the proposed excavation area. A total of approximately 401 cubic yards of PCS soil was excavated and transported from SWMU 31 for off-site disposal at the Rhino Environmental facility. All soil was exported under nonhazardous waste manifests that were signed by a Cannon AFB representative. Table 3-2 summarizes the total amount of PCS removed by date. Copies of the waste manifests are provided in Appendix D.

Table 3-2. Removed PCS Totals

Date	PCS Soil/Concrete Debris Removed (cubic yards)
04/06/09	120
04/07/09	100
04/08/09	80
04/09/09	40
09/22/09	61
Total	401

3.1.2 Confirmation Sampling and Data Quality

Rhino Environmental performed excavation activities with oversight from North Wind. The excavation was performed using a track excavator. Confirmation samples were then collected from the sidewalls and floor of the excavation to verify the concentrations of petroleum contamination remaining in place prior to backfilling. Eight discrete samples (S01–S08) were collected at equally spaced intervals along the sidewalls. Twelve samples (S09–S20) were collected from the floor of the excavation. Confirmation samples were analyzed for the following:

- TPH-DRO—EPA SW-846 method modified 8015B
- TPH-GRO—EPA SW-846 method modified 8015B

Table 3-3 presents a summary of the TPH-DRO results for confirmation samples. There was an exceedance of the TPH-DRO regulatory guideline of 520 mg/kg (NMED 2004). This one detection

of 1,500 mg/kg occurred in the sample collected from the northeast wall of the excavation. Additional excavation was performed and five new confirmation samples (S21–S25) were taken. No exceedances of the regulatory guideline were found in the new confirmation samples. Results from the analytical laboratory are provided in Appendix F.

Table 3-3. Confirmation Sample Results

Sample Location	Sample Date	GRO (mg/kg)	GRO RL (mg/kg)	DRO (mg/kg)	DRO RL (mg/kg)
S01	04/08/09	**3.7**	1.2	1.2U	4.7
S02	04/08/09	0.37U	1.1	1.1U	4.5
S03	04/08/09	**0.42F**	1.2	**4.6F**	4.7
S04	04/08/09	**0.40F**	1.1	**24**	4.5
S05	04/08/09	**2.5**	1.1	**30**	4.2
S06	04/08/09	**0.41F**	1.1	**8.9**	4.6
S07	04/08/09	**26**	1.2	**1,500**	24
S08	04/08/09	**0.56F**	1.2	1.2U	4.7
S09	04/08/09	**0.45F**	1.1	**8.5**	4.4
S10	04/08/09	**0.67F**	1.1	**2.9F**	4.5
S11	04/08/09	0.37U	1.1	1.1U	4.5
S12	04/08/09	**1.3**	1.1	**82**	4.4
S13	04/08/09	**1.2**	1.2	**17**	4.7
S14	04/08/09	**2.4**	1.1	**250**	4.2
S15	04/08/09	0.37U	1.1	1.1U	4.5
S16	04/08/09	**11**	1.1	**71**	4.3
S17	04/08/09	**13**	1.1	**50**	4.3
S18	04/10/09	1.2U	1.2	1.1U	4.6
S19	04/10/09	1.3U	1.2	1.2U	4.6
S20	04/10/09	0.39U	1.2	1.2U	4.8
S21	09/16/09	1.2U	1.1	**46**	4.4
S22	09/16/09	0.37U	1.2	1.1U	4.6
S23	09/16/09	0.36U	1.1	**1.6F**	4.5
S24	09/16/09	0.37U	1.1	1.1U	4.6
S25	09/16/09	0.37U	1.1	1.1U	4.6

All parameters were analyzed using EPA SW-846 method modified 8015B. Bold values signify detected concentrations.

DRO Diesel-range organics

F Estimated value below the method reporting limit and above the method detection limit

GRO Gasoline-range organics

MDL Method detection limit

RL Reporting limit

U Value below MDL, nondetection

Chemical analyses for waste characterization and confirmation soil samples were performed by TestAmerica Laboratories, Inc. facilities in Arvada, Colorado. Analytical methods for chemical analyses are taken from the latest revision and update of the EPA's *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA 2004) and *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (EPA 2008).

The data validation procedures followed the EPA Functional Guidelines. One hundred percent of the data were reviewed for precision, accuracy, representativeness, comparability, and completeness (PARCC). The PARCC review was achieved by evaluating the following criteria:

- Deliverables for completeness
- Extraction and analysis holding times
- Blanks (method, trip, field)
- System monitoring compounds (surrogate spike recoveries)
- Laboratory duplicate samples
- Laboratory control sample recoveries
- Matrix spike/matrix spike duplicate recoveries
- Internal standards
- Overall data assessment

The laboratory control spike, matrix spike, and field duplicate samples are reviewed to determine the precision of the analytical data. System monitoring compounds, laboratory control, and matrix spike sample recoveries are reviewed to determine the accuracy of the data. Representativeness of the data is determined through review of holding times and evaluation of method, trip, and field blank data. Data completeness was evaluated through review of hard copy and electronic data deliverables, quality assurance (QA) of deliverables against analytical requirements, and review and documentation of overall data assessment and usability.

The results of the data validation effort indicated that the data are suitable for the intended purpose of waste characterization and confirmation sampling. The TPH-GRO results were qualified as nondetects in the sample S21 and in the associated trip blank. All analyses were performed, and the data met the QA and quality control (QC) requirements for this project (TtEC 2009).

3.1.3 Backfilling, Compaction, and Grading Activities

Rhino Environmental performed backfilling, compaction, and grading activities with oversight from North Wind. The SWMU 31 excavation was completely backfilled using crushed concrete from ongoing crushing operations on the Base. The surface was graded to a slight mound to allow for settlement and to provide positive drainage.

Site restoration consisted of backfilling, compaction, and grading activities. Both backfilling and compacting were performed using a wheel loader, and then by a vibratory roller. The final paving of the site will be completed during the first quarter of 2010.

3.1.4 Site Demobilization

Demobilization for the excavation activities was conducted in accordance with the Final Work Plan (TtEC 2009) and consisted of removing all equipment, cleaning the project site, inspecting the work, and certifying completion. Final demobilization of the site will take place upon completion of paving operations in early 2010.

3.2 Quality Assurance/Quality Control Summary

All activities were conducted in accordance with the project-specific Construction Quality Control (CQC) Plan in the Final Work Plan (TtEC 2009). The CQC Plan combined the QA/QC

requirements of the USACE-Omaha District and Base with the TtEC QC program. Preparatory, initial, and follow-up phase inspections were performed at the site in accordance with the Final Work Plan.

3.3 Health and Safety

All field activities were conducted in accordance with the Basewide Health and Safety Plan and project-specific Site Safety and Health Plan contained in the Final Work Plan (TtEC 2009). All safety zones were established and maintained throughout construction operations. There were no Occupational Safety and Health Administration recordable or lost time incidents or accidents associated with this effort.

The Site Supervisor performed daily health and safety awareness meetings. The Site Health and Safety Officer conducted site inspections daily. Equipment was also inspected daily and reported in the Daily Quality Control Reports (DQCRs), which are maintained by USACE. There were no significant findings as a result of these inspections.

3.4 CONSTRUCTION DOCUMENTATION

3.4.1 Record Drawings and Site Survey

No Record Drawings were made of this project. The boundary of the excavation was surveyed by a licensed surveyor and coordinates were used to develop the site maps presented in this report.

3.4.2 Completion Inspection Reports

The Completion Inspection Report was completed and approved by USACE. All inspections are on file with USACE at the Cannon AFB Resident Engineer's office.

3.4.3 Waste Manifests

Copies of the waste manifests for the excavated soil are presented in Appendix D.

3.4.4 Variance Reports

There were no variance reports generated for this project.

3.4.5 Site Inspections and Quality Control Reporting

The DQCRs documenting field activities were submitted to USACE daily during the work effort. DQCRs are on file with USACE at the Cannon AFB Resident Engineer's office.

3.4.6 Nonconformance Reports

There were no Nonconformance Reports generated during the field activities.

3.4.7 Site Photographs

Photographs of the site taken throughout construction are presented in Appendix E.

4. CONCLUSIONS AND RECOMMENDATIONS

A summary of the corrective action field activities and previous investigations is presented below to support the recommendation for the future of SWMU 31. The results of the investigations and corrective actions of the site are also summarized below:

- Results of the 1993 and 1994 RFIs indicated that soil had been impacted by activities associated with maintenance within the SWMU 31 pad area and the adjacent wash pad. Primary contaminants in soil included VOCs, PAHs, and metals (Woodward-Clyde 1994a, 1995b).

- Human health risk and ecological risk assessments were conducted. A Tier I evaluation for human health risk resulted in individual chemicals of concern being selected for the Tier II human health risk evaluation. The associated risk to human health was determined as acceptable based on the evaluation protocol (URS 2007). The initial evaluation of ecological risk determined that any receptors on site will have minimal or no exposure to potential contaminants present in soil. Therefore the risk to ecological receptors is negligible (URS 2007).

- Cannon AFB voluntarily conducted a corrective action in 1999 to remove soil contaminated with metals and PAHs at concentrations exceeding Tier II SSTLs. The soil removal was confined to the area where soil boring 03101 was sampled during the Phase I RFI (Foster Wheeler 1999).

- The CMS evaluated corrective action alternatives for SWMU 31. Based on the results of the human health and ecological risk evaluations and the corrective measures evaluation criteria, the No Action alternative was selected (URS 2007).

- Considering the potential for petroleum contamination in soil beneath SWMU 31 and the adjacent AGE maintenance shop pad, Cannon AFB voluntarily conducted a corrective action of SWMU 31. In 2008, soil contamination was delineated utilizing DPT sampling methodology for future removal and off-site disposal (Bay West and TtEC 2008).

- Utilizing the 2008 sample results, a corrective action at SWMU 31 was conducted by excavating contaminated soil in the area of the AGE maintenance shop pad and the adjacent wash pad. The contaminated soil was disposed off site and the excavation was backfilled with clean crushed concrete. The excavation area will be paved in early 2010.

Taking into consideration the results of previous investigations and risk evaluations and the completion of the remedy, a status of "Corrective Action Complete Without Controls" is recommended for SWMU 31.

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Appendix A
Previous Investigations

FINAL REVISION 1

CORRECTIVE MEASURES STUDY AT SWMUs 31, 48A, 77, AND 127

CANNON AIR FORCE BASE
NEW MEXICO

Prepared for:
U.S. Department of the Army
Corps of Engineers, Omaha District
Omaha, Nebraska

October 2007

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4.1 SITE BACKGROUND

4.1.1 Site Description

The AGE Maintenance Shop Pad is an open asphaltic concrete area adjacent to the southeast side of the AGE Maintenance Shop, located in Building No. 186. The pad is approximately 60 to 70 feet wide and 240 feet long (Figure 4-1). A wash rack occupies an area about 45 feet square beyond the southeast edge of the pad. The AGE Drainage Ditch (SWMU No. 34, investigated in the Appendix I RI) (W-C 1992) lies to the southeast of the maintenance pad and carries runoff to the northeast.

The maintenance pad has a slight gradient to the southeast, which directs surface runoff from the area north and east of Building 186 toward the AGE ditch. Runoff northwest of the wash rack is directed along an expansion joint southwestward off of the pad.

4.1.2 Site History

The maintenance pad has been active since 1971. Water from washing and surface or storm water, potentially contaminated with waste oils and fuel, flows off the pad to the southeast. The Appendix I RI investigation of soils lining the AGE drainage ditch to the southeast of the AGE pad found negligible to nondetectable levels of target contaminants in the soils sampled (W-C 1992).

4.1.3 Current Use

Maintenance on aeronautical ground equipment is performed in Building No. 186 and on the south and east sections of the pad. The wash rack (not a target of this investigation) is frequently used to wash and clean support vehicles and equipment. The wash rack is separately drained to an adjacent OWS, which is not a part of this investigation. A portion of the drainage from the pad reportedly drains into a sand trap at the northwest corner of the wash rack. This sand trap reportedly empties into the OWS.

4.2 SUMMARY OF RESULTS OF PHYSICAL AND CHEMICAL INVESTIGATION

4.2.1 Physical Investigation

Four 10-foot soil borings were drilled and soil samples were collected in areas where wash-down water and storm water from the maintenance pad enters the AGE ditch and along expansion joints or cracks in the maintenance pad to determine if a release of SWMU-related chemicals posing a hazard to human health or the environment has occurred at these points. Boring numbers and sample descriptions are in Table 4-1 and Figure 4-1. Boring 03101 was drilled in a small drainage channel entering the AGE drainage ditch to determine if maintenance pad runoff has affected soil at this location. Surface soils in the drainage channel are discolored and vegetation within the channel appears stressed. Since this drainage channel receives runoff from locations other than the AGE Maintenance Shop, (e.g., the parking area near Facility 191), other sources may be contributing contaminants to this sample location. Boring 03102 was drilled in an area of soil cover near the AGE drainage ditch to determine if runoff from the pad has contaminated soils at this location. Soils at this location did not appear contaminated and vegetation appeared normal. The high density of buried utilities under the maintenance pad forced the relocation of two borings from the pad itself to nearby sites. Boring 03103 was located just off the slab to the west of the Wash Rack near the expansion joint. Small piles of stained soil were observed at this location suggesting the potential for petroleum contamination of the near-surface soils. Boring 03104 was located about 10 feet southwest of Boring 03103, just off the edge of the AGE pad. No surface staining was evident at this location.

Soil samples were collected from the 0- to 0.5-foot, 1.5- to 3.5-foot, 4- to 6-foot, and 8- to 10-foot depth intervals in Borings 03101 and 03102 and from the 0.5- to 2-foot, 2- to 4-foot, and 8- to 10-foot depth intervals in Borings 03103 and 03104. Target analytes included VOCs, SVOCs, metals, and TPH. Surficial samples from the 0 to .5-foot interval were collected in areas of soil cover from the 0.2- to 0.5-foot depth interval to provide surface soil data for risk assessment purposes. In areas of pavement or concrete surfaces, soil sampling began immediately below the pavement/soil contact.

4.2.2 Chemical Investigation

Soil samples were collected from four borings (03101, 03102, 03103, and 03104). Sampling and analyses performed are summarized in Table 4-1. Summaries of the analytical results for these soil samples are provided in Table 4-2a (near-surface samples) and Table 4-2b (subsurface samples). The tables provide results for analytes detected at least once in the sample group. Complete analytical results are provided in Appendix A of the RFI report.

4.2.3 Data Assessment

The quality of the analytical data was evaluated in the RFI Report, and the data were deemed to be of adequate quality to meet the objectives of the RFI. However, data quality issues that may affect the risk assessment are more fully discussed here.

Elevated reporting limits resulting from sample dilution may limit the usability of the data if concentrations of some analytes are thereby diluted to levels below the reporting limit. That is, chemicals may be reported as nondetect when they are actually present in the sample at levels of potential concern. Section 4.1.6 of the QCSR (Appendix A of the RFI report) presents a discussion of elevated reporting limits; however, only mercury had significantly elevated reporting limits. This does not affect the usability of the data at this SWMU, because mercury was properly quantified nondetect in all but two samples, so there is no reason to believe that mercury would be present at concentrations of concern in the two samples with elevated reporting limits. There were also elevated reporting limits for lead and TPH analyses; however, there is no impact on the usability of the associated data because these analytes were detected at concentrations above elevated reporting limits.

Manganese data were rejected in all samples at this SWMU. Therefore, the manganese concentration at this SWMU is unknown. Although this is a data gap, it is not viewed as crucial for the following reasons. Since manganese has not been determined to be a chemical of concern at other SWMU with similar waste streams at Cannon AFB, manganese is not likely to be associated with the wastes at this SWMU. Additionally, manganese is an essential nutrient and would have to be present at very high concentrations to be at a level of concern. Therefore, there is no reason to believe that manganese would be present at a concentration that would pose a significant health risk compared to other semivolatile and volatile compounds that are quantified at this site. Therefore, although manganese has not been quantified, it is not likely that this will impact the conclusions of the risk assessment.

4.2.4 Nature and Extent of Contamination

The sampling at this SWMU (Figure 4-2) was directed at areas just off the edge of the pavement where materials that may have been spilled during equipment maintenance would be expected to run off or be carried by wash water or storm water. The surface samples at two of the four borings (Borings 03103 and 03101) were found to be contaminated with petroleum hydrocarbons in excess of 1,000 mg/kg. The maximum TPH concentration was 4,070 mg/kg at the surface of Boring 03103. These surface samples were also contaminated with various semivolatile organic compounds (SVOCs) at or slightly above reporting limits. In general, there was no significant contamination in the samples below 2 feet of depth, and the surface soil contamination is likely to be limited to areas immediately adjacent to the edge of the pavement. The contamination detected in surface soils could have resulted from equipment wash water and/or from the pavement itself.

4.3 HUMAN HEALTH RISK ASSESSMENT

4.3.1 Exposure Pathway Flow Charts

Figure 4-3 shows the exposure pathway flow chart of chemical sources and potential human exposure pathways for the AGE Maintenance Shop Pad. In the flow chart, potentially complete exposure pathways are indicated with solid lines; incomplete or insignificant pathways are indicated with broken lines.

The primary sources are waste fluids (e.g., fuels, oils, and solvents) that may have been discharged or spilled on the pad. Chemicals from the primary source may be released to other media (soil, air, or water) that may in turn act as secondary sources of release or exposure. Mixing and infiltration of the wastes to the soil and storm water runoff are shown as primary chemical release mechanisms. Soils are a secondary source of potential chemical release. Chemicals in soils may infiltrate/percolate through the soil and be released to groundwater, be released to the air via volatile emissions or wind erosion, or result in exposure via direct contact (e.g., dermal contact or incidental soil ingestion).

As shown on the flow chart, surface soils may provide exposures to Base workers (occupational exposures), hypothetical future construction workers, or hypothetical future trespassers (if the Base is closed in the future). Air emissions (volatile and particulates) from surface soil may also provide exposures to Base workers, construction workers, and trespassers. Subsurface soils and air emissions from subsurface soil (i.e., during excavation) may provide exposures to construction workers. Groundwater is used for domestic purposes on and off Base. Groundwater is probably an insignificant pathway because very little contamination was found in subsurface soils. Nevertheless, fate and transport modeling was conducted to determine if contaminants of concern in soils at the SWMU could reach groundwater at concentrations of concern. Results of the fate and transport modeling (Section 4.3.4.2) indicate that contaminants will not reach groundwater at concentrations of potential concern. Therefore, this pathway was not evaluated further. Residential exposures to soils are not considered for this SWMU because the SWMU is located in an industrial area, so even if the Base closes in the future, industrial rather than residential use is the reasonable future use of the site.

In summary, potential complete human exposure pathways to be evaluated in the risk assessment are:

Occupational Workers

- Ingestion of and dermal contact with surface soil
- Inhalation of volatile emissions and airborne particulate matter from surface soil

Hypothetical Construction Workers

- Ingestion of and dermal contact with surface and subsurface soil
- Inhalation of volatile emissions and airborne particulate matter from surface and subsurface soil

Hypothetical Trespassers

- Ingestion of and dermal contact with surface soil
- Inhalation of volatile emissions and airborne particulate matter from surface soil

4.3.2 Comparison of Metals Concentrations to Background

Metals are natural constituents of soils. Therefore, SWMU concentrations of metals of potential concern were evaluated to assess whether they exceeded background levels. Metals that occur in concentrations within background levels are not considered SWMU-related chemicals of concern and are not evaluated further.

Background levels were defined by the upper tolerance limit (UTL) of concentrations from 37 background soil samples collected at Cannon AFB and by literature values for regional soils (USGS 1984). The background data and calculation of UTLs are presented in Appendix A. (The background UTL was defined as the mean plus two times the standard deviation; see Appendix A).

Tables 4-3 and 4-4 show the comparison of SWMU results to background levels.

The maximum detected concentrations of antimony, barium, cadmium, chromium, copper, lead, and zinc in both surface soil and total soils exceeded the background levels. Therefore, these metals were retained for further evaluation as chemicals of concern in surface and total soils. However, since barium can substitute for calcium, it is believed the high levels of barium may be a naturally-occurring constituent of the caliche (Klein and Hurlbut 1985).

4.3.3 Identification of Chemicals of Concern

Chemicals of concern are compounds that have been released from waste sources at SWMU 31, have been detected in soil at the SWMU, and may be significant contributors to human health or environmental risks. In general, metals detected above background levels and organic compounds other than those shown to be laboratory or field contaminants are considered to be chemicals of concern for risk assessment. Chemicals of concern that do not have EPA-established toxicity factors are not evaluated quantitatively in the risk assessment, but their potential contribution to overall risk is addressed qualitatively.

Tables 4-2a and 4-2b present the analytical results for all chemicals detected in W-C samples for soils. Of these, chemicals of concern were identified as described below.

The concentrations of antimony, barium, cadmium, chromium, copper, lead, and zinc detected in soil exceeded background ranges according to the comparison described in Section 4.3.2. These metals are, therefore, considered as chemicals of concern in soil. Organic contaminants detected in soils were retained as chemicals of concern for risk assessment. Chemicals of concern in surface soil and total soil are listed in Tables 4-5 and 4-6, respectively.

Cobalt, lead, and TPH are listed as chemicals of concern in Tables 4-5 and 4-6, but they do not have EPA-established toxicity factors and, therefore, cannot be evaluated quantitatively in the risk assessment. However, their potential effects on the results of the risk assessment are addressed in Sections 4.3.8 through 4.3.10.

4.3.4 Environmental Fate and Transport

4.3.4.1 General

The environmental fate of chemicals of concern is influenced by the physicochemical properties of each of the chemicals. Physicochemical properties that are generally of primary importance to fate and transport of chemicals in the environment are water solubility, soil adsorption, volatilization, and biodegradation. A more thorough discussion of these properties is provided in Appendix B. Physicochemical properties of the chemicals of concern reported at the SWMUs in this investigation are given in Table B-1.

4.3.4.2 Vadose Zone Fate and Transport Modeling

A partitioning leachate model was used to estimate potential leachate generation from contaminants in the soil at the SWMU and to estimate the transport of the leachate to groundwater. The analytical model, developed at the Idaho National Engineering Laboratory (DOE 1991), describes the mass balance of a contaminant (based on average soil concentrations) in the contaminated soil volume at the SWMU. The DOE model assumes a constant infiltration rate (based on the Hydrologic Evaluation of Landfill Performance [HELP] Model) and accounts for sorption to soils and degradation in the vadose zone. The model conservatively considers dilution of the leachate as it reaches the groundwater to estimate potential groundwater concentrations of chemicals of concern. The input parameters and estimated leachate concentrations are given in Section 4.3.5.2. A complete description of the model is given in Appendix B.

The modeled groundwater concentrations are compared to conservative risk-based concentrations (RBCs) for drinking water (Section 4.3.5.2). Since the RBCs were developed for drinking water (at the tap) and are based on very conservative exposure and health-protective (risk) assumptions, it can be concluded that modeled groundwater concentrations that do not exceed RBCs will pose no significant adverse health risks.

4.3.4.3 Air Modeling

RME air concentrations of volatile and particulate emissions from surface soil and total (surface and subsurface) soil were calculated using RME soil concentrations of chemicals of concern. The results of the air modeling are discussed in Section 4.3.5.3. Air concentrations of VOCs released from soil were estimated using a VF approach developed by Hwang and Falco (1986) and adopted by EPA for use at hazardous waste sites (EPA 1991). Air concentrations of SVOCs that may be bound to airborne particulates (dust) were estimated using a PEF approach developed by Cowherd (1985) and adopted by EPA for use at hazardous waste sites to calculate soil cleanup levels (EPA 1991). Air concentrations were calculated for only those chemicals with inhalation toxicity factors. The methodologies used in the air modeling are discussed in more detail in Appendix B.

The air modeling approach is conservative because it uses default values recommended by EPA for establishing preliminary remediation goals at hazardous waste sites, and it assumes that potential receptors are consistently exposed to air concentrations predicted immediately at the source (i.e., it does not account for dilution in the air during transport from the SWMU source to potential receptors).

4.3.5 Exposure Point Concentrations

4.3.5.1 Soils

Tables 4-7 and 4-8 show the calculation of the average (arithmetic mean) and RME concentrations of organic chemicals and metals of concern in surface soils and total soils respectively at the AGE Maintenance Shop Pad.

In accordance with EPA guidance (EPA 1989d) and as explained in Appendix C of the Baseline Risk Assessment for Appendix III Solid Waste Management Units – Phase I (W-C 1994b), the RME concentration is either the 95 percent UCL on the mean or the maximum concentration detected, whichever is lower. The "nondetect" values (U-qualified data) in calculating exposure point concentrations; this is also explained in Appendix C (W-C 1994b). Nondetect values were replaced with one half the reporting limit. Tables 4-9 and 4-10 give the soil concentrations of organic compounds from surface and total soils, respectively which have been adjusted for dermally absorbed fraction. These adjusted concentrations were used for calculating risks from dermal exposures to organic chemicals in soils. The absorbed fraction (from Table C-26 in Appendix C [W-C 1994b]) is the ratio of the quantity of chemical that is absorbed through skin

to the quantity that is applied to the skin in soil. As explained in Appendix C (W-C 1994b), dermal absorption of metals (except mercury) adhered to soil is considered to be insignificant and is not evaluated.

For purposes of risk assessment, surface soil was defined as soils to a depth of 2 feet. Some samples with field identification indicating 2-foot depth (i.e., XXXXX-XXXX-0002) were actually collected from a depth of 1.5 to 3.5 feet. These samples were not considered surface samples but are included in the risk assessment for subsurface soil exposures.

4.3.5.2 Groundwater

A leachate partitioning model was used to evaluate current leaching from the average total soil concentration at SWMU 31. Model results are included in Table 4-11. These modeled concentrations were then compared to EPA Region III tap-water RBCs (EPA 1993b). These concentrations are calculated assuming residential groundwater ingestion and inhalation and are based on an excess cancer risk of 1×10^{-6} or hazard quotient equal to one. Table 4-12 summarizes the comparison of the modeled concentration in groundwater to the conservative tap-water RBCs. No modeled concentrations exceeded the RBCs, so significant risks are not expected from the groundwater pathway. Therefore, the groundwater pathway has been determined to be insignificant and was not evaluated further.

4.3.5.3 Air

RME air concentrations of volatile and particulate emissions from surface soil were calculated using RME concentrations of chemicals of concern. The results of the air modeling are shown in Tables 4-13 and 4-14. RME air concentrations of volatile and particulate emission from total soil were also calculated using RME concentrations of concern. The results of the air modeling from total soil are shown in Tables 4-15 and 4-16.

4.3.6 Exposure Assumptions

The rationale and assumptions concerning potential human exposures considered in the risk assessment are described in Appendix C (W-C 1994b). Appendix C (W-C 1994b) includes discussions of the intake factors used to quantify chemical intake of SWMU-related contaminants in various environmental media soil and air. Table 4-17 shows a summary of the intake factors used in the exposure assessment. These factors are multiplied by chemical concentrations in soil and air to obtain estimates of chemical intake by each exposure pathway.

4.3.7 Risk Characterization

Chemical intake is combined with chemical-specific toxicity factors to obtain an estimate of health risk. Noncarcinogenic hazards and carcinogenic risks to occupational workers, hypothetical future construction workers, and hypothetical future trespassers were estimated for all relevant exposure routes and chemicals of concern using the approach and exposure assumptions described in Appendix C (W-C 1994b). Detailed risk calculations are shown in Appendix C (W-C 1994b) and summarized in Table 4-18. A summary of the results of the risk assessment is given here.

Occupational Exposure

Occupational receptors (Cannon AFB personnel and civilians working routinely on Cannon AFB) were assumed to be exposed (via ingestion, dermal contact, and inhalation) to contaminated surface soil at SWMU 31. Occupational receptors were assumed to be exposed for 2 and 8 hours/day, for 120 and 250 days/year, over 9 and 25 years for the average and RME cases, respectively. These assumptions are very conservative, because there are no occupational receptors routinely exposed to contaminated media at the SWMU. Furthermore, the surface area of the SWMU is small (approximately 200 feet by 60 feet or one-quarter acre), and long-term exposures are not likely to occur there. Therefore, the exposure assumptions overestimate current and future exposure conditions at the SWMU.

The total hazard indexes calculated for noncarcinogenic health effects due to chronic exposures to contaminants in surface soils at SWMU 31 via the dermal contact, inhalation, and ingestion pathways are 0.0002 and 0.03 in the average and RME cases, respectively. Neither hazard index exceeds 1.0, which indicates that no adverse health effects are to be anticipated, even to sensitive individuals, with 25 years of exposure.

The estimated lifetime excess cancer risk under the assumed chronic exposure conditions is 2×10^{-8} under the average exposure case and 5×10^{-6} under the RME case. These levels are within or below the EPA target risk range of 1×10^{-6} to 1×10^{-4} (1 in 1,000,000 to 1 in 10,000) for exposure to chemicals released from hazardous waste sites (EPA 1990; EPA 1991b). Ingestion of benzo(a)pyrene is the primary contributor to the carcinogenic risk estimate. The estimate of risks due to ingestion probably significantly overestimates actual risks, because it is assumed that the occupational worker will daily ingest the RME concentration of benzo(a)pyrene.

Construction Worker Exposure

Future construction workers were assumed to be exposed (via ingestion, dermal contact, and inhalation) to surface and subsurface soils at SWMU 31. Exposures were assumed to occur during excavation activities for 8 hours/day for 20 and 40 days for the average and RME cases, respectively.

The total hazard index calculated for noncarcinogenic health effects due to subchronic exposures to chemicals of concern in soils at SWMU 31 via the dermal contact, inhalation, and ingestion pathways is 0.0001 and 0.001 in the average and RME cases, respectively. Neither hazard index exceeds 1.0, which indicates that no adverse health effects are to be anticipated, even to sensitive individuals.

The estimated lifetime excess cancer risk under the assumed subchronic exposure conditions is 3×10^{-9} in the average case and 6×10^{-8} in the RME case. These levels are below the EPA target risk range of 1×10^{-6} to 1×10^{-4} (1 in 1,000,000 to 1 in 10,000) for exposure to chemicals released from hazardous waste sites (EPA 1990; EPA 1991c), and are so low as to be negligible.

Hypothetical Future Trespasser Exposure

Hypothetical trespassers were assumed to be exposed (via ingestion, dermal contact and inhalation) to surface soil at SWMU 31. Hypothetical trespassers were assumed to be exposed at the SWMU for 2 and 8 hours/day, for 26 and 52 days/year, over 6 years for the average and RME cases, respectively. These assumptions are very conservative, because Cannon AFB is likely to remain a military installation, making access to SWMU 31 by trespassers unlikely.

The total hazard index calculated for noncarcinogenic health effects due to exposures to contaminants in surface soil at SWMU 31 via the dermal contact, ingestion and inhalation pathways is 0.00003 and 0.005 in the average and RME cases, respectively. Neither hazard index exceeds 1.0, which indicates that no adverse health effects are to be anticipated, even to sensitive individuals.

The estimated lifetime excess cancer risk under the assumed exposure conditions is 4×10^{-9} under the average exposure case and 3×10^{-7} under the RME case. These levels are below the EPA target risk range of 1×10^{-6} to 1×10^{-4} (1 in 1,000,000 to 1 in 10,000) for exposure to chemicals released from hazardous waste sites (EPA 1990; EPA 1991b).

4.3.8Qualitative Assessment of Exposures to Lead

Lead exposures are not addressed in the quantitative risk assessment, because EPA withdrew the RfD for lead in 1989, primarily due to the lack of a discernible threshold dose and the numerous sources of lead in the environment. Current EPA guidance (EPA 1989) suggests a soil lead concentration of 500 mg/kg to 1,000 mg/kg be considered for sites characterized as residential. This level is supported by EPA's Uptake/Biokinetic (UBK) Lead Model which predicts that exposures of children ages 0 to 6 to soils with approximately these levels will not result in blood lead levels that exceed a level of concern established by the Centers for Disease Control.

The maximum lead concentration measured in soils at SWMU 31 was 930 mg/kg detected in surface soil at 03101-0000. Lead was measured at 9 to 78 mg/kg in other surface soil samples at SWMU 31. The mean lead concentration in four surface soil samples was 266 mg/kg. The maximum concentration detected at SWMU 31 is near the high end of the range suggested by EPA for residential soils. However, because the area of potential contamination is very small, because elevated lead concentrations do not appear to be characteristic of soil at the site, because the mean concentration is below EPA's suggested range for long-term residential exposures, and because the maximum value is within the concentration range suggested in EPA guidance, lead detected in soils at SWMU 31 would not be expected to pose a threat to human health.

4.3.9 Qualitative Assessment of TPH Exposures

Petroleum-derived fuel is a complex mixture of hundreds of branched, straight-chain, cyclic, and aromatic carbon compounds, most of which are not particularly toxic. However, a small fraction of fuel constituents are known to have toxic or carcinogenic properties. The primary toxic fuel constituents of concern are BTEX; benzene, because it is carcinogenic, is the chief hazardous constituent of fuels and the chief contributor to risk from exposure. In the RFI, BTEX and other potentially hazardous fuel constituents (such as naphthalene and pyrene) were analyzed for individually in the soil samples collected at the SWMU and are included in the quantitative risk assessment. Cumulative risks did not exceed levels of concern. It is not likely that other hydrocarbon constituents of TPH, which are relatively innocuous, would add significantly to the resulting estimates of potential health risks.

This can be demonstrated by comparing SWMU concentrations of TPH to RBCs derived using target risk levels, occupational soil ingestion intake factors, and provisional EPA toxicity factors for JP-4 and gasoline (EPA 1992d). (These provisional toxicity values are based on inhalation

studies in animals using fresh fuel product. They are most appropriately used for evaluating exposures to fresh fuel spills when analytical results for the toxic constituents of TPH [primarily BTEX] are not available, and when the fuel product is known. The provisional values are under review and subject to revision. RBCs derived from them are used simply as a guide to potential health hazards.)

The toxicity factors and calculation of risk-based concentrations are shown in Table 4-19. Assuming that all the TPH at the SWMU is gasoline is the most conservative approach because its RBC is the lowest, based on evidence of carcinogenicity (probably due to benzene). The risk-based concentration of gasoline for oral exposures to TPH under occupational exposure assumptions is 33,600 mg/kg. The maximum SWMU concentration of TPH is 4,070 mg/kg, well below the conservative RBC.

4.3.10 Uncertainties and Limitations

Throughout the human health risk assessment, conservative assumptions regarding exposure conditions, exposure concentrations, and chemical toxicity and carcinogenicity were used that combine to result in an upper-bound estimate of risk for the SWMU. The conservative features and other uncertainties inherent in the risk assessment process are outlined in Appendix C (W-C 1994b). The chief uncertainties specific to risk assessment for SWMU 31 and their effect on the results and conclusions of the risk assessment are listed below.

- Only one of the two surface soil samples contained detectable concentrations of PAHs. Occupational risks were calculated based on the concentrations found in that one sample and very conservative estimates of exposure duration and frequency. These exposure assumptions significantly overstate the likelihood of exposure to the contaminated area. Therefore, the RME risk of 5×10^{-6} could significantly overestimate of actual risk associated with the SWMU.

- Direct physical contact with contaminated soils was assumed to occur routinely for several hours/day, 120 to 250 days a year, for 9 to 25 years. These assumptions overstate current and likely future occupational exposure conditions to soils at this site.

- Dermal absorption of PAHs was not evaluated quantitatively in the risk assessment. EPA guidance (EPA RAGS 1989a) states that it is inappropriate to use the oral slope factor to evaluate the risks associated with dermal exposure to carcinogens, such

as benzo(a)pyrene, which can cause skin cancer through a direct action at the point of application. The exclusion of PAHs from quantitative evaluation in the dermal exposure pathway may underestimate the potential human health risk from dermal contact with soils at the SWMU. Because of the low actual exposure potential and because PAHs were detected in only a few samples analyzed, the uncertainty regarding direct contact risk is not likely to affect the conclusions of the risk assessment.

- Chemicals of concern that do not have EPA-established inhalation toxicity factors were not included in the calculation of potential risk from the inhalation pathway. While their exclusion may underestimate the risk at the SWMU, it is unlikely that the total calculated risk will be significantly affected because ingestion and dermal contact, rather than inhalation, are generally the major contributors to the total risk.

- Cobalt was not considered in the quantitative risk assessment, because it does not have an EPA-established toxicity factor; however, an oral RfD is pending. Its exclusion from the quantitative analysis may underestimate risk at the SWMU. However, it is not likely to affect the results or conclusions of the risk assessment relative to the chemicals with known toxic or carcinogenic effects detected at the SWMU.

- The soil surface area at this SWMU is too small to support chronic occupational exposures. Therefore, the exposure assumptions used are likely to significantly overestimate potential magnitude of exposure to contaminated soils and risk at this SWMU.

4.4 ECOLOGICAL RISK ASSESSMENT

4.4.1 Ecological Characterization and Key Receptor (Indicator) Species

SWMU 31, the AGE Maintenance Shop Pad, is located in a small area of poor wildlife habitat quality, within the developed portion of Cannon AFB where existing ground cover is mostly concrete, buildings, and isolated areas of mowed non-native grasses. About 90 percent of the land surface within the immediate vicinity (within 100 feet) of SWMU 31 is concrete paving and Building 186. Mowed grassy areas are located to the northwest, across Torch Boulevard, and to the northeast, where the grass forms a slight drainage channel. The AGE Drainage Ditch begins southeast of the pad. The pad has been actively used since 1971.

The most common species are likely to be birds, such as robin (*Turdus migratorius*), house sparrow (*Passer domesticus*), and the starling (*Sturnus vulgaris*). Seedeaters would be more limited, since the grass is maintained by mowing. Although the house mouse (*Mus musculus*) may occur in the area around the buildings, the grass habitat is probably too small, fragmented, and subject to human disturbance to be used regularly by terrestrial species such as deer mice. Raptors are unlikely to use the area for similar reasons.

Given this assessment, the robin (*Turdus migratorius*) was selected as the key receptor species for the grassy areas near SWMU 31.

4.4.2 Chemicals of Concern

The chemicals of concern (COCs) at SWMU 31 were selected using validated data from six soil samples covering the interval between 0 and 2 feet deep. This interval was selected because most soil-dwelling organisms (e.g. earthworms and deer mice) occupy this zone. Table 4-20 provides a summary of the chemicals detected in the six samples considered for this ERA. A detailed description of the soil sampling program and chemical analysis and results can be found in the Cannon AFB RFI, Appendix III SWMUs (W-C 1993).

A chemical must have been detected in at least one of the six samples to be considered a possible COC. The following screening criteria were then applied, in the order shown, to determine if a chemical in the soil would be retained as a COC:

- Exceedance of Cannon AFB background soil concentrations
- Exceedance of average concentrations found in southwestern U.S. soils
- Exceedance of the normal range found in U.S. soils (nationwide)

The maximum detected concentration of the six samples was used in the comparison to background criteria. If no background criteria were available for comparison, as was the case for the organic chemicals, the chemicals were retained as COCs. If the maximum detected concentration of a chemical exceeded the local (i.e. Cannon AFB) background concentration, it was then compared to the average concentration found in southwestern U.S. soils. If it exceeded this criteria, it was likely retained as a COC, even if it fell within the normal range found in U.S. soils. This is because the normal U.S. range is widely variable and was included in the screening process primarily as an additional reference. In some cases however, the normal U.S. range was the only screening criteria available. Table 4-21 lists the maximum concentrations detected and shows the screening values used. The chemicals that were retained as COCs at SWMU 31

following the screening process include tetrachloroethene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, carbazole, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, phenanthrene, pyrene, antimony, barium, cadmium, chromium, cobalt, copper, lead, selenium, zinc, and TPH.

4.4.3 Exposure Assessment

Figure 4-4 depicts the exposure pathway flow chart developed for SWMU 31. As the flowchart indicates, chemicals could potentially be released through transport in runoff, infiltration to groundwater, volatilization or wind erosion, and direct contact by ecological receptors. Except for direct contact, these exposure pathways are incomplete or of minor importance for ecological receptors at SWMU 31. Storm water runoff is a potentially complete but insignificant pathway, because the AGE Drainage Ditch was already addressed as a separate SWMU. Any storm water runoff to grassy areas bordering the pad can be considered as part of direct contact with surface soil for the purposes of this analysis. Ecological receptors are not in contact with groundwater, so this is an incomplete exposure pathway. Volatilization or wind erosion is not considered a significant pathway at this site. Although one of the COCs is a volatile organic compound (VOC), the maximum concentration was about 0.0036 mg/kg, and VOC concentrations of 100 mg/kg or greater in air are generally needed to induce toxic responses in laboratory rats and mice from inhalation (NIOSH 1987). Concentrations in soils would have to be many times greater than this to produce these toxic levels in air, even near the soil surface. Direct contact with subsurface soils (more than two feet deep) is also considered an insignificant or incomplete pathway because of the limited use of deeper soils at this site by wildlife.

Therefore, the only potentially complete and significant exposure pathway is direct contact with contaminated surface soil by species frequenting the SWMU area. Direct contact may include dermal absorption or ingestion. Dermal absorption is not considered a significant exposure route for the receptors at this site because the animals are assumed to be largely protected by their fur or feathers. Receptors at the SWMU may ingest COCs either directly or indirectly. Direct ingestion usually occurs along the food/prey chain from soil adhered to the surface of food or from preening/cleaning or burrowing activities. Indirect ingestion includes ingestion of COCs that have been transferred via food webs.

Figure 4-5 depicts the Conceptual Site Model developed from the exposure pathway analysis, the ecological characterization, and the identification of the key receptor species for SWMU 31. As the figure indicates, the pathway of concern is from surface soil to the robin, via direct and indirect ingestion, with the earthworm identified as a main dietary component of the robin.

4.4.4 Risk Characterization

This section provides a characterization of potential risk to the selected key receptor species (robin) at SWMU 31. For the purposes of this analysis, it was assumed that the robin's diet consists of earthworms and inadvertent consumption of soil. It was also assumed that the concentration of the COCs were the same in the earthworm as in the soil, except for cadmium and selenium, for which bioaccumulation factors (BAFs) of 4.6 and 12 were used (see Section 7.4.4 (Raptor discussion)). Therefore the analysis consisted of comparing the concentration of COCs in the robin's food (i.e., the chemical concentration in soil) to selected toxicity benchmark dietary levels for those chemicals (see Table 4-22).

This is a somewhat conservative approach, because studies indicate that, for many chemicals, BAFs from soil to earthworm are less than one (Beyer and Stafford 1993). However, this assumption takes into account the soil that would be clinging to the earthworm when consumed by the robin (that is not taken into account by the BAF studies) and also accounts for minor inadvertent soil ingestion by the robin. The benchmark dietary levels were selected as explained in Appendix D, Sections D.3 and D.4; these sections also provide background toxicological information about the COCs. The soil chemical concentration used was the arithmetic mean, as described in Appendix D (Section D.6.).

Table 4-22 lists the COCs for SWMU 31 and provides a comparison between the soil concentration (arithmetic mean) and the benchmark dietary level for the robin. If the soil level exceeds the benchmark level, there is a possibility of risk, as noted in the table. The following discussion addresses those chemicals where a possibility of risk is indicated.

<u>Benzo-a-pyrene (BaP)</u>

The average concentration of BaP at SWMU 31 was 2.3 mg/kg, compared to the benchmark dietary level of 0.02 mg/kg, indicating a potential risk. The 2.3 mg/kg level is above reported BaP soil concentrations for various locations as reported in the literature (see Table A-6) and is higher than BaP levels found at other similar SWMUs at Cannon AFB. However, BaP was detected in only one of three samples, at 2.7 mg/kg; the other two samples were non-detects, and one of those was reported at an assumed value of 4.0 mg/kg because of the high reporting limit of 8.0 mg/kg. Therefore, it is unlikely that the robin is exposed to a level of 2.7 mg/kg in all areas in which it feeds, assuming it does not feed just at the "hot spots" in the SWMU area. Also, the low toxicity benchmark level for BaP is a reflection of BaP's carcinogenic effects

through the action of its intermediate metabolites, as opposed to acute toxicity. In most cases, the process of carcinogenesis occurs over a period of many months in experimental animals, and therefore it is questionable if carcinogenesis is an important endpoint for relatively short-lived mammals and birds, such as the robin. Finally, the BaP found at SWMU 31 may not be completely bioavailable to robins. Goon et al. (1991) showed that BaP that had aged 6 months in soil was only 34 percent to 51 percent orally bioavailable for clayey and sandy soils, relative to BaP administered alone to rats. For all these reasons, it is unlikely that BaP presents an unacceptable risk at SWMU 31.

Benzo(a)anthracene (BaA)

The average concentration in the soil (2.2 mg/kg) slightly exceeds the dietary benchmark level of 2.0 mg/kg. However, Beyer and Stafford (1992) calculated BAFs of less than one for all PAHs from soil to earthworm, specifically a BAF of 0.27 for BaA. Therefore, given this and the low level of BaA detected, along with the fact that the benchmark level reflects a concern primarily for carcinogenicity, which is not a particularly important benchmark for shorter-lived birds, it is unlikely that the BaA at SWMU 31 constitutes a risk to the robin.

Lead

The average concentration of lead at SWMU 31 was 181.63 mg/kg, compared to the benchmark dietary level of 87.5 mg/kg, indicating a potential risk. However, it is unlikely that lead constitutes a risk to the robin at SWMU 31, for several reasons. First, the average soil value is high primarily because of one "hot spot" out of six samples, with lead reported at 930 mg/kg. The remaining five samples are all under the benchmark level. Therefore, it is unlikely that the robin is exposed to high levels of lead in all areas in which it feeds. In addition, the toxicity of lead to wildlife depends on the chemical form in which the lead occurs. Lead in soils at Cannon AFB is probably aged or oxidized, and therefore less toxic or bioavailable than either the lead forms typically used in studies that establish toxicity benchmark values (e.g., lead acetate) or the organolead compounds, that are unstable upon exposure to air and light and typically convert to less toxic lead oxide forms.

TPH

The average concentration of TPH at SWMU 31 was 1391.93 mg/kg, compared to the benchmark dietary level of 241 mg/kg, indicating a potential risk. However, as with lead, TPH levels are very spotty at SWMU 31, with "hot spots" indicated by three samples (ranging from

973 mg/kg to 4070 mg/kg) and two non-detects out of six samples. Also, it is not certain how much the robin is exposed to fresh TPH mixtures as opposed to aged products. As noted in Appendix D, the toxicity benchmarks for TPH are derived from experiments using fresh fuels, and the BTEX and PAH compounds are the compounds of primary concern in TPH mixtures in setting cleanup levels and characterizing risk. In older spills to surface soils, the volatile BTEX component may not be present or prevalent, and the total TPH value may reflect less toxic constituents. However, PAHs may still be present in older spills, and these may be of concern. At SWMU 31, PAHs were detected, but it appears that the risk related to these is minimal (see BaP and BaA discussion, above).

Cadmium & Selenium

The average concentration of cadmium in earthworms at SWMU 31 was estimated to be 11.87 mg/kg and the average selenium concentration in earthworms was 5.4 mg/kg. These levels of cadmium and selenium, which were calculated using BAFs of 4.6 and 12, respectively, are just slightly above their respective benchmark dietary levels of 10.5 mg/kg and 5 mg/kg for robins. Cadmium was detected at a level of 8.7 and 4.4 mg/kg in 2 of the 6 samples; the cadmium concentration in the remaining 4 samples was below 1. This indicates 2 possible "hot spots" for cadmium. Since the average cadmium concentration in earthworms was only slightly above the benchmark dietary level and it is unlikely robins feed only at the "hot spots", cadmium is unlikely to pose a risk to robins feeding at SWMU 31. Similarly, selenium is unlikely to pose a risk to robins since it was detected in only 2 of 6 samples and the average earthworm concentration is only slightly above the benchmark dietary level for robins. It is also likely that the selenium concentrations in soil at Cannon AFB represent natural sources (see Section 7.4.4).

4.5 SUMMARY AND CONCLUSIONS

4.5.1 Summary

A human health and ecological risk assessment which considered both present and future receptors and all appropriate exposure pathways was completed for this SWMU. Analytical data were collected for soils at the SWMU, and fate and transport modeling was conducted to evaluate the air and groundwater pathways. The results of the risk assessment are summarized here.

- Results of the human health risk assessment (Table 4-18) show that no unacceptable health risks due to chemical releases are expected at the SWMU

- Results of the ecological risk assessment show that no unacceptable ecological risks due to chemical releases are expected at the SWMU

4.5.2 Conclusions

Since no unacceptable human health or ecological risks due to chemical releases are expected from this SWMU, no further action is recommended for this SWMU.

TABLE 4-1

SUMMARY OF COMPOUNDS DETECTED IN PHASE I FOR NEAR SURFACE SAMPLES COLLECTED FROM SWMU 31

LOCATOR	CAN031-0311-0000			CAN031-0311-0002			CAN031-0312-0000			CAN031-0312-0002		
LAB SAMPLE NUMBER	0311830016SA			0311830017SA			0311830010SA			0311830011SA		
COLLECT DATE	09/12/93			09/12/93			09/12/93			09/12/93		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Volatile Organics (µg/kg)												
Tetrachloroethene										<	5.6	U
Semivolatile Organics (µg/kg)												
Anthracene	600	4100	J							<	370	U
Benzo(a)anthracene	2400	4100	J							<	370	U
Benzo(a)pyrene	2700	4100	J							<	370	U
Benzo(b)fluoranthene	5600	4100								65	370	J
Benzo(g,h,i)perylene	2600	4100	J							<	370	U
Carbazole	500	4100	J							<	370	U
Chrysene	3100	4100	J							<	370	U
Fluoranthene	5600	4100								55	370	J
Indeno(1,2,3-cd)pyrene	2300	4100	J							<	370	U
2-Methylnaphthalene	<	4100	U							45	370	J
Phenanthrene	3200	4100	J							44	370	J
Pyrene	4600	4100								44	370	J
Metals (mg/kg)												
Aluminum	5660	12.5		4160	24.1		4260	10.5		5430	11.2	
Antimony	1.9	7.5	J	<	14.4	U	<	6.3	U	<	6.7	U
Arsenic	3.2	0.62		2.3	0.6		2.4	0.52		2.9	0.56	
Barium	1460	1.2	J	120	2.4	J	166	1	J	201	1.1	J
Beryllium	0.36	0.25		0.26	0.48	J	0.22	0.21		0.27	0.22	
Cadmium	8.7	0.62		<	1.2	U	0.85	0.52		0.63	0.56	
Calcium	6270	25		205000	48.1		48600	20.9		94400	22.3	
Chromium	130	1.2		4.2	2.4		9.9	1	J	8	1.1	J
Cobalt	3.4	1.2		2.3	2.4	J	2.6	1		3.2	1.1	

NOTE: Results presented here are chemicals which were detected at least once in near-surface soils at this SWMU and have passed data review.
A complete summary of chemical results are presented in Appendix A of the RFI report.
J = Estimated value below reporting limit or estimated based on data quality criteria.
U = Not detected
Qual = Qualification
RL = Reporting Limit

Metals (mg/kg), cont.												
Copper	61.4	2.5		2.7	4.8	J	9.3	2.1		10.9	2.2	

TABLE 4-1

SUMMARY OF COMPOUNDS DETECTED IN PHASE I FOR NEAR SURFACE SAMPLES COLLECTED FROM SWMU 31

LOCATOR	CAN031-0311-0000			CAN031-0311-0002			CAN031-0312-0000			CAN031-0312-0002		
LAB SAMPLE NUMBER	0311830016SA			0311830017SA			0311830010SA			0311830011SA		
COLLECT DATE	09/12/93			09/12/93			09/12/93			09/12/93		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Iron	7150	12.5		3290	24.1		5570	10.5		6420	11.2	
Lead	930	125		3.5	1.2		46.9	5.2		22.3	5.6	
Magnesium	1150	25		2450	48.1		1810	20.9		2210	22.3	
Nickel	7.2	5		4.9	9.6	J	5.8	4.2		6.9	4.5	
Potassium	867	625	UJ	666	1200	J	1100	523		954	558	
Selenium	<	1.2	U	<	1.2	UJ	<	1	UJ	<	1.1	UJ
Sodium	<	625		<	1200	U	<	523	U	<	558	U
Vanadium	13.8	1.2		10.4	2.4		13.8	1		17.1	1.1	
Zinc	479	2.5		9.2	4.8		57	2.1		33.5	2.2	
TPH (mg/kg)												
Total Petroleum Hydrocarbons	3180	500		<	48.1	U	973	209		81	44.6	

NOTE: Results presented here are chemicals which were detected at least once in near-surface soils at this SWMU and have passed data review.
A complete summary of chemical results are presented in Appendix A of the RFI report.

J = Estimated value below reporting limit or estimated based on data quality criteria.
U = Not detected

Qual = Qualification
RL = Reporting Limit

TABLE 4-1

SUMMARY OF COMPOUNDS DETECTED IN PHASE I FOR NEAR SURFACE SAMPLES COLLECTED FROM SWMU 31

LOCATOR	CAN031-0313-0000			CAN031-0313-0002			CAN031-0314-0000			CAN031-0314-0002		
LAB SAMPLE NUMBER	0311830002SA			0311830003SA			0311830006SA			0311830008SA		
COLLECT DATE	09/12/93			09/12/93			09/12/93			09/12/93		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Volatile Organics (µg/kg)												
Tetrachloroethene	3.6	6.1								<	5.8	U
Semivolatile Organics (µg/kg)												
Anthracene	<	8000	U	<	390	U				<	380	U
Benzo(a)anthracene	<	8000	U	<	390	U				<	380	U
Benzo(a)pyrene	<	8000	U	<	390	U				<	380	U
Benzo(b)fluoranthene	<	8000	U	<	390	U				<	380	U
Benzo(g,h,i)perylene	<	8000	U	<	390	U				<	380	U
Carbazole	<	8000	U	<	390	U				<	380	U
Chrysene	<	8000	U	<	390	U				<	380	U
Fluoranthene	<	8000	U	<	390	U				<	380	U
Indeno(1,2,3-cd)pyrene	<	8000	U	<	390	U				<	380	U
2-Methylnaphthalene	<	8000	U	<	390	U				<	380	U
Phenanthrene	<	8000	U	<	390	U				<	380	U
Pyrene	<	8000	U	<	390	U				<	380	U
Metals (mg/kg)												
Aluminum	6650	12.2		5740	11.7		9430	11.7		6090	11.7	J
Antimony	<	7.3	U	<	7	U	<	7	U	<	7	U
Arsenic	4.4	0.61		2.2	0.59		4.6	0.59		2.6	0.58	
Barium	229	1.2	J	119	1.2	J	104	1.2	J	107	1.2	J
Beryllium	0.25	0.24		0.25	0.23		0.69	0.23		0.34	0.23	
Cadmium	4.4	0.61		<	0.59	U	<	0.59	U	<	0.58	U
Calcium	42400	24.4		108000	23.4		4200	23.5		71300	23.3	J
Chromium	24.3	1.2		6	1.2		11.8	1.2		6.4	1.2	
Cobalt	3.5	1.2		3.2	1.2		5.1	1.2		3.2	1.2	

NOTE: Results presented here are chemicals which were detected at least once in near-surface soils at this SWMU and have passed data review.
A complete summary of chemical results are presented in Appendix A of the RFI report.

J = Estimated value below reporting limit or estimated based on data quality criteria.
U = Not detected

Qual = Qualification
RL = Reporting Limit

Metals (mg/kg), cont.												
Copper	18.8	2.4		4.7	2.3		7.6	2.3		5.2	2.3	J

TABLE 4-1

SUMMARY OF COMPOUNDS DETECTED IN PHASE I FOR NEAR SURFACE SAMPLES COLLECTED FROM SWMU 31

LOCATOR	CAN031-0313-0000			CAN031-0313-0002			CAN031-0314-0000			CAN031-0314-0002		
LAB SAMPLE NUMBER	0311830002SA			0311830003SA			0311830006SA			0311830008SA		
COLLECT DATE	09/12/93			09/12/93			09/12/93			09/12/93		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Iron	7950	12.2		5470	11.7		10700	11.7		6030	11.7	J
Lead	77.7	6.1		4.7	0.59		9.4	0.59		6.9	1.2	J
Magnesium	2310	24.4		1940	23.4		2130	23.5		1760	23.3	
Nickel	6.8	4.9		5.7	4.7		9.7	4.7		7	4.7	
Potassium	1550	610		998	586		1610	587		1110	583	J
Selenium	0.24	1.2	J	<	1.2	UJ	0.15	1.2	J	0.16	1.2	J
Sodium	193	610	J	<	586	U	<	587	U	<	583	U
Vanadium	16.6	1.2		13.1	1.2		21.2	1.2		13.3	1.2	
Zinc	85.8	2.4		12.6	2.3		29.8	2.3		13.2	2.3	
TPH (mg/kg)												
Total Petroleum Hydrocarbons	4070	488		<	46.9	U	<	46.9	U	<	46.6	U

NOTE: Results presented here are chemicals which were detected at least once in near-surface soils at this SWMU and have passed data review.
A complete summary of chemical results are presented in Appendix A of the RFI report.

J = Estimated value below reporting limit or estimated based on data quality criteria.
U = Not detected

Qual = Qualification
RL = Reporting Limit

TABLE 4-2

SUMMARY OF COMPOUNDS DETECTED IN PHASE I SUBSURFACE SAMPLES COLLECTED FROM SWMU 31

LOCATOR	CAN031-0311-0004			CAN031-0311-0008			CAN031-0312-0004			CAN031-0312-0008		
LAB SAMPLE NUMBER	0311830018SA			0311830001SA			0311830014SA			0311830015SA		
COLLECT DATE	09/12/93			09/12/93			09/12/93			09/12/93		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Metals (mg/kg)												
Aluminum	7690	11.8		3210	11.2		4210	23.5		5820	11.4	
Arsenic	2.4	0.59		1.1	0.56		2.2	0.59		2.6	0.57	
Barium	81.2	1.2	J	327	1.1	J	273	2.4	J	237	1.1	J
Beryllium	0.29	0.24		<	0.22	U	<	0.47	U	0.35	0.23	
Calcium	22900	23.6		60300	22.4		217000	47		68100	22.9	
Chromium	8.2	1.2		3.8	1.1		6.5	2.4		6.1	1.1	
Cobalt	4.4	1.2		1.7	1.1		2.4	2.4		3.1	1.1	
Copper	5.9	2.4		2.2	2.2		3.6	4.7	J	3.8	2.3	
Iron	8140	11.8		3320	11.2		3930	23.5		5900	11.4	
Lead	6.7	1.2		4.5	1.1		5.4	0.59		6.6	0.57	
Magnesium	2000	23.6		2200	22.4		3250	47		3970	22.9	
Nickel	7.4	4.7		3.6	4.5	J	5.7	9.4	J	6.3	4.6	
Potassium	1450	590		892	560		688	1180		1090	572	
Selenium	<	1.2	UJ	0.12	1.1	J	<	1.2	UJ	<	1.1	UJ
Vanadium	16.4	1.2		11.2	1.1		14	2.4		23.4	1.1	
Zinc	18.8	2.4		8	2.2	J	9.6	4.7		12.9	2.3	

NOTE: Results presented here are chemicals which were detected at least once in subsurface soils at this SWMU and have passed data review. A complete summary of chemical results are presented in Appendix A of the RFI report.

J = Estimated value below reporting limit or estimated based on data quality criteria.

U = Not detected

RL = Reporting Limit.

Qual= Qualifier

TABLE 4-2

SUMMARY OF COMPOUNDS DETECTED IN PHASE I SUBSURFACE SAMPLES COLLECTED FROM SWMU 31

LOCATOR	CAN031-0313-0004			CAN031-0313-0008			CAN031-0314-0004			CAN031-0314-0008		
LAB SAMPLE NUMBER	0311830004SA			0311830005SA			0311830009SA			0311830019SA		
COLLECT DATE	09/12/93			09/12/93			09/12/93			09/12/93		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Metals (mg/kg)												
Aluminum	4090	23.3		5460	11.4		4830	23.5		2160	23.3	
Arsenic	2.7	0.58		3	0.57		3.1	0.59		1.5	0.58	
Barium	130	2.3	J	411	1.1	J	1130	2.4	J	143	2.3	J
Beryllium	0.24	0.47	J	0.53	0.23		<	0.47	U	<	0.47	U
Calcium	142000	46.6		50700	22.8		156000	47		222000	46.5	
Chromium	4.9	2.3		6.1	1.1		4.5	2.4		2.3	2.3	
Cobalt	2.5	2.3		3	1.1		2.4	2.4		<	2.3	U
Copper	2.7	4.7	J	3.6	2.3		2.5	4.7	J	1.5	4.7	J
Iron	4050	23.3		5580	11.4		4570	23.5		1680	23.3	
Lead	4	0.58		5.8	1.1		4.1	0.59		1.9	0.58	
Magnesium	2500	46.6		2960	22.8		3390	47		2920	46.5	
Nickel	5.9	9.3	J	6.5	4.6		6.2	9.4	J	3.6	9.3	J
Potassium	762	1170		1140	570		844	1180	J	<	1160	U
Selenium	<	1.2	UJ	<	1.1	UJ	<	1.2	UJ	<	1.2	UJ
Vanadium	15.4	2.3		22.6	1.1		18.7	2.4		6	2.3	
Zinc	9.8	4.7		12.1	2.3		11.9	4.7		5.6	4.7	

NOTE: Results presented here are chemicals which were detected at least once in subsurface soils at this SWMU and have passed data review. A complete summary of chemical results are presented in Appendix A of the RFI report.

J = Estimated value below reporting limit or estimated based on data quality criteria.

U = Not detected

RL = Reporting Limit.

Qual= Qualifier

TABLE 4-3

SUMMARY OF COMPOUNDS DETECTED IN PHASE II SOIL SAMPLES COLLECTED AT SWMU 31
CANNON AFB

LOCATOR	CAN031-3105-0000			CAN031-3105-0005			CAN031-3105-0010			CAN031-3106-0000			CAN031-3106-0005			CAN031-3106-0010		
LAB SAMPLE NUMBER	0397140012SA			0397140013SA			0397140014SA			0397140015SA			0397140016SA			0397140017SA		
COLLECT DATE	12/08/94			12/08/94			12/08/94			12/08/94			12/08/94			12/08/94		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Volatile Organics (µg/kg)																		
Acetone	<	12	U	<	12	U	<	12	U	<	11	U	2.6	12	J	<	11	U
Toluene	<	6	U	<	5.8	U	<	5.8	U	<	5.5	UJ	<	6	U	<	5.7	U
Xylenes (total)	<	6	U	<	5.8	U	<	5.8	U	<	5.5	UJ	<	6	U	<	5.7	U
Semivolatile Organics (µg/kg)																		
Acenaphthene	<	400	U	<	380	U	<	380	U	89	360	J	<	400	U	<	380	U
Anthracene	80	400	J	<	380	U	<	380	U	370	360		<	400	U	<	380	U
Benzo(a)anthracene	490	400		<	380	U	<	380	U	1600	360		<	400	U	<	380	U
Benzo(a)pyrene	600	400		<	380	U	<	380	U	1900	360		<	400	U	<	380	U
Benzo(b)fluoranthene	1100	400		<	380	U	<	380	U	<	360	U	<	400	U	<	380	U
Benzo(g,h,i)perylene	310	400	J	<	380	U	<	380	U	870	360		<	400	U	<	380	U
Benzo(k)fluoranthene	1300	400		<	380	U	<	380	U	3800	360		<	400	U	<	380	U
bis(2-Ethylhexyl)phthalate	340	400	J	<	380	U	<	380	U	1200	360		<	400	U	<	380	U
Butyl benzyl phthalate	65	400	J	<	380	U	<	380	U	73	360	J	<	400	U	<	380	U
Carbazole	170	400	J	<	380	U	<	380	U	370	360		<	400	U	<	380	U
Chrysene	790	400		<	380	U	<	380	U	270	360	J	<	400	U	<	380	U
Dibenz(a,h)anthracene	140	400	J	<	380	U	<	380	U	400	360		<	400	U	<	380	U
Dibenzofuran	<	400	U	<	380	U	<	380	U	49	360	J	<	400	U	<	380	U
Fluoranthene	1300	400		<	380	U	<	380	U	3800	360		<	400	U	<	380	U
Fluorene	47	400	J	<	380	U	<	380	U	96	360	J	<	400	U	<	380	U
Indeno(1,2,3-cd)pyrene	330	400	J	<	380	U	<	380	U	920	360		<	400	U	<	380	U
4-Methylphenol	<	400	U	<	380	U	<	380	U	<	360	U	<	400	U	<	380	U
Naphthalene	66	400	J	<	380	U	<	380	U	39	360	J	<	400	U	<	380	U
Phenanthrene	540	400		<	380	U	<	380	U	1500	360		<	400	U	<	380	U
Pyrene	810	400		<	380	U	<	380	U	2700	360		<	400	U	<	380	U

Results presented here are only those chemicals which were detected at least once at this SWMU and have passed data review.
A complete summary of chemical results are presented on Table A.
J = Estimated value.
R = Rejected value. D = Sample was diluted for analysis.
U = Nondetected value. RL = Reporting Limit.
(1) = MS/MSD for preceding sample number.

TABLE 4-3

SUMMARY OF COMPOUNDS DETECTED IN PHASE II SOIL SAMPLES COLLECTED AT SWMU 31
CANNON AFB

LOCATOR	CAN031-3105-0000			CAN031-3105-0005			CAN031-3105-0010			CAN031-3106-0000			CAN031-3106-0005			CAN031-3106-0010		
LAB SAMPLE NUMBER	0397140012SA			0397140013SA			0397140014SA			0397140015SA			0397140016SA			0397140017SA		
COLLECT DATE	12/08/94			12/08/94			12/08/94			12/08/94			12/08/94			12/08/94		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Metals (mg/kg)																		
Aluminum	9230	12		10500	11.5		8700	23.2		10200	11		3970	60.3		10200	11.4	
Arsenic	2.4	1.2		2.3	0.58		2	0.58		3.1	0.55		2.4	0.6		2.5	0.57	
Barium	237	1.2		657	1.2		275	2.3		305	1.1		270	6		101	1.1	
Beryllium	0.38	0.24		0.45	0.23		0.4	0.46	J	0.42	0.22		<	1.2	U	0.47	0.23	
Cadmium	1.2	0.6		<	0.58	U	<	1.2	U	3.3	0.55		<	3	U	<	0.57	U
Calcium	44600	24		105000	23		124000	46.3		46600	21.9		288000	121		96600	22.8	
Chromium	11.3	1.2		8.2	1.2		5.8	2.3		26.5	1.1		<	6	U	7.7	1.1	
Cobalt	2.9	1.2		2.1	1.2		2.2	2.3	J	3.1	1.1		<	6	U	2.5	1.1	
Copper	14.9	2.4		5.6	2.3		4	4.6	J	15.5	2.2		3.9	12.1	J	4.5	2.3	
Iron	8700	12		7590	11.5		6370	23.2		10600	11		3620	60.3		8050	11.4	
Lead	42.7	6	J	7	0.58	J	5.1	1.2	J	138	11		3.1	1.2	J	5.8	1.1	
Magnesium	2310	24		2620	23		2910	46.3		2460	21.9		3270	121		4330	22.8	
Manganese	234	1.2	J	99.4	1.2	J	73.2	2.3	J	187	1.1	J	40.7	6	J	112	1.1	J
Nickel	8.7	4.8		9.3	4.6		8.6	9.3	J	10.1	4.4		8.8	24.1	J	9	4.6	
Potassium	1460	600		1740	576		1430	1160		2200	548		639	3010	J	1830	571	
Thallium	<	1.2	UJ	0.13	1.2	J	0.12	1.2	J	<	1.1	UJ	<	1.2	UJ	<	1.1	UJ
Vanadium	17.3	1.2		15.1	1.2		15.4	2.3		19.9	1.1		12.2	6		23.7	1.1	
Zinc	114	2.4		21.1	2.3		16.4	4.6		139	2.2		8.5	12.1	J	20.6	2.3	
TRPH (mg/kg)																		
Total Recoverable Petroleum Hydrocar	696	48		<	46.1	U	<	46.3	U	914	132		<	48.2	U	<	45.7	U

Results presented here are only those chemicals which were detected at least once at this SWMU and have passed data review.
A complete summary of chemical results are presented on Table A-1.
J = Estimated value.
R = Rejected value. D = Sample was diluted for analysis.
U = Nondetected value. RL = Reporting Limit.
(1) = MS/MSD for preceding sample number.

TABLE 4-3

SUMMARY OF COMPOUNDS DETECTED IN PHASE II SOIL SAMPLES COLLECTED AT SWMU 31 CANNON AFB

LOCATOR	CAN031-3107-0000			CAN031-3107-0005			CAN031-3107-6005[1]			CAN031-3107-0010		
LAB SAMPLE NUMBER	0398710006SA			0398710002SA			0398710010SA			0398710004SA		
COLLECT DATE	12/13/94			12/13/94			12/13/94			12/13/94		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Volatile Organics (µg/kg)												
Acetone	210	110		6.3	11	J	14	11		12	12	
Toluene	<	56	U	5.5	5.7	J	<	5.7	U	4.9	5.9	J
Xylenes (total)	130	56		<	5.7	U	<	5.7	U	<	5.9	U
Semivolatile Organics (µg/kg)												
Acenaphthene	<	3700	U	<	380	U	<	380	U	<	390	U
Anthracene	820	3700	J	<	380	U	<	380	U	<	390	U
Benzo(a)anthracene	1800	3700	J	<	380	U	<	380	U	<	390	U
Benzo(a)pyrene	1700	3700	J	<	380	U	<	380	U	<	390	U
Benzo(b)fluoranthene	1200	3700	J	<	380	U	<	380	U	<	390	U
Benzo(g,h,i)perylene	1100	3700	J	<	380	U	<	380	U	<	390	U
Benzo(k)fluoranthene	1800	3700	J	<	380	U	<	380	U	<	390	U
bis(2-Ethylhexyl)phthalate	2500	3700	J	<	380	U	<	380	U	<	390	U
Butyl benzyl phthalate	<	3700	U	<	380	U	<	380	U	<	390	U
Carbazole	<	3700	U	<	380	U	<	380	U	<	390	U
Chrysene	2000	3700	J	<	380	U	<	380	U	<	390	U
Dibenz(a,h)anthracene	630	3700	J	<	380	U	<	380	U	<	390	U
Dibenzofuran	<	3700	U	<	380	U	<	380	U	<	390	U
Fluoranthene	4800	3700		120	380	J	170	380	J	<	390	U
Fluorene	<	3700	U	<	380	U	<	380	U	<	390	U
Indeno(1,2,3-cd)pyrene	1100	3700	J	<	380	U	<	380	U	<	390	U
4-Methylphenol	1100	3700	J	<	380	U	<	380	U	<	390	U
Naphthalene	3100	3700	J	<	380	U	<	380	U	<	390	U
Phenanthrene	1900	3700	J	<	380	U	<	380	U	<	390	U
Pyrene	3500	3700	J	<	380	U	<	380	U	<	390	U

Results presented here are only those chemicals which were detected at least once at this SWMU and have passed c
A complete summary of chemical results are presented on Table A-1.

J = Estimated value.

R = Rejected value. D = Sample was diluted for analysis.

U = Nondetected value. RL = Reporting Limit.

[1] = MS/MSD for preceding sample number.

TABLE 4-3

SUMMARY OF COMPOUNDS DETECTED IN PHASE II SOIL SAMPLES COLLECTED AT SWMU 31 CANNON AFB

LOCATOR	CAN031-3107-0000			CAN031-3107-0005			CAN031-3107-6005[1]			CAN031-3107-0010		
LAB SAMPLE NUMBER	0398710006SA			0398710002SA			0398710010SA			0398710004SA		
COLLECT DATE	12/13/94			12/13/94			12/13/94			12/13/94		
	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual	Result	RL	Qual
Metals (mg/kg)												
Aluminum	7550	22.5		7550	23		7050	23		4160	58.9	
Arsenic	3.7	0.56		3	0.57		2.8	0.57		1	0.59	
Barium	716	2.2		267	2.3	J	208	2.3	J	344	5.9	J
Beryllium	0.46	0.45		0.43	0.46	J	0.45	0.46	J	<	1.2	U
Cadmium	1.9	1.1		1	1.1	J	5.2	1.1		<	2.9	U
Calcium	173000	45		120000	45.9		133000	46		289000	118	
Chromium	25.6	2.2		5.6	2.3		4.9	2.3		<	5.9	U
Cobalt	22.2	2.2		2.8	2.3		2.6	2.3		2.6	5.9	J
Copper	22.5	4.5		4.9	4.6		5.2	4.6		<	11.8	U
Iron	8990	22.5		6410	23		6120	23		2930	58.9	
Lead	20.7	2.8	J	4.7	0.57	J	4.8	0.57	J	3.3	0.59	J
Magnesium	5230	45		3050	45.9		3070	46		4820	118	
Manganese	280	2.2		86.5	2.3		89	2.3		81.6	5.9	
Nickel	15.8	9		7.5	9.2	J	8.8	9.2	J	7.4	23.6	J
Potassium	994	1120	J	1180	1150		1180	1150		706	2940	J
Thallium	<	2.2	UJ	<	1.1	UJ	<	1.1	UJ	<	1.2	UJ
Vanadium	21	2.2		18	2.3		18.8	2.3		10	5.9	
Zinc	44.7	4.5		18.7	4.6		20.8	4.6		8.2	11.8	J
TRPH (mg/kg)												
Total Recoverable Petroleum Hydrocarbons	2500	225		<	45.9	U	<	46	U	<	47.1	U

Results presented here are only those chemicals which were detected at least once at this SWMU and have passed c
A complete summary of chemical results are presented on Table A.

J = Estimated value.

R = Rejected value. D = Sample was diluted for analysis.

U = Nondetected value. RL = Reporting Limit.

[1] = MS/MSD for preceding sample number.

TABLE 4-4

COMPARISON OF SWMU 31 METALS CONCENTRATIONS IN SURFACE SOIL WITH BACKGROUND UTLs CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Field Sample ID for Maximum Hit	Maximum Detected Concentration (mg/kg)	Qualifiers for Maximum Hit	Background Surface Soil UTL Concentration[1] (mg/kg)	Exceeds Background UTL	Frequency of Exceedance of UTL	Frequency of Exceedance (%)	Does Metal Exceed Background?
METALS									
Aluminum	7/7	CAN031-3106-0000	10200		8,950	YES	3/7	43%	**YES**
Antimony	1/7	CAN031-0311-0000	1.9	J	3.15	NO			NO
Arsenic	7/7	CAN031-0314-0000	4.6		3.6	YES	3/7	43%	**YES**
Barium	7/7	CAN031-0311-0000	1460	J	670	YES	2/7	29%	**YES**
Beryllium	7/7	CAN031-0314-0000	0.69		0.78	NO			NO
Cadmium	7/7	CAN031-0311-0000	8.7		0.435	YES	6/7	86%	**YES**
Calcium	7/7	CAN031-3107-0000	173000		44800	YES	2/7	29%	**YES**
Chromium, Total	7/7	CAN031-0311-0000	130		10.5	YES	5/7	71%	**YES**
Cobalt	7/7	CAN031-3107-0000	22.2		6.6	YES	2/7	29%	**YES**
Copper	7/7	CAN031-0311-0000	61.4		18.3	YES	3/7	43%	**YES**
Iron	7/7	CAN031-3114-0000	10700		10100	YES	2/7	29%	**YES**
Lead	7/7	CAN031-0311-0000	930		12	YES	6/7	86%	**YES**
Magnesium	7/7	CAN031-3107-0000	5230		1930	YES	4/7	57%	**YES**
Manganese	3/7	CAN031-3107-0000	280		307	NO			NO
Nickel	7/7	CAN031-3107-0000	15.8		11	YES	1/7	14%	**YES**
Potassium	7/7	CAN031-3106-0000	2200		2691	NO			NO
Selenium	1/7	CAN031-0313-0000	0.24	J	0.26	NO			NO
Sodium	2/7	CAN031-0313-0000	193	J	102	YES	1/7	14%	**YES**
Vanadium	7/7	CAN031-0314-0000	21.2		23.3	NO			NO
Zinc	6/7	CAN031-0311-0000	479		32.2	YES	6/7	86%	**YES**

[1] Upper Tolerance Limit of Background (90% limit of 95th percentile). See Table 6-3 of W-C 1997.
mg/kg = milligrams per kilogram
J = Estimated

TABLE 4-5

COMPARISON OF SWMU 31 METALS CONCENTRATIONS IN SUBSURFACE SOIL WITH BACKGROUND UTLs CANNON AFB, NEW MEXICO

Chemical	Frequency Detected	Field Sample ID for Maximum Hit	Maximum Detected Concentration (mg/kg)	Qualifiers for Maximum Hit	Background Subsurface Soil UTL Concentration[1] (mg/kg)	Exceeds Background UTL	Frequency of Exceedance of UTL	Frequency of Exceedance (%)	Does Metal Exceed Background?
METALS									
Aluminum	18/14	CAN031-3105-0005	10500		12,214	NO			NO
Arsenic	18/14	CAN031-0314-0004	3.1		4.3	NO			NO
Barium	18/14	CAN031-0314-0004	1130	J	890	YES	1/18	6%	**YES**
Beryllium	12/14	CAN031-0313-0008	0.53		0.73	NO			NO
Cadmium	2/14	CAN031-3107-0005	1	J	1.3	NO			NO
Calcium	18/14	CAN031-3107-0010	289000		237498	YES	2/18	11%	**YES**
Chromium	12/14	CAN031-3105-0005	8.2		13.3	NO			NO
Cobalt	12/14	CAN031-0311-0004	4.4		4.7	NO			NO
Copper	17/18	CAN031-0312-0002	10.9		8.3	YES	1/18	6%	**YES**
Iron	18/18	CAN031-0311-0004	8140		13148	NO			NO
Lead	18/18	CAN031-0312-0002	22.3		8.7	YES	1/18	6%	**YES**
Magnesium	18/18	CAN031-3107-0010	4820		19300	NO			NO
Manganese	6/18	CAN031-3106-0010	112	J	333	NO			NO
Nickel	18/18	CAN031-3105-0005	9.3		14.9	NO			NO
Potassium	17/18	CAN031-3106-0010	1830		2512	NO			NO
Selenium	2/18	CAN031-0314-0002	0.16	J	1.1	NO			NO
Thallium	2/18	CAN031-3105-0005	0.13	J	2.65	NO			NO
Vanadium	18/18	CAN031-3106-0010	23.7		32.8	NO			NO
Zinc	18/18	CAN031-0312-0002	33.5		30.6	YES	1/18	6%	**YES**

[1] Upper Tolerance Limit of Background (90% limit of 95th percentile). See Table 6-3 of W-C 1997.
mg/kg = milligrams per kilogram
J = Estimated

TABLE 4-6

ESSENTIAL NUTRIENTS EXCLUDED AS POTENTIAL COCs IN THE SOIL AT SWMU 31 CANNON AFB, NEW MEXICO

Chemical	Detected Concentration[1] (mg/kg)	Ingestion Rate[2] (mg/d)	Conversion Factor (kg/mg)	Daily Intake from the site[3] (mg/d)	Recommended Daily Allowance (RDA)[4] (mg/d)
Calcium	289,000	100	1.00E-06	28.9	1,200
Magnesium	5,230	100	1.00E-06	0.523	400
Sodium	193	100	1.00E-06	0.0193	2400 [5]

[1] Maximum detected concentration at SWMU 31. See Tables 4-5 and 4-6.
[2] Estimation of potential chemical ingestion rate for receptors at SWMU 31.
[3] Daily Intake = Detected Concentration * Ingestion Rate * Conversion Factor
[4] National Research Council 1989
[5] An RDA has not been established for sodium. This number is based on a recommendation for a 2,000 calorie diet (National Research Council, 1989).

TABLE 4-7

COMPARISON OF SWMU 31 MAXIMUM SOIL CONCENTRATIONS TO MSSLs
CANNON AFB, NEW MEXICO

Chemical	Maximum Detected Concentration (mg/kg)	Qual	Residential Soil MSSL Concentration[1] (mg/kg)	Exceeds MSSL?
VOLATILE ORGANICS				
Acetone	0.21		1400	NO
Methylene Chloride	0.0065		8.5	NO
Tetrachloroethene	0.0036		4.7	NO
Toluene	0.0055		520	NO
Xylenes	0.13		210	NO
SEMIVOLATILE ORGANICS				
Acenaphthene	0.089		2600	NO
Anthracene	0.82		14000	NO
Benzo(a)anthracene	2.4		0.56	**YES**
Benzo(a)pyrene	2.7		0.056	**YES**
Benzo(b)fluoranthene	5.6		0.56	**YES**
Benzo(k)fluoranthene	3.8		5.6	NO
Benzo(g,h,i)perylene*	2.6		55	NO
Bis(2-ethylhexyl)phthalate	2.5		32	NO
Butylbenzylphthalate	0.073		240	NO
Carbazole	0.5		22	NO
Chrysene	3.1		56	NO
Dibenzo(a,h)anthracene	0.63		0.056	**YES**
Dibenzofuran	0.049		210	NO
Fluoranthene	5.6		2000	NO
Fluorene	0.096		1800	NO
Indeno(1,2,3)pyrene	2.3		0.56	**YES**
2-Methylnaphthalene*	0.045		55	NO
4-Methylphenol	1.1		270	NO
Naphthalene	3.1		55	NO
Phenanthrene*	3.2		55	NO
Pyrene	4.6		1500	NO
Siloxane	0.019		NA	NA
TRPH	4070		NA	NA
METALS				
Aluminum	10,500		75,000	NO
Arsenic	4.6		0.38	**YES**
Barium	1460		5200	NO
Cadmium	8.7		37	NO
Chromium	130		30	**YES**
Cobalt	22.2		3300	NO
Copper	61.4		2800	NO
Iron	10,700		22,000	NO
Lead	930		400	**YES**
Nickel	15.8		1500	NO
Zinc	479		22000	NO

(1) EPA Region VI Media-Specific Screening Levels for Residential Soil (EPA 1998)

* The MSSL for naphthalene was used as a surrogate for these PAHs. See text.

mg/kg = milligrams per kilogram

TABLE 4-8

CALCULATION OF INITIAL LEACHATE CONCENTRATIONS
CANNON AFB SWMU 31

Chemical	C_s (mg/kg)	f_{oc}	K_{oc} (mL/g)	K_d (mL/g)	θ_w	θ_a	H'	ρ_b (g/cm^3)	C_w (mg/L)
Benzo(a)anthracene	2.4	0.0004	3.98E+05	1.59E+02	0.24	0.16	1.37E-04	1.6	0.0151
Benzo(a)pyrene	2.7	0.0004	1.02E+06	4.08E+02	0.24	0.16	4.63E-05	1.6	0.0066
Benzo(b)fluoranthene	5.6	0.0004	1.23E+06	4.92E+02	0.24	0.16	4.55E-03	1.6	0.0114
Dibenzo(a,h)anthracene	0.63	0.0004	3.80E+06	1.52E+03	0.24	0.16	6.03E-07	1.6	0.00041
Indeno(1,2,3)pyrene	2.3	0.0004	3.47E+06	1.39E+03	0.24	0.16	6.56E-05	1.6	0.00166
Arsenic	4.6	-	-	29	0.24	0.16	0.0	1.6	0.158
Chromium	130	-	-	19	0.24	0.16	0.0	1.6	6.8
Lead	930	-	-	8,000	0.24	0.16	0.0	1.6	0.116

$$Cs = Cw \cdot \left[Kd + \frac{\theta w + \theta a \cdot H'}{\rho b} \right]$$

C_s = soil concentration, mg/kg
C_w = initial leachate concentration, mg/L
f_{oc} = fraction organic carbon content
K_{oc} = organic carbon distribution coefficient, mL/g (USEPA 1996)
K_d = distribution coefficient, mL/g (=K_{oc}*f_{oc} for organics, K_d at pH=6.8 for metals) (USEPA 1996)
θ_w = water-filled soil porosity
θ_a = air-filled soil porosity
H' = dimensionless Henry's Law constant (USEPA 1996)
ρ_b = dry bulk density, g/cm^3

TABLE 4-9

MODEL-PREDICTED CONCENTRATIONS
CANNON AFB SWMU 31

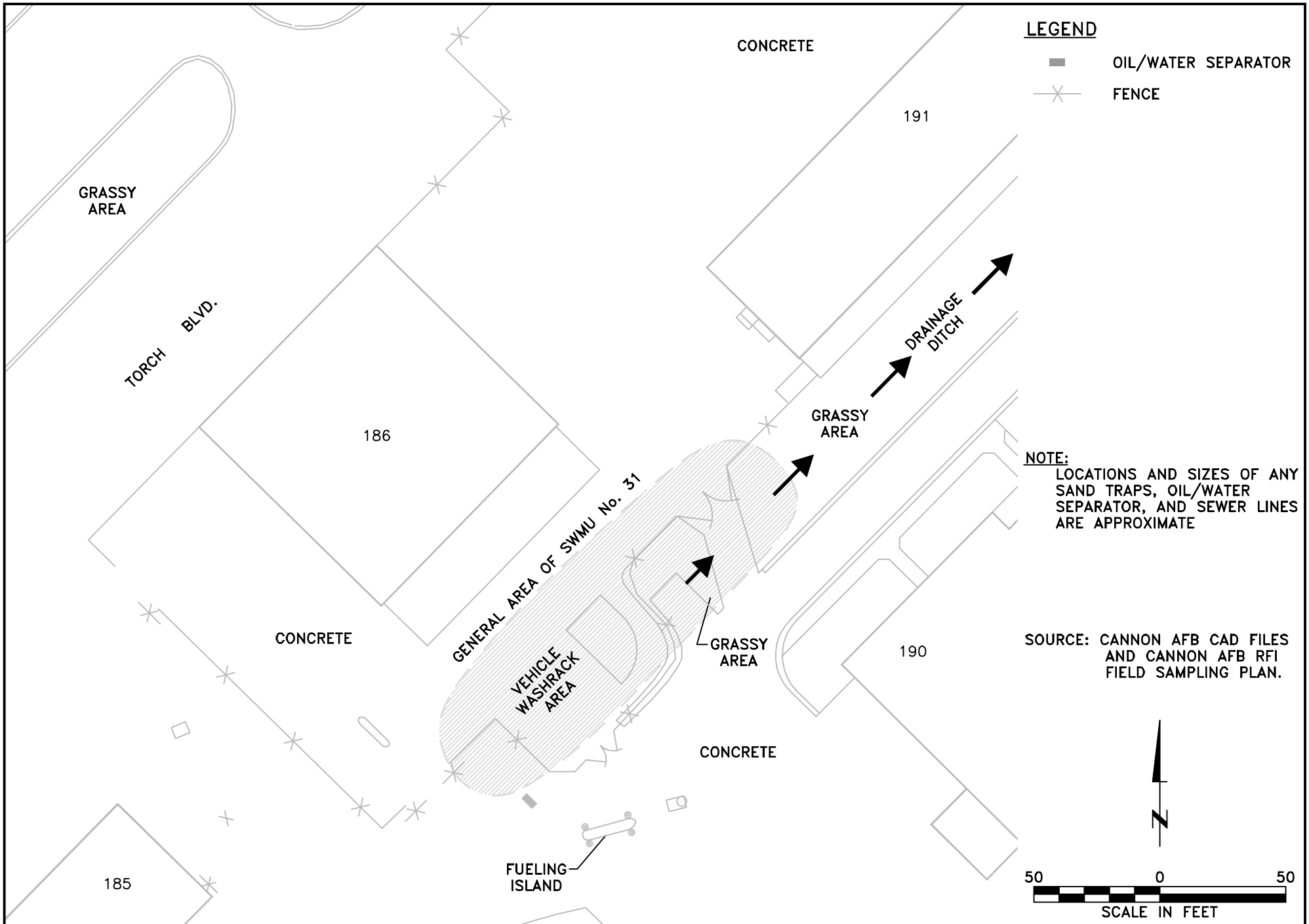
	Source Conditions			Active Transport Processes					Unsaturated Zone		Saturated Zone		Screening Levels	
Chemical	Steady-State	Pulse*	Decay**	Dispersion	Adsorption	Biodegradation	C_s (mg/kg)	C_w (mg/L)	AF	$(C_w)_u$ (mg/L)	DAF	$(C_w)_s$ (mg/L)	Region VI Tap Water MSSL (mg/L)	MCL (mg/L)
Benzo(a)anthracene	✓			✓			2.4	0.0151	1.0	0.0151	6.0	0.0025	9.2E-05	-
	✓			✓		✓			-	0	-	0		
		✓		✓	✓				2,003	7.5E-06	14607.1	1.03E-06		
		✓		✓	✓	✓			-	0	-	0		
			✓	✓	✓				14,543	1.04E-06	-	-		
			✓	✓	✓	✓			-	0	-	0		
Benzo(a)pyrene	✓			✓			2.7	0.0066	1.0	0.0066	6.0	0.0011	9.2E-06	0.0002
	✓			✓		✓			-	0	-	0		
		✓		✓	✓				5,131	1.3E-06	37,439	1.8E-07		
		✓		✓	✓	✓			-	0	-	0		
			✓	✓	✓				37,258	1.8E-07	-	-		
			✓	✓	✓	✓			-	0	-	0		
Benzo(b)fluoranthene	✓			✓			5.6	0.0114	1.0	0.0114	6.0	0.0019	9.2E-05	-
	✓			✓		✓			-	0	-	0		
		✓		✓	✓				6,188	1.8E-06	45,147	2.5E-07		
		✓		✓	✓	✓			-	0	-	0		
			✓	✓	✓				44,944	2.5E-07	-	-		
			✓	✓	✓	✓			-	0	-	0		
Dibenzo(a,h)anthracene	✓			✓			0.63	0.00041	1.0	4.1E-04	6.0	6.9E-05	9.2E-06	-
	✓			✓		✓			-	0	-	0		
		✓		✓	✓				19,113	2.2E-08	139,470	3.0E-09		
		✓		✓	✓	✓			-	0	-	0		
			✓	✓	✓				138,812	3.0E-09	-	-		
			✓	✓	✓	✓			-	0	-	0		

TABLE 4-9

MODEL-PREDICTED CONCENTRATIONS
CANNON AFB SWMU 31

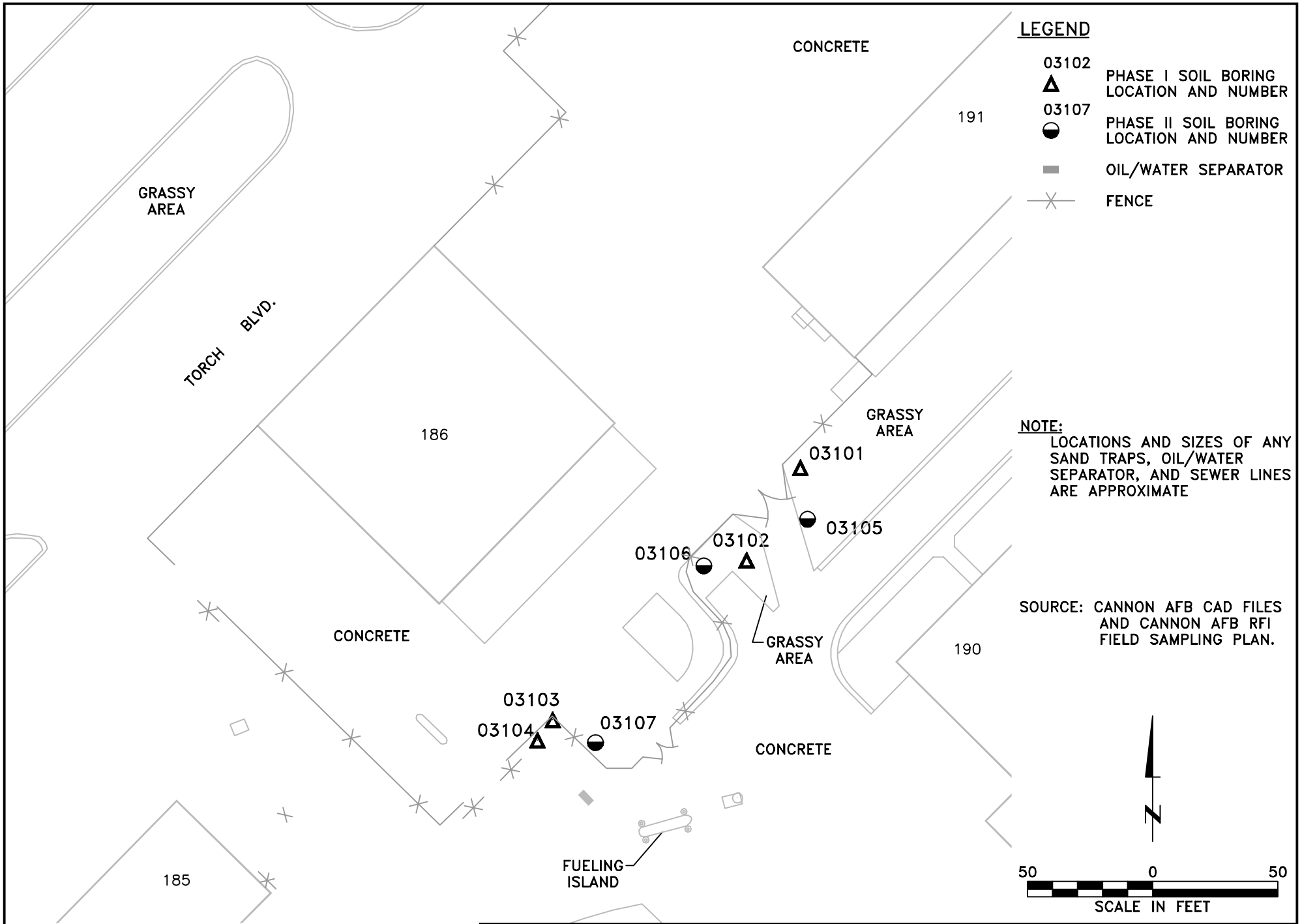
	Source Conditions			Active Transport Processes					Unsaturated Zone		Saturated Zone		Screening Levels	
Chemical	Steady-State	Pulse*	Decay**	Dispersion	Adsorption	Biodegradation	C_s (mg/kg)	C_w (mg/L)	AF	$(C_w)_u$ (mg/L)	DAF	$(C_w)_s$ (mg/L)	Region VI Tap Water MSSL (mg/L)	MCL (mg/L)
Indeno(1,2,3)pyrene	✓			✓			2.3	0.00166	1.0	0.00166	6.0	0.00028	9.2E-05	-
	✓			✓		✓			-	0	-	0		
		✓		✓	✓				17,446	9.5E-08	127,307	1.30E-08		
		✓		✓	✓	✓			-	0	-	0		
			✓	✓	✓				126,759	1.31E-08	-	-		
			✓	✓	✓	✓			-	0	-	0		
Arsenic	✓			✓			4.6	0.158	1.0	0.158	6.0	0.026	4.5E-05	0.05
		✓		✓	✓				365	4.3E-04	2,658	5.9E-05		
			✓	✓	✓				265	6.0E-04	-	-		
Chromium	✓			✓			130	6.8	1.0	0.1	6.0	0.0	0.18	0.1
		✓		✓	✓				240	0.000	1,741	0.0001		
			✓	✓	✓				174	0.001	-	-		
Lead	✓			✓			930	0.116	1.0	0.1	6.0	0.0	0.015	0.015
		✓		✓	✓				100,402	1.16E-06	732,064	1.58E-07		
			✓	✓	✓				73,046	1.59E-06	-	-		

* Pulse duration = 100 years.
** Decay half-life = 10 years for SVOCs and 100 years for metals.
Cs = maximum detected soil concentration
Cw = initial leachate concentration based on equilibrium partitioning
AF = attenuation factor for unsaturated zone calculated from MULTIMED results
(Cw)u = soil water concentration at bottom of unsaturated zone (= Cw / AF)
DAF = dilution-attenuation factor for initial groundwater mixing zone calculated from MULTIMED results
(Cw)s = groundwater concentration at water table after initial mixing (= Cw / DAF)
"-" indicates factor is not applicable or factor/concentration could not be calculated based on model results
indicates predicted concentration exceeds highlighted screening level



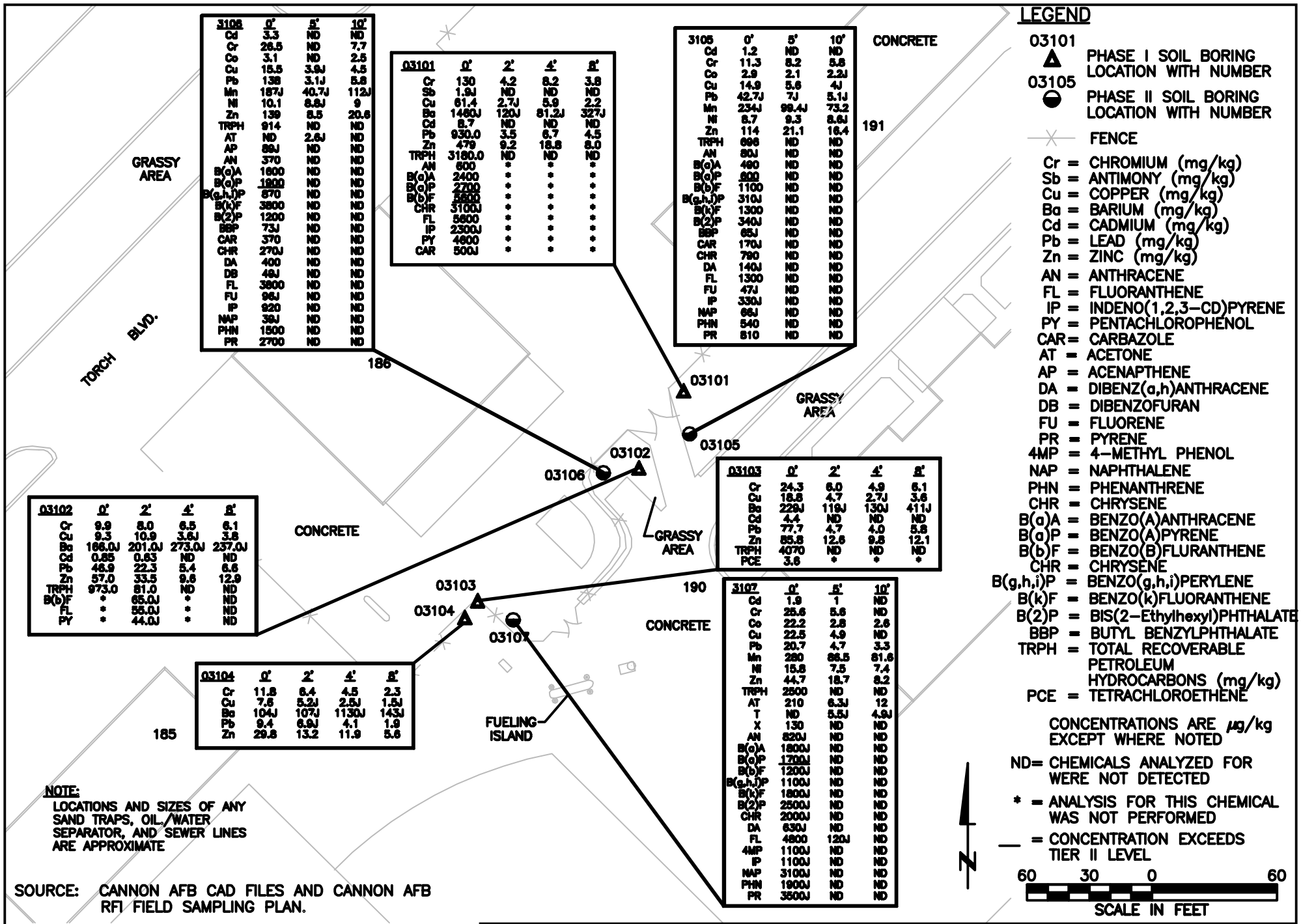
January 10, 2007 1:38:23 p.m.
Drawing: O:\2000-06\cannon\m9602cc\T5500\Fig4-1.dwg

DRN BY: TSSM	DATE: 04/07/99	AGE MAINTENANCE SHOP PAD – SWMU 31 SITE PLAN CANNON AIR FORCE BASE NEW MEXICO	PROJECT NO. 45FM9602CC.00
CHK'D BY: .	REVISION: 0		FIG. NO. 4-1



January 10, 2007 1:40:49 p.m.
Drawing: O:\2000-06\cannon\m9602cc\T5500\Fig4-2.dwg

DRN BY: TSSM	DATE: 04/07/99	AGE MAINTENANCE SHOP PAD – SWMU 31 SITE PLAN WITH BORING LOCATIONS CANNON AIR FORCE BASE NEW MEXICO	PROJECT NO. 45FM9602CC.00	FIG. NO. 4-2
CHK'D BY: .	REVISION: 0			



3106	0'	5'	10'
Cd	3.3	ND	ND
Cr	26.5	ND	7.7
Co	3.1	ND	2.5
Cu	15.5	3.9J	4.5
Pb	138	3.1J	5.8
Mn	187J	40.7J	112J
Ni	10.1	8.8J	9
Zn	139	8.5	20.6
TRPH	914	ND	ND
AT	ND	2.6J	ND
AP	89J	ND	ND
AN	370	ND	ND
B(a)A	1600	ND	ND
B(a)P	1900	ND	ND
B(g,h,i)P	870	ND	ND
B(k)F	3800	ND	ND
B(2)P	1200	ND	ND
BBP	73J	ND	ND
CAR	370	ND	ND
CHR	270J	ND	ND
DA	400	ND	ND
DB	49J	ND	ND
FL	3800	ND	ND
FU	96J	ND	ND
IP	920	ND	ND
NAP	39J	ND	ND
PHN	1500	ND	ND
PR	2700	ND	ND

03101	0'	2'	4'	8'
Cr	130	4.2	8.2	3.8
Sb	1.9J	ND	ND	ND
Cu	61.4	2.7J	5.9	2.2
Ba	1460J	120J	81.2J	327J
Cd	8.7	ND	ND	ND
Pb	930.0	3.5	6.7	4.5
Zn	479	9.2	18.8	8.0
TRPH	3180.0	ND	ND	ND
AN	600	*	*	*
B(a)A	2400	*	*	*
B(a)P	2700	*	*	*
B(b)F	3600	*	*	*
CHR	3100J	*	*	*
FL	5600	*	*	*
IP	2300J	*	*	*
PY	4600	*	*	*
CAR	500J	*	*	*

3105	0'	5'	10'
Cd	1.2	ND	ND
Cr	11.3	8.2	5.8
Co	2.9	2.1	2.2J
Cu	14.9	5.6	4J
Pb	42.7J	7J	5.1J
Mn	234J	99.4J	73.2
Ni	8.7	9.3	8.6J
Zn	114	21.1	16.4
TRPH	696	ND	ND
AN	80J	ND	ND
B(a)A	490	ND	ND
B(a)P	800	ND	ND
B(b)F	1100	ND	ND
B(g,h,i)P	310J	ND	ND
B(k)F	1300	ND	ND
B(2)P	340J	ND	ND
BBP	65J	ND	ND
CAR	170J	ND	ND
CHR	790	ND	ND
DA	140J	ND	ND
FL	1300	ND	ND
FU	47J	ND	ND
IP	330J	ND	ND
NAP	66J	ND	ND
PHN	540	ND	ND
PR	810	ND	ND

03102	0'	2'	4'	8'
Cr	9.9	8.0	6.5	6.1
Cu	9.3	10.9	3.6J	3.8
Ba	166.0J	201.0J	273.0J	237.0J
Cd	0.85	0.63	ND	ND
Pb	46.9	22.3	5.4	6.6
Zn	57.0	33.5	9.6	12.9
TRPH	973.0	81.0	ND	ND
B(b)F	*	65.0J	*	ND
FL	*	55.0J	*	ND
PY	*	44.0J	*	ND

03103	0'	2'	4'	8'
Cr	24.3	6.0	4.9	6.1
Cu	18.8	4.7	2.7J	3.6
Ba	229J	119J	130J	411J
Cd	4.4	ND	ND	ND
Pb	77.7	4.7	4.0	5.8
Zn	85.8	12.6	9.8	12.1
TRPH	4070	ND	ND	ND
PCE	3.6	*	*	*

3107	0'	5'	10'
Cd	1.9	1	ND
Cr	25.6	5.6	ND
Co	22.2	2.8	2.6
Cu	22.5	4.9	ND
Pb	20.7	4.7	3.3
Mn	280	86.5	81.6
Ni	15.8	7.5	7.4
Zn	44.7	18.7	8.2
TRPH	2500	ND	ND
AT	210	6.3J	12
T	ND	5.5J	4.9J
X	130	ND	ND
AN	820J	ND	ND
B(a)A	1800J	ND	ND
B(a)P	1700J	ND	ND
B(b)F	1200J	ND	ND
B(g,h,i)P	1100J	ND	ND
B(k)F	1800J	ND	ND
B(2)P	2500J	ND	ND
CHR	2000J	ND	ND
DA	630J	ND	ND
FL	4800	120J	ND
4MP	1100J	ND	ND
IP	1100J	ND	ND
NAP	3100J	ND	ND
PHN	1900J	ND	ND
PR	3500J	ND	ND

03104	0'	2'	4'	8'
Cr	11.8	6.4	4.5	2.3
Cu	7.6	5.2J	2.5J	1.5J
Ba	104J	107J	1130J	143J
Pb	9.4	6.9J	4.1	1.9
Zn	29.8	13.2	11.9	5.6

LEGEND

03101 ▲ PHASE I SOIL BORING LOCATION WITH NUMBER

03105 ◒ PHASE II SOIL BORING LOCATION WITH NUMBER

FENCE

Cr = CHROMIUM (mg/kg)
Sb = ANTIMONY (mg/kg)
Cu = COPPER (mg/kg)
Ba = BARIUM (mg/kg)
Cd = CADMIUM (mg/kg)
Pb = LEAD (mg/kg)
Zn = ZINC (mg/kg)
AN = ANTHRACENE
FL = FLUORANTHENE
IP = INDENO(1,2,3-CD)PYRENE
PY = PENTACHLOROPHENOL
CAR = CARBAZOLE
AT = ACETONE
AP = ACENAPTHENE
DA = DIBENZ(a,h)ANTHRACENE
DB = DIBENZOFURAN
FU = FLUORENE
PR = PYRENE
4MP = 4-METHYL PHENOL
NAP = NAPHTHALENE
PHN = PHENANTHRENE
CHR = CHRYSENE
B(a)A = BENZO(A)ANTHRACENE
B(a)P = BENZO(A)PYRENE
B(b)F = BENZO(B)FLURANTHENE
CHR = CHRYSENE
B(g,h,i)P = BENZO(g,h,i)PERYLENE
B(k)F = BENZO(k)FLUORANTHENE
B(2)P = BIS(2-Ethylhexyl)PHTHALATE
BBP = BUTYL BENZYLPHTHALATE
TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (mg/kg)
PCE = TETRACHLOROETHENE

CONCENTRATIONS ARE µg/kg EXCEPT WHERE NOTED

ND= CHEMICALS ANALYZED FOR WERE NOT DETECTED

* = ANALYSIS FOR THIS CHEMICAL WAS NOT PERFORMED

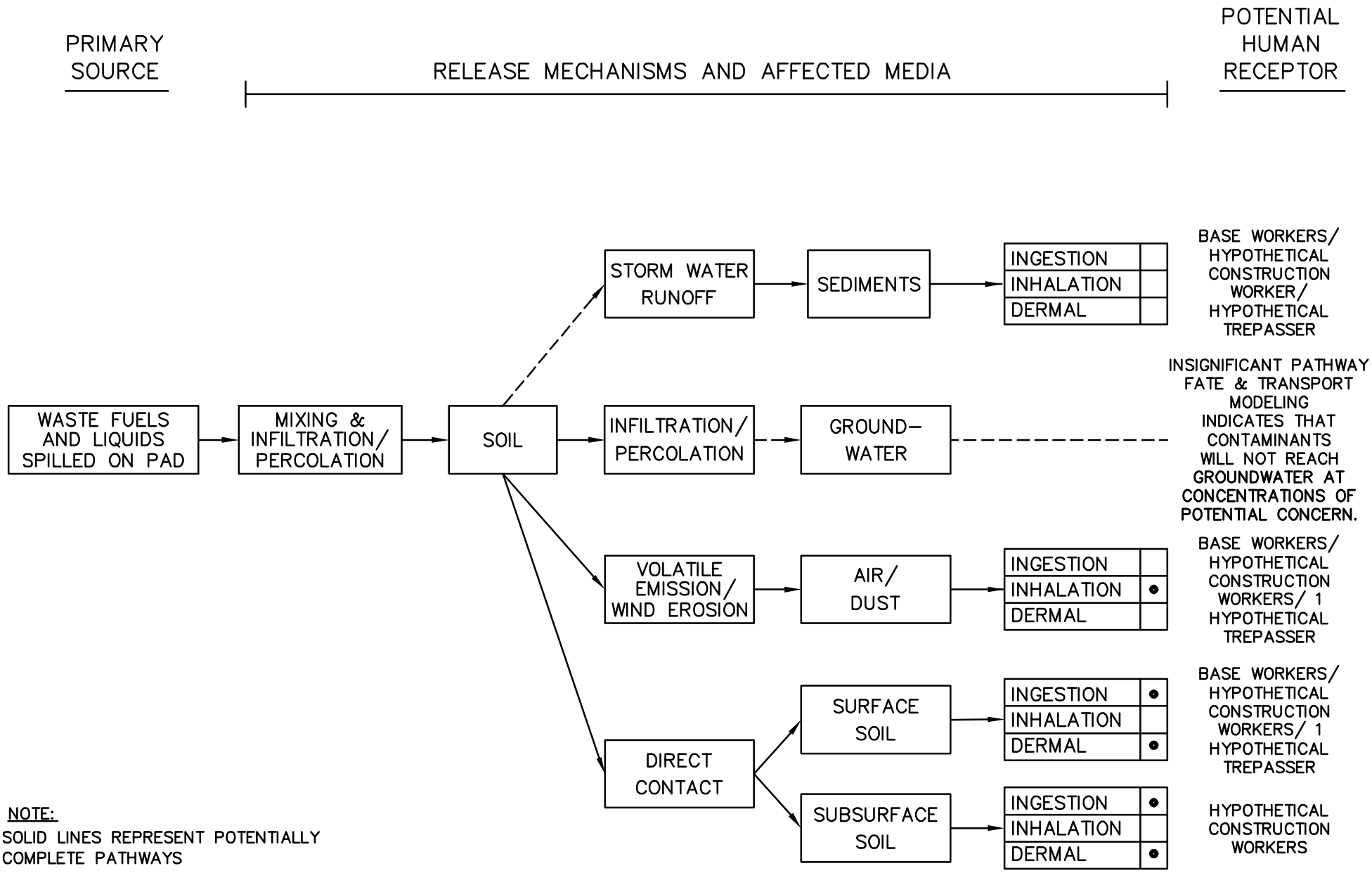
___ = CONCENTRATION EXCEEDS TIER II LEVEL

NOTE:
LOCATIONS AND SIZES OF ANY SAND TRAPS, OIL/WATER SEPARATOR, AND SEWER LINES ARE APPROXIMATE

SOURCE: CANNON AFB CAD FILES AND CANNON AFB RFI FIELD SAMPLING PLAN.

January 10, 2007 1:56:56 p.m.
Drawing: O:\2000-06\cannon\m9602cc\T5500\Fig4-3.dwg

DRN BY: TSSM	DATE: 08/06/99	AGE MAINTENANCE SHOP PAD - SWMU 31 CHEMICAL CONCENTRATIONS DETECTED IN SOIL CANNON AIR FORCE BASE NEW MEXICO	PROJECT NO.	FIG. NO.
CHK'D BY: .	REVISION: 0		45FM9602CC.00	4-3



NOTE:

SOLID LINES REPRESENT POTENTIALLY COMPLETE PATHWAYS

DASHED LINES REPRESENT INCOMPLETE OR INSIGNIFICANT PATHWAYS

ONLY FUTURE USE EXPOSURES WILL BE CONSIDERED FOR SOILS PRESENTLY COVERED BY PAVEMENT

January 10, 2007 1:58:22 p.m.
Drawing: O:\2000-06\cannon\m9602cc\T5500\FIG4-4.dwg

DRN BY TSSM	DATE 07/26/99	SITE CONCEPTUAL EXPOSURE MODEL AGE MAINTENANCE SHOP PAD SWMU - 31 CANNON AIR FORCE BASE NEW MEXICO	PROJECT NO.
CHK'D BY .	REVISIONS: 0		45-FM9602CC.00

FIG. NO. 4-4

Appendix B
1999 Voluntary Corrective Measure Letter Report

FOSTER WHEELER ENVIRONMENTAL CORPORATION

August 13, 1999
TERC-021.001-99X-019

Mr. Tom Zink, P.G.
U.S. Army Corps of Engineers
Attn: CENWO-MD-HA, 9th Floor
215 North 17th Street
Omaha, NE 68102-4978

Subject: TERC Contract No. DACW45-94-D-0003, Delivery Order 21, WAD 1;
Draft Letter Report for Voluntary Corrective Measure Implementation— SWMU 31,
Cannon Air Force Base, New Mexico

Dear Mr. Zink:

Foster Wheeler Environmental Corporation (Foster Wheeler) is submitting four (4) copies of the following draft letter report that presents the results of the voluntary corrective measure implemented at the Aerospace Ground Equipment (AGE) Maintenance Pad (Solid Waste Management Unit [SWMU] 31) at Cannon Air Force Base (AFB), New Mexico. This voluntary corrective measure implementation (CMI) was performed to achieve closure of the site per Cannon AFB'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). At the direction of the United States Army Corps of Engineers (USACE) and Cannon AFB, Foster Wheeler excavated and disposed of the contaminated soil at SWMU 31 and restored the site. All work was conducted in accordance with the CMI Work Plan for SWMU 31 (USAF, 1999).

This letter report provides the objectives of the voluntary CMI, summarizes the site description and history, describes the field activities and sampling program conducted during February and March 1999, reports the analytical data results, and presents site conclusions. As directed by Cannon AFB, this report was developed with the intent that it would be included as an attachment to a Corrective Measure Study Report being prepared by Woodward Clyde.

143 UNION BOULEVARD, SUITE 1010, LAKEWOOD, CO 80228-1824
TEL· 303-988-2202 FAX 303-980-3539

1.0 PROJECT OBJECTIVES

The CMI SWMU 31 project objectives include the following actions:

- Excavate contaminated soil from one area located in SWMU 31 (adjacent to soil boring SB-3101)
- Verify removal of contaminated soil
- Characterize excavated soils for disposal
- Perform site restoration (clean backfill and revegetation)

As specified by the approved CMI Work Plan (Foster Wheeler, 1999), a 10-ft-by-5-ft-by-2-ft-deep excavation around soil boring SB-3101 was completed; due to funding limitations for this project, excavation activities ceased at the limits defined by USACE. Verification samples were analyzed and contaminant concentrations compared to Cannon AFB background levels (Woodward Clyde, 1997) and the total recoverable petroleum hydrocarbon (TRPH) action level to confirm that contaminated soil has been removed from the site.

2.0 SITE BACKGROUND AND HISTORY

A brief summary of the site description and history is provided below. The site history and detailed descriptions of previous site activities have been presented in previous investigation reports (Woodward Clyde, 1994; 1995).

SWMU 31, the AGE Maintenance Pad, is located in an open concrete area adjacent to the southeast side of the AGE Maintenance Shop in Building 186. A washrack is located in a 45-square foot (ft) area beyond the southeast edge of the pad. The AGE Drainage Ditch (SWMU 34), located to the northeast of SWMU 31, 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 storm water runoff flows off the pad to the southeast and is potentially contaminated with JP-4, oils, and diesel fuel. However, the Appendix I Remedial Investigation of the soils lining the SWMU 34 AGE Ditch found negligible to nondetectable levels of the target contaminants in the soils sampled (Woodward Clyde, 1991; 1992).

Previous investigations conducted at SWMU 31 identified potential contaminants at the SWMU, including metals, JP-4, oils, and diesel fuel. As reported in the Phase I and Phase II RCRA

Facility Investigations (RFIs) for the Appendix III SWMUs at Cannon AFB (Woodward Clyde, 1994; 1995), TRPH and chromium were detected at concentrations exceeding their respective background or action levels at one location, and lead was detected above background levels at two locations in the area of the planned excavation. TRPH was detected in soil samples collected from 0 to 2 ft below ground surface (bgs) at soil boring SB-3101 (3,180 milligrams per kilogram [mg/kg]) and soil boring SB-3105 (696 mg/kg), compared to the NMED action level for TRPH of 1,000 mg/kg. Lead concentrations in the samples collected from 0 to 2 ft bgs at soil borings SB-3101 (930 mg/kg) and SB-3105 (42.7 mg/kg) exceeded the background level of 8.7 mg/kg. Chromium was also detected in these two samples at concentrations of 130 mg/kg (SB-3101) and 11.3 mg/kg (SB-3105), compared to the background level of 13.3 mg/kg.

3.0 FIELD ACTIVITIES

On February 17 and 18, 1999, site mobilization, excavation of contaminated soil, and verification and confirmation sampling were performed. As specified in the CMI Work Plan (Foster Wheeler, 1999), a backhoe was used to remove the contaminated soil from the 10-ft-by-5-ft-by-2-ft-deep excavation around soil boring SB-3101.

The excavation limits were surveyed by a New Mexico Registered Land Surveyor (Lydick Engineers) and transferred to site maps provided by Woodward Clyde. The attached Figure 1 depicts the location of the excavation at SWMU 31. The excavated soil was then deposited into a rolloff container for storage pending characterization sampling results. Closure/verification samples were collected as described in the Sampling and Analysis Plan provided in the CMI Work Plan (Foster Wheeler, 1999) and submitted for laboratory analysis. The locations of the closure verification samples are shown on Figure 1. Prior to backfilling, the excavated areas were taped and barricaded.

The analytical results for the verification soil samples collected from the excavated area are provided as an attachment to this report, and are also shown on the attached Figure 1. TRPH was not detected above the method reporting limit in any of the samples. Total lead concentrations exceeded the method reporting limit in only one sample, at a value of 10 mg/kg, and total chromium concentrations ranged from 3.9 to 11.4 mg/kg. Background concentrations for chromium and lead are 13.3 and 8.7 mg/kg, respectively. Therefore, Foster Wheeler recommended that the excavation be backfilled with clean fill from the Cannon AFB

maintenance yard (letter dated March 18, 1999). Cannon AFB and USACE approved this recommendation on March 22, 1999.

Soil generated during excavation activities was characterized to determine appropriate management and disposition. Waste management and characterization were performed in accordance with the CMI Work Plan (Foster Wheeler, 1999). Excavated soil was placed and stored in a rolloff container until disposal options were determined based on the characterization analysis.

Information obtained from Cannon AFB personnel and the USACE concerning the potential contaminants of concern for SWMU 31 were used as generator knowledge. Based on this information, the SWMU 31 characterization soil sample was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, and ignitibility, based on the previously reported detections of lead, chromium, and TRPH. The TCLP analysis reported barium at a concentration of 1560 micrograms per liter (µg/L), cadmium at a concentration of 5 µg/L, and chromium at a concentration of 69.5 µg/L. Lead was not detected in the characterization sample above the method reporting limit. The TCLP results verify there were no exceedances of the RCRA TCLP regulatory levels. The ignitibility of the characterization soil sample exceeded 200 degrees Fahrenheit indicating the material is not ignitable. Using the laboratory analytical data, a Material Profile and Certificate of Non-Hazardous Waste was completed for the soil excavated from SWMU 31 (letter dated March 18, 1999). Foster Wheeler recommended that the soil be classified as non-hazardous and disposed of at Safety-Kleen's Lone Mountain facility in Oklahoma. Cannon AFB and USACE approved this recommendation on March 20, 1999.

On March 24, 1999, transportation and disposal of the contaminated soil, site restoration, and demobilization was performed. The Uniform Hazardous Waste Manifest from Safety-Kleen is provided as an attachment to this letter report. The revegetation was performed using seeded grass similar to that found in adjacent areas. The remainder of the area was returned to its original condition. USACE and Cannon AFB performed the Final Acceptance Inspection of the site prior to demobilization.

4.0 CONCLUSIONS

Based on evaluation of the CMI analytical data, the contaminated soil from the 10-ft-by-5-ft-by-2-ft area adjacent to soil boring SB-3101 has been removed. The excavated soil was characterized as non-hazardous, and transported to Safety-Kleen's Lone Mountain facility and disposed of. Site restoration at SWMU 31 has been completed in accordance with the CMI Work Plan and project objectives have been achieved.

5.0 REFERENCES

Foster Wheeler (Foster Wheeler Environmental Corporation)
1999 Corrective Measure Implementation Work Plan FOR SWMU 31 (AGE Maintenance Pad) and SWMU 77 (Civil Engineering Container Storage Area) Cannon Air Force Base, Clovis, New Mexico

Woodward Clyde
1997 Naturally Occurring Concentrations of Inorganics and Background Concentrations of Pesticides at Cannon Air Force Base, New Mexico.

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.

If you would like more detailed information or if you have any other questions or concerns, please call me at (505) 878-8905.

Sincerely,

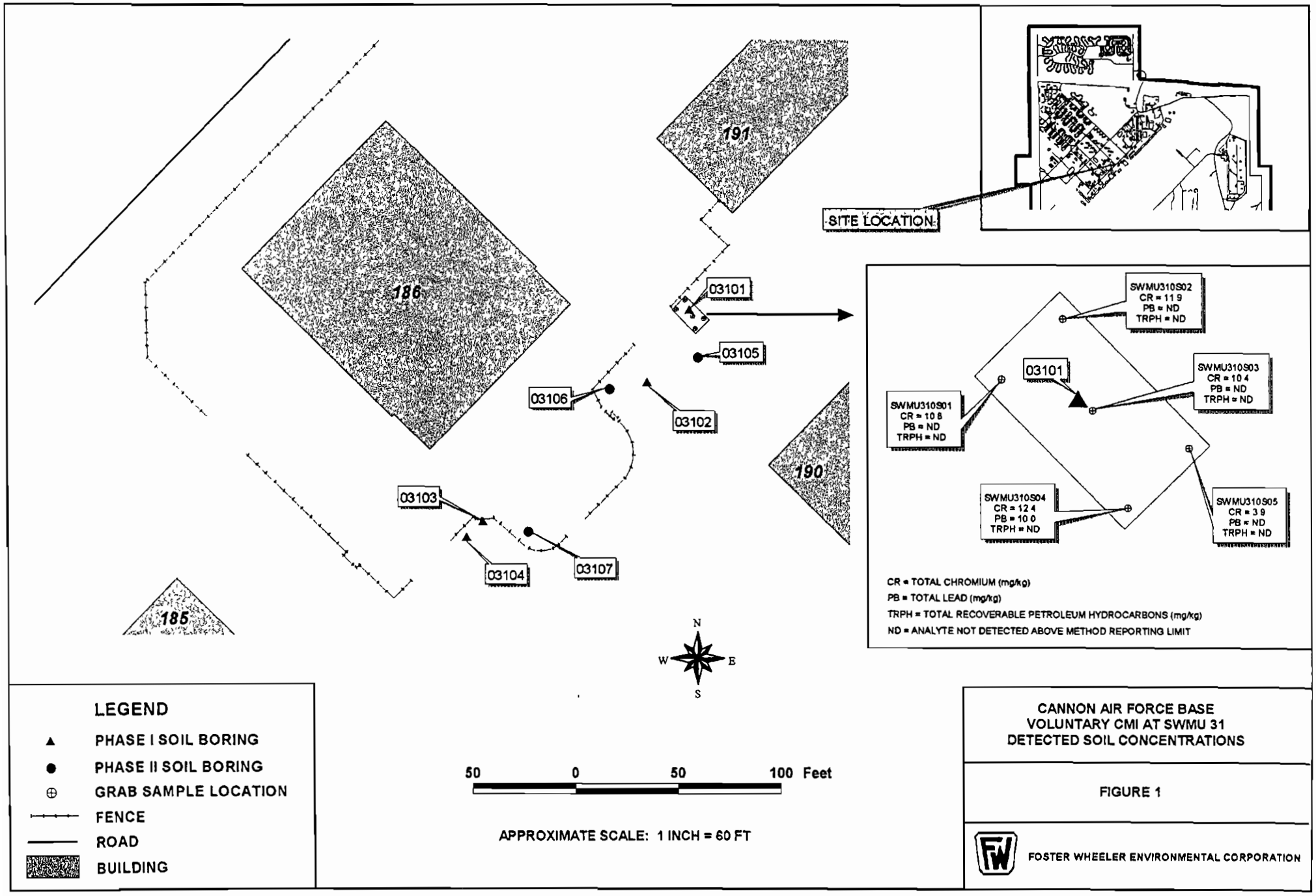
Pamela Mass for
Derek Johnson

Derek Johnson, P.E.
Delivery Order Manager, Cannon AFB

PM:DJ:bl

Attachments
cc: John Pike, Cannon AFB (3 copies)
Max Pastor, USACE – Cannon AFB (2 copies)
James Morning, FWENC Holloman AFB (1 copy)
Sina Seyedian, FWENC Denver (w/o attachments)
TERC-4 Project File

FIGURE 1


191
186
190
185
03101
03105
03106
03102
03103
03104
03107
SITE LOCATION
SWMU310S02
CR = 11 9
PB = ND
TRPH = ND
03101
SWMU310S03
CR = 10 4
PB = ND
TRPH = ND
SWMU310S01
CR = 10 8
PB = ND
TRPH = ND
SWMU310S04
CR = 12 4
PB = 10 0
TRPH = ND
SWMU310S05
CR = 3 9
PB = ND
TRPH = ND
CR = TOTAL CHROMIUM (mg/kg)
PB = TOTAL LEAD (mg/kg)
TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (mg/kg)
ND = ANALYTE NOT DETECTED ABOVE METHOD REPORTING LIMIT
N
W
E
S
LEGEND
PHASE I SOIL BORING
PHASE II SOIL BORING
GRAB SAMPLE LOCATION
FENCE
ROAD
BUILDING
50
0
50
100 Feet
APPROXIMATE SCALE: 1 INCH = 60 FT
CANNON AIR FORCE BASE
VOLUNTARY CMI AT SWMU 31
DETECTED SOIL CONCENTRATIONS
FIGURE 1
FOSTER WHEELER ENVIRONMENTAL CORPORATION

781 659

781 660

UNIFORM HAZARDOUS WASTE MANIFEST

781 661

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

Form Approved OMB No 2050-0039 Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: N M 7 5 7 2 1 2 4 4 5 4 Manifest Document No: 99001

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

Generator's Name and Mailing Address
CANNON AIR FORCE BASE
506 NORTH D.J. INGRAM BLVD., CANNON AFB, NM 88103

4 Generator's Phone (505 784-6378

A. State Manifest Document Number

B. State Generator's ID

5 Transporter 1 Company Name: NP ENVIRONMENTAL

6 US EPA ID Number: C A T 0 0 0 6 2 4 2 4 7

C. State Transporter's ID

D. Transporter's Phone (805) 393-1151

7. Transporter 2 Company Name

8 US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
SAFETY-KLEEN(LONE MOUNTAIN)INC
5E & 1N OF JCT 412 & 281
WAYNOKA, OK 73860-9622

10 US EPA ID Number: O K D 0 6 5 4 3 8 3 7 6

G. State Facility's ID

H. Facility's Phone (580) 697-3500

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I. Waste No
a. NON-REGULATED		001	CM	01600	P	NONE
b						
c						
d						

Additional Descriptions for Materials Listed Above
Additional EPA Waste Codes a. b. c. d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Approval Numbers a. LH99-0171 b. c. d.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name | Signature | Month Day Year 03 24 99

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Rinnie Stanley | Signature | Month Day Year 03 24 99

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19 Discrepancy Indication Space
See attached for generators signature
99-1320

Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Lori Mitchell | Signature | Month Day Year 03 24 99

EPA Form 8700-200 (Rev 9-88) Previous editions are obsolete

ORIGINAL - RETURN TO GENERATOR

781 662

Please print or type. (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NM7572124454 Manifest Document No. 99001

2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
CANNON AIR FORCE BASE
506 NORTH B.J. INGRAM BLVD., CANNON AFB, NM 88103

4. Generator's Phone (505) 784-6378

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: NP ENVIRONMENTAL

6. US EPA ID Number: CAT000624247

C. State Transporter's ID

D. Transporter's Phone (885) 393-1151

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
SAFETY-KLEEN (LONE MOUNTAIN) INC
5E & 1N OF JCT 412 & 281
WAYNOKA, OK 73860-9622

10. US EPA ID Number: OKD065438376

G. State Facility's ID

H. Facility's Phone (580) 697-3500

GENERATOR	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	NON-REGULATED		001	CM	EST 01600	P	NONE
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
Additional EPA Waste Codes: a. b. c. d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Approval Numbers: a. LN99-0171 b. c. d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: SANFORD D. HUTSELL | Signature: Sanford D. Hutsell | Month Day Year: 03 24 99

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ronnie Stanley | Signature: Ronnie Stanley | Month Day Year: 03 24 99

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACIL

19. Discrepancy Indication Space
99-1320

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Rick Mitchell | Signature: Rick Mitchell | Month Day Year: 03 24 99

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

ANALYTICAL DATA

LAUCKS TESTING LABORATORIES
SAMPLE DATA PACKET

FOSTER WHEELER ENVIRONMENTAL

LABORATORY No.: 9902484

SDG NO.: FCA01

MARCH 11, 1999

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

To: Foster Wheeler Environmental
Project No. : 5155 0021 0001 A2000
Laboratory No. : 9902484
SDG No.: FCA01
Date of Report: March 11, 1999

SAMPLE RECEIPT, IDENTIFICATION, AND GENERAL COMMENTS:

Sample Receipt and Identification:

The samples submitted under the laboratory number(s) indicated above were identified and analyzed as tabulated below. The samples were collected and received on the dates noted on the enclosed chain-of-custody copies, Attachment A.

Client Sample Identification	Laucks Sample Identification	Testing Analytical Request
SWMU 31S01	9902484-01	2MET/TPH
SWMU 31S02	9902484-02	2MET/TPH
SWMU 31S03	9902484-03	2MET/TPH
SWMU 31S04	9902484-04	2MET/TPH
SWMU 31S05	9902484-05	2MET/TPH
SWMU 31S05D	9902484-06	2MET/TPH
SWMU 31S06 R	9902484-07	TCLP/IG
SWMU 31S07 Roll Off	9902484-08	HOLD
SWMU 31S08	9902484-09	HOLD
SWMU 31S09	9902484-10	HOLD
SWMU 31S10	9902484-11	HOLD
SWMU 31S11	9902484-12	HOLD

Analytical Request Key:

2MET =	Lead and Chromium (6010B)
TCLP =	TCLP Metals
TPH =	Total Petroleum Hydrocarbons (9071/418.1)
IG =	Ignitability (SW1020)
HOLD =	These samples were put on hold by the client.

Sample Receipt Comments:

There were no anomalies in the receipt of these samples.

Sample Identification on Forms:

When completing forms created through the CLP software, every attempt is made to use both your sample IDs as well as the laboratory sample IDs. The forms have varied default sizes to their sample identification fields, and are not amenable to alteration or editing. When it is not possible to use your complete sample ID because of field length limitations, Laucks will usually do one of two things: 1) use as much of your ID as will fit, beginning from the RIGHT hand side of the sample ID number; or 2) select some sub-set of your sample identifier if it is clearly a discrete number. In addition, all forms will contain our sample IDs, which can be cross-referenced from the table above.

GENERAL REMARKS ON INORGANIC ANALYSES:

The following comments describe general analysis conditions. For remarks specific to the samples reported in this case, see "SPECIFIC REMARKS ON INORGANIC ANALYSES."

ICP Metals:

The preparation blank for metals in soil is calculated to mg/kg by assuming a sample weight of 1.00g/100mL. Total solids of 100% are also assumed.

On the first timed and dated page of each ICP run, the data to be reported or rejected will be tabulated for that run.

Mercury:

Laucks purchases a 1000 mg/L Hg stock solution from Inorganic Ventures. The 1.0 mg/L working standard is made by diluting 100 µL to 100 mL with 2% HNO_3. The calibration curve is made by placing 0, 20, 50, 100, 200, 500 and 1000 µl of the working standard in BOD bottles and diluting up to 100 mL. The standard curve is equivalent to 0, 0.2, 0.5, 1.0, 2.0, 5.0 and 10.0 µg/L.

SPECIFIC REMARKS ON INORGANIC ANALYSES:

Holding Time Compliance:

Laucks calculates holding time compliance for inorganic determinations using the date on which reportable data were acquired.

Metals:

The holding time for metals is six months from the date of collection, excepting mercury, which is 28 days All analyses were performed within holding time.

The holding time for TCLP metals extraction is 180 days (28 days for mercury). The subsequent holding time from TCLP extraction to preparative digestion & analysis is another 180 days (28 days for mercury). All preparations and analyses were within holding time.

Miscellaneous:

The following analytes do not have a Contract Laboratory Program holding time. The holding times tabulated below derive from the relevant EPA methods and are applicable when the sample was appropriately preserved and/or cooled. All samples submitted followed the preservation guidelines unless explicitly noted otherwise.

Analyte	Holding Time	Violations
418.1	28 days	None
Ignitability	10 days	None

ICP Metals:

No comments.

TCLP Metals:

No comments.

418.1:

No comments.

Flash Point:

No comments.

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

ABBREVIATIONS

Several abbreviations can appear in our reports. The most commonly employed abbreviations are as follows:

U The analyte of interest was not detected to the limit of detection indicated.

SDL Sample Detection Limit. The SDL can vary from sample to sample, depending on sample size, matrix interferences, moisture content and other sample-specific conditions.

PQL Practical Quantitation Limit. The limit is drawn from the test method and usually represents the SDL multiplied by a matrix-specific factor.

DB Dry Basis. The value reported has been back-calculated to normalize for the moisture content of the sample.

AR As-Received. The value has not been normalized for moisture.

INORGANIC ANALYSES:

B The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected, a "U" shall be entered.

E The reported value is estimated because of the presence of interference. An explanatory note shall be included under Comments on the Cover Page (if the problem applies to all samples) or on the specific Form I-IN (if it is an isolated problem).

M Duplicate injection precision not met.

N Spiked sample recovery not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA)

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50 % of spike absorbance.

* Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

Entering "S", "W" or "+" is mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

CRDL Client Requested Detection Limit, usually the limit of detection specified at your request. Might also be referred to as Contract required Detection Limit.

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

RELEASE OF DATA

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Respectfully submitted,

Jenna Gorham Project Manager	Mike Nelson Technical Director
12 Mar 99 (DATE)	12 Mar 99 (DATE)

HOW TO CONTACT US:

All Laucks Testing Laboratories staff members can be reached at the same telephone and facsimile numbers: (206) 767-5060 by phone, (206) 767-5063 by FAX.

	Primary Contact	Alternate
Technical	Mike Nelson	
Administrative/billing	Jenna Gorham	
Package	Tom Marino	Rebecca James

REQUESTS FOR DUPLICATE COPIES:

This packet has been checked for accuracy. All pages are present and in sequential order. Please see Attachment B for a detailed record

In the event that duplicate data copies are needed, Laucks will accommodate your request at a fee of twenty five cents ($0.25) per copy, plus shipping. If the data are in storage, there will also be a fee for retrieval.

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

ATTACHMENT A

Chain-of-Custody Copies

THIS INFORMATION ... E USED FOR REPORTING/BILLING* (SEE BELOW)

COMPANY: Foster Wheeler Env
ADDRESS: 6605 Uptown Blvd
ALBQ NM 87110
ATTENTION: Derek Johnson
PROJECT NAME: Cannon AFB SWMU 31
PROJECT CONTACT: Pam Moss
TELEPHONE: 505 878 8900 FAX: 8933
JOB/P O NO: 5155 0021 0001 A2000

CHAIN OF CUSTODY ... ORD
12525
WORK ORDER ID#: 9902484

SDG #: FCA01
PAGE 1 OF 1

Laucks Testing Laboratories, Inc.

SUBMITTED AT: ☐ 940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063 ☐ 1806 Edwards Ave., Yakima, WA 98902 (509) 248-1005 FAX 972-1289

TESTS TO PERFORM

LAB SA#	SAMPLE ID / LOCATION	DATE	TIME	MATRIX: WATER, SOIL OR SPECIFY	NO OF CONTAINERS	TRPH	LEAD	Chromium	TCLP	TCLP Volatiles	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1)	SWMU 31501	2-18	1134	Soil	1	X	X	X			
2)	SWMU 31502	2-18	1137	Soil	1	X	X	X			
3)	SWMU 31503	2-18	1139	Soil	1	X	X	X			
4)	SWMU 31504	2-18	1141	Soil	1	X	X	X			
5)	SWMU 31505	2-18	1144	Soil	1	X	X	X			
6)	SWMU 31505 D	2-18	1144	Soil	1	X	X	X			
7)	SWMU 31506 R	2-18	1150	Soil					X	X	Roll off
8)	SWMU 31508 Roll off	2-18	1150	Soil							Hold Pending
9)	SWMU 31508	2-18	1150	Soil							FW-Direction
10)	SWMU 31509	2-18	1150	Soil							
11)	SWMU 31510	2-18	1150	Soil							
12)	SWMU 31511	2-18	1150	Soil							

A. A standard turnaround time is assumed unless otherwise marked

B. The laboratory may not be responsible for missed holding time for samples received with less than 50% of the analytical hold time remaining. Please contact the laboratory for further information

INSTRUCTIONS
1. USE ONE LINE PER SAMPLE.
2. BE SPECIFIC IN TEST REQUESTS.
3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE

*BILLING INFORMATION, IF DIFFERENT THAN ABOVE
NAME
ADDRESS
ATTN.
CITY, STATE, ZIP

★ RUSH TURNAROUND IS SUBJECT TO PRIOR LABORATORY APPROVAL

TOTAL NO. OF CONTAINERS

TURNAROUND REQUEST
☒ STD. 10-14 WORKING DAYS
★☐ 24-48 HRS (100% SUR)
★☐ 72 HRS (75% SUR)
★☐ 5 DAYS (50% SUR)
☐ OTHER
☐ TEMP
USTO: ☐ ☒ ☐ ☐

RELINQUISHED BY (SIGN AND PRINT)	DATE TIME	RECEIVED BY (SIGN AND PRINT)	DATE TIME
James Morning	2-18-99 1300	Fed X ticket 800567620221	
		PAM R. JOHNSON	2/19/99 1145

781 671

781 672

Laucks
Testing Laboratories, Inc.

COOLER RECEIPT FORM

WORKORDER #: 9902484

Contractor Cooler _____

QA Lab Cooler # _____

Number of Coolers _____

Project: Cannon AFB SWMU 31

Date samples were received at the laboratory: 2/19/99

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 2/19/99

By: (print) PAM R. JOHNSON (sign) [signature]

1. Did cooler come with a shipping slip (airbill, etc.),>>>>>>>>>>>>>>>>>>>> YES NO
   If YES, record carrier name and airbill number: FedEx 8005676020221
2. Were custody seals on outside of cooler?>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> YES NO
   How many and where: 1 F, 1B
   Seal date: 2/18/99 Seal name: See Attached
3. Were custody seals unbroken and intact at the date and time of arrival?>>>>>>> YES NO
4. Did you screen samples for radioactivity using the Geiger Counter?>>>>>>>> YES NO
5. Were custody papers sealed in a plastic bag and taped inside to the lid?>>>>>> YES NO
6. Were custody papers filled out properly (ink, signed, etc.)?>>>>>>>>>>>>>>> YES NO
7. Did you sign custody papers in the appropriate place?>>>>>>>>>>>>>>>>>>>> YES NO
8. Was project identifiable from custody papers? If YES, enter project name at top of this form.
9. If required, was enough cooling material present?>>>>Type of ice: bags YES NO
10. Have designated person initial here to acknowledge receipt of cooler: [signature] date 2/19/99

B. LOG-IN PHASE: Date samples were logged-in: 2/19/99

By (print) PAM R. JOHNSON (sign) [signature]

11. Describe type of packing in cooler: bubblewrap
12. Were all bottles sealed in separate plastic bags?>>>>>>>>>>>>>>>>>>>>>>>> YES NO
13. Did all bottles arrive unbroken and were labels in good condition?>>>>>>>> YES NO

LAUCKS TESTING LABORATORIES, INC.
940 South Harney St., Seattle, WA 98108
Phone (206) 767-5060 • FAX (206) 767-5063

CUSTODY SEAL
SIGNATURE [signature] DATE 2/18/99

9

LAUCKS TESTING LABORATORIES, INC.

COOLER RECEIPT FORM (continued)

14. Were all bottle labels complete (ID, date, time signature, preservative, etc.)? YES NO
15. Did all bottle labels agree with custody papers?>>>>>>>>>>>>>>>>>>>>>>>>YES NO
16. Were correct containers used for the tests indicated?>>>>>>>>>>>>>>>>>>>YES NO
17. Were correct preservatives added to samples?>>>>>>>>>>>>>>>>>>>>>>>>~~YES~~ ~~NO~~ NA
18. Was a sufficient amount of sample sent for tests indicated?>>>>>>>>>>>>>YES NO
19. Were bubbles absent in VOA samples: If NO, list by QA #:>>>>>>>>>>>>>~~YES~~ ~~NO~~ NA
20. Was project manager called / faxed & status discussed? >>>>>>>>>>>>>>>> YES NO

    If YES, give details below

21. Who was called / faxed? Pam Moss

    By whom? Jenna Graham (date) 2/19/99

DESCREPANCIES:

TCLP for metals or Pesticides?

Pam Moss called 2/19/99 - TCLP metals only.

Laucks Testing Laboratories, Inc., Supplemental Sample Receipt Log

rk Order Number: 9902484
signed SDG Number: FLA01

	Temperature	pH of Bottle Types								
1										
2	2.0									
3										
4										
5	2.8									
6										
7										
8			Soils							
9										
10										
11	2.7									
12										

owable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

nperature	Allowable temperature range is 4± 2 degrees Celsius
d Preserved pH	pH must be less than 2
se Preserved pH	pH must be greater than 12

TEMPLOG DOT 2 02/21/95

TCLP Metals Data

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: 31S06R

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01T

Matrix (soil/water): TCLP Lab Sample ID: 02484-07

Level (low/med): LOW Date Received: 02/19/99

% Solids: 0 0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	25.	U		P
7440-39-3	Barium	1560.			P
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.			P
7440-70-2	Calcium				
7440-47-3	Chromium	69.5			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	28.	U		P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	1.	U		AV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	33.	U		P
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: ___

Comments:

CLIENT ID: SWMU 31S06 R

FORM I - IN

U S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

B02231

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

ab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01T

Matrix (soil/water): TCLP Lab Sample ID: B0223-01

Level (low/med): LOW Date Received: _____

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	25. U			P
7440-39-3	Barium	531. B			P
7440-41-7	Beryllium				
7440-43-9	Cadmium	1.8 U			P
7440-70-2	Calcium				
7440-47-3	Chromium	4.8 U			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	28. U			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	10. U			AV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	33. U			P
7440-22-4	Silver	2.9 U			P
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

LIENT ID TCLP BLANK EXTRACTION FLUID

Total Metals Data

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: A31S01

b Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-01

Level (low/med): LOW Date Received: 02/19/99

% Solids: 87.0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10.8			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	9.9	B		P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before. BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: ___

mments:

CLIENT ID: SWMU 31S01

U S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO :

B31S02

ıb Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-02

Level (low/med): LOW Date Received: 02/19/99

% Solids: 86.0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	11.9			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	9 9 B			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After. BROWN Clarity After: ___ Artifacts. _

Comments:

CLIENT ID: SWMU 31S02

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: C31S03

b Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-03

Level (low/med): LOW Date Received: 02/19/99

% Solids: 86.5

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10.4			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	8.3	B		P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: ___

Comments:

.IENT ID SWMU 31S03

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: D31S04

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No : ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-04

Level (low/med): LOW Date Received: 02/19/99

% Solids: 88.0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	12.4			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	10.			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: _

Comments:

CLIENT ID: SWMU 31S04

U S EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: E31S05

Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-05

Level (low/med): LOW Date Received: 02/19/99

% Solids: 88 0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	3 9			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.1 B			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: _

nments:

CLIENT ID: SWMU 31S05

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO :

F31S05

ab Name: LAUCKS TESTING LABS, INC Contract: _____

Lab Code: LAUCKS Case No : ___ SAS No.: ___ SDG No.. FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-06

Level (low/med). LOW Date Received: 02/19/99

% Solids: 88.1

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	4.8			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	7.4 B			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts. _

omments:

CLIENT ID: SWMU 31S05D

Flash Point Data

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S06 R
Lab Sample ID: 9902484-07
Date Received: 02/19/99

Analyte	Result	Units	Prepped	Analyzed	Limit	Method
Flash Point (Setaflash)	>200.	degrees F	03/05/99	03/05/99	-	SW 1020

418.1 and Total Solids Data

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S01
Lab Sample ID: 9902484-01
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418 1)	20	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	87.0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S02
Lab Sample ID: 9902484-02
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	86.0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S03
Lab Sample ID: 9902484-03
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	86.5		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S04
Lab Sample ID: 9902484-04
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	88.0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs Sample ID : SWMU 31S05
SDG No. : FCA01 Lab Sample ID: 9902484-05
Matrix : SOIL Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	88 0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs Sample ID : SWMU 31S05D
SDG No. : PCA01 Lab Sample ID: 9902484-06
Matrix : SOIL Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	88.1		%	02/23/99	02/24/99	0.1	SM209A

Appendix B
1999 Voluntary Corrective Measure Letter Report

FOSTER WHEELER ENVIRONMENTAL CORPORATION

August 13, 1999
TERC-021.001-99X-019

Mr. Tom Zink, P.G.
U.S. Army Corps of Engineers
Attn: CENWO-MD-HA, 9th Floor
215 North 17th Street
Omaha, NE 68102-4978

Subject: TERC Contract No. DACW45-94-D-0003, Delivery Order 21, WAD 1;
Draft Letter Report for Voluntary Corrective Measure Implementation— SWMU 31,
Cannon Air Force Base, New Mexico

Dear Mr. Zink:

Foster Wheeler Environmental Corporation (Foster Wheeler) is submitting four (4) copies of the following draft letter report that presents the results of the voluntary corrective measure implemented at the Aerospace Ground Equipment (AGE) Maintenance Pad (Solid Waste Management Unit [SWMU] 31) at Cannon Air Force Base (AFB), New Mexico. This voluntary corrective measure implementation (CMI) was performed to achieve closure of the site per Cannon AFB'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). At the direction of the United States Army Corps of Engineers (USACE) and Cannon AFB, Foster Wheeler excavated and disposed of the contaminated soil at SWMU 31 and restored the site. All work was conducted in accordance with the CMI Work Plan for SWMU 31 (USAF, 1999).

This letter report provides the objectives of the voluntary CMI, summarizes the site description and history, describes the field activities and sampling program conducted during February and March 1999, reports the analytical data results, and presents site conclusions. As directed by Cannon AFB, this report was developed with the intent that it would be included as an attachment to a Corrective Measure Study Report being prepared by Woodward Clyde.

143 UNION BOULEVARD, SUITE 1010, LAKEWOOD, CO 80228-1824
TEL· 303-988-2202 FAX 303-980-3539

1.0 PROJECT OBJECTIVES

The CMI SWMU 31 project objectives include the following actions:

- Excavate contaminated soil from one area located in SWMU 31 (adjacent to soil boring SB-3101)
- Verify removal of contaminated soil
- Characterize excavated soils for disposal
- Perform site restoration (clean backfill and revegetation)

As specified by the approved CMI Work Plan (Foster Wheeler, 1999), a 10-ft-by-5-ft-by-2-ft-deep excavation around soil boring SB-3101 was completed; due to funding limitations for this project, excavation activities ceased at the limits defined by USACE. Verification samples were analyzed and contaminant concentrations compared to Cannon AFB background levels (Woodward Clyde, 1997) and the total recoverable petroleum hydrocarbon (TRPH) action level to confirm that contaminated soil has been removed from the site.

2.0 SITE BACKGROUND AND HISTORY

A brief summary of the site description and history is provided below. The site history and detailed descriptions of previous site activities have been presented in previous investigation reports (Woodward Clyde, 1994; 1995).

SWMU 31, the AGE Maintenance Pad, is located in an open concrete area adjacent to the southeast side of the AGE Maintenance Shop in Building 186. A washrack is located in a 45-square foot (ft) area beyond the southeast edge of the pad. The AGE Drainage Ditch (SWMU 34), located to the northeast of SWMU 31, 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 storm water runoff flows off the pad to the southeast and is potentially contaminated with JP-4, oils, and diesel fuel. However, the Appendix I Remedial Investigation of the soils lining the SWMU 34 AGE Ditch found negligible to nondetectable levels of the target contaminants in the soils sampled (Woodward Clyde, 1991; 1992).

Previous investigations conducted at SWMU 31 identified potential contaminants at the SWMU, including metals, JP-4, oils, and diesel fuel. As reported in the Phase I and Phase II RCRA

Facility Investigations (RFIs) for the Appendix III SWMUs at Cannon AFB (Woodward Clyde, 1994; 1995), TRPH and chromium were detected at concentrations exceeding their respective background or action levels at one location, and lead was detected above background levels at two locations in the area of the planned excavation. TRPH was detected in soil samples collected from 0 to 2 ft below ground surface (bgs) at soil boring SB-3101 (3,180 milligrams per kilogram [mg/kg]) and soil boring SB-3105 (696 mg/kg), compared to the NMED action level for TRPH of 1,000 mg/kg. Lead concentrations in the samples collected from 0 to 2 ft bgs at soil borings SB-3101 (930 mg/kg) and SB-3105 (42.7 mg/kg) exceeded the background level of 8.7 mg/kg. Chromium was also detected in these two samples at concentrations of 130 mg/kg (SB-3101) and 11.3 mg/kg (SB-3105), compared to the background level of 13.3 mg/kg.

3.0 FIELD ACTIVITIES

On February 17 and 18, 1999, site mobilization, excavation of contaminated soil, and verification and confirmation sampling were performed. As specified in the CMI Work Plan (Foster Wheeler, 1999), a backhoe was used to remove the contaminated soil from the 10-ft-by-5-ft-by-2-ft-deep excavation around soil boring SB-3101.

The excavation limits were surveyed by a New Mexico Registered Land Surveyor (Lydick Engineers) and transferred to site maps provided by Woodward Clyde. The attached Figure 1 depicts the location of the excavation at SWMU 31. The excavated soil was then deposited into a rolloff container for storage pending characterization sampling results. Closure/verification samples were collected as described in the Sampling and Analysis Plan provided in the CMI Work Plan (Foster Wheeler, 1999) and submitted for laboratory analysis. The locations of the closure verification samples are shown on Figure 1. Prior to backfilling, the excavated areas were taped and barricaded.

The analytical results for the verification soil samples collected from the excavated area are provided as an attachment to this report, and are also shown on the attached Figure 1. TRPH was not detected above the method reporting limit in any of the samples. Total lead concentrations exceeded the method reporting limit in only one sample, at a value of 10 mg/kg, and total chromium concentrations ranged from 3.9 to 11.4 mg/kg. Background concentrations for chromium and lead are 13.3 and 8.7 mg/kg, respectively. Therefore, Foster Wheeler recommended that the excavation be backfilled with clean fill from the Cannon AFB

maintenance yard (letter dated March 18, 1999). Cannon AFB and USACE approved this recommendation on March 22, 1999.

Soil generated during excavation activities was characterized to determine appropriate management and disposition. Waste management and characterization were performed in accordance with the CMI Work Plan (Foster Wheeler, 1999). Excavated soil was placed and stored in a rolloff container until disposal options were determined based on the characterization analysis.

Information obtained from Cannon AFB personnel and the USACE concerning the potential contaminants of concern for SWMU 31 were used as generator knowledge. Based on this information, the SWMU 31 characterization soil sample was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, and ignitibility, based on the previously reported detections of lead, chromium, and TRPH. The TCLP analysis reported barium at a concentration of 1560 micrograms per liter (µg/L), cadmium at a concentration of 5 µg/L, and chromium at a concentration of 69.5 µg/L. Lead was not detected in the characterization sample above the method reporting limit. The TCLP results verify there were no exceedances of the RCRA TCLP regulatory levels. The ignitibility of the characterization soil sample exceeded 200 degrees Fahrenheit indicating the material is not ignitable. Using the laboratory analytical data, a Material Profile and Certificate of Non-Hazardous Waste was completed for the soil excavated from SWMU 31 (letter dated March 18, 1999). Foster Wheeler recommended that the soil be classified as non-hazardous and disposed of at Safety-Kleen's Lone Mountain facility in Oklahoma. Cannon AFB and USACE approved this recommendation on March 20, 1999.

On March 24, 1999, transportation and disposal of the contaminated soil, site restoration, and demobilization was performed. The Uniform Hazardous Waste Manifest from Safety-Kleen is provided as an attachment to this letter report. The revegetation was performed using seeded grass similar to that found in adjacent areas. The remainder of the area was returned to its original condition. USACE and Cannon AFB performed the Final Acceptance Inspection of the site prior to demobilization.

4.0 CONCLUSIONS

Based on evaluation of the CMI analytical data, the contaminated soil from the 10-ft-by-5-ft-by-2-ft area adjacent to soil boring SB-3101 has been removed. The excavated soil was characterized as non-hazardous, and transported to Safety-Kleen's Lone Mountain facility and disposed of. Site restoration at SWMU 31 has been completed in accordance with the CMI Work Plan and project objectives have been achieved.

5.0 REFERENCES

Foster Wheeler (Foster Wheeler Environmental Corporation)
1999 Corrective Measure Implementation Work Plan FOR SWMU 31 (AGE Maintenance Pad) and SWMU 77 (Civil Engineering Container Storage Area) Cannon Air Force Base, Clovis, New Mexico

Woodward Clyde
1997 Naturally Occurring Concentrations of Inorganics and Background Concentrations of Pesticides at Cannon Air Force Base, New Mexico.

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.

If you would like more detailed information or if you have any other questions or concerns, please call me at (505) 878-8905.

Sincerely,

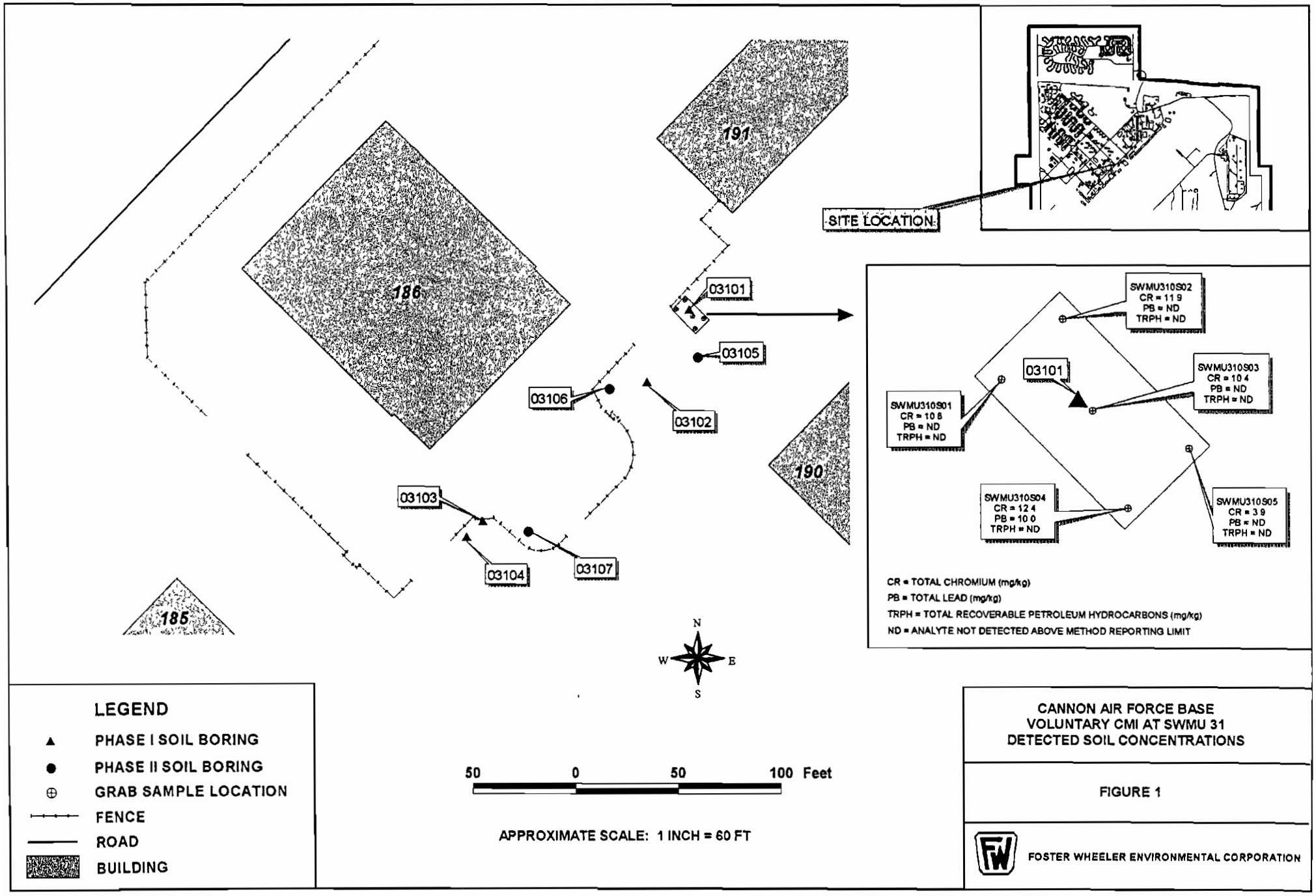
Pamela Mass for
Derek Johnson

Derek Johnson, P.E.
Delivery Order Manager, Cannon AFB

PM:DJ:bl

Attachments
cc: John Pike, Cannon AFB (3 copies)
Max Pastor, USACE – Cannon AFB (2 copies)
James Morning, FWENC Holloman AFB (1 copy)
Sina Seyedian, FWENC Denver (w/o attachments)
TERC-4 Project File

FIGURE 1


191
186
190
185
03101
03105
03106
03102
03103
03104
03107
SITE LOCATION
SWMU310S02
CR = 11 9
PB = ND
TRPH = ND
03101
SWMU310S03
CR = 10 4
PB = ND
TRPH = ND
SWMU310S01
CR = 10 8
PB = ND
TRPH = ND
SWMU310S04
CR = 12 4
PB = 10 0
TRPH = ND
SWMU310S05
CR = 3 9
PB = ND
TRPH = ND
CR = TOTAL CHROMIUM (mg/kg)
PB = TOTAL LEAD (mg/kg)
TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (mg/kg)
ND = ANALYTE NOT DETECTED ABOVE METHOD REPORTING LIMIT
N
W
E
S
LEGEND
PHASE I SOIL BORING
PHASE II SOIL BORING
GRAB SAMPLE LOCATION
FENCE
ROAD
BUILDING
50
0
50
100 Feet
APPROXIMATE SCALE: 1 INCH = 60 FT
CANNON AIR FORCE BASE
VOLUNTARY CMI AT SWMU 31
DETECTED SOIL CONCENTRATIONS
FIGURE 1
FOSTER WHEELER ENVIRONMENTAL CORPORATION

781 659

781 660

UNIFORM HAZARDOUS WASTE MANIFEST

781 661

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

Form Approved OMB No 2050-0039 Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No: N M 7 5 7 2 1 2 4 4 5 4 Manifest Document No: 99001

2 Page 1 of 1

Information in the shaded areas is not required by Federal law

Generator's Name and Mailing Address
CANNON AIR FORCE BASE
506 NORTH D.J. INGRAM BLVD., CANNON AFB, NM 88103

4 Generator's Phone (505 784-6378

A. State Manifest Document Number

B. State Generator's ID

5 Transporter 1 Company Name: NP ENVIRONMENTAL

6 US EPA ID Number: C A T 0 0 0 6 2 4 2 4 7

C. State Transporter's ID

D. Transporter's Phone (805) 393-1151

7. Transporter 2 Company Name

8 US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
SAFETY-KLEEN(LONE MOUNTAIN)INC
5E & 1N OF JCT 412 & 281
WAYNOKA, OK 73860-9622

10 US EPA ID Number: O K D 0 6 5 4 3 8 3 7 6

G. State Facility's ID

H. Facility's Phone (580) 697-3500

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No	Type	13 Total Quantity	14 Unit Wt/Vol	I. Waste No
a. NON-REGULATED		001	CM	01600	P	NONE
b						
c						
d						

Additional Descriptions for Materials Listed Above
Additional EPA Waste Codes a. b. c. d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Approval Numbers a. LH99-0171 b. c. d.

16 GENERATOR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed/Typed Name | Signature | Month Day Year 03 24 99

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Rinnie Stanley | Signature | Month Day Year 03 24 99

18 Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19 Discrepancy Indication Space
See attached for generators signature
99-1320

Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: Lori Mitchell | Signature | Month Day Year 03 24 99

EPA Form 8700-200 (Rev 9-88) Previous editions are obsolete

ORIGINAL - RETURN TO GENERATOR

781 662

Please print or type. (Form designed for use on elite (12-pitch) typewriter) Form Approved. OMB No. 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NM7572124454 Manifest Document No. 99001

2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
CANNON AIR FORCE BASE
506 NORTH B.J. INGRAM BLVD., CANNON AFB, NM 88103

4. Generator's Phone (505) 784-6378

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: NP ENVIRONMENTAL

6. US EPA ID Number: CAT000624247

C. State Transporter's ID

D. Transporter's Phone (885) 393-1151

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
SAFETY-KLEEN (LONE MOUNTAIN) INC
5E & 1N OF JCT 412 & 281
WAYNOKA, OK 73860-9622

10. US EPA ID Number: OKD065438376

G. State Facility's ID

H. Facility's Phone (580) 697-3500

GENERATOR	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	NON-REGULATED		001	CM	EST 01600	P	NONE
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
Additional EPA Waste Codes: a. b. c. d.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Approval Numbers: a. LN99-0171 b. c. d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: SANFORD D. HUTSELL | Signature: Sanford D. Hutsell | Month Day Year: 03 24 99

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ronnie Stanley | Signature: Ronnie Stanley | Month Day Year: 03 24 99

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACIL

19. Discrepancy Indication Space
99-1320

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Rick Mitchell | Signature: Rick Mitchell | Month Day Year: 03 24 99

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

ANALYTICAL DATA

LAUCKS TESTING LABORATORIES
SAMPLE DATA PACKET

FOSTER WHEELER ENVIRONMENTAL

LABORATORY No.: 9902484

SDG NO.: FCA01

MARCH 11, 1999

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

To: Foster Wheeler Environmental
Project No. : 5155 0021 0001 A2000
Laboratory No. : 9902484
SDG No.: FCA01
Date of Report: March 11, 1999

SAMPLE RECEIPT, IDENTIFICATION, AND GENERAL COMMENTS:

Sample Receipt and Identification:

The samples submitted under the laboratory number(s) indicated above were identified and analyzed as tabulated below. The samples were collected and received on the dates noted on the enclosed chain-of-custody copies, Attachment A.

Client Sample Identification	Laucks Sample Identification	Testing Analytical Request
SWMU 31S01	9902484-01	2MET/TPH
SWMU 31S02	9902484-02	2MET/TPH
SWMU 31S03	9902484-03	2MET/TPH
SWMU 31S04	9902484-04	2MET/TPH
SWMU 31S05	9902484-05	2MET/TPH
SWMU 31S05D	9902484-06	2MET/TPH
SWMU 31S06 R	9902484-07	TCLP/IG
SWMU 31S07 Roll Off	9902484-08	HOLD
SWMU 31S08	9902484-09	HOLD
SWMU 31S09	9902484-10	HOLD
SWMU 31S10	9902484-11	HOLD
SWMU 31S11	9902484-12	HOLD

Analytical Request Key:

2MET =	Lead and Chromium (6010B)
TCLP =	TCLP Metals
TPH =	Total Petroleum Hydrocarbons (9071/418.1)
IG =	Ignitability (SW1020)
HOLD =	These samples were put on hold by the client.

Sample Receipt Comments:

There were no anomalies in the receipt of these samples.

Sample Identification on Forms:

When completing forms created through the CLP software, every attempt is made to use both your sample IDs as well as the laboratory sample IDs. The forms have varied default sizes to their sample identification fields, and are not amenable to alteration or editing. When it is not possible to use your complete sample ID because of field length limitations, Laucks will usually do one of two things: 1) use as much of your ID as will fit, beginning from the RIGHT hand side of the sample ID number; or 2) select some sub-set of your sample identifier if it is clearly a discrete number. In addition, all forms will contain our sample IDs, which can be cross-referenced from the table above.

GENERAL REMARKS ON INORGANIC ANALYSES:

The following comments describe general analysis conditions. For remarks specific to the samples reported in this case, see "SPECIFIC REMARKS ON INORGANIC ANALYSES."

ICP Metals:

The preparation blank for metals in soil is calculated to mg/kg by assuming a sample weight of 1.00g/100mL. Total solids of 100% are also assumed.

On the first timed and dated page of each ICP run, the data to be reported or rejected will be tabulated for that run.

Mercury:

Laucks purchases a 1000 mg/L Hg stock solution from Inorganic Ventures. The 1.0 mg/L working standard is made by diluting 100 µL to 100 mL with 2% HNO_3. The calibration curve is made by placing 0, 20, 50, 100, 200, 500 and 1000 µl of the working standard in BOD bottles and diluting up to 100 mL. The standard curve is equivalent to 0, 0.2, 0.5, 1.0, 2.0, 5.0 and 10.0 µg/L.

SPECIFIC REMARKS ON INORGANIC ANALYSES:

Holding Time Compliance:

Laucks calculates holding time compliance for inorganic determinations using the date on which reportable data were acquired.

Metals:

The holding time for metals is six months from the date of collection, excepting mercury, which is 28 days All analyses were performed within holding time.

The holding time for TCLP metals extraction is 180 days (28 days for mercury). The subsequent holding time from TCLP extraction to preparative digestion & analysis is another 180 days (28 days for mercury). All preparations and analyses were within holding time.

Miscellaneous:

The following analytes do not have a Contract Laboratory Program holding time. The holding times tabulated below derive from the relevant EPA methods and are applicable when the sample was appropriately preserved and/or cooled. All samples submitted followed the preservation guidelines unless explicitly noted otherwise.

Analyte	Holding Time	Violations
418.1	28 days	None
Ignitability	10 days	None

ICP Metals:

No comments.

TCLP Metals:

No comments.

418.1:

No comments.

Flash Point:

No comments.

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

ABBREVIATIONS

Several abbreviations can appear in our reports. The most commonly employed abbreviations are as follows:

U The analyte of interest was not detected to the limit of detection indicated.

SDL Sample Detection Limit. The SDL can vary from sample to sample, depending on sample size, matrix interferences, moisture content and other sample-specific conditions.

PQL Practical Quantitation Limit. The limit is drawn from the test method and usually represents the SDL multiplied by a matrix-specific factor.

DB Dry Basis. The value reported has been back-calculated to normalize for the moisture content of the sample.

AR As-Received. The value has not been normalized for moisture.

INORGANIC ANALYSES:

B The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected, a "U" shall be entered.

E The reported value is estimated because of the presence of interference. An explanatory note shall be included under Comments on the Cover Page (if the problem applies to all samples) or on the specific Form I-IN (if it is an isolated problem).

M Duplicate injection precision not met.

N Spiked sample recovery not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA)

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50 % of spike absorbance.

* Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

Entering "S", "W" or "+" is mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

CRDL Client Requested Detection Limit, usually the limit of detection specified at your request. Might also be referred to as Contract required Detection Limit.

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

RELEASE OF DATA

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Respectfully submitted,

Jenna Gorham Project Manager	Mike Nelson Technical Director
12 Mar 99 (DATE)	12 Mar 99 (DATE)

HOW TO CONTACT US:

All Laucks Testing Laboratories staff members can be reached at the same telephone and facsimile numbers: (206) 767-5060 by phone, (206) 767-5063 by FAX.

	Primary Contact	Alternate
Technical	Mike Nelson	
Administrative/billing	Jenna Gorham	
Package	Tom Marino	Rebecca James

REQUESTS FOR DUPLICATE COPIES:

This packet has been checked for accuracy. All pages are present and in sequential order. Please see Attachment B for a detailed record

In the event that duplicate data copies are needed, Laucks will accommodate your request at a fee of twenty five cents ($0.25) per copy, plus shipping. If the data are in storage, there will also be a fee for retrieval.

LAUCKS TESTING LABORATORIES
940 S. Harney
Seattle, WA 98108

ATTACHMENT A

Chain-of-Custody Copies

THIS INFORMATION ... E USED FOR REPORTING/BILLING* (SEE BELOW)

COMPANY: Foster Wheeler Env
ADDRESS: 6605 Uptown Blvd
ALBQ NM 87110
ATTENTION: Derek Johnson
PROJECT NAME: Cannon AFB SWMU 31
PROJECT CONTACT: Pam Moss
TELEPHONE: 505 878 8900 FAX: 8933
JOB/P O NO: 5155 0021 0001 A2000

CHAIN OF CUSTODY ... ORD
12525
WORK ORDER ID#: 9902484

SDG #: FCA01
PAGE 1 OF 1

Laucks Testing Laboratories, Inc.

SUBMITTED AT: ☐ 940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063 ☐ 1806 Edwards Ave., Yakima, WA 98902 (509) 248-1005 FAX 972-1289

TESTS TO PERFORM

LAB SA#	SAMPLE ID / LOCATION	DATE	TIME	MATRIX: WATER, SOIL OR SPECIFY	NO OF CONTAINERS	TRPH	LEAD	Chromium	TCLP	TCLP Volatiles	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1)	SWMU 31501	2-18	1134	Soil	1	X	X	X			
2)	SWMU 31502	2-18	1137	Soil	1	X	X	X			
3)	SWMU 31503	2-18	1139	Soil	1	X	X	X			
4)	SWMU 31504	2-18	1141	Soil	1	X	X	X			
5)	SWMU 31505	2-18	1144	Soil	1	X	X	X			
6)	SWMU 31505 D	2-18	1144	Soil	1	X	X	X			
7)	SWMU 31506 R	2-18	1150	Soil					X	X	Roll off
8)	SWMU 31508 Roll off	2-18	1150	Soil							Hold Pending
9)	SWMU 31508	2-18	1150	Soil							FW-Direction
10)	SWMU 31509	2-18	1150	Soil							
11)	SWMU 31510	2-18	1150	Soil							
12)	SWMU 31511	2-18	1150	Soil							

A. A standard turnaround time is assumed unless otherwise marked

B. The laboratory may not be responsible for missed holding time for samples received with less than 50% of the analytical hold time remaining. Please contact the laboratory for further information

INSTRUCTIONS
1. USE ONE LINE PER SAMPLE.
2. BE SPECIFIC IN TEST REQUESTS.
3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE

*BILLING INFORMATION, IF DIFFERENT THAN ABOVE
NAME
ADDRESS
ATTN.
CITY, STATE, ZIP

★ RUSH TURNAROUND IS SUBJECT TO PRIOR LABORATORY APPROVAL

TOTAL NO. OF CONTAINERS

TURNAROUND REQUEST
☒ STD. 10-14 WORKING DAYS
★☐ 24-48 HRS (100% SUR)
★☐ 72 HRS (75% SUR)
★☐ 5 DAYS (50% SUR)
☐ OTHER
☐ TEMP
USTO: ☐ ☒ ☐ ☐

RELINQUISHED BY (SIGN AND PRINT)	DATE TIME	RECEIVED BY (SIGN AND PRINT)	DATE TIME
James Morning	2-18-99 1300	Fed X ticket 800567620221	
		PAM R. JOHNSON	2/19/99 1145

781 671

781 672

Laucks
Testing Laboratories, Inc.

COOLER RECEIPT FORM

WORKORDER #: 9902484

Contractor Cooler _____

QA Lab Cooler # _____

Number of Coolers _____

Project: Cannon AFB SWMU 31

Date samples were received at the laboratory: 2/19/99

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 2/19/99

By: (print) PAM R. JOHNSON (sign) [signature]

1. Did cooler come with a shipping slip (airbill, etc.),>>>>>>>>>>>>>>>>>>>> YES NO
   If YES, record carrier name and airbill number: FedEx 8005676020221
2. Were custody seals on outside of cooler?>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> YES NO
   How many and where: 1 F, 1B
   Seal date: 2/18/99 Seal name: See Attached
3. Were custody seals unbroken and intact at the date and time of arrival?>>>>>>> YES NO
4. Did you screen samples for radioactivity using the Geiger Counter?>>>>>>>> YES NO
5. Were custody papers sealed in a plastic bag and taped inside to the lid?>>>>>> YES NO
6. Were custody papers filled out properly (ink, signed, etc.)?>>>>>>>>>>>>>>> YES NO
7. Did you sign custody papers in the appropriate place?>>>>>>>>>>>>>>>>>>>> YES NO
8. Was project identifiable from custody papers? If YES, enter project name at top of this form.
9. If required, was enough cooling material present?>>>>Type of ice: bags YES NO
10. Have designated person initial here to acknowledge receipt of cooler: [signature] date 2/19/99

B. LOG-IN PHASE: Date samples were logged-in: 2/19/99

By (print) PAM R. JOHNSON (sign) [signature]

11. Describe type of packing in cooler: bubblewrap
12. Were all bottles sealed in separate plastic bags?>>>>>>>>>>>>>>>>>>>>>>>> YES NO
13. Did all bottles arrive unbroken and were labels in good condition?>>>>>>>> YES NO

LAUCKS TESTING LABORATORIES, INC.
940 South Harney St., Seattle, WA 98108
Phone (206) 767-5060 • FAX (206) 767-5063

CUSTODY SEAL
SIGNATURE [signature] DATE 2/18/99

9

LAUCKS TESTING LABORATORIES, INC.

COOLER RECEIPT FORM (continued)

14. Were all bottle labels complete (ID, date, time signature, preservative, etc.)? YES NO
15. Did all bottle labels agree with custody papers?>>>>>>>>>>>>>>>>>>>>>>>>YES NO
16. Were correct containers used for the tests indicated?>>>>>>>>>>>>>>>>>>>YES NO
17. Were correct preservatives added to samples?>>>>>>>>>>>>>>>>>>>>>>>>~~YES~~ ~~NO~~ NA
18. Was a sufficient amount of sample sent for tests indicated?>>>>>>>>>>>>>YES NO
19. Were bubbles absent in VOA samples: If NO, list by QA #:>>>>>>>>>>>>>~~YES~~ ~~NO~~ NA
20. Was project manager called / faxed & status discussed? >>>>>>>>>>>>>>>> YES NO

    If YES, give details below

21. Who was called / faxed? Pam Moss

    By whom? Jenna Graham (date) 2/19/99

DESCREPANCIES:

TCLP for metals or Pesticides?

Pam Moss called 2/19/99 - TCLP metals only.

Laucks Testing Laboratories, Inc., Supplemental Sample Receipt Log

rk Order Number: 9902484
signed SDG Number: FLA01

	Temperature	pH of Bottle Types								
1										
2	2.0									
3										
4										
5	2.8									
6										
7										
8			Soils							
9										
10										
11	2.7									
12										

owable temperature and pH ranges (neutral pH defined as a value between 5 and 9)

nperature	Allowable temperature range is 4± 2 degrees Celsius
d Preserved pH	pH must be less than 2
se Preserved pH	pH must be greater than 12

TEMPLOG DOT 2 02/21/95

TCLP Metals Data

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: 31S06R

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01T

Matrix (soil/water): TCLP Lab Sample ID: 02484-07

Level (low/med): LOW Date Received: 02/19/99

% Solids: 0 0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	25.	U		P
7440-39-3	Barium	1560.			P
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.			P
7440-70-2	Calcium				
7440-47-3	Chromium	69.5			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	28.	U		P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	1.	U		AV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	33.	U		P
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: ___

Comments:

CLIENT ID: SWMU 31S06 R

FORM I - IN

U S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.:

B02231

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

ab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01T

Matrix (soil/water): TCLP Lab Sample ID: B0223-01

Level (low/med): LOW Date Received: _____

% Solids: 0.0

ConcentrationUnits (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	25. U			P
7440-39-3	Barium	531. B			P
7440-41-7	Beryllium				
7440-43-9	Cadmium	1.8 U			P
7440-70-2	Calcium				
7440-47-3	Chromium	4.8 U			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	28. U			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	10. U			AV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	33. U			P
7440-22-4	Silver	2.9 U			P
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture: ___

Color After: COLORLESS Clarity After: CLEAR Artifacts: _

Comments:

LIENT ID TCLP BLANK EXTRACTION FLUID

Total Metals Data

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: A31S01

b Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-01

Level (low/med): LOW Date Received: 02/19/99

% Solids: 87.0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10.8			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	9.9	B		P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before. BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: ___

mments:

CLIENT ID: SWMU 31S01

U S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO :

B31S02

ıb Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-02

Level (low/med): LOW Date Received: 02/19/99

% Solids: 86.0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	11.9			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	9 9 B			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After. BROWN Clarity After: ___ Artifacts. _

Comments:

CLIENT ID: SWMU 31S02

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: C31S03

b Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-03

Level (low/med): LOW Date Received: 02/19/99

% Solids: 86.5

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	10.4			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	8.3	B		P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: ___

Comments:

.IENT ID SWMU 31S03

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: D31S04

Lab Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No : ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-04

Level (low/med): LOW Date Received: 02/19/99

% Solids: 88.0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	12.4			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	10.			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: _

Comments:

CLIENT ID: SWMU 31S04

U S EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.: E31S05

Name: LAUCKS TESTING LABS, INC. Contract: _____

Lab Code: LAUCKS Case No.: ___ SAS No.: ___ SDG No.: FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-05

Level (low/med): LOW Date Received: 02/19/99

% Solids: 88 0

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	3 9			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.1 B			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts: _

nments:

CLIENT ID: SWMU 31S05

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO :

F31S05

ab Name: LAUCKS TESTING LABS, INC Contract: _____

Lab Code: LAUCKS Case No : ___ SAS No.: ___ SDG No.. FCA01S

Matrix (soil/water): SOIL Lab Sample ID: 02484-06

Level (low/med). LOW Date Received: 02/19/99

% Solids: 88.1

ConcentrationUnits (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium	4.8			P
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	7.4 B			P
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				

Color Before: BROWN Clarity Before: ___ Texture: FINE

Color After: BROWN Clarity After: ___ Artifacts. _

omments:

CLIENT ID: SWMU 31S05D

Flash Point Data

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S06 R
Lab Sample ID: 9902484-07
Date Received: 02/19/99

Analyte	Result	Units	Prepped	Analyzed	Limit	Method
Flash Point (Setaflash)	>200.	degrees F	03/05/99	03/05/99	-	SW 1020

418.1 and Total Solids Data

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S01
Lab Sample ID: 9902484-01
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418 1)	20	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	87.0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S02
Lab Sample ID: 9902484-02
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	86.0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S03
Lab Sample ID: 9902484-03
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	86.5		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs
SDG No. : FCA01
Matrix : SOIL

Sample ID : SWMU 31S04
Lab Sample ID: 9902484-04
Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	88.0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs Sample ID : SWMU 31S05
SDG No. : FCA01 Lab Sample ID: 9902484-05
Matrix : SOIL Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	88 0		%	02/23/99	02/24/99	0.1	SM209A

1

INORGANICS ANALYSIS DATA SHEET

Lab Name: Laucks Testing Labs Sample ID : SWMU 31S05D
SDG No. : PCA01 Lab Sample ID: 9902484-06
Matrix : SOIL Date Received: 02/19/99

Analyte	Result		Units	Prepped	Analyzed	Limit	Method
TPH (418.1)	20.	U	mg/kg DB	03/01/99	03/02/99	20.	EPA 418 1
Total Solids	88.1		%	02/23/99	02/24/99	0.1	SM209A

Appendix C
2008 DPT Letter Report

Draft Letter Report

Revision 00
May 2008

Voluntary Corrective Action
AGE Maintenance Facility Shop Pad (SWMU 31)
and POL Wash Pad (SWMU 127)

Cannon Air Force Base, New Mexico
27 SOCES/CEVC

U.S. Army Corps of Engineers
Omaha District
Contract W9128F-04-D-0004, Delivery Order 0003

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Draft Letter Report

Revision 00
May 2008

Voluntary Corrective Action
AGE Maintenance Facility Shop Pad (SWMU 31)
and POL Wash Pad (SWMU 127)

Cannon Air Force Base, New Mexico

Prepared for:

Cannon Air Force Base, New Mexico
27 SOCES/CEVC

U.S.Army Corps of Engineers
Omaha District
Contract W9128F-04-D-0004, Delivery Order 9

Prepared by:

Bay West, Inc.
143 Union Boulevard
Lakewood, CO 80228

Tetra Tech EC, Inc.
5 Empire Drive
St. Paul, MN 55103

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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
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

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1.0 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. Supporting information on current site conditions and previous investigations is derived from 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). The rationale and methodology for the sampling program is presented in the October 2007 Technical Memorandum (Bay West, 2007a), November 2007 SWMU 127 Risk Screening Evaluation (Bay West, 2007b), and the February 2008 Work Plan (Bay West, 2008).

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. However, no soil sample had 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 conducted at SWMU 127, TPH was detected in soil at 16 of the 17 locations sampled. TPH exceeded the regulatory residential screening guideline of 520 milligrams per kilogram (mg/kg) in two soil samples. One of the samples was collected beneath the concrete inside of the wash pad (Soil Boring 12710), and one was collected at 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 proximal to the drains near the center of the wash pad. No other soil samples had been collected within the wash pad to comprehensively determine whether any contamination existed 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.

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.

The approach for future investigation and subsequent remedial action at SWMUs 31 and 127 was to determine the extent of contamination in the shallow subsurface soil less than 15 feet bgs because of risk due to direct exposure to contaminated soil (Bay West, 2007a, 2007b, and 2008). Soil at a depth of 15 ft and shallower is considered "potentially accessible" to workers 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. Thus, to characterize soil within the top 15 ft of each SWMU, exploratory soil borings were recommended to be sampled to confirm known contamination and determine the lateral and vertical extent of contaminated soil requiring remediation.

In the work plan. 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 accordance with the work plan 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 contamination. These results were also used to identify locations where it was expected that contamination could be present. 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 associated with the former operations at these sites are VOCs, PAHs, metals, and petroleum hydrocarbons. 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 a sampling approach for characterization of existing contamination in soil at SWMU 127 that may 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 was used to determine the extent of contaminated soil requiring remediation at the two SWMUs.

2.0 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 to a maximum depth of 15 ft using DPT 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 logs (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 (Bay West, 2007a) and November 2007 Risk Evaluation (Bay West, 2007b) 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.

3.0 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 four soil boring locations: 031SB01, 031SB06, 031SB07, and 031SB14.. 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.

4.0 REFERENCES

Bay West (Bay West, Inc.)

2007a *Technical Memorandum. Characterization at SWMUs 31 and 127.* Cannon Air Force Base, New Mexico, October 8, 2008.

2007b. *SWMU 127 Risk Screening Evaluation, November 2007.*

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

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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.

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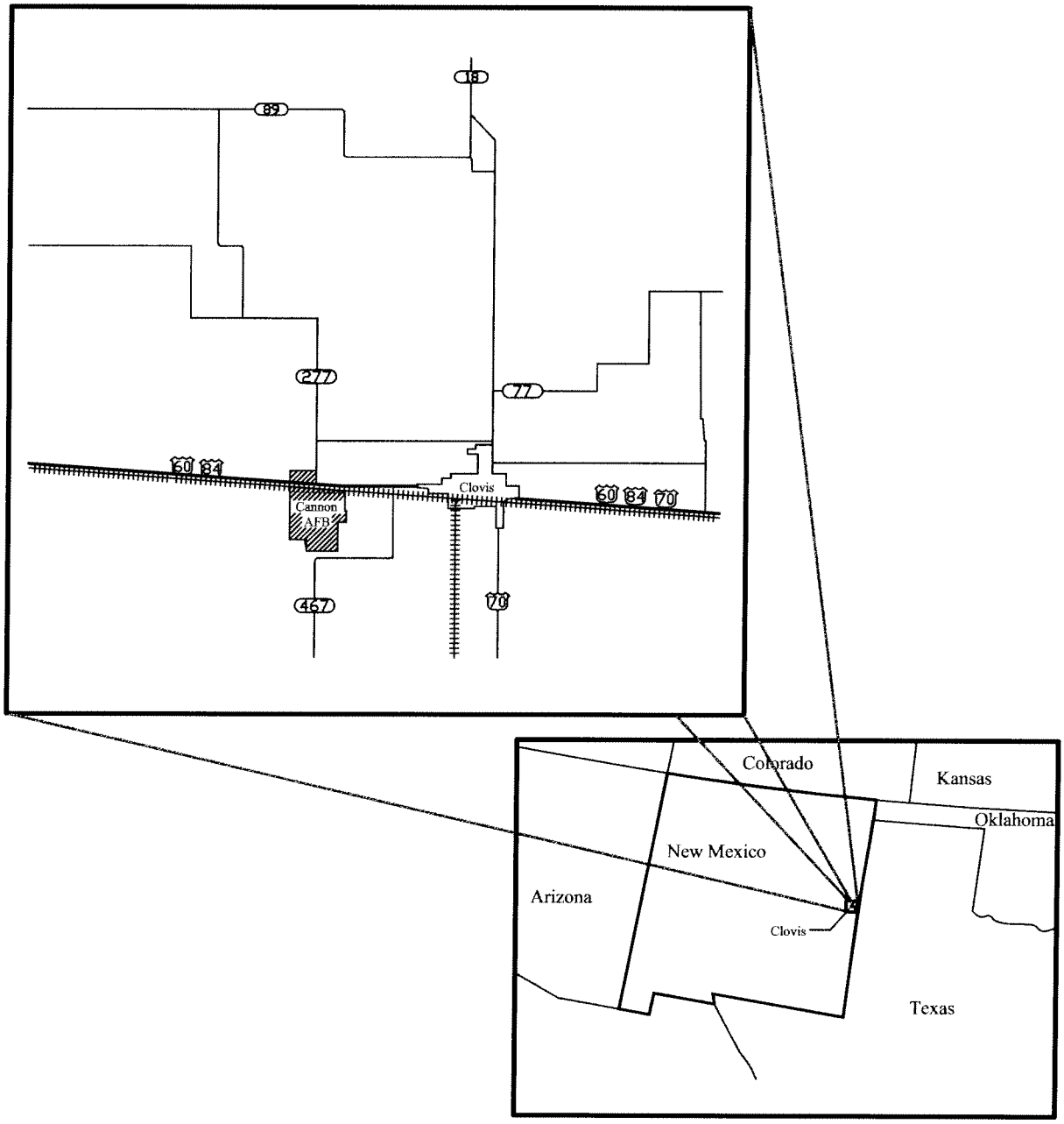
2003. *Total Petroleum Hydrocarbon (TPH) Screening Guidelines*, June 24, 2003.

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



Not Drawn to Scale

N

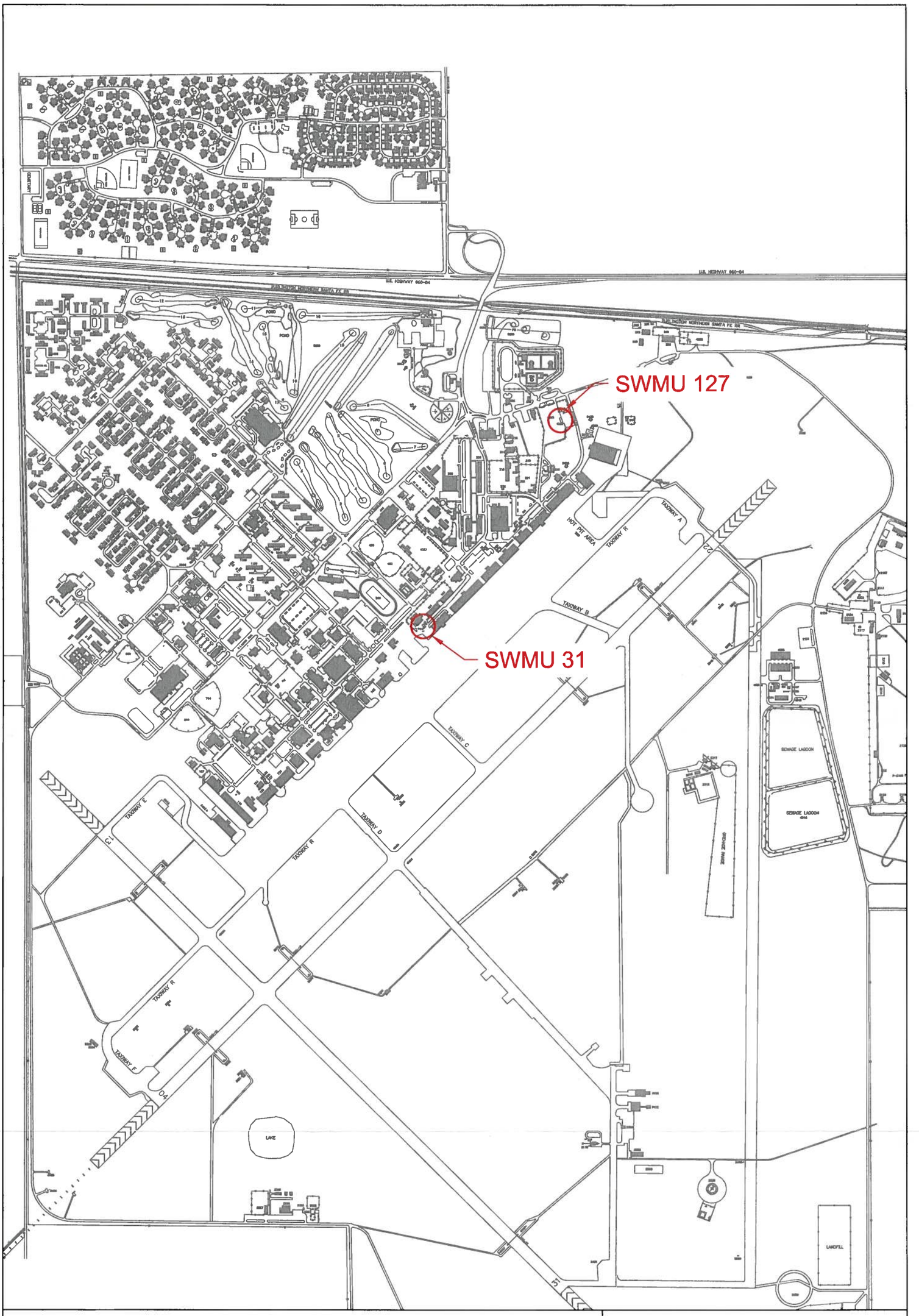
VCA Characterization of SWMUs 31 and 127
Cannon Air Force Base, New Mexico

Location Map - Cannon Air Force Base

Date: 02-05-08

File Name:
Figure 1-1.dwg

Figure 1-1



Not Drawn to Scale

N

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

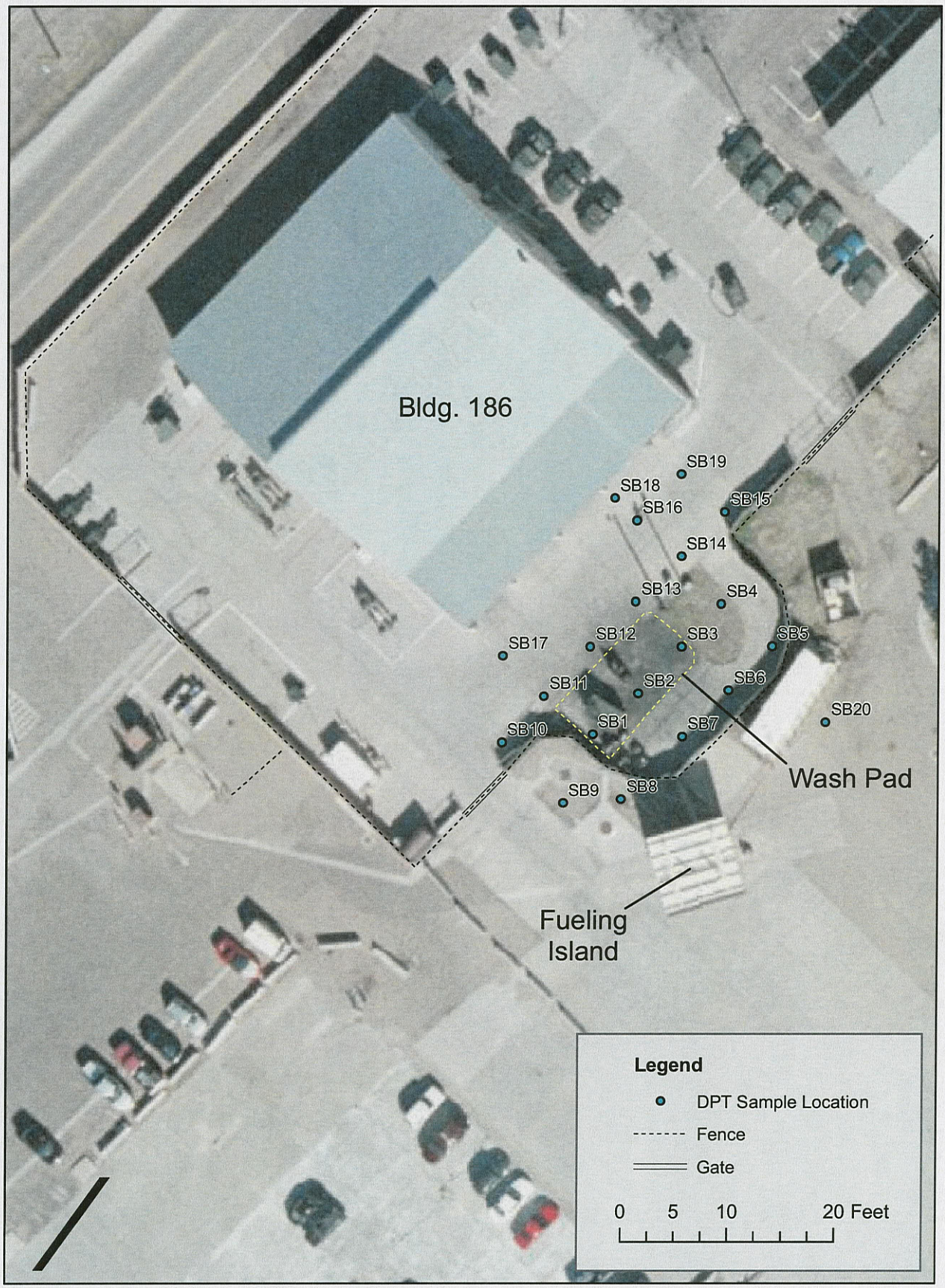


Figure 2-1
SWMU 31 Sample Location Map

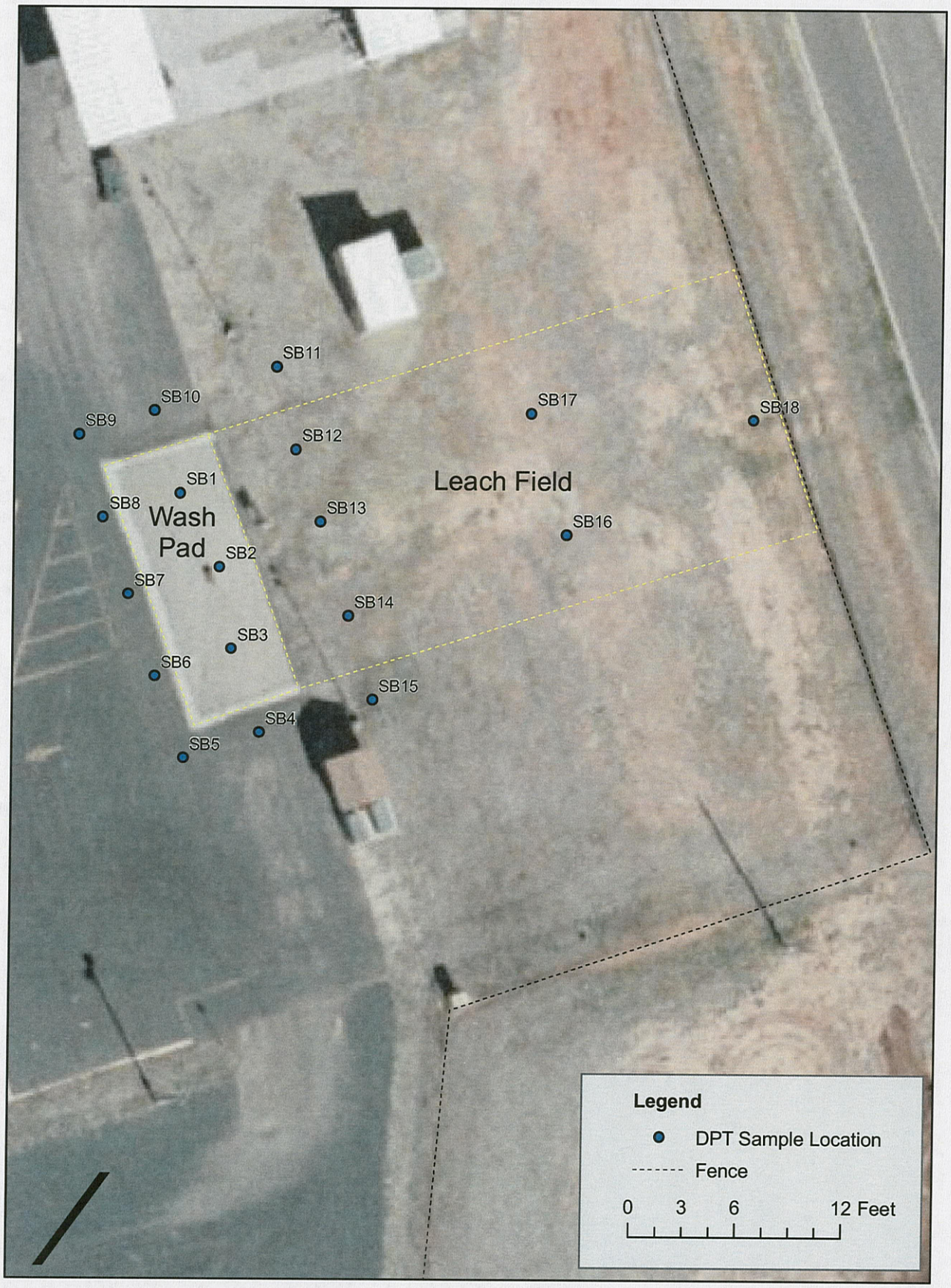


Figure 2-2
SWMU 127 Sample Location Map

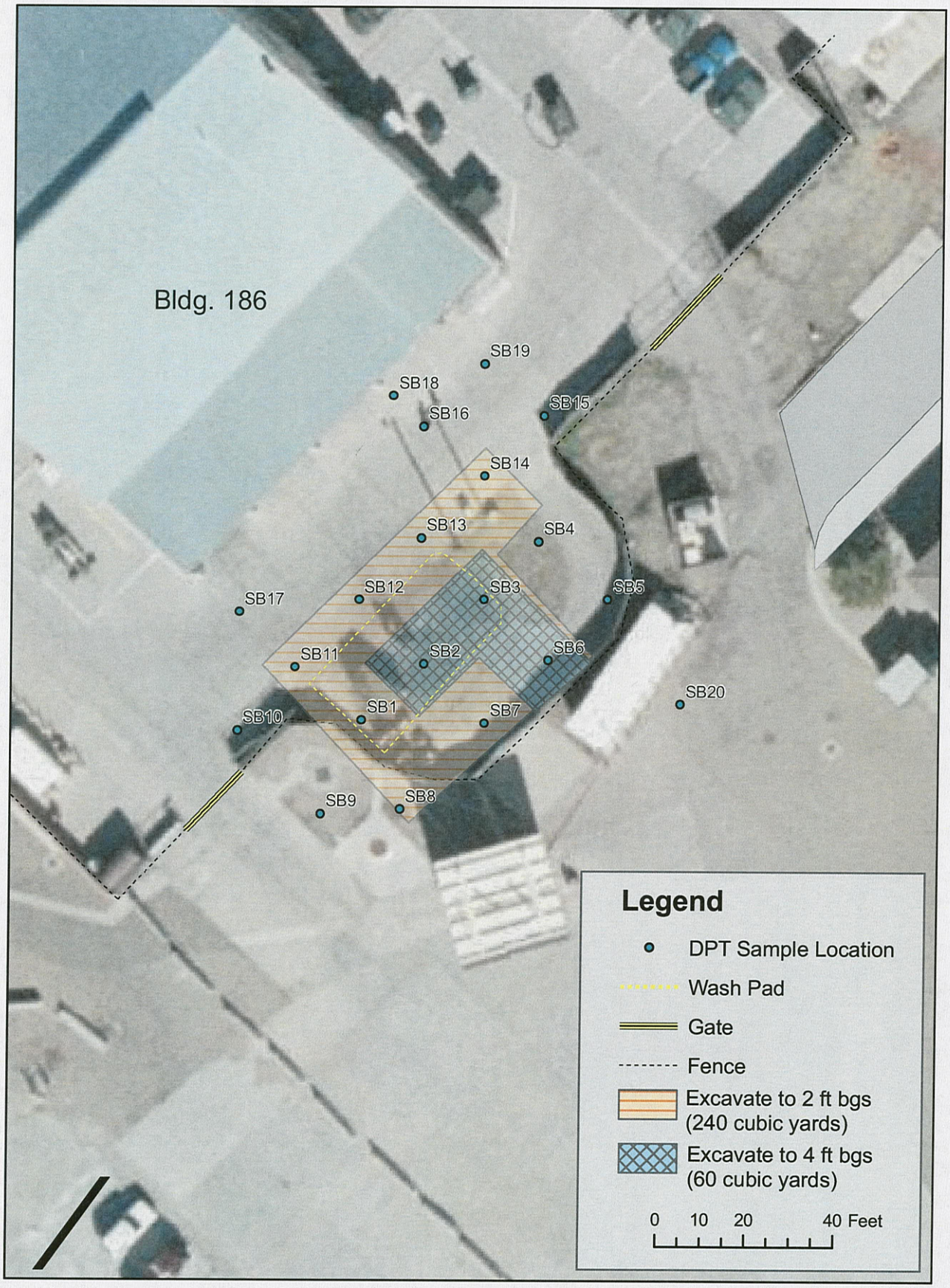


Figure 3-1
SWMU 31 Proposed Excavation Area

Tables

Table 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

Table 2-1
SWMU 31 Borehole and Sampling Summary

Borehole ID	Borehole Depth (ft bgs)	Sample ID	HTW 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 *Reporting limit*	GRO (1.0 mg/kg)	DRO (10 mg/kg)	Motor Oil (20 mg/kg)	Total TPH	TCLP VOCs (50 µg/L)	Ignitability (60 deg C)
031SB0100	ND	310	340	**650**	na	na
031SB0102	ND	69	15J	84	na	na
031SB0102D	ND	100	15J	115	na	na
031SB0105	ND	ND	ND	ND	na	na
031SB0200	ND	120	72	192	na	na
031SB0202	ND	ND	ND	ND	na	na
031SB0300	ND	160	64	224	na	na
031SB0302	ND	ND	ND	ND	na	na
031SB0402	ND	ND	ND	ND	na	na
031SB0402M	ND	ND	ND	ND	na	na
031SB0500	ND	31	170	201	na	na
031SB0600	110	**1,700**	410	**2220**	na	na
031SB0600D	160	**2,000**	240	**2400**	na	na
031SB0603	ND	10J	ND	10J	na	na
031SB0700	0.71J	ND	**1,200J**	**1200.71**	na	na
031SB0800	ND	ND	130J	130	na	na
031SB0900	ND	ND	21J	21	na	na
031SB1000	ND	7.5J	14J	21.5	na	na
031SB1100	9	170	ND	179	na	na
031SB1100D	2.5	38	ND	40.5	na	na
031SB1200	ND	ND	13J	13	na	na
031SB1300	ND	ND	31	31	na	na
031SB1400	150	**1,200**	140	**1490**	na	na
031SB1402	ND	ND	ND	ND	na	na
031SB1500	ND	ND	ND	ND	na	na
031SB1600	66	190	170	426	na	na
031SB1700	ND	ND	ND	ND	na	na
031SB1800	15	110	ND	125	na	na
031SB1900	ND	ND	16J	16	na	na
031SB2000	ND	ND	ND	ND	na	na
031WC01	na	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 Celsius
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 D
Waste Manifests

01.07.10
02

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	50345.01 – 02

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE WYKOFF For USACE
Signature: [signature]
Month 4 Day 7 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jerry Rivers Truck #: 525
Signature: [signature]
Month 4 Day 7 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Dave Turnbow
Signature: [signature]
Month 4 Day 7 Year 09

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 03

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff FOR USACE
Signature: D Wykoff
Month 4 Day 7 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza Truck #: 524
Signature: Gustavo Esparza
Month 4 Day 7 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Lane Turnbow
Signature: Lane Turnbow
Month 4 Day 7 Year 09

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DESIGNATED FACILITY TO GENERATOR

01.07.10
04

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 04

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name: Diamond J BACK
~~Rhino Environmental~~ Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wyatt For USACE
Signature: [signature]
Month 4 Day 7 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Zane Turnbow Truck #: 01
Signature: [signature]
Month 4 Day 7 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Zane Turnbow
Signature: [signature]
Month 4 Day 7 Year 09

01.07.10
-05

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 05

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff For USACE
Signature: [signature]
Month 4 Day 7 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza Truck #: 524
Signature: [signature]
Month 4 Day 7 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: [signature]
Signature: Jenny River
Month 4 Day 7 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01.07.10
06

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 06

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff For USACE
Signature: [signature]
Month 4 Day 7 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jerry Rivero Truck #: 525
Signature: [signature]
Month 4 Day 7 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Gustavo Espinoza
Signature: [signature]
Month 4 Day 6 Year 07

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

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DESIGNATED FACILITY TO GENERATOR

01-08-10
07

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 07

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff For USACE
Signature:
Month 4 Day 8 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jenny Rivero
Truck #: 525
Signature:
Month 4 Day 8 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Gustavo Espana
Signature: Gustavo Espana
Month 4 Day 8 Year 09

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DESIGNATED FACILITY TO GENERATOR

01·08·10
08

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 08

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name: Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: Dwykoff For USACE
Signature: [signature]
Month 4 Day 8 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza Truck #: 524
Signature: [signature]
Month 4 Day 8 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Jerry Rivero
Signature: [signature]
Month 4 Day 8 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

01. 09.10
08

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 09

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Schroff For USCE
Signature:
Month 4 Day 8 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza
Truck #: 524
Signature: Gustavo Esparza
Month 4 Day 8 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Cave Turner
Signature:
Month 4 Day 8 Year 09

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

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DESIGNATED FACILITY TO GENERATOR

01.09.10
10

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 10

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Environmental Services 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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: Dave Wykoff for USACE
Signature:
Month 4 Day 8 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jerry River Truck #: 520
Signature:
Month 4 Day 8 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Janet Turner
Signature:
Month 4 Day 8 Year 09

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DESIGNATED FACILITY TO GENERATOR

a. 09.10
11

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 11

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Diamondback Disposal PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name
NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.					
3.	back fill	1	dump	20	
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: David Wykoff for USACE
Signature: [signature]
Month 4 Day 9 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza Truck #: 524
Signature: [signature]
Month 4 Day 9 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

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: Brandon Price
Signature: [signature]
Month 4 Day 9 Year 09

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DESIGNATED FACILITY TO GENERATOR

01.08.10
12

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 12

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Diamondback Disposal PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name
NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.				
3.				
4. Backfill	1	dump	20	yd

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: Del S Wykoff For USACE
Signature: [signature]
Month 4 Day 6 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza Truck #: 524
Signature: [signature]
Month 4 Day 6 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

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: RANDALL HERRINGTON
Signature: Randall Herrington
Month 4 Day 6 Year 09

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DESIGNATED FACILITY TO GENERATOR

01-08-10
13

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 13

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name: Rhino Environmental Serv.
~~Diamondback Disposal PO Box 2491 Hobbs, NM 88241 (575) 392-9996~~
U.S. EPA ID Number: NA

7. Transporter 2 Company Name: NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff for USACE
Signature:
Month 4 Day 6 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jerry Rivero Truck #: 525
Signature:
Month 4 Day 6 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

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: RANDALL HERRINGTON
Signature: Randall Herrington
Month 4 Day 6 Year 09

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

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DESIGNATED FACILITY TO GENERATOR

01. 08-10
14

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 14

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name: Diamondback Disposal PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name: NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff for USACE
Signature: Dl S Wykoff
Month 4 Day 6 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Zane Trabon Truck #: 01
Signature:
Month 4 Day 6 Year 09
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
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: RANDALL Herrington
Signature: Randall Herrington
Month 4 Day 6 Year 09

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01.09.10
15

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 15

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name: Rhino Enviormental Serv.
~~Diamondback Disposal~~ PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name: NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff For USACE
Signature: [signature]
Month 4 Day 6 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza
Truck #: 524
Signature: Gustavo Esparza
Month 4 Day 06 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Dave Turnbow
Signature: [signature]
Month 4 Day 6 Year 09

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DESIGNATED FACILITY TO GENERATOR

01·09·10
IC

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 16

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Rhino Enviomental
~~Diamondback Disposal~~ PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name
NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff For USACE
Signature:
Month 4 Day 6 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jerry Rivero Truck #: 525
Signature:
Month 4 Day 6 Year 09
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
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: Dave Turnbow
Signature:
Month 4 Day 6 Year 09

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01.10.10
17

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 17

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name
Diamondback Disposal PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name
NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff for USACE
Signature: [signature]
Month 4 Day 6 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Carl Turnbow
Truck #: 01
Signature: [signature]
Month 4 Day 6 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

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: Carl Turnbow
Signature: [signature]
Month 4 Day 6 Year 09

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01.10.10
18

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 18

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

6. Transporter 1 Company Name: Diamondback Disposal PO Box 2491 Hobbs, NM 88241 (575) 392-9996
U.S. EPA ID Number: NA

7. Transporter 2 Company Name: NA
U.S. EPA ID Number: NA

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2.	Clean fill	1	D	20	yd3
3.					
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: DAVE Wykoff for USCE
Signature:
Month 4 Day 9 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Cane Turnbow Truck #: 01
Signature:
Month 4 Day 9 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Brandon Price
Signature:
Month 4 Day 9 Year 09

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01-10-D
19

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 19

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: TOM MATZEN
Signature: Thomas A. Matzen
Month 09 Day 22 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza
Truck #: 524
Signature: Gustavo Esparza
Month 9 Day 22 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Gustavo Esparza
Signature: Gustavo Esparza
Month 9 Day 22 Year 09

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01-10-10
20

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 20

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	~~20~~ 21	yd³
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: TOM MATZEN
Signature: Thomas A. Matzen
Month 9 Day 23 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Esparza Truck #: 524
Signature: Gustavo Esparza
Month 9 Day 23 Year 09

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

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: Gustavo Esparza
Signature: Gustavo Esparza
Month 9 Day 23 Year 09

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

01.10.10
21

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	N/A	1	(800) 762-0241	5034S.01 – 21

GENERATOR

5. Generator's Name and Mailing Address
CAFB
27 SOCES/CEAN
506 N. DL Ingram Ave.
Cannon Air Force Base, NM 88103
Generator's Phone: (575) 784-6391

Generator's Site Address (if different than mailing address)
SWMU 31
CAFB, NM

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

8. Designated Facility Name and Site Address
Rhino's DP 619
8 miles south of Hobbs on Lovington Hwy
Lea County, NM
Facility's Phone: (575) 392-9996 Fax: (575) 392-9376
U.S. EPA ID Number: NA

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1. Non-Hazardous, Non-RCRA Hydrocarbon Impacted Soil	1	Dump	20	yd^3
2. back fill	1	dump	20	yd
3.				
4.				

13. Special Handling Instructions and Additional Information

Cell: Non-Hazardous Petroleum 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/Offeror's Printed/Typed Name: TOM MATZEN
Signature: Thomas A. Matzen
Month 09 Day 21 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gustavo Espana Truck #: 524
Signature: Gustavo Espana
Month 09 Day 22 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

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: Gustavo Espana
Signature: Gustavo Espana
Month 9 Day 22 Year 09

169-BLS-C 5 11979 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

Appendix E
Photograph Log

Date	**Time**	**Direction of View**
04-03-09	1305	NE

Subject

SWMU-31-Concrete pad removed. Note unmarked abandoned conduit

Date	**Time**	**Direction of View**
04-03-09	1305	NE

Subject

SWMU-31-Concrete pad removed. Note plastic sheeting and pea gravel beneath concrete

Date	**Time**	**Direction of View**
04-03-09	1306	NE

Subject

SWMU-31-Concrete pad removed. Note pea gravel beneath concrete

Date	**Time**	**Direction of View**
04-03-09	1306	SW

Subject

SWMU-31-Concrete pad demo continues. This was the old wash pad drain.

Date	**Time**	**Direction of View**
04-07-09	1447	S

Subject

SWMU-31-Excavation – note retaining wall between SWMU-31 and ramp

Date	**Time**	**Direction of View**
04-07-09	1448	SE

Subject

SWMU-31-Excavation to 4 ft depth. Retaining wall between SWMU 31 and ramp

Date	**Time**	**Direction of View**
04-07-09	1509	E

Subject

SWMU-31-Excavation to 4 ft depth. Empty JP-8 fuel tank in background.

Date	**Time**	**Direction of View**
04-07-09	1634	E

Subject

SWMU-31-Excavation –concrete encased sensor wire conduit.

Date	**Time**	**Direction of View**
04-08-09	0839	E

Subject

SWMU-31-Excavation –Oily water leaking from old wash pad drain pipe. Extra soil was excavated to clean this up.

Date	**Time**	**Direction of View**
04-08-09	0839	E

Subject

SWMU-31-Excavation –Oily water leaking from old wash pad drain pipe.

Date	**Time**	**Direction of View**
04-08-09	1511	SW

Subject

SWMU-31-Excavation –Storm water culvert that was discovered to be running through the excavation area. Note smaller pipe beneath – purpose unknown, seems to be abandoned.

Date	**Time**	**Direction of View**
04-08-09	1511	E

Subject

SWMU-31-Excavation –Overview of excavation area note end of stormwater culvert.

Date	**Time**	**Direction of View**
04-08-09	1511	

Subject

SWMU-31-Excavation –Clay drain pipe, possibly an abandoned sewer line?

Date	**Time**	**Direction of View**
04-08-09	1511	NE

Subject

SWMU-31-Excavation –Storm water drain that ran across SWMU 31 area.

Date	**Time**	**Direction of View**
04-08-09	1512	S

Subject

SWMU-31-Excavation –SW corner, concrete covers sensor line conduit. We hand excavated around this in order to preserve it.

Date	**Time**	**Direction of View**
04-10-09	1215	SW

Subject

SWMU-31-Excavation –Overview of excavated area.

Date	**Time**	**Direction of View**
09-15-09	0935	NW

Subject

SWMU-31-Removing vegetation that had grown in over the summer..

Date	Time	Direction of View
09-15-09	1052	S

Subject

SWMU-31-Removing Removing concrete stem wall from around perimeter of SWMU-31 at request of USACE.

Date	**Time**	**Direction of View**
09-16-09	1517	Down and North

Subject

SWMU-31-Structural backfill material. Material is crushed concrete recycled from the south side of the base.

Date	Time	Direction of View
09-16-09	1550	SW

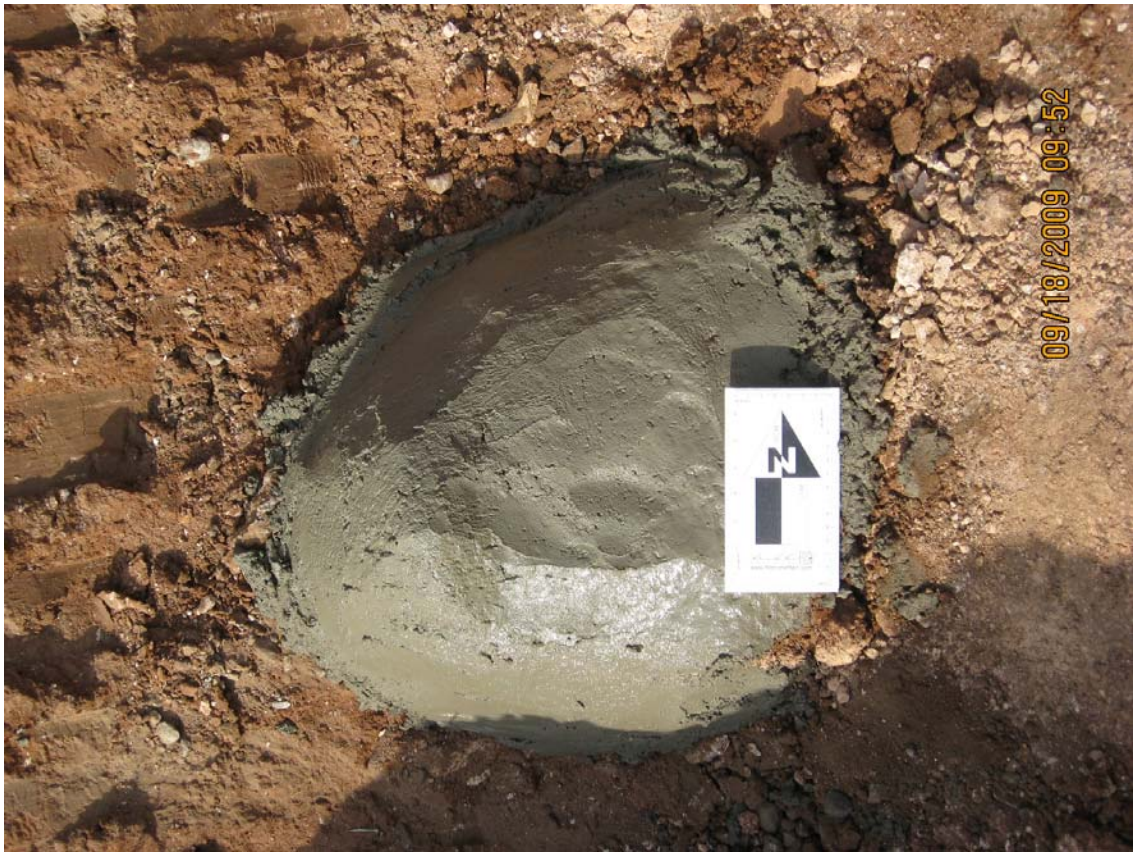
Subject

SWMU-31- Performing additional excavation in east corner where confirmation samples in April of 2009 had indicated that further excavation was required.

Date	**Time**	**Direction of View**
09-16-09	1650	E

Subject

SWMU-31-Additional excavation complete in east corner where confirmation samples in April of 2009 had indicated that further excavation was required. No staining is visible. Confirmation sample containers in lower center.



Date	**Time**	**Direction of View**
09-18-09	10952	Down and north

Subject

SWMU-31 Concrete plug placed in abandoned sewer line

Date	**Time**	**Direction of View**
09-18-09	1343	SE

Subject

SWMU-31 New storm drain culvert installed

Date	**Time**	**Direction of View**
09-21-09	1620	SW

Subject

SWMU-31 Removing additional concrete and soil on the east side of SWMU-31 in order to pave area with asphalt per CAFB request.

Date	**Time**	**Direction of View**
09-22-09	1607	NE

Subject

SWMU-31 Backfilled and working on final grading preparatory to asphalt paving.

Date	**Time**	**Direction of View**
09-22-09	1616	E

Subject

SWMU-31 Checking grade of backfill with level.

Date	**Time**	**Direction of View**
09-23-09	0949	NW

Subject

SWMU-31 Finish grading backfill.

Date	**Time**	**Direction of View**
09-23-09	1003	N

Subject

SWMU-31 Compacting backfill with front-loader.

Date	**Time**	**Direction of View**
09-23-09	1006	N

Subject

SWMU-31 Compacting backfill with vibratory roller.

Date	**Time**	**Direction of View**
09-23-09	1106	NE

Subject

SWMU-31 Testing backfill compaction with nuclear gage.

Appendix F
Confirmation Soil Sample Analytical Data

Lot # D9D090142

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Diesel Range Organics by GC Forms 44
Wet Chemistry Forms 102
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Wet Chemistry Raw Data 459
Percent Moisture 459

Total Number of Pages in this Package 460

Close Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Revised
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

Cannon AFB
Clovis, New Mexico

Lot # D9D090142

Michelle Klinger

North Wind, Inc.
1425 Higham Street
Idaho Falls, ID 83402

Patrick McEntee
Project Manager

April 13, 2009
Revised April 27, 2009

Case Narrative
D9D090142

With the exception of the below mentioned anomalies, standard analytical protocols were followed in the analysis of the samples. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits with any exceptions noted.

The test results presented in this report meet all requirements of NELAC and any exceptions are noted. This report shall not be reproduced, except in full, without written permission from the laboratory.

Sample Receipt
Seventeen solid samples were received under chain of custody by TestAmerica Denver on April 9, 2009.

The cooler temperature at receipt was acceptable at 4.7°C.

All sample containers were received intact.

Chain of Custody number 111748 did not have a "Relinquished by" signature, date or time present.

Gasoline Range Organics, Method SW846 8015B
Gasoline range organics are present in the method blank associated with QC batch 9100200. Because the concentration in the method blank is at a level less than one-half the reporting limit, corrective action is deemed unnecessary.

MS/MSD analyses were not requested for QC batch 9100200.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to analytes present above the linear calibration curve, samples D9B130339-001 and -002 were analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required.

Extractable Petroleum Hydrocarbons C10-C24 & C24-C36, Method SW846 8015B
Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Sample D9D090142-014 exhibited elevated detection limits due elevated final extract volume. The method specified final extract volume is 1 mL; however, sample D9D090142-014 would not concentrate below 5 mL. Sample D9D090142-007 was diluted at the instrument due to high constituent concentration. The reporting limits are elevated accordingly.

The surrogate recovery could not be calculated for samples D9D030151-007 and -014 because the extracts were diluted beyond the ability to quantitate a recovery. The surrogate is flagged “U DIL”.

MS/MSD analyses were not requested for QC batch 9099236.

Percent Moisture, ASTM D 2216-90
The sample duplicate performed on D9D090142-001 was in control.

Revision Changes
The Lot number on the top of page 2 was changed to D9D090142.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which are spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried throughout he entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken form the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, i.e., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
J	The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F	The analyte was positively identified but the associated numerical value is above the MDL and below the RL.
Q	The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.
B	The analyte was found in an associated blank, as well as in the sample.
M	A matrix effect was present.
U, MSB	The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.
U, DIL	The recovery was not calculated because the sample was diluted four times or greater.
N	Inorganics: Spiked analyte recovery is outside stated control limits.
a	Organics: Spiked analyte recovery is outside stated control limits.
*	Surrogate or LCS is outside control limits.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte specific quality control criteria.

METHODS SUMMARY

D9D090142

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Extractable Petroleum Hydrocarbons	SW846 8015B	
Method for Determination of Water Content of Soil	ASTM D 2216-90	ASTM D2216-90
Volatile Petroleum Hydrocarbons	SW846 8015B	SW846 5035

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D9D090142

ANALYTICAL METHOD	ANALYST	ANALYST ID
ASTM D 2216-90	Dave Elkin	000901
SW846 8015B	Brian Ream	000323
SW846 8015B	Heather Dybas	038161

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

Table of Contents

SAMPLE SUMMARY

D9D090142

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
K9T26	001	SWMU31S01	04/08/09	12:00
K9T3D	002	SWMU31S02	04/08/09	12:05
K9T3E	003	SWMU31S03	04/08/09	12:10
K9T3F	004	SWMU31S04	04/08/09	12:15
K9T3G	005	SWMU31S05	04/08/09	12:20
K9T3H	006	SWMU31S06	04/08/09	12:25
K9T3K	007	SWMU31S07	04/08/09	12:30
K9T3M	008	SWMU31S08	04/08/09	12:35
K9T3N	009	SWMU31S09	04/08/09	12:40
K9T3Q	010	SWMU31S10	04/08/09	12:45
K9T3T	011	SWMU31S11	04/08/09	12:50
K9T3V	012	SWMU31S12	04/08/09	12:55
K9T3X	013	SWMU31S13	04/08/09	13:00
K9T31	014	SWMU31S14	04/08/09	13:05
K9T33	015	SWMU31S15	04/08/09	13:10
K9T36	016	SWMU31S16	04/08/09	13:15
K9T37	017	SWMU31S17	04/08/09	13:20

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9D090142

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
002	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
003	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
004	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
005	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
006	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
007	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
008	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
009	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
010	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
011	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

D9D090142

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
012	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
013	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
014	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
015	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
016	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167
017	SO	SW846 8015B		9099236	
	SO	SW846 8015B		9100200	
	SO	ASTM D 2216-90		9099319	9099167

Volatile GC

CLP-Like Forms

Lot ID: D9D090142

Method: SW846 8015B – GRO

Associated Samples: -001 through -017

Batch: 9100200

Table of Contents

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S01
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-001
Matrix:	SOLID	**Lab WorkOrder:**	K9T261AA
% Moisture:	14	**Date/Time Collected:**	04/08/09 12:00
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 15:18
Sample Aliquot:	5.62 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**3.7**	0.38	1.2	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	95	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S02
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-002
Matrix:	SOLID	**Lab WorkOrder:**	K9T3D1AA
% Moisture:	12	**Date/Time Collected:**	04/08/09 12:05
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 15:49
Sample Aliquot:	6.74 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.37	0.37	1.1	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	93	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S03
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-003
Matrix:	SOLID	**Lab WorkOrder:**	K9T3E1AA
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:10
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 16:21
Sample Aliquot:	5.42 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.42**	0.38	1.2	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	94	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S04
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-004
Matrix:	SOLID	**Lab WorkOrder:**	K9T3F1AA
% Moisture:	11	**Date/Time Collected:**	04/08/09 12:15
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 16:52
Sample Aliquot:	4.55 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.40**	0.37	1.1	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	98	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S05
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-005
Matrix:	SOLID	**Lab WorkOrder:**	K9T3G1AA
% Moisture:	5.3	**Date/Time Collected:**	04/08/09 12:20
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 17:24
Sample Aliquot:	5.59 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**2.5**	0.34	1.1	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	100	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S06
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-006
Matrix:	SOLID	**Lab WorkOrder:**	K9T3H1AA
% Moisture:	13	**Date/Time Collected:**	04/08/09 12:25
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 17:55
Sample Aliquot:	5.53 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.41**	0.37	1.1	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	92	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S07
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-007
Matrix:	SOLID	**Lab WorkOrder:**	K9T3K1AA
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:30
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 18:26
Sample Aliquot:	5.46 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**26**	0.38	1.2	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	116	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S08
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-008
Matrix:	SOLID	**Lab WorkOrder:**	K9T3M1AA
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:35
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 18:57
Sample Aliquot:	5.84 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.56**	0.38	1.2	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	90	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S09
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-009
Matrix:	SOLID	**Lab WorkOrder:**	K9T3N1AA
% Moisture:	9.0	**Date/Time Collected:**	04/08/09 12:40
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 19:29
Sample Aliquot:	5.21 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.45**	0.36	1.1	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	92	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S10
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-010
Matrix:	SOLID	**Lab WorkOrder:**	K9T3Q1AA
% Moisture:	11	**Date/Time Collected:**	04/08/09 12:45
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 20:00
Sample Aliquot:	5.92 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.67**	0.36	1.1	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	94	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S11
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-011
Matrix:	SOLID	**Lab WorkOrder:**	K9T3T1AA
% Moisture:	12	**Date/Time Collected:**	04/08/09 12:50
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 21:03
Sample Aliquot:	4.5 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.37	0.37	1.1	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	93	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S12
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-012
Matrix:	SOLID	**Lab WorkOrder:**	K9T3V1AA
% Moisture:	9.7	**Date/Time Collected:**	04/08/09 12:55
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 21:34
Sample Aliquot:	2.98 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**1.3**	0.36	1.1	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	92	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S13
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-013
Matrix:	SOLID	**Lab WorkOrder:**	K9T3X1AA
% Moisture:	16	**Date/Time Collected:**	04/08/09 13:00
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 22:05
Sample Aliquot:	5.64 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**1.2**	0.39	1.2	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	95	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S14
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-014
Matrix:	SOLID	**Lab WorkOrder:**	K9T311AA
% Moisture:	4.8	**Date/Time Collected:**	04/08/09 13:05
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 22:36
Sample Aliquot:	5.25 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**2.4**	0.34	1.1	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	96	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S15
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-015
Matrix:	SOLID	**Lab WorkOrder:**	K9T331AA
% Moisture:	11	**Date/Time Collected:**	04/08/09 13:10
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 23:07
Sample Aliquot:	5.48 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.37	0.37	1.1	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	91	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S16
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-016
Matrix:	SOLID	**Lab WorkOrder:**	K9T361AA
% Moisture:	6.4	**Date/Time Collected:**	04/08/09 13:15
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 23:39
Sample Aliquot:	5.38 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**11**	0.35	1.1	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	99	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S17
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-017
Matrix:	SOLID	**Lab WorkOrder:**	K9T371AA
% Moisture:	6.6	**Date/Time Collected:**	04/08/09 13:20
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/10/09 00:10
Sample Aliquot:	4.69 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**13**	0.35	1.1	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	92	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D100000-200B
Matrix:	SOLID	**Lab WorkOrder:**	K9W7V1AA
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 14:27
Sample Aliquot:	5.01 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.42**	0.32	1.0	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	99	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Surrogate Recovery Summary

Lab Name: TESTAMERICA DENVER **Extraction** A4BKJA4
Lot/SDG Number: D9D090142 **QC Batch ID:** 9100200

Client ID	Work Order	SRG1	SRG2	SRG3	SRG4	SRG5	SRG6	SRG7	SRG8	TOT OUT
SWMU31S01	K9T261AA	95								0
SWMU31S14	K9T311AA	96								0
SWMU31S15	K9T331AA	91								0
SWMU31S16	K9T361AA	99								0
SWMU31S17	K9T371AA	92								0
SWMU31S02	K9T3D1AA	93								0
SWMU31S03	K9T3E1AA	94								0
SWMU31S04	K9T3F1AA	98								0
SWMU31S05	K9T3G1AA	100								0
SWMU31S06	K9T3H1AA	92								0
SWMU31S07	K9T3K1AA	116								0
SWMU31S08	K9T3M1AA	90								0
SWMU31S09	K9T3N1AA	92								0
SWMU31S10	K9T3Q1AA	94								0
SWMU31S11	K9T3T1AA	93								0
SWMU31S12	K9T3V1AA	92								0
SWMU31S13	K9T3X1AA	95								0
INTRA-LAB BLANK	K9W7V1AA	99								0
CHECK SAMPLE	K9W7V1AC	110								0
DUPLICATE CHECK	K9W7V1AD	109								0

Surrogate Number	Surrogate Name	Lower Control Limit	Upper Control Limit
SRG 1	Chlorobenzene	64	148

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D100000-200C
Matrix:	SOLID	**Lab WorkOrder:**	K9W7V1AC
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 13:24
Sample Aliquot:	5 g	**Instrument ID:**	B
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Gasoline Range Organics	5.50	6.89	125		57 - 146

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	110	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D100000-200L
Matrix:	SOLID	**Lab WorkOrder:**	K9W7V1AD
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 10:30
QC Batch ID:	9100200	**Date/Time Analyzed:**	04/09/09 13:56
Sample Aliquot:	5 g	**Instrument ID:**	B
Dilution Factor:	1		

Analyte	True	Found	C	% Rec	Q	RPD	Q	QC Limits	
								% Rec	RPD
Gasoline Range Organics	5.50	6.91		126		0.36		57 - 146	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	109	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Method Blank Summary

Lab Name:	TESTAMERICA DENVER	**Lab File ID:**	116F0801.
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D100000-200B
Matrix:	SOLID	**Lab Work Order:**	K9W7V1AA
Analysis Method:	8015B	**Date/Time Extracted:**	04/09/09 10:30
Extraction Method:	A4BKJA4	**Date/Time Analyzed:**	04/09/09 14:27
QC Batch ID:	9100200	**Instrument ID:**	B

Client ID	Sample Work Order #	Lab File ID	Date Analyzed	Time Analyzed
SWMU31S01	K9T261AA	116F0801.	04/09/09	15:18
SWMU31S14	K9T311AA	214F2201.	04/09/09	22:36
SWMU31S15	K9T331AA	215F2301.	04/09/09	23:07
SWMU31S16	K9T361AA	216F2401.	04/09/09	23:39
SWMU31S17	K9T371AA	301F2501.	04/10/09	00:10
SWMU31S02	K9T3D1AA	201F0901.	04/09/09	15:49
SWMU31S03	K9T3E1AA	202F1001.	04/09/09	16:21
SWMU31S04	K9T3F1AA	203F1101.	04/09/09	16:52
SWMU31S05	K9T3G1AA	204F1201.	04/09/09	17:24
SWMU31S06	K9T3H1AA	205F1301.	04/09/09	17:55
SWMU31S07	K9T3K1AA	206F1401.	04/09/09	18:26
SWMU31S08	K9T3M1AA	207F1501.	04/09/09	18:57
SWMU31S09	K9T3N1AA	208F1601.	04/09/09	19:29
SWMU31S10	K9T3Q1AA	209F1701.	04/09/09	20:00
SWMU31S11	K9T3T1AA	211F1901.	04/09/09	21:03
SWMU31S12	K9T3V1AA	212F2001.	04/09/09	21:34
SWMU31S13	K9T3X1AA	213F2101.	04/09/09	22:05
CHECK SAMPLE	K9W7V1AC C	113F0501.	04/09/09	13:24
DUPLICATE CHECK	K9W7V1AD L	114F0601.	04/09/09	13:56

Report Date : 09-Feb-2009 12:45

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Last Edit : 09-Feb-2009 12:44 pavlakoa

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\112F0801.D
Level 2: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\111F0701.D
Level 3: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\110F0601.D
Level 4: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D
Level 5: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\108F0401.D
Level 6: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\107F0301.D

Compound	20.0000 Level 1	50.0000 Level 2	100.0000 Level 3	200.0000 Level 4	500.0000 Level 5	1000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 2 GRO - C6 to C10	6388	6130	6328	6782	6863	6848	AVRG		6557		4.78875	
S 3 C6 - C12	160531	360106	725181	1541820	3882447	7714423	WLINR	-0.68398	7546		0.99766	1/AM1^2
S 163 GRO (C5-C12)	170146	377989	762994	1625734	4096273	8172973	WLINR	-0.73409	7959		0.99728	1/AM1^2
4 1-Chloro-4-Fluorobenzene	8252	8267	8266	8558	8582	8584	AVRG		8418		2.04177	
$ 1 Trifluorotoluene	8668	8547	8501	8779	8859	8931	AVRG		8714		1.97120	
$ 5 Chlorobenzene	10454	10483	10430	10776	10756	10768	AVRG		10611		1.61425	

AP
2/9/09

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Last Edit : 09-Feb-2009 12:44 pavlakoa

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response
Wt Linear	Amt = b + Rsp/ml	Response

Table of Contents

Report Date: 09-Feb-2009 12:45

Calibration History

Method : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Start Cal Date: 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 20.00000		
05-FEB-2009 17:27	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\112F0801.D
Cal Level: 2 , Cal Amount: 50.00000		
05-FEB-2009 16:55	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\111F0701.D
Cal Level: 3 , Cal Amount: 100.00000		
05-FEB-2009 16:24	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\110F0601.D
Cal Level: 4 , Cal Amount: 200.00000		
05-FEB-2009 15:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D
Cal Level: 5 , Cal Amount: 500.00000		
05-FEB-2009 15:21	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\108F0401.D
Cal Level: 6 , Cal Amount: 1000.00000		
05-FEB-2009 14:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\107F0301.D

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 4

06-FEB-2009 03:54	GRO.A.C5_C12	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\216F2801.D
05-FEB-2009 15:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B/113F0901.D
Report Date: 02/09/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 113F0901.D
Analysis Type: WATER

Injection Date: 05-FEB-2009 17:58
Lab Sample ID: ICV #0037-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\02

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	29.8157	0.6	15.0
162 GRO - C6 to C10	200.0000	223.6824	11.8	15.0
163 GRO (C5-C12)	200.0000	222.8006	11.4	15.0
0 C6 - C12	200.0000	221.8616	10.9	20.0
0 1-Chloro-4-Fluorobenzene	30.0000	28.6257	4.6	15.0
161 Chlorobenzene	30.0000	31.0233	3.4	15.0

Average %D = 7.13

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\040909B1.B/112F0401.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 112F0401.D
Analysis Type: WATER

Injection Date: 09-APR-2009 12:42
Lab Sample ID: CCV #0109-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\04090

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	33.4894	11.6	15.0
162 GRO - C6 to C10	200.0000	178.2966	10.9	15.0
0 1-Chloro-4-Fluorobenzene	30.0000	32.9945	10.0	15.0
161 Chlorobenzene	30.0000	32.3604	7.9	15.0

Average %D = 10.1

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\040909B1.B/210F1801.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 210F1801.D
Analysis Type: WATER

Injection Date: 09-APR-2009 20:31
Lab Sample ID: CCV #0109-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\04090

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D	
139 Trifluorotoluene	30.0000	29.7501	0.8	15.0	
162 GRO - C6 to C10	200.0000	169.1557	15.4	15.0	<-
0 1-Chloro-4-Fluorobenzene	30.0000	28.9415	3.5	15.0	
161 Chlorobenzene	30.0000	28.8237	3.9	15.0	

Average %D = 5.93

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\040909B1.B/302F2601.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 302F2601.D
Analysis Type: WATER

Injection Date: 10-APR-2009 00:41
Lab Sample ID: CCV #0109-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\04090

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	28.8527	3.8	15.0
162 GRO - C6 to C10	200.0000	178.9990	10.5	15.0
0 1-Chloro-4-Fluorobenzene	30.0000	27.9043	7.0	15.0
161 Chlorobenzene	30.0000	28.2181	5.9	15.0

Average %D = 6.81

Sequence: C:\HPCHEM\2\SEQUENCE\B020509.S

Sequence Table (Front Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 105	RT 1 #0045-09				
2	Vial 106	RT 2 #0336-08				
3	Vial 107	L6(1000)#0052-09				
4	Vial 108	L5(500) #0052-09				
5	Vial 109	L4(200) #0052-09				
6	Vial 110	L3(100) #0052-09				
7	Vial 111	L2(50) #0052-09				
8	Vial 112	L1(20) #0052-09				
9	Vial 113	ICV #0037-09				
10	Vial 114	RINSE				
11	Vial 115	LCS #0008-09				
12	Vial 116	LCSD #0008-09				
13	Vial 201	RINSE				
14	Vial 202	RINSE				
15	Vial 203	MB #0034-09 RR				
16	Vial 204	K6FF51A3,176-9 DNR				
17	Vial 205	K6L381AD,176-2				
18	Vial 206	K6L4M1AP,176-3				
19	Vial 207	K6L4R1AP,176-4				
20	Vial 208	K6L4W1AP,176-5				
21	Vial 209	K6L4X1AE,176-6				
22	Vial 210	K6L4X1D4,176-6S				
23	Vial 211	K6L4X1D5,176-6D				
24	Vial 212	K6L5J1AQ,176-7				
25	Vial 213	K6L5L1A3,176-8				
26	Vial 214	RINSE				
27	Vial 215	MB #0034-09				
28	Vial 216	CCV #0049-09				

Sequence Table (Back Injector):

No entries - empty table!

\2\SEQUENCE\B040909B.S

Sequence Table (Front Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 109	RT #0100-09				
2	Vial 110	CCV #0109-09-OUR-out-~~[illegible]~~ 3-10 BP				
3	Vial 111	LCS #0115-09-OUR				
4	Vial 112	CCV #0109-09				
5	Vial 113	LCS #0115-09				
6	Vial 114	LCSD #0115-09				
7	Vial 115	MB #0058-09				
8	Vial 116	K9T261AA,142-1				
9	Vial 201	K9T3D1AA,142-2				
10	Vial 202	K9T3E1AA,142-3				
11	Vial 203	K9T3F1AA,142-4				
12	Vial 204	K9T3G1AA,142-5				
13	Vial 205	K9T3H1AA,142-6				
14	Vial 206	K9T3K1AA,142-7				
15	Vial 207	K9T3M1AA,142-8				
16	Vial 208	K9T3N1AA,142-9				
17	Vial 209	K9T3Q1AA,142-10				
18	Vial 210	CCV #0109-09				
19	Vial 211	K9T3T1AA,142-11				
20	Vial 212	K9T3V1AA,142-12				
21	Vial 213	K9T3X1AA,142-13				
22	Vial 214	K9T311AA,142-14				
23	Vial 215	K9T331AA,142-15				
24	Vial 216	K9T361AA,142-16				
25	Vial 301	K9T371AA,142-17				
26	Vial 302	CCV #0109-09				

9100200

Sequence Table (Back Injector):

No entries - empty table!

Report Date 02/09/2009 Page 1

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RT 1 #0045-09	020509i1.b/105F0101.D	RT 1 #0045-09	No Manual Integrations	
RT 2 #0336-08	020509i1.b/106F0201.D	RT 2 #0336-08	No Manual Integrations	
L6(1000)#0052-0	020509i1.b/107F0301.D	L6(1000)#0052-09	No Manual Integrations	
L5(500) #0052-0	020509i1.b/108F0401.D	L5(500) #0052-09	No Manual Integrations	
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	Trifluorotoluene	BAS
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	Chlorobenzene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	Trifluorotoluene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	Chlorobenzene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	Trifluorotoluene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	Chlorobenzene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	Trifluorotoluene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	Chlorobenzene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	1-Chloro-4-Fluorobenzene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	Trifluorotoluene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	Chlorobenzene	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

4/10

4/10/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RT #0100-09	040909b1.b/109F0101.D	RT #0100-09	No Manual Integrations	
CCV #0109-09	040909b1.b/112F0401.D	CCV #0109-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0109-09	040909b1.b/112F0401.D	CCV #0109-09	Trifluorotoluene	BAS
CCV #0109-09	040909b1.b/112F0401.D	CCV #0109-09	Chlorobenzene	BAS
LCS #0115-09	040909b1.b/113F0501.D	LCS #0115-09	1-Chloro-4-Fluorobenzene	BAS
LCS #0115-09	040909b1.b/113F0501.D	LCS #0115-09	Chlorobenzene	BAS
LCSD #0115-09	040909b1.b/114F0601.D	LCSD #0115-09	1-Chloro-4-Fluorobenzene	BAS
LCSD #0115-09	040909b1.b/114F0601.D	LCSD #0115-09	Chlorobenzene	BAS
MB #0058-09	040909b1.b/115F0701.D	MB #0058-09	No Manual Integrations	
K9T261AA	040909b1.b/116F0801.D	142-1	1-Chloro-4-Fluorobenzene	BAS
K9T261AA	040909b1.b/116F0801.D	142-1	Chlorobenzene	BAS
K9T3D1AA	040909b1.b/201F0901.D	142-2	No Manual Integrations	
K9T3E1AA	040909b1.b/202F1001.D	142-3	No Manual Integrations	
K9T3F1AA	040909b1.b/203F1101.D	142-4	No Manual Integrations	
K9T3G1AA	040909b1.b/204F1201.D	142-5	1-Chloro-4-Fluorobenzene	BAS
K9T3G1AA	040909b1.b/204F1201.D	142-5	Chlorobenzene	BAS
K9T3H1AA	040909b1.b/205F1301.D	142-6	No Manual Integrations	
K9T3K1AA	040909b1.b/206F1401.D	142-7	1-Chloro-4-Fluorobenzene	BAS
K9T3K1AA	040909b1.b/206F1401.D	142-7	Chlorobenzene	BAS
K9T3M1AA	040909b1.b/207F1501.D	142-8	No Manual Integrations	
K9T3N1AA	040909b1.b/208F1601.D	142-9	No Manual Integrations	
K9T3Q1AA	040909b1.b/209F1701.D	142-10	No Manual Integrations	
CCV #0109-09	040909b1.b/210F1801.D	CCV #0109-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0109-09	040909b1.b/210F1801.D	CCV #0109-09	Trifluorotoluene	BAS
CCV #0109-09	040909b1.b/210F1801.D	CCV #0109-09	Chlorobenzene	BAS
K9T3T1AA	040909b1.b/211F1901.D	142-11	No Manual Integrations	
K9T3V1AA	040909b1.b/212F2001.D	142-12	No Manual Integrations	
K9T3X1AA	040909b1.b/213F2101.D	142-13	No Manual Integrations	
K9T311AA	040909b1.b/214F2201.D	142-14	No Manual Integrations	
K9T331AA	040909b1.b/215F2301.D	142-15	No Manual Integrations	
K9T361AA	040909b1.b/216F2401.D	142-16	1-Chloro-4-Fluorobenzene	BAS
K9T361AA	040909b1.b/216F2401.D	142-16	Chlorobenzene	BAS
K9T371AA	040909b1.b/301F2501.D	142-17	No Manual Integrations	
CCV #0109-09	040909b1.b/302F2601.D	CCV #0109-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0109-09	040909b1.b/302F2601.D	CCV #0109-09	Trifluorotoluene	BAS
CCV #0109-09	040909b1.b/302F2601.D	CCV #0109-09	Chlorobenzene	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

B 4/10 YL 4/10/09

Semivolatile GC

CLP-Like Forms

Lot ID: D9D090142

Method: SW846 8015B – DRO (C10– C24), Motor Oil (C24-C36)

Associated Samples: -001 through -017

Batch: 9099236

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S01
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-001
Matrix:	SOLID	**Lab WorkOrder:**	K9T261AC
% Moisture:	14	**Date/Time Collected:**	04/08/09 12:00
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 17:10
Sample Aliquot:	31.77 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.2	1.2	4.7	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.6	4.6	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	66	47	142	
630-02-4	n-Octacosane	75	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S02
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-002
Matrix:	SOLID	**Lab WorkOrder:**	K9T3D1AC
% Moisture:	12	**Date/Time Collected:**	04/08/09 12:05
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 17:38
Sample Aliquot:	29.21 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.1	1.1	4.5	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.4	4.4	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	64	47	142	
630-02-4	n-Octacosane	72	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S03
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-003
Matrix:	SOLID	**Lab WorkOrder:**	K9T3E1AC
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:10
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 18:06
Sample Aliquot:	30.87 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**4.6**	1.2	4.7	F
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**12**	4.6	14	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	67	47	142	
630-02-4	n-Octacosane	73	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S04
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-004
Matrix:	SOLID	**Lab WorkOrder:**	K9T3F1AC
% Moisture:	11	**Date/Time Collected:**	04/08/09 12:15
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 18:33
Sample Aliquot:	29.41 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**24**	1.1	4.5	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**32**	4.4	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	72	47	142	
630-02-4	*n*-Octacosane	74	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S05
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-005
Matrix:	SOLID	**Lab WorkOrder:**	K9T3G1AC
% Moisture:	5.3	**Date/Time Collected:**	04/08/09 12:20
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 19:02
Sample Aliquot:	30.19 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**30**	1.0	4.2	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**88**	4.1	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	78	47	142	
630-02-4	n-Octacosane	85	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S06
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-006
Matrix:	SOLID	**Lab WorkOrder:**	K9T3H1AC
% Moisture:	13	**Date/Time Collected:**	04/08/09 12:25
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 19:30
Sample Aliquot:	30.09 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**8.9**	1.1	4.6	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**11**	4.5	14	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	63	47	142	
630-02-4	n-Octacosane	74	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S07
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-007
Matrix:	SOLID	**Lab WorkOrder:**	K9T3K1AC
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:30
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/10/09 08:02
Sample Aliquot:	30.25 g	**Instrument ID:**	U
Dilution Factor:	5	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**1500**	5.9	24	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	23	23	71	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	0.0	47	142	U DIL
630-02-4	n-Octacosane	0.0	25	162	U DIL

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Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S08
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-008
Matrix:	SOLID	**Lab WorkOrder:**	K9T3M1AC
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:35
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 20:26
Sample Aliquot:	30.22 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.2	1.2	4.7	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.6	4.6	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	59	47	142	
630-02-4	n-Octacosane	76	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
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Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S09
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-009
Matrix:	SOLID	**Lab WorkOrder:**	K9T3N1AC
% Moisture:	9.0	**Date/Time Collected:**	04/08/09 12:40
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 20:54
Sample Aliquot:	31.05 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**8.5**	1.1	4.4	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**21**	4.3	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	67	47	142	
630-02-4	n-Octacosane	67	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S10
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-010
Matrix:	SOLID	**Lab WorkOrder:**	K9T3Q1AC
% Moisture:	11	**Date/Time Collected:**	04/08/09 12:45
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 21:22
Sample Aliquot:	28.93 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**2.9**	1.1	4.5	F
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.4	4.4	13	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	60	47	142	
630-02-4	n-Octacosane	67	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S11
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-011
Matrix:	SOLID	**Lab WorkOrder:**	K9T3T1AC
% Moisture:	12	**Date/Time Collected:**	04/08/09 12:50
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 22:46
Sample Aliquot:	29.84 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.1	1.1	4.5	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.4	4.4	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	66	47	142	
630-02-4	n-Octacosane	78	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S12
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-012
Matrix:	SOLID	**Lab WorkOrder:**	K9T3V1AC
% Moisture:	9.7	**Date/Time Collected:**	04/08/09 12:55
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 23:14
Sample Aliquot:	30.28 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**82**	1.1	4.4	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**150**	4.3	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	75	47	142	
630-02-4	n-Octacosane	112	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S13
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-013
Matrix:	SOLID	**Lab WorkOrder:**	K9T3X1AC
% Moisture:	16	**Date/Time Collected:**	04/08/09 13:00
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 23:42
Sample Aliquot:	30.94 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**17**	1.2	4.7	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**9.0**	4.6	14	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	60	47	142	
630-02-4	n-Octacosane	59	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S14
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-014
Matrix:	SOLID	**Lab WorkOrder:**	K9T311AC
% Moisture:	4.8	**Date/Time Collected:**	04/08/09 13:05
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/10/09 08:30
Sample Aliquot:	29.14 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**250**	1.0	4.2	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**480**	4.1	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	0.0	47	142	U DIL
630-02-4	n-Octacosane	0.0	25	162	U DIL

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S15
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-015
Matrix:	SOLID	**Lab WorkOrder:**	K9T331AC
% Moisture:	11	**Date/Time Collected:**	04/08/09 13:10
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/10/09 00:37
Sample Aliquot:	30.16 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.1	1.1	4.5	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.4	4.4	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	55	47	142	
630-02-4	n-Octacosane	80	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
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Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S16
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-016
Matrix:	SOLID	**Lab WorkOrder:**	K9T361AC
% Moisture:	6.4	**Date/Time Collected:**	04/08/09 13:15
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/10/09 01:05
Sample Aliquot:	30.79 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**71**	1.1	4.3	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**130**	4.2	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	88	47	142	
630-02-4	n-Octacosane	93	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
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Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S17
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-017
Matrix:	SOLID	**Lab WorkOrder:**	K9T371AC
% Moisture:	6.6	**Date/Time Collected:**	04/08/09 13:20
Basis:	Dry	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/10/09 01:33
Sample Aliquot:	31.62 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**50**	1.1	4.3	
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	**94**	4.2	13	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	75	47	142	
630-02-4	n-Octacosane	83	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
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Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090000-236B
Matrix:	SOLID	**Lab WorkOrder:**	K9T7L1AA
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 15:45
Sample Aliquot:	28.51 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	0.99	0.99	4.0	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	3.9	3.9	12	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	64	47	142	
630-02-4	n-Octacosane	75	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Surrogate Recovery Summary

Lab Name: TESTAMERICA DENVER **Extraction** A13KIA4
Lot/SDG Number: D9D090142 **QC Batch ID:** 9099236

Client ID	Work Order	SRG1	SRG2	SRG3	SRG4	SRG5	SRG6	SRG7	SRG8	TOT OUT
SWMU31S01	K9T261AC	75	66							0
SWMU31S14	K9T311AC	121	115							0
SWMU31S15	K9T331AC	80	55							0
SWMU31S16	K9T361AC	93	88							0
SWMU31S17	K9T371AC	83	75							0
SWMU31S02	K9T3D1AC	72	64							0
SWMU31S03	K9T3E1AC	73	67							0
SWMU31S04	K9T3F1AC	74	72							0
SWMU31S05	K9T3G1AC	85	78							0
SWMU31S06	K9T3H1AC	74	63							0
SWMU31S07	K9T3K1AC	0.0	0.0							0
SWMU31S08	K9T3M1AC	76	59							0
SWMU31S09	K9T3N1AC	67	67							0
SWMU31S10	K9T3Q1AC	67	60							0
SWMU31S11	K9T3T1AC	78	66							0
SWMU31S12	K9T3V1AC	112	75							0
SWMU31S13	K9T3X1AC	59	60							0
INTRA-LAB BLANK	K9T7L1AA	75	64							0
CHECK SAMPLE	K9T7L1AC	104	75							0
CHECK SAMPLE	K9T7L1AD	100	75							0

Surrogate Number	Surrogate Name	Lower Control Limit	Upper Control Limit
SRG 1	n-Octacosane	25	162
SRG 2	o-Terphenyl	47	142

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090000-236C
Matrix:	SOLID	**Lab WorkOrder:**	K9T7L1AC
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 16:13
Sample Aliquot:	29.49 g	**Instrument ID:**	U
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Diesel Range Organics (C10-C24)	67.8	59.3	87		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	75	47	142	
630-02-4	n-Octacosane	104	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090000-236C
Matrix:	SOLID	**Lab WorkOrder:**	K9T7L1AD
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/09/09 12:00
QC Batch ID:	9099236	**Date/Time Analyzed:**	04/09/09 16:42
Sample Aliquot:	31.63 g	**Instrument ID:**	U
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
TPH quantitated as Motor Oil(C24-C36)	158	125	79		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	75	47	142	
630-02-4	n-Octacosane	100	25	162	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Method Blank Summary

Lab Name:	TESTAMERICA DENVER	**Lab File ID:**	009B0901.
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090000-236B
Matrix:	SOLID	**Lab Work Order:**	K9T7L1AA
Analysis Method:	8015B	**Date/Time Extracted:**	04/09/09 12:00
Extraction Method:	A13KJA4	**Date/Time Analyzed:**	04/09/09 15:45
QC Batch ID:	9099236	**Instrument ID:**	U

Client ID	Sample Work Order #	Lab File ID	Date Analyzed	Time Analyzed
SWMU31S01	K9T261AC	009B0901.	04/09/09	17:10
SWMU31S14	K9T311AC	042B4201.	04/10/09	08:30
SWMU31S15	K9T331AC	025B2501.	04/10/09	00:37
SWMU31S16	K9T361AC	026B2601.	04/10/09	01:05
SWMU31S17	K9T371AC	027B2701.	04/10/09	01:33
SWMU31S02	K9T3D1AC	010B1001.	04/09/09	17:38
SWMU31S03	K9T3E1AC	011B1101.	04/09/09	18:06
SWMU31S04	K9T3F1AC	012B1201.	04/09/09	18:33
SWMU31S05	K9T3G1AC	013B1301.	04/09/09	19:02
SWMU31S06	K9T3H1AC	014B1401.	04/09/09	19:30
SWMU31S07	K9T3K1AC	041B4101.	04/10/09	08:02
SWMU31S08	K9T3M1AC	016B1601.	04/09/09	20:26
SWMU31S09	K9T3N1AC	017B1701.	04/09/09	20:54
SWMU31S10	K9T3Q1AC	018B1801.	04/09/09	21:22
SWMU31S11	K9T3T1AC	021B2101.	04/09/09	22:46
SWMU31S12	K9T3V1AC	022B2201.	04/09/09	23:14
SWMU31S13	K9T3X1AC	023B2301.	04/09/09	23:42
CHECK SAMPLE	K9T7L1AC C	007B0701.	04/09/09	16:13
CHECK SAMPLE	K9T7L1AD C	008B0801.	04/09/09	16:42

Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\018B1801.D
Level 2: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\017B1701.D
Level 3: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\016B1601.D
Level 4: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\015B1501.D
Level 5: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\014B1401.D
Level 6: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\013B1301.D
Level 7: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\012B1201.D

SEE CALIBRATION HISTORY

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 192 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	WLINR	0.000e+000	0.000e+000		0.000e+000	<-
S 191 C10-C32	1225	1306	1269	1168	1333	1335	1009	AVRG		1235		9.42294	
S 190 C10-C24	1225	1305	1268	1167	1331	1333	1008	AVRG		1234		9.41395	
S 188 C10-C22	1206	1278	1246	1156	1318	1319	999	AVRG		1217		9.26094	

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	30000.0000 Level 7										
S 189 C22-C36	1212	1243	1254	983	998	849					
	887						AVRG		1061		16.25775
S 187 Oklahoma	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 182 C8-C11	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 183 C12-C14	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 186 C8-C30	1288	1566	1311	1183	1348	1347					
	1023						AVRG		1295		12.83732
S 184 C15-C20	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 185 C21-C30	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 181 C28-34	37635	113821	492805	1773731	2693736	4225756	8848489	WLINR	-93.75983	310		0.98631	<-
S 177 C10-38	1227	1306	1269	1168	1333	1335	1009	AVRG		1235		9.41980	
S 178 C10-25	1225	1306	1269	1168	1332	1334	1009	AVRG		1235		9.41788	
S 179 C12-24	1188	1220	1172	1066	1216	1219	921	AVRG		1143		9.78389	
174 C10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
175 C28	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
176 C36	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	30000.0000 Level 7											
S 173 C24-C36	991	1063	1051	818	813	690						
	737						AVRG		881		17.36259	
S 170 Jet Fuel JP4	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+000	0.000e+000		0.000e+000	<-
S 2 Jet Fuel JP-8	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	
S 3 Diesel Range Organics	1225	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.42295	
S 4 C10 - C36	1226	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.42159	
S 180 C25-36	845	916	936	716	701	582						
	605						AVRG		757		18.94941	

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	30000.0000 Level 7										
$ 1 o-Terphenyl	363	1073	5582	31467	57296	123759					
	+++++						LINR	2.03947	1663		0.99413
$ 6 n-Octacosane	1182	1230	1280	1207	1394	1333					
	+++++						AVRG		1271		6.35327

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

Report Date: 10-Mar-2009 05:53

Calibration History

Method : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Start Cal Date: 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration

HF 3/10/09

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
10-MAR-2009 ~~23~~ 01:22	C25-36	018B1801.D
09-MAR-2009 ~~19~~ 20:38	DROICAL	010B1001.D
Cal Level: 2 , Cal Amount: 250.00000		
09-MAR-2009 ~~22~~ 23:54	C25-36	017B1701.D
09-MAR-2009 ~~19~~ 20:10	DROICAL	009B0901.D
Cal Level: 3 , Cal Amount: 1000.00000		
09-MAR-2009 ~~22~~ 23:26	C25-36	016B1601.D
09-MAR-2009 ~~18~~ 19:42	DROICAL	008B0801.D
Cal Level: 4 , Cal Amount: 5000.00000		
09-MAR-2009 ~~21~~ 22:58	C25-36	015B1501.D
09-MAR-2009 ~~18~~ 19:14	DROICAL	007B0701.D
Cal Level: 5 , Cal Amount: 7500.00000		
09-MAR-2009 ~~21~~ 22:30	C25-36	014B1401.D
09-MAR-2009 ~~17~~ 18:46	DROICAL	006B0601.D
Cal Level: 6 , Cal Amount: 15000.00000		
09-MAR-2009 ~~21~~ 22:02	C25-36	013B1301.D
09-MAR-2009 ~~17~~ 18:17	DROICAL	005B0501.D
Cal Level: 7 , Cal Amount: 30000.00000		
09-MAR-2009 ~~20~~ 01:34	C25-36	012B1201.D
09-MAR-2009 ~~16~~ 17:49	DROICAL	004B0401.D

Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 3

10-MAR-2009 23:50	C25-36	019B1901.D
09-MAR-2009 20:06	DROICAL	011B1101.D
09-MAR-2009 22:26	C25-36	016B1601.D
09-MAR-2009 18:42	DROICAL	008B0801.D

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B/011B1101.D
Report Date: 03/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 011B1101.D
Analysis Type: NONE

Injection Date: 09-MAR-2009 20:06
Lab Sample ID: DRO SS GSV026109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
188 C10-C22	1000.0000	983.8328	1.6	15.0
190 C10-C24	1000.0000	1009.1291	0.9	15.0
178 C10-25	1000.0000	1012.4947	1.2	15.0
186 C8-C30	1000.0000	999.4646	0.1	15.0
0 Diesel Range Organics	1000.0000	1015.2504	1.5	15.0
191 C10-C32	1000.0000	1015.3130	1.5	15.0
179 C12-24	1000.0000	1010.4679	1.0	15.0
165 C10 - C36	1000.0000	1015.3824	1.5	15.0
177 C10-38	1000.0000	1015.4458	1.5	15.0
139 o-Terphenyl	5.0000	5.2998	6.0	15.0
162 n-Octacosane	5.0000	5.5098	10.2	15.0

Average %D = 2.47

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/004B0401.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 004B0401.D
Analysis Type: NONE

Injection Date: 09-APR-2009 14:48
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
190 C10-C24	5000.0000	4754.4393	4.9	15.0
0 C10-C28(DRO)	5000.0000	4751.3632	5.0	15.0
165 C10 - C36	5000.0000	4750.9165	5.0	15.0
0 o-Terphenyl	25.0000	21.7049	13.2	15.0
0 n-Octacosane	25.0000	21.7656	12.9	15.0

Average %D = 8.20

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/019B1901.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 019B1901.D
Analysis Type: NONE

Injection Date: 09-APR-2009 21:50
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
190 C10-C24	5000.0000	4728.4713	5.4	15.0
0 C10-C28(DRO)	5000.0000	4725.4862	5.5	15.0
165 C10 - C36	5000.0000	4725.1357	5.5	15.0
0 o-Terphenyl	25.0000	22.2479	11.0	15.0
0 n-Octacosane	25.0000	21.6468	13.4	15.0

Average %D = 8.17

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/028B2801.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 028B2801.D
Analysis Type: NONE

Injection Date: 10-APR-2009 02:01
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D	
190 C10-C24	5000.0000	4687.7809	6.2	15.0	
0 C10-C28(DRO)	5000.0000	4684.7122	6.3	15.0	
165 C10 - C36	5000.0000	4684.1981	6.3	15.0	
0 o-Terphenyl	25.0000	22.0964	11.6	15.0	
0 n-Octacosane	25.0000	21.1141	15.5	15.0	<-

Average %D = 9.20

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/039B3901.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 039B3901.D
Analysis Type: NONE

Injection Date: 10-APR-2009 07:06
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
190 C10-C24	5000.0000	5098.9989	2.0	15.0
0 C10-C28(DRO)	5000.0000	5096.4400	1.9	15.0
165 C10 - C36	5000.0000	5095.8350	1.9	15.0
0 o-Terphenyl	25.0000	23.8240	4.7	15.0
0 n-Octacosane	25.0000	22.9993	8.0	15.0

Average %D = 3.71

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/043B4301.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 043B4301.D
Analysis Type: NONE

Injection Date: 10-APR-2009 08:58
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D	
190 C10-C24	5000.0000	4599.9733	8.0	15.0	
0 C10-C28(DRO)	5000.0000	4597.0901	8.1	15.0	
165 C10 - C36	5000.0000	4596.5669	8.1	15.0	
0 o-Terphenyl	25.0000	22.3195	10.7	15.0	
0 n-Octacosane	25.0000	21.0661	15.7	15.0	<-

Average %D = 10.1

Sequence: C:\HPCHEM\2\SEQUENCE\U030909B.S

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L7 GSV025509				
5	Vial 5	DRO L6 GSV025609				
6	Vial 6	DRO L5 GSV025709				
7	Vial 7	DRO L4 GSV018009				
8	Vial 8	DRO L3 GSV025809				
9	Vial 9	DRO L2 GSV025909				
10	Vial 10	DRO L1 GSV026009				
11	Vial 11	DRO SS GSV026109				
12	Vial 12	RRO L7 GSV029609				
13	Vial 13	RRO L6 GSV029709				
14	Vial 14	RRO L5 GSV029809				
15	Vial 15	RRO L4 GSV029509				
16	Vial 16	RRO L3 GSV029909				
17	Vial 17	RRO L2 GSV030009				
18	Vial 18	RRO L1 GSV030109				
19	Vial 19	RRO SS GSV030209				
20	Vial 20	K74TE1AA,MB				
21	Vial 21	K74TE1AC,LCS				
22	Vial 22	K74TE1AD,LCSD				
23	Vial 23	K68CJ2AE,159-2				
24	Vial 24	K68CQ1AP,159-3S				
25	Vial 25	K68CQ1AQ,159-3D				
26	Vial 26	K68CQ2AE,159-3				
27	Vial 27	K68CV2AE,159-4				
28	Vial 28	K7AQ02AE,223-1				
29	Vial 29	K7AQ72AE,223-3				
30	Vial 30	DRO L4 GSV018009				
31	Vial 31	RRO L4 GSV029509				
32	Vial 32	K7ARA2AE,223-4				
33	Vial 33	K7ARE2AE,223-5				
34	Vial 34	K7ARM2AE,223-7				
35	Vial 35	K7ARW2AE,223-8				
36	Vial 36	DRO L4 GSV018009				
37	Vial 37	RRO L4 GSV029509				

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L4 GSV045109				
5	Vial 5	RRO L4 GSV43009				
6	Vial 6	K9T7L1AA,MB				
7	Vial 7	K9T7L1AC,LCS				
8	Vial 8	K9T7L1AD,RRO				
9	Vial 9	K9T261AC,142-1				
10	Vial 10	K9T3D1AC,142-2				
11	Vial 11	K9T3E1AC,142-3				
12	Vial 12	K9T3F1AC,142-4				
13	Vial 13	K9T3G1AC,142-5				
14	Vial 14	K9T3H1AC,142-6				
15	Vial 15	K9T3K1AC,142-7 RRSY				
16	Vial 16	K9T3M1AC,142-8				
17	Vial 17	K9T3N1AC,142-9				
18	Vial 18	K9T3Q1AC,142-10				
19	Vial 19	DRO L4 GSV045109				
20	Vial 20	RRO L4 GSV43009				
21	Vial 21	K9T3T1AC,142-11				
22	Vial 22	K9T3V1AC,142-12				
23	Vial 23	K9T3X1AC,142-13				
24	Vial 24	K9T311AC,142-14 RRLY				5
25	Vial 25	K9T331AC,142-15				
26	Vial 26	K9T361AC,142-16				
27	Vial 27	K9T371AC,142-17				
28	Vial 28	DRO L4 GSV045109				
29	Vial 29	RRO L4 GSV43009				
30	Vial 30	K9P0T1AA,MB				
31	Vial 31	K9P0T1AC,LCS				
32	Vial 32	K9P0T1AD,LCSD				
33	Vial 33	K9N8R1AU,176-2				
34	Vial 34	K9N881AM,176-3				
35	Vial 35	K9N9M1AU,176-10				
36	Vial 36	K9N9Q1A0,176-11				
37	Vial 37	K9N921A6,176-16				
38	Vial 38	K9N951A0,176-17				
39	Vial 39	DRO L4 GSV045109				
40	Vial 40	RRO L4 GSV43009				
41	Vial 41	K9T3K1AC,142-7				5
42	Vial 42	K9T311AC,142-14				1
43	Vial 43	DRO L4 GSV045109				
44	Vial 44	RRO L4 GSV43009				

Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\018B1801.D
Level 2: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\017B1701.D
Level 3: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\016B1601.D
Level 4: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\015B1501.D
Level 5: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\014B1401.D
Level 6: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\013B1301.D
Level 7: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\012B1201.D

SEE CALIBRATION HISTORY

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
S 192 Bunker C	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	WLINR	0.000e+000	0.000e+000		0.000e+000 <-
S 191 C10-C32	1225 / 1009	1306	1269	1168	1333	1335	AVRG		1235		9.42294
S 190 C10-C24	1225 / 1008	1305	1268	1167	1331	1333	AVRG		1234		9.41395
S 188 C10-C22	1206 / 999	1278	1246	1156	1318	1319	AVRG		1217		9.26094

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Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
S 189 C22-C36	1212	1243	1254	983	998	849	887	AVRG		1061		16.25775
S 187 Oklahoma	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 182 C8-C11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 183 C12-C14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 186 C8-C30	1288	1566	1311	1183	1348	1347	1023	AVRG		1295		12.83732
S 184 C15-C20	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 185 C21-C30	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000

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Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 181 C28-34	37635	113821	492805	1773731	2693736	4225756						1/x
	8848489						WLINR	-93.75983	310		0.98631	<- r=0.993
S 177 C10-38	1227	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.41980	
S 178 C10-25	1225	1306	1269	1168	1332	1334						
	1009						AVRG		1235		9.41788	
S 179 C12-24	1188	1220	1172	1066	1216	1219						
	921						AVRG		1143		9.78389	
174 C10	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
175 C28	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
176 C36	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 173 C24-C36	991	1063	1051	818	813	690	737	AVRG		881		17.36259	
S 170 Jet Fuel JP4	+++++	+++++	+++++	+++++	+++++	+++++	+++++	LINR	0.000e+000	0.000e+000		0.000e+000	<-
S 2 Jet Fuel JP-8	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000	
S 3 Diesel Range Organics	1225	1306	1269	1168	1333	1335	1009	AVRG		1235		9.42295	
S 4 C10 - C36	1226	1306	1269	1168	1333	1335	1009	AVRG		1235		9.42159	
S 180 C25-36	845	916	936	716	701	582	605	AVRG		757		18.94941	

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Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 1 o-Terphenyl	363	1073	5582	31467	57296	123759					
	+++++						LINR	2.03947	1663		0.99413
$ 6 n-Octacosane	1182	1230	1280	1207	1394	1333					
	+++++						AVRG		1271		6.35327

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
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Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

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Report Date: 10-Mar-2009 06:05

Calibration History

Method : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Start Cal Date: 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration HF 3/10/09

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
10-MAR-2009 ~~23~~:22	C25-36	018B1801.D
09-MAR-2009 ~~19~~:38	DROICAL	010B1001.D
Cal Level: 2 , Cal Amount: 250.00000		
09-MAR-2009 ~~22~~:54	C25-36	017B1701.D
09-MAR-2009 ~~19~~:10	DROICAL	009B0901.D
Cal Level: 3 , Cal Amount: 1000.00000		
09-MAR-2009 ~~22~~:26	C25-36	016B1601.D
09-MAR-2009 ~~18~~:42	DROICAL	008B0801.D
Cal Level: 4 , Cal Amount: 5000.00000		
09-MAR-2009 ~~21~~:58	C25-36	015B1501.D
09-MAR-2009 ~~18~~:14	DROICAL	007B0701.D
Cal Level: 5 , Cal Amount: 7500.00000		
09-MAR-2009 ~~21~~:30	C25-36	014B1401.D
09-MAR-2009 ~~17~~:46	DROICAL	006B0601.D
Cal Level: 6 , Cal Amount: 15000.00000		
09-MAR-2009 ~~21~~:02	C25-36	013B1301.D
09-MAR-2009 ~~17~~:17	DROICAL	005B0501.D
Cal Level: 7 , Cal Amount: 30000.00000		
09-MAR-2009 ~~20~~:34	C25-36	012B1201.D
09-MAR-2009 ~~16~~:49	DROICAL	004B0401.D

Continuing Calibration

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Ccal Level Mode: GLOBAL LEVEL 4

10-MAR-2009 23:50	C25-36	019B1901.D
09-MAR-2009 22:26	C25-36	016B1601.D
09-MAR-2009 20:06	DROICAL	011B1101.D
09-MAR-2009 18:42	DROICAL	008B0801.D

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B/019B1901.D
Report Date: 03/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 019B1901.D
Analysis Type: NONE

Injection Date: 10-MAR-2009 23:50
Lab Sample ID: RRO SS GSV030209
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	1000.0000	947.1579	5.3	15.0
173 C24-C36	1000.0000	921.2974	7.9	15.0
180 C25-36	1000.0000	897.8620	10.2	15.0
181 C28-34	1000.0000	913.1193	8.7	15.0

Average %D = 8.01

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/005B0501.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 005B0501.D
Analysis Type: NONE

Injection Date: 09-APR-2009 15:17
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4647.2466	7.1	15.0
173 C24-C36	5000.0000	4589.4252	8.2	15.0
180 C25-36	5000.0000	4471.2771	10.6	15.0
181 C28-34	5000.0000	5229.3900	4.6	15.0

Average %D = 7.61

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/020B2001.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 020B2001.D
Analysis Type: NONE

Injection Date: 09-APR-2009 22:18
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4674.2861	6.5	15.0
173 C24-C36	5000.0000	4567.7684	8.6	15.0
180 C25-36	5000.0000	4678.1519	6.4	15.0
181 C28-34	5000.0000	5361.5536	7.2	15.0

Average %D = 7.21

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/029B2901.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 029B2901.D
Analysis Type: NONE

Injection Date: 10-APR-2009 02:29
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4872.3498	2.6	15.0
173 C24-C36	5000.0000	4776.8301	4.5	15.0
180 C25-36	5000.0000	4761.9981	4.8	15.0
181 C28-34	5000.0000	5510.3205	10.2	15.0

Average %D = 5.50

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/040B4001.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 040B4001.D
Analysis Type: NONE

Injection Date: 10-APR-2009 07:34
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4853.8063	2.9	15.0
173 C24-C36	5000.0000	4753.5004	4.9	15.0
180 C25-36	5000.0000	4834.1637	3.3	15.0
181 C28-34	5000.0000	5183.9669	3.7	15.0

Average %D = 3.71

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0409091.B/044B4401.D
Report Date: 04/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 044B4401.D
Analysis Type: NONE

Injection Date: 10-APR-2009 09:25
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\040909

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4703.7997	5.9	15.0
173 C24-C36	5000.0000	4619.4964	7.6	15.0
180 C25-36	5000.0000	4689.0732	6.2	15.0
181 C28-34	5000.0000	5251.4910	5.0	15.0

Average %D = 6.20

Sequence: C:\HPCHEM\2\SEQUENCE\U030909B.S

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L7 GSV025509				
5	Vial 5	DRO L6 GSV025609				
6	Vial 6	DRO L5 GSV025709				
7	Vial 7	DRO L4 GSV018009				
8	Vial 8	DRO L3 GSV025809				
9	Vial 9	DRO L2 GSV025909				
10	Vial 10	DRO L1 GSV026009				
11	Vial 11	DRO SS GSV026109				
12	Vial 12	RRO L7 GSV029609				
13	Vial 13	RRO L6 GSV029709				
14	Vial 14	RRO L5 GSV029809				
15	Vial 15	RRO L4 GSV029509				
16	Vial 16	RRO L3 GSV029909				
17	Vial 17	RRO L2 GSV030009				
18	Vial 18	RRO L1 GSV030109				
19	Vial 19	RRO SS GSV030209				
20	Vial 20	K74TE1AA,MB				
21	Vial 21	K74TE1AC,LCS				
22	Vial 22	K74TE1AD,LCSD				
23	Vial 23	K68CJ2AE,159-2				
24	Vial 24	K68CQ1AP,159-3S				
25	Vial 25	K68CQ1AQ,159-3D				
26	Vial 26	K68CQ2AE,159-3				
27	Vial 27	K68CV2AE,159-4				
28	Vial 28	K7AQ02AE,223-1				
29	Vial 29	K7AQ72AE,223-3				
30	Vial 30	DRO L4 GSV018009				
31	Vial 31	RRO L4 GSV029509				
32	Vial 32	K7ARA2AE,223-4				
33	Vial 33	K7ARE2AE,223-5				
34	Vial 34	K7ARM2AE,223-7				
35	Vial 35	K7ARW2AE,223-8				
36	Vial 36	DRO L4 GSV018009				
37	Vial 37	RRO L4 GSV029509				

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L4 GSV045109				
5	Vial 5	RRO L4 GSV43009				
6	Vial 6	K9T7L1AA,MB				
7	Vial 7	K9T7L1AC,LCS				
8	Vial 8	K9T7L1AD,RRO				
9	Vial 9	K9T261AC,142-1				
10	Vial 10	K9T3D1AC,142-2				
11	Vial 11	K9T3E1AC,142-3				
12	Vial 12	K9T3F1AC,142-4				
13	Vial 13	K9T3G1AC,142-5				
14	Vial 14	K9T3H1AC,142-6				
15	Vial 15	K9T3K1AC,142-7 RR54				
16	Vial 16	K9T3M1AC,142-8				
17	Vial 17	K9T3N1AC,142-9				
18	Vial 18	K9T3Q1AC,142-10				
19	Vial 19	DRO L4 GSV045109				
20	Vial 20	RRO L4 GSV43009				
21	Vial 21	K9T3T1AC,142-11				
22	Vial 22	K9T3V1AC,142-12				
23	Vial 23	K9T3X1AC,142-13				
24	Vial 24	K9T311AC,142-14 RR14				5
25	Vial 25	K9T331AC,142-15				
26	Vial 26	K9T361AC,142-16				
27	Vial 27	K9T371AC,142-17				
28	Vial 28	DRO L4 GSV045109				
29	Vial 29	RRO L4 GSV43009				
30	Vial 30	K9P0T1AA,MB				
31	Vial 31	K9P0T1AC,LCS				
32	Vial 32	K9P0T1AD,LCSD				
33	Vial 33	K9N8R1AU,176-2				
34	Vial 34	K9N881AM,176-3				
35	Vial 35	K9N9M1AU,176-10				
36	Vial 36	K9N9Q1A0,176-11				
37	Vial 37	K9N921A6,176-16				
38	Vial 38	K9N951A0,176-17				
39	Vial 39	DRO L4 GSV045109				
40	Vial 40	RRO L4 GSV43009				
41	Vial 41	K9T3K1AC,142-7				5
42	Vial 42	K9T311AC,142-14				1
43	Vial 43	DRO L4 GSV045109				
44	Vial 44	RRO L4 GSV43009				

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L7 GSV02550	030909b1.b/004B0401.D	DRO L7 GSV025509	o-Terphenyl	BAS
DRO L6 GSV02560	030909b1.b/005B0501.D	DRO L6 GSV025609	o-Terphenyl	BAS
DRO L5 GSV02570	030909b1.b/006B0601.D	DRO L5 GSV025709	o-Terphenyl	BAS
DRO L4 GSV01800	030909b1.b/007B0701.D	DRO L4 GSV018009	o-Terphenyl	BAS
DRO L3 GSV02580	030909b1.b/008B0801.D	DRO L3 GSV025809	o-Terphenyl	BAS
DRO L2 GSV02590	030909b1.b/009B0901.D	DRO L2 GSV025909	o-Terphenyl	BAS
DRO L1 GSV02600	030909b1.b/010B1001.D	DRO L1 GSV026009	o-Terphenyl	BAS
DRO SS GSV02610	030909b1.b/011B1101.D	DRO SS GSV026109	o-Terphenyl	BAS
RRO L7 GSV02960	030909b1.b/012B1201.D	RRO L7 GSV029609	No Manual Integrations	
RRO L6 GSV02970	030909b1.b/013B1301.D	RRO L6 GSV029709	No Manual Integrations	
RRO L5 GSV02980	030909b1.b/014B1401.D	RRO L5 GSV029809	No Manual Integrations	
RRO L4 GSV02950	030909b1.b/015B1501.D	RRO L4 GSV029509	No Manual Integrations	
RRO L3 GSV02990	030909b1.b/016B1601.D	RRO L3 GSV029909	No Manual Integrations	
RRO L2 GSV03000	030909b1.b/017B1701.D	RRO L2 GSV030009	No Manual Integrations	
RRO L1 GSV03010	030909b1.b/018B1801.D	RRO L1 GSV030109	No Manual Integrations	
RRO SS GSV03020	030909b1.b/019B1901.D	RRO SS GSV030209	No Manual Integrations	

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

HF 4/9/09

YG 4/10/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L4 GSV04510	0409091.b/004B0401.D	DRO L4 GSV045109	o-Terphenyl	BAS
RRO L4 GSV43009	0409091.b/005B0501.D	RRO L4 GSV43009	No Manual Integrations	
K9T7L1AA	0409091.b/006B0601.D	MB	No Manual Integrations	
K9T7L1AC	0409091.b/007B0701.D	LCS	o-Terphenyl	BAS
K9T7L1AD	0409091.b/008B0801.D	RRO	n-Octacosane	BAS
K9T7L1AD	0409091.b/008B0801.D	RRO	o-Terphenyl	BAS
K9T261AC	0409091.b/009B0901.D	142-1	n-Octacosane	BAS
K9T3D1AC	0409091.b/010B1001.D	142-2	No Manual Integrations	
K9T3E1AC	0409091.b/011B1101.D	142-3	n-Octacosane	BAS
K9T3E1AC	0409091.b/011B1101.D	142-3	o-Terphenyl	BAS
K9T3F1AC	0409091.b/012B1201.D	142-4	n-Octacosane	BAS
K9T3F1AC	0409091.b/012B1201.D	142-4	o-Terphenyl	BAS
K9T3G1AC	0409091.b/013B1301.D	142-5	n-Octacosane	BAS
K9T3G1AC	0409091.b/013B1301.D	142-5	o-Terphenyl	BAS
K9T3H1AC	0409091.b/014B1401.D	142-6	n-Octacosane	BAS
K9T3H1AC	0409091.b/014B1401.D	142-6	o-Terphenyl	BAS
K9T3M1AC	0409091.b/016B1601.D	142-8	No Manual Integrations	
K9T3N1AC	0409091.b/017B1701.D	142-9	n-Octacosane	BAS
K9T3N1AC	0409091.b/017B1701.D	142-9	o-Terphenyl	BAS
K9T3Q1AC	0409091.b/018B1801.D	142-10	n-Octacosane	BAS
K9T3Q1AC	0409091.b/018B1801.D	142-10	o-Terphenyl	BAS
DRO L4 GSV04510	0409091.b/019B1901.D	DRO L4 GSV045109	o-Terphenyl	BAS
RRO L4 GSV43009	0409091.b/020B2001.D	RRO L4 GSV43009	No Manual Integrations	
K9T3T1AC	0409091.b/021B2101.D	142-11	No Manual Integrations	
K9T3V1AC	0409091.b/022B2201.D	142-12	n-Octacosane	BAS
K9T3V1AC	0409091.b/022B2201.D	142-12	o-Terphenyl	BAS
K9T3X1AC	0409091.b/023B2301.D	142-13	n-Octacosane	BAS
K9T3X1AC	0409091.b/023B2301.D	142-13	o-Terphenyl	BAS
K9T331AC	0409091.b/025B2501.D	142-15	No Manual Integrations	
K9T361AC	0409091.b/026B2601.D	142-16	n-Octacosane	BAS
K9T361AC	0409091.b/026B2601.D	142-16	o-Terphenyl	BAS
K9T371AC	0409091.b/027B2701.D	142-17	n-Octacosane	BAS
K9T371AC	0409091.b/027B2701.D	142-17	o-Terphenyl	BAS
DRO L4 GSV04510	0409091.b/028B2801.D	DRO L4 GSV045109	o-Terphenyl	BAS
RRO L4 GSV43009	0409091.b/029B2901.D	RRO L4 GSV43009	No Manual Integrations	
DRO L4 GSV04510	0409091.b/039B3901.D	DRO L4 GSV045109	o-Terphenyl	BAS

Legend

BAS - Baseline Event
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yl 4/10/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RRO L4 GSV43009	0409091.b/040B4001.D	RRO L4 GSV43009	No Manual Integrations	
K9T3K1AC	0409091.b/041B4101.D	142-7	No Manual Integrations	
K9T311AC	0409091.b/042B4201.D	142-14	n-Octacosane	BAS
K9T311AC	0409091.b/042B4201.D	142-14	o-Terphenyl	BAS
DRO L4 GSV04510	0409091.b/043B4301.D	DRO L4 GSV045109	o-Terphenyl	BAS
RRO L4 GSV43009	0409091.b/044B4401.D	RRO L4 GSV43009	No Manual Integrations	

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

gk 4/10/09

General Chemistry

CLP-Like Forms

Lot ID: D9D090142

Methods: ASTM D 2216-90

Associated Samples: -001 through -017

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S01
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-001
Matrix:	SOLID	**Lab WorkOrder:**	K9T26
% Moisture:	14	**Date/Time Collected:**	04/08/09 12:00
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	18.09 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**14**	0.0	0.10	

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North Wind, Inc.

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S02
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-002
Matrix:	SOLID	**Lab WorkOrder:**	K9T3D
% Moisture:	12	**Date/Time Collected:**	04/08/09 12:05
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	18.51 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**12**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S03
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-003
Matrix:	SOLID	**Lab WorkOrder:**	K9T3E
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:10
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.77 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**15**	0.0	0.10	

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North Wind, Inc.
Cannon AFB, New Mexico
Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S04
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-004
Matrix:	SOLID	**Lab WorkOrder:**	K9T3F
% Moisture:	11	**Date/Time Collected:**	04/08/09 12:15
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	17.46 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**11**	0.0	0.10	

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North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S05
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-005
Matrix:	SOLID	**Lab WorkOrder:**	K9T3G
% Moisture:	5.3	**Date/Time Collected:**	04/08/09 12:20
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.69 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**5.3**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S06
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-006
Matrix:	SOLID	**Lab WorkOrder:**	K9T3H
% Moisture:	13	**Date/Time Collected:**	04/08/09 12:25
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	15.59 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**13**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S07
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-007
Matrix:	SOLID	**Lab WorkOrder:**	K9T3K
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:30
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.04 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**15**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S08
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-008
Matrix:	SOLID	**Lab WorkOrder:**	K9T3M
% Moisture:	15	**Date/Time Collected:**	04/08/09 12:35
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	18.39 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**15**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S09
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-009
Matrix:	SOLID	**Lab WorkOrder:**	K9T3N
% Moisture:	9.0	**Date/Time Collected:**	04/08/09 12:40
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.5 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**9.0**	0.0	0.10	

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North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S10
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-010
Matrix:	SOLID	**Lab WorkOrder:**	K9T3Q
% Moisture:	11	**Date/Time Collected:**	04/08/09 12:45
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.88 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**11**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S11
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-011
Matrix:	SOLID	**Lab WorkOrder:**	K9T3T
% Moisture:	12	**Date/Time Collected:**	04/08/09 12:50
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.21 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**12**	0.0	0.10	

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North Wind, Inc.

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S12
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-012
Matrix:	SOLID	**Lab WorkOrder:**	K9T3V
% Moisture:	9.7	**Date/Time Collected:**	04/08/09 12:55
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	17.5 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**9.7**	0.0	0.10	

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Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S13
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-013
Matrix:	SOLID	**Lab WorkOrder:**	K9T3X
% Moisture:	16	**Date/Time Collected:**	04/08/09 13:00
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.23 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**16**	0.0	0.10	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S14
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-014
Matrix:	SOLID	**Lab WorkOrder:**	K9T31
% Moisture:	4.8	**Date/Time Collected:**	04/08/09 13:05
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	17.61 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**4.8**	0.0	0.10	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S15
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-015
Matrix:	SOLID	**Lab WorkOrder:**	K9T33
% Moisture:	11	**Date/Time Collected:**	04/08/09 13:10
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	15.89 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**11**	0.0	0.10	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S16
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-016
Matrix:	SOLID	**Lab WorkOrder:**	K9T36
% Moisture:	6.4	**Date/Time Collected:**	04/08/09 13:15
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	17.19 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**6.4**	0.0	0.10	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S17
Lot/SDG Number:	D9D090142	**Lab Sample ID:**	D9D090142-017
Matrix:	SOLID	**Lab WorkOrder:**	K9T37
% Moisture:	6.6	**Date/Time Collected:**	04/08/09 13:20
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
Sample Aliquot:	16.25 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Dave Elkin	DE	**6.6**	0.0	0.10	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S01 DUP
Lot/SDG Number:	D9D090142	**MSD Lab Sample ID:**	D9D090142-001X
Matrix:	SOLID	**MSD Lab WorkOrder:**	K9T26
% Moisture:	14	**Date/Time Collected:**	04/08/09 12:00
Basis:	Wet	**Date/Time Received:**	04/09/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/09/09 14:00
QC Batch ID:	9099319	**Date/Time Analyzed:**	04/09/09 14:00
MSD Sample Aliquot:	17.2 g	**Instrument ID:**	BAL
MSD Dilution Factor:	1		

Analyte	RPD Limit	Sample Result	C	Duplicate Result	C	RPD	Q
Percent Moisture	15	14		14		5.0	

TestAmerica Denver

Sample Receiving Checklist

Lot #: D9D090142 Date/Time Received: 4/9/09 0900

Company Name & Sampling Site: North Wind - Cannon

PM to Complete This Section: *Yes* *No*
Residual chlorine check required: ☐ ☑

Quarantined : *Yes* ☐ *No* ☑

Quote #: E2143

A = 4/10
R 4/10

Special Instructions:

Time Zone:
• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER NM

Unpacking Checks:

Cooler #(s): _____ _____ _____ _____ _____ _____ _____ _____

Temperatures (°C): 4.7° _____ _____ _____ _____ _____ _____ _____

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	
	☑	☐	2. Coolers scanned for radiation. Is the reading ≤ to background levels? Yes: ✓ No:____	
	☑	☐	3. Chain of custody present? If no, document on CUR.	
	☐	☑	4. Bottles broken and/or are leaking? If yes, document on CUR.	
	☐	☑	5. Multiphasic samples obvious? If yes, document on CUR.	
	☑	☐	6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.	
☑	☐	☐	7. pH of all samples checked and meet requirements? If no, document on CUR.	
	☑	☐	8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
	☑	☐	9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
☑	☐	☐	10. Were VOA samples without headspace? If no, document on CUR.	
☑	☐	☐	11. Were VOA vials preserved? Preservative ☐HCl ☐4±2°C ☐Sodium Thiosulfate ☐ Ascorbic Acid	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
☑	☐	☐	15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☐	☑	16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☐	☑	17. Are analyses with short holding times requested?	
	☑	☐	18. Was a quick Turn Around (TAT) requested?	

TestAmerica Denver

Sample Receiving Checklist

Lot # D9D090142

Login Checks:

Initials

N/A	Yes	No		
	☑	☐	19.	Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.
☑	☐	☐	20.	Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
	☑	☐	21.	Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?
☐	☑	☐	22.	Were special log in instructions read and followed?
☑	☐	☐	23.	Were AFCEE metals logged for refrigerated storage?
	☑	☐	24.	Were tests logged checked against the COC? Which samples were confirmed? 1
☐	☑	☐	25.	Was a Rush form completed for quick TAT?
☑	☐	☐	26.	Was a Short Hold form completed for any short holds?
	☐	☑	27.	Were special archiving instructions indicated in the General Comments? If so, what were they?

Labeling and Storage Checks:

Initials

☑	☐	☐	28.	Was the subcontract COC signed and sent with samples to bottle prep?
	☑	☐	29.	Were sample labels double-checked by a second person?
☑	☐	☐	30.	Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
	☑	☐	31.	Did the sample ID, Date, and Time from label match what was logged?
☑	☐	☐	32.	Were stickers for special archiving instructions affixed to each box? See #27
☑	☐	☐	33.	Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

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FedEx Express *US Airbill*

8681 9332 6350

0200 Form ID No.

FedEx Retrieval Copy

1 From

Date 4-8-09 Sender's FedEx Account Number 1823-2015-3

Sender's Name DAVE Wytoff Phone 505 577-9541

Company North Wind

Address 1350 Central AVE

Dept./Floor/Suite/Room

City Los Alamos State NM ZIP 87544

2 Your Internal Billing Reference

3 To

Recipient's Name Pat McEntee Phone 303 736-0107

Company Test AmricA

Recipient's Address 4955 Yarrow St

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City Arvada State CO ZIP 80002

8681 9332 6350

4a Express Package Service *Packages up to 150 lbs.*

1 [✓] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

5 [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

6 [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

3 [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

7 [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

8 [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

83 [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

5 Packaging

6 [ ] FedEx Envelope* 2 [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. 3 [ ] FedEx Box 4 [ ] FedEx Tube 1 [✓] Other

* Declared Value limit $500.

6 Special Handling — Include FedEx address in Section 3.

3 [ ] **SATURDAY Delivery** — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.

1 [ ] **HOLD Weekday** at FedEx Location — Not available for FedEx First Overnight.

31 [ ] **HOLD Saturday** at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

[ ] No 4 [ ] Yes — As per attached Shipper's Declaration. [ ] Yes — Shipper's Declaration not required. 6 [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

1 [✓] Sender — Acct. No. in Section 1 will be billed. 2 [ ] Recipient 3 [ ] Third Party 4 [ ] Credit Card 5 [ ] Cash/Check — Obtain Recip. Acct. No. [ ]

[redacted]

Total Packages 1 Total Weight 115 [redacted]

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details. Credit Card Auth.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

[ ] No Signature Required — Package may be left without obtaining a signature for delivery. 10 [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.* 34 [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

520

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Chain of Custody Record

4.7°C
CAK
4/9/09
IR1

Sampler ID _____

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client: North Wind	Project Manager: Tom Matzen	Date: 4-8-09	Chain of Custody Number: 111747
Address	Telephone Number (Area Code)/Fax Number: 785-760-6617	Lab Number	Page 1 of 2
City / State / Zip Code	Site Contact	Lab Contact	
Project Name and Location (State): CANNON Air Force Base SWMU-31	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis: THP GRO	THP DRO/GRO
SWMU31501	4-8-09	1200				✓		1						2	X	X
SWMU31502		1205				✓		1						2	X	X
SWMU31503		1210				✓		1						2	X	X
SWMU31504		1215				✓		1						2	X	X
SWMU31505		1220				✓		1						2	X	X
SWMU31506		1225				✓		1						2	X	X
SWMU31507		1230				✓		1						2	X	X
SWMU31508		1235				✓		1						2	X	X
SWMU31509		1240				✓		1						2	X	X
SWMU31510		1245				✓		1						2	X	X
SWMU31511		1250				✓		1						2	X	X
SWMU31512		1255				✓		1						2	X	X

Special Instructions/ Conditions of Receipt

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☑ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]			1. Received By: [signature]	4/9/09	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: Shipped Fed Ex Priority Over Nite

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Table of Contents

Chain of Custody Record

Sampler ID _____

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client: North Wind	Project Manager: Tom Matzen	Date: 4.09	Chain of Custody Number: 111748
Address	Telephone Number (Area Code)/Fax Number: 785-760-6617	Lab Number	Page 2 of 2
City / State / Zip Code	Site Contact	Lab Contact	
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed): TPH-GRO, TPH-DRO

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	HCl	TPH-GRO	TPH-DRO
SWMU31 S 13	4.8.09	1300				✓	1						2	X	X
SWMU31 S 14	↓	1305				✓	1						2	X	X
SWMU31S15		1310				✓	1						2	X	X
SWMU31S16		1315				✓	1						2	X	X
SWMU31S17		1320				✓	1						2	X	X

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☑ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By			1. Received By: Aaron Bindell	4/9/09	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

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Volatile GC

Supporting Documentation

Sample Sequence, Chromatograms

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot ID: D9D090142

Client: North Wind

Method: 8015 GRO

Associated Samples: 1-17

Batch #(s): 9100200

I certify that, to the best of my knowledge, the attached package represents a complete and accurate copy of the original data.

Signature/Date: Lynnea Garrett 4/10/09

Lot # D9D090142

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Close Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Revised
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

Cannon AFB
Clovis, New Mexico

Lot # D9D110109

Michelle Klinger

North Wind, Inc.
1425 Higham Street
Idaho Falls, ID 83402

Patrick McEntee
Project Manager

April 15, 2009
Revised April 16, 2009

Case Narrative
Lot D9D110109

With the exception of the below mentioned anomalies, standard analytical protocols were followed in the analysis of the samples. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits with any exceptions noted.

The test results presented in this report meet all requirements of NELAC and any exceptions are noted. This report shall not be reproduced, except in full, without written permission from the laboratory.

Sample Receipt
Three solid samples were received under chain of custody by TestAmerica Denver on April 11, 2009.

The cooler temperature at receipt was acceptable at 3.8°C.

All sample containers were received intact.

Gasoline Range Organics, Method SW846 8015B
Gasoline range organics are present in the method blank associated with QC batch 9104158. Because the concentration in the method blank is at a level less than one-half the reporting limit, corrective action is deemed unnecessary.

MS/MSD analyses were performed on sample D9D110109-003 as requested and were in control.

Extractable Petroleum Hydrocarbons C10-C24 & C24-C36, Method SW846 8015B
Diesel range organics are present in the method blank associated with QC batch 9102015. Because the concentration in the method blank is at a level less than one-half the reporting limit, corrective action is deemed unnecessary.

MS/MSD analyses were performed on sample D9D110109-003 as requested and were in control.

Percent Moisture, ASTM D 2216-90
The sample duplicate performed on a sample from another client and/or lot and was in control.

Revision Changes
The Lot number on the top of page 2 was changed to D9D110109.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which are spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried throughout he entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken form the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, i.e., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
J	The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F	The analyte was positively identified but the associated numerical value is above the MDL and below the RL.
Q	The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.
B	The analyte was found in an associated blank, as well as in the sample.
M	A matrix effect was present.
U, MSB	The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.
U, DIL	The recovery was not calculated because the sample was diluted four times or greater.
N	Inorganics: Spiked analyte recovery is outside stated control limits.
a	Organics: Spiked analyte recovery is outside stated control limits.
*	Surrogate or LCS is outside control limits.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte specific quality control criteria.

METHODS SUMMARY

D9D110109

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Extractable Petroleum Hydrocarbons	SW846 8015B	
Method for Determination of Water Content of Soil	ASTM D 2216-90	ASTM D2216-90
Volatile Petroleum Hydrocarbons	SW846 8015B	SW846 5035

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D9D110109

ANALYTICAL METHOD	ANALYST	ANALYST ID
ASTM D 2216-90	Reva M. Golden	010906
SW846 8015B	Brian Ream	000323
SW846 8015B	Heather Dybas	038161

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D9D110109

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
K902P	001	SWMU31S18	04/10/09	12:00
K9023	002	SWMU31S19	04/10/09	12:00
K9024	003	SWMU31S20	04/10/09	12:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9D110109

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SO	SW846 8015B		9102015	9102005
	SO	SW846 8015B		9104158	9104086
	SO	ASTM D 2216-90		9103230	9104087
002	SO	SW846 8015B		9102015	9102005
	SO	SW846 8015B		9104158	9104086
	SO	ASTM D 2216-90		9103230	9104087
003	SO	SW846 8015B		9102015	9102005
	SO	SW846 8015B		9104158	9104086
	SO	ASTM D 2216-90		9103230	9104087

Volatile GC

CLP-Like Forms

Lot ID: D9D110109

Method: SW846 8015B – GRO

Associated Samples: -001 through -003

Batch: 9104158

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S18
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-001
Matrix:	SOLID	**Lab WorkOrder:**	K902P1AA
% Moisture:	13	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 12:39
Sample Aliquot:	5.97 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.42**	0.37	1.2	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	85	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S19
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-002
Matrix:	SOLID	**Lab WorkOrder:**	K90231AA
% Moisture:	14	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 13:08
Sample Aliquot:	5.68 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**1.3**	0.38	1.2	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	86	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-003
Matrix:	SOLID	**Lab WorkOrder:**	K90241AA
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 13:40
Sample Aliquot:	5.86 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.39	0.39	1.2	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	85	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D140000-158B
Matrix:	SOLID	**Lab WorkOrder:**	K920F1AA
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 10:04
Sample Aliquot:	5 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.38**	0.32	1.0	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	86	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Surrogate Recovery Summary

Lab Name: TESTAMERICA DENVER **Extraction** A4BKJA4
Lot/SDG Number: D9D110109 **QC Batch ID:** 9104158

Client ID	Work Order	SRG1	SRG2	SRG3	SRG4	SRG5	SRG6	SRG7	SRG8	TOT OUT
SWMU31S19	K90231AA	86								0
SWMU31S20	K90241AA	85								0
SWMU31S20 MS	K90241AE	115								0
SWMU31S20 MSD	K90241AF	115								0
SWMU31S18	K902P1AA	85								0
INTRA-LAB BLANK	K920F1AA	86								0
CHECK SAMPLE	K920F1AC	105								0
DUPLICATE CHECK	K920F1AD	104								0

Surrogate Number	Surrogate Name	Lower Control Limit	Upper Control Limit
SRG 1	Chlorobenzene	64	148

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D140000-158C
Matrix:	SOLID	**Lab WorkOrder:**	K920F1AC
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 09:01
Sample Aliquot:	5.02 g	**Instrument ID:**	B
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Gasoline Range Organics	5.48	6.12	112		57 - 146

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	105	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D140000-158L
Matrix:	SOLID	**Lab WorkOrder:**	K920F1AD
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 09:32
Sample Aliquot:	5.02 g	**Instrument ID:**	B
Dilution Factor:	1		

Analyte	True	Found	C	% Rec	Q	RPD	Q	QC Limits	
								% Rec	RPD
Gasoline Range Organics	5.48	6.05		110		1.1		57 - 146	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	104	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**MS Lab Sample ID:**	D9D110109-003S
Matrix:	SOLID	**MS Lab WorkOrder:**	K90241AE
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 14:12
MS Sample Aliquot:	4.62 g	**Instrument ID:**	B
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Gasoline Range Organics	7.08	0.39	U	9.66		136		57 - 146

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	115	64	148	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**MSD Lab Sample ID:**	D9D110109-003D
Matrix:	SOLID	**MSD Lab WorkOrder:**	K90241AF
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 14:44
MSD Sample Aliquot:	4.62 g	**Instrument ID:**	B
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Gasoline Range Organics	7.08	0.39	U	9.70		137		0.37		57 - 146	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	115	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Method Blank Summary

Lab Name:	TESTAMERICA DENVER	**Lab File ID:**	203F0701.
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D140000-158B
Matrix:	SOLID	**Lab Work Order:**	K920F1AA
Analysis Method:	8015B	**Date/Time Extracted:**	04/11/09 10:00
Extraction Method:	A4BKJA4	**Date/Time Analyzed:**	04/13/09 10:04
QC Batch ID:	9104158	**Instrument ID:**	B

Client ID	Sample Work Order #	Lab File ID	Date Analyzed	Time Analyzed
SWMU31S19	K90231AA	203F0701.	04/13/09	13:08
SWMU31S20	K90241AA	204F0801.	04/13/09	13:40
SWMU31S20 MS	K90241AE S	205F0901.	04/13/09	14:12
SWMU31S20 MSD	K90241AF D	206F1001.	04/13/09	14:44
SWMU31S18	K902P1AA	202F0601.	04/13/09	12:39
CHECK SAMPLE	K920F1AC C	115F0301.	04/13/09	09:01
DUPLICATE CHECK	K920F1AD L	116F0401.	04/13/09	09:32

Report Date : 09-Feb-2009 12:45

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Last Edit : 09-Feb-2009 12:44 pavlakoa

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\112F0801.D
Level 2: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\111F0701.D
Level 3: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\110F0601.D
Level 4: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D
Level 5: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\108F0401.D
Level 6: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\107F0301.D

Compound	20.0000 Level 1	50.0000 Level 2	100.0000 Level 3	200.0000 Level 4	500.0000 Level 5	1000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 2 GRO - C6 to C10	6388	6130	6328	6782	6863	6848	AVRG		6557		4.78875	
S 3 C6 - C12	160531	360106	725181	1541820	3882447	7714423	WLINR	-0.68398	7546		0.99766	1/AM^2
S 163 GRO (C5-C12)	170146	377989	762994	1625734	4096273	8172973	WLINR	-0.73409	7959		0.99728	1/AM^2
4 1-Chloro-4-Fluorobenzene	8252	8267	8266	8558	8582	8584	AVRG		8418		2.04177	
$ 1 Trifluorotoluene	8668	8547	8501	8779	8859	8931	AVRG		8714		1.97120	
$ 5 Chlorobenzene	10454	10483	10430	10776	10756	10768	AVRG		10611		1.61425	

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Last Edit : 09-Feb-2009 12:44 pavlakoa

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response
Wt Linear	Amt = b + Rsp/ml	Response

Table of Contents

Report Date: 09-Feb-2009 12:45

Calibration History

Method : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Start Cal Date: 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 20.00000		
05-FEB-2009 17:27	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\112F0801.D
Cal Level: 2 , Cal Amount: 50.00000		
05-FEB-2009 16:55	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\111F0701.D
Cal Level: 3 , Cal Amount: 100.00000		
05-FEB-2009 16:24	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\110F0601.D
Cal Level: 4 , Cal Amount: 200.00000		
05-FEB-2009 15:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D
Cal Level: 5 , Cal Amount: 500.00000		
05-FEB-2009 15:21	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\108F0401.D
Cal Level: 6 , Cal Amount: 1000.00000		
05-FEB-2009 14:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\107F0301.D

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 4

06-FEB-2009 03:54	GRO.A.C5_C12	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\216F2801.D
05-FEB-2009 15:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B/113F0901.D
Report Date: 02/09/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 113F0901.D
Analysis Type: WATER

Injection Date: 05-FEB-2009 17:58
Lab Sample ID: ICV #0037-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\02

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	29.8157	0.6	15.0
162 GRO - C6 to C10	200.0000	223.6824	11.8	15.0
163 GRO (C5-C12)	200.0000	222.8006	11.4	15.0
0 C6 - C12	200.0000	221.8616	10.9	20.0
0 1-Chloro-4-Fluorobenzene	30.0000	28.6257	4.6	15.0
161 Chlorobenzene	30.0000	31.0233	3.4	15.0

Average %D = 7.13

2/4/04

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\0413091.B/114F0201.D
Report Date: 04/14/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 114F0201.D
Analysis Type: WATER

Injection Date: 13-APR-2009 08:29
Lab Sample ID: CCV #0109-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\04130

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	32.2824	7.6	15.0
162 GRO - C6 to C10	200.0000	175.2487	12.4	15.0
0 1-Chloro-4-Fluorobenzene	30.0000	31.5008	5.0	15.0
161 Chlorobenzene	30.0000	30.9401	3.1	15.0

Average %D = 7.03

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\0413091.B/207F1101.D
Report Date: 04/14/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 207F1101.D
Analysis Type: WATER

Injection Date: 13-APR-2009 15:44
Lab Sample ID: CCV #0109-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\04130

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D	
139 Trifluorotoluene	30.0000	32.9055	9.7	15.0	
162 GRO - C6 to C10	200.0000	169.9038	15.0	15.0	<-
0 1-Chloro-4-Fluorobenzene	30.0000	31.6414	5.5	15.0	
161 Chlorobenzene	30.0000	31.0099	3.4	15.0	

Average %D = 8.39

Sequence: C:\HPCHEM\2\SEQUENCE\B020509.S

Sequence Table (Front Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 105	RT 1 #0045-09				
2	Vial 106	RT 2 #0336-08				
3	Vial 107	L6(1000)#0052-09				
4	Vial 108	L5(500) #0052-09				
5	Vial 109	L4(200) #0052-09				
6	Vial 110	L3(100) #0052-09				
7	Vial 111	L2(50) #0052-09				
8	Vial 112	L1(20) #0052-09				
9	Vial 113	ICV #0037-09				
10	Vial 114	RINSE				
11	Vial 115	LCS #0008-09				
12	Vial 116	LCSD #0008-09				
13	Vial 201	RINSE				
14	Vial 202	RINSE				
15	Vial 203	MB #0034-09 RR				
16	Vial 204	K6FF51A3,176-9 DNR				
17	Vial 205	K6L381AD,176-2				
18	Vial 206	K6L4M1AP,176-3				
19	Vial 207	K6L4R1AP,176-4				
20	Vial 208	K6L4W1AP,176-5				
21	Vial 209	K6L4X1AE,176-6				
22	Vial 210	K6L4X1D4,176-6S				
23	Vial 211	K6L4X1D5,176-6D				
24	Vial 212	K6L5J1AQ,176-7				
25	Vial 213	K6L5L1A3,176-8				
26	Vial 214	RINSE				
27	Vial 215	MB #0034-09				
28	Vial 216	CCV #0049-09				

Sequence Table (Back Injector):

No entries - empty table!

\2\SEQUENCE\B041309.S

Sequence Table (Front Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 113	RT #0100-09				
2	Vial 114	CCV #0109-09				
3	Vial 115	LCS #0115-09				
4	Vial 116	LCSD #0115-09				
5	Vial 201	MB #0058-09				
6	Vial 202	K902P1AA,109-1				
7	Vial 203	K90231AA,109-2				
8	Vial 204	K90241AA,109-3				
9	Vial 205	K90241AE,109-3S				
10	Vial 206	K90241AF,109-3D				
11	Vial 207	CCV #0109-09				

9104158

Sequence Table (Back Injector):

No entries - empty table!

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RT #0100-09	0413091.b/113F0101.D	RT #0100-09	No Manual Integrations	
CCV #0109-09	0413091.b/114F0201.D	CCV #0109-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0109-09	0413091.b/114F0201.D	CCV #0109-09	Trifluorotoluene	BAS
CCV #0109-09	0413091.b/114F0201.D	CCV #0109-09	Chlorobenzene	BAS
K920F1AC	0413091.b/115F0301.D	LCS #0115-09	1-Chloro-4-Fluorobenzene	BAS
K920F1AC	0413091.b/115F0301.D	LCS #0115-09	Chlorobenzene	BAS
K920F1AD	0413091.b/116F0401.D	LCSD #0115-09	1-Chloro-4-Fluorobenzene	BAS
K920F1AD	0413091.b/116F0401.D	LCSD #0115-09	Chlorobenzene	BAS
K920F1AA	0413091.b/201F0501.D	MB #0058-09	No Manual Integrations	
K902P1AA	0413091.b/202F0601.D	109-1	No Manual Integrations	
K90231AA	0413091.b/203F0701.D	109-2	No Manual Integrations	
K90241AA	0413091.b/204F0801.D	109-3	No Manual Integrations	
K90241AE	0413091.b/205F0901.D	109-3S	1-Chloro-4-Fluorobenzene	BAS
K90241AE	0413091.b/205F0901.D	109-3S	Chlorobenzene	BAS
K90241AF	0413091.b/206F1001.D	109-3D	1-Chloro-4-Fluorobenzene	BAS
K90241AF	0413091.b/206F1001.D	109-3D	Chlorobenzene	BAS
CCV #0109-09	0413091.b/207F1101.D	CCV #0109-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0109-09	0413091.b/207F1101.D	CCV #0109-09	Trifluorotoluene	BAS
CCV #0109-09	0413091.b/207F1101.D	CCV #0109-09	Chlorobenzene	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

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Report Date 02/09/2009 Page 1

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RT 1 #0045-09	020509i1.b/105F0101.D	RT 1 #0045-09	No Manual Integrations	
RT 2 #0336-08	020509i1.b/106F0201.D	RT 2 #0336-08	No Manual Integrations	
L6(1000)#0052-0	020509i1.b/107F0301.D	L6(1000)#0052-09	No Manual Integrations	
L5(500) #0052-0	020509i1.b/108F0401.D	L5(500) #0052-09	No Manual Integrations	
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	Trifluorotoluene	BAS
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	Chlorobenzene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	Trifluorotoluene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	Chlorobenzene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	Trifluorotoluene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	Chlorobenzene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	Trifluorotoluene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	Chlorobenzene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	1-Chloro-4-Fluorobenzene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	Trifluorotoluene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	Chlorobenzene	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

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JL 4/14/07

Semivolatile GC

CLP-Like Forms

Lot ID: D9D110109

Method: SW846 8015B – DRO (C10– C24), Motor Oil (C24-C36)

Associated Samples: -001 through -003

Batch: 9102015

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S18
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-001
Matrix:	SOLID	**Lab WorkOrder:**	K902P1AC
% Moisture:	13	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 21:57
Sample Aliquot:	30.88 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.1	1.1	4.6	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.5	4.5	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	63	47	142	
630-02-4	n-Octacosane	66	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S19
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-002
Matrix:	SOLID	**Lab WorkOrder:**	K90231AC
% Moisture:	14	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 22:25
Sample Aliquot:	30.5 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.2	1.2	4.6	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.5	4.5	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	63	47	142	
630-02-4	n-Octacosane	70	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-003
Matrix:	SOLID	**Lab WorkOrder:**	K90241AC
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 22:53
Sample Aliquot:	30.35 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	1.2	1.2	4.8	U
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	4.6	4.6	14	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	64	47	142	
630-02-4	n-Octacosane	65	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.
Cannon AFB, New Mexico
Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D120000-015B
Matrix:	SOLID	**Lab WorkOrder:**	K91LC1AA
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 20:04
Sample Aliquot:	30.14 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Heather Dybas	HD	**1.1**	0.99	4.0	F
Q1770	TPH quantitated as Motor Oil(C24-C36)	Heather Dybas	HD	3.9	3.9	12	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	84	47	142	
630-02-4	n-Octacosane	90	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Surrogate Recovery Summary

Lab Name: TESTAMERICA DENVER **Extraction** A13KIA4
Lot/SDG Number: D9D110109 **QC Batch ID:** 9102015

Client ID	Work Order	SRG1	SRG2	SRG3	SRG4	SRG5	SRG6	SRG7	SRG8	TOT OUT
SWMU31S19	K90231AC	70	63							0
SWMU31S20	K90241AC	65	64							0
SWMU31S20 MS	K90241AG	73	61							0
SWMU31S20 MSD	K90241AH	77	67							0
SWMU31S20 MS	K90241AJ	91	70							0
SWMU31S20 MSD	K90241AK	90	69							0
SWMU31S18	K902P1AC	66	63							0
INTRA-LAB BLANK	K91LC1AA	90	84							0
CHECK SAMPLE	K91LC1AC	81	88							0
CHECK SAMPLE	K91LC1AD	85	74							0

Surrogate Number	Surrogate Name	Lower Control Limit	Upper Control Limit
SRG 1	n-Octacosane	25	162
SRG 2	o-Terphenyl	47	142

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D120000-015C
Matrix:	SOLID	**Lab WorkOrder:**	K91LC1AC
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 20:32
Sample Aliquot:	31.89 g	**Instrument ID:**	U
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Diesel Range Organics (C10-C24)	62.7	56.0	89		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	88	47	142	
630-02-4	n-Octacosane	81	25	162	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D120000-015C
Matrix:	SOLID	**Lab WorkOrder:**	K91LC1AD
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 21:01
Sample Aliquot:	30.03 g	**Instrument ID:**	U
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
TPH quantitated as Motor Oil(C24-C36)	167	142	85		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	74	47	142	
630-02-4	n-Octacosane	85	25	162	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**MS Lab Sample ID:**	D9D110109-003S
Matrix:	SOLID	**MS Lab WorkOrder:**	K90241AG
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 23:21
MS Sample Aliquot:	30.3 g	**Instrument ID:**	U
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Diesel Range Organics (C10-C24)	78.4	1.2	U	62.7		80		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
630-02-4	n-Octacosane	73	25	162	
84-15-1	o-Terphenyl	61	47	142	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**MSD Lab Sample ID:**	D9D110109-003D
Matrix:	SOLID	**MSD Lab WorkOrder:**	K90241AH
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/13/09 23:49
MSD Sample Aliquot:	30.32 g	**Instrument ID:**	U
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Diesel Range Organics (C1	78.4	1.2	U	69.0		88		9.6		51 - 153	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
630-02-4	n-Octacosane	77	25	162	
84-15-1	o-Terphenyl	67	47	142	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**MS Lab Sample ID:**	D9D110109-003S
Matrix:	SOLID	**MS Lab WorkOrder:**	K90241AJ
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/14/09 00:17
MS Sample Aliquot:	30.19 g	**Instrument ID:**	U
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
TPH quantitated as Motor Oil(C24-C36)	197	4.6	U	176		89		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
630-02-4	n-Octacosane	91	25	162	
84-15-1	o-Terphenyl	70	47	142	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**MSD Lab Sample ID:**	D9D110109-003D
Matrix:	SOLID	**MSD Lab WorkOrder:**	K90241AK
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/12/09 12:00
QC Batch ID:	9102015	**Date/Time Analyzed:**	04/14/09 00:45
MSD Sample Aliquot:	30.32 g	**Instrument ID:**	U
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
TPH quantitated as Motor C	196	4.6	U	176		90		0.13		51 - 153	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
630-02-4	n-Octacosane	90	25	162	
84-15-1	o-Terphenyl	69	47	142	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Method Blank Summary

Lab Name:	TESTAMERICA DENVER	**Lab File ID:**	026B2601.
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D120000-015B
Matrix:	SOLID	**Lab Work Order:**	K91LC1AA
Analysis Method:	8015B	**Date/Time Extracted:**	04/12/09 12:00
Extraction Method:	A13KIA4	**Date/Time Analyzed:**	04/13/09 20:04
QC Batch ID:	9102015	**Instrument ID:**	U

Client ID	Sample Work Order #	Lab File ID	Date Analyzed	Time Analyzed
SWMU31S19	K90231AC	026B2601.	04/13/09	22:25
SWMU31S20	K90241AC	027B2701.	04/13/09	22:53
SWMU31S20 MS	K90241AG S	028B2801.	04/13/09	23:21
SWMU31S20 MSD	K90241AH D	029B2901.	04/13/09	23:49
SWMU31S20 MS	K90241AJ S	030B3001.	04/14/09	00:17
SWMU31S20 MSD	K90241AK D	031B3101.	04/14/09	00:45
SWMU31S18	K902P1AC	025B2501.	04/13/09	21:57
CHECK SAMPLE	K91LC1AC C	022B2201.	04/13/09	20:32
CHECK SAMPLE	K91LC1AD C	023B2301.	04/13/09	21:01

Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\018B1801.D
Level 2: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\017B1701.D
Level 3: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\016B1601.D
Level 4: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\015B1501.D
Level 5: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\014B1401.D
Level 6: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\013B1301.D
Level 7: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\012B1201.D

SEE CALIBRATION HISTORY

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
S 192 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	WLINR	0.000e+000	0.000e+000		0.000e+000 <-
S 191 C10-C32	1225	1306	1269	1168	1333	1335	1009	AVRG		1235		9.42294
S 190 C10-C24	1225	1305	1268	1167	1331	1333	1008	AVRG		1234		9.41395
S 188 C10-C22	1206	1278	1246	1156	1318	1319	999	AVRG		1217		9.26094

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
S 189 C22-C36	1212	1243	1254	983	998	849	887	AVRG		1061		16.25775
S 187 Oklahoma	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 182 C8-C11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 183 C12-C14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 186 C8-C30	1288	1566	1311	1183	1348	1347	1023	AVRG		1295		12.83732
S 184 C15-C20	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 185 C21-C30	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

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Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 181 C28-34	37635	113821	492805	1773731	2693736	4225756	8848489	WLINR	-93.75983	310		0.98631	<- r=0.993 1/x
S 177 C10-38	1227	1306	1269	1168	1333	1335	1009	AVRG		1235		9.41980	
S 178 C10-25	1225	1306	1269	1168	1332	1334	1009	AVRG		1235		9.41788	
S 179 C12-24	1188	1220	1172	1066	1216	1219	921	AVRG		1143		9.78389	
174 C10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
175 C28	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
176 C36	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	30000.0000 Level 7											
S 173 C24-C36	991	1063	1051	818	813	690						
	737						AVRG		881		17.36259	
S 170 Jet Fuel JP4	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+000	0.000e+000		0.000e+000	<-
S 2 Jet Fuel JP-8	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	
S 3 Diesel Range Organics	1225	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.42295	
S 4 C10 - C36	1226	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.42159	
S 180 C25-36	845	916	936	716	701	582						
	605						AVRG		757		18.94941	

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Report Date : 10-Mar-2009 05:52

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 1 o-Terphenyl	363	1073	5582	31467	57296	123759	+++++	LINR	2.03947	1663		0.99413
$ 6 n-Octacosane	1182	1230	1280	1207	1394	1333	+++++	AVRG		1271		6.35327

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:52 dybash

Curve	Formula	Units
Averaged	Amt = Rsp/ml	Response
Linear	Amt = b + Rsp/ml	Response
Wt Linear	Amt = b + Rsp/ml	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

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Report Date: 10-Mar-2009 05:53

Calibration History

Method : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Start Cal Date: 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration

HF 3/10/09

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
10-MAR-2009 ~~23~~ 01:22	C25-36	018B1801.D
09-MAR-2009 ~~19~~ 20:38	DROICAL	010B1001.D
Cal Level: 2 , Cal Amount: 250.00000		
09-MAR-2009 ~~22~~ 23:54	C25-36	017B1701.D
09-MAR-2009 ~~19~~ 20:10	DROICAL	009B0901.D
Cal Level: 3 , Cal Amount: 1000.00000		
09-MAR-2009 ~~22~~ 23:26	C25-36	016B1601.D
09-MAR-2009 ~~18~~ 19:42	DROICAL	008B0801.D
Cal Level: 4 , Cal Amount: 5000.00000		
09-MAR-2009 ~~21~~ 22:58	C25-36	015B1501.D
09-MAR-2009 ~~18~~ 19:14	DROICAL	007B0701.D
Cal Level: 5 , Cal Amount: 7500.00000		
09-MAR-2009 ~~21~~ 22:30	C25-36	014B1401.D
09-MAR-2009 ~~17~~ 18:46	DROICAL	006B0601.D
Cal Level: 6 , Cal Amount: 15000.00000		
09-MAR-2009 ~~21~~ 22:02	C25-36	013B1301.D
09-MAR-2009 ~~17~~ 18:17	DROICAL	005B0501.D
Cal Level: 7 , Cal Amount: 30000.00000		
09-MAR-2009 ~~20~~ 21:34	C25-36	012B1201.D
09-MAR-2009 ~~16~~ 17:49	DROICAL	004B0401.D

Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 3

10-MAR-2009 23:50	C25-36	019B1901.D
09-MAR-2009 20:06	DROICAL	011B1101.D
09-MAR-2009 22:26	C25-36	016B1601.D
09-MAR-2009 18:42	DROICAL	008B0801.D

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B/011B1101.D
Report Date: 03/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 011B1101.D
Analysis Type: NONE

Injection Date: 09-MAR-2009 20:06
Lab Sample ID: DRO SS GSV026109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
188 C10-C22	1000.0000	983.8328	1.6	15.0
190 C10-C24	1000.0000	1009.1291	0.9	15.0
178 C10-25	1000.0000	1012.4947	1.2	15.0
186 C8-C30	1000.0000	999.4646	0.1	15.0
0 Diesel Range Organics	1000.0000	1015.2504	1.5	15.0
191 C10-C32	1000.0000	1015.3130	1.5	15.0
179 C12-24	1000.0000	1010.4679	1.0	15.0
165 C10 - C36	1000.0000	1015.3824	1.5	15.0
177 C10-38	1000.0000	1015.4458	1.5	15.0
139 o-Terphenyl	5.0000	5.2998	6.0	15.0
162 n-Octacosane	5.0000	5.5098	10.2	15.0

Average %D = 2.47

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0413091.B/019B1901.D
Report Date: 04/14/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 019B1901.D
Analysis Type: NONE

Injection Date: 13-APR-2009 19:07
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\041309

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D	
190 C10-C24	5000.0000	4680.2390	6.4	15.0	
0 C10-C28(DRO)	5000.0000	4678.8049	6.4	15.0	
165 C10 - C36	5000.0000	4678.4809	6.4	15.0	
0 o-Terphenyl	25.0000	25.3537	1.4	15.0	
0 n-Octacosane	25.0000	21.0583	15.8	15.0	<-

Average %D = 7.29

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0413091.B/032B3201.D
Report Date: 04/14/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 032B3201.D
Analysis Type: NONE

Injection Date: 14-APR-2009 01:13
Lab Sample ID: DRO L4 GSV045109
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\041309

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
190 C10-C24	5000.0000	4916.9562	1.7	15.0
0 C10-C28(DRO)	5000.0000	4916.6041	1.7	15.0
165 C10 - C36	5000.0000	4916.2802	1.7	15.0
0 o-Terphenyl	25.0000	22.5642	9.7	15.0
0 n-Octacosane	25.0000	22.0858	11.7	15.0

Average %D = 5.28

Sequence: C:\HPCHEM\2\SEQUENCE\U030909B.S

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L7 GSV025509				
5	Vial 5	DRO L6 GSV025609				
6	Vial 6	DRO L5 GSV025709				
7	Vial 7	DRO L4 GSV018009				
8	Vial 8	DRO L3 GSV025809				
9	Vial 9	DRO L2 GSV025909				
10	Vial 10	DRO L1 GSV026009				
11	Vial 11	DRO SS GSV026109				
12	Vial 12	RRO L7 GSV029609				
13	Vial 13	RRO L6 GSV029709				
14	Vial 14	RRO L5 GSV029809				
15	Vial 15	RRO L4 GSV029509				
16	Vial 16	RRO L3 GSV029909				
17	Vial 17	RRO L2 GSV030009				
18	Vial 18	RRO L1 GSV030109				
19	Vial 19	RRO SS GSV030209				
20	Vial 20	K74TE1AA,MB				
21	Vial 21	K74TE1AC,LCS				
22	Vial 22	K74TE1AD,LCSD				
23	Vial 23	K68CJ2AE,159-2				
24	Vial 24	K68CQ1AP,159-3S				
25	Vial 25	K68CQ1AQ,159-3D				
26	Vial 26	K68CQ2AE,159-3				
27	Vial 27	K68CV2AE,159-4				
28	Vial 28	K7AQ02AE,223-1				
29	Vial 29	K7AQ72AE,223-3				
30	Vial 30	DRO L4 GSV018009				
31	Vial 31	RRO L4 GSV029509				
32	Vial 32	K7ARA2AE,223-4				
33	Vial 33	K7ARE2AE,223-5				
34	Vial 34	K7ARM2AE,223-7				
35	Vial 35	K7ARW2AE,223-8				
36	Vial 36	DRO L4 GSV018009				
37	Vial 37	RRO L4 GSV029509				

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L4 GSV045109				
5	Vial 5	K9WD31AA,MB				
6	Vial 6	K9WD31AC,LCS				
7	Vial 7	K9R1V1AC,283-1				10
8	Vial 8	K9R1V1AK,283-1S				10
9	Vial 9	K9R1V1AL,283-1D				10
10	Vial 10	K9R2T1AC,283-23				10
11	Vial 11	K90F51AA,MB				
12	Vial 12	K90F51AC,LCS				
13	Vial 13	K90F51AD,CLSD				
14	Vial 14	K51CM1AC,150-17				
15	Vial 15	K9WJF1AA,MB				
16	Vial 16	K9WJF1AC,LCS				
17	Vial 17	K9Q8T1AC,195-2				
18	Vial 18	K9Q8W1AC,195-3				
19	Vial 19	DRO L4 GSV045109				
20	Vial 20	RRO L4 GSV43009				
21	Vial 21	K91LC1AA,MB				
22	Vial 22	K91LC1AC,LCS				
23	Vial 23	K91LC1AD,RRO				
24	Vial 24	K9V0Q1AD,238-1				
25	Vial 25	K902P1AC,109-1				
26	Vial 26	K90231AC,109-2				
27	Vial 27	K90241AC,109-3				
28	Vial 28	K90241AG,109-3S				
29	Vial 29	K90241AH,109-3D				
30	Vial 30	K90241AJ,109-3S				
31	Vial 31	K90241AK,109-3D				
32	Vial 32	DRO L4 GSV045109				
33	Vial 33	RRO L4 GSV43009				
34	Vial 34	K9WJH1AA,MB				
35	Vial 35	K9WJH1AC,LCS				
36	Vial 36	K9Q4W1AM,182-1				
37	Vial 37	K9Q5H1A0,182-3				
38	Vial 38	K9Q621AU,182-14				
39	Vial 39	K9Q621AU,182-18				
40	Vial 40	K9V5J1AV,259-3				
41	Vial 41	K9V7H1AH,263-11				
42	Vial 42	K9V781AH,263-12				
43	Vial 43	K9V8A1AH,263-13				
44	Vial 44	K9V8D1AH,263-14				
45	Vial 45	K9V8D1A2,263-14S				
46	Vial 46	DRO L4 GSV045109				
47	Vial 47	K9V8D1A3,263-14D				
48	Vial 48	K9V8F1AH,263-15				
49	Vial 49	K9V8G1AH,263-16				
50	Vial 50	K9V8K1AH,263-17				
51	Vial 51	DRO L4 GSV045109				

Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\018B1801.D
Level 2: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\017B1701.D
Level 3: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\016B1601.D
Level 4: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\015B1501.D
Level 5: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\014B1401.D
Level 6: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\013B1301.D
Level 7: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\012B1201.D

SEE CALIBRATION HISTORY

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
S 192 Bunker C	+++++ / +++++	+++++	+++++	+++++	+++++	+++++	WLINR	0.000e+000	0.000e+000		0.000e+000 <-
S 191 C10-C32	1225 / 1009	1306	1269	1168	1333	1335	AVRG		1235		9.42294
S 190 C10-C24	1225 / 1008	1305	1268	1167	1331	1333	AVRG		1234		9.41395
S 188 C10-C22	1206 / 999	1278	1246	1156	1318	1319	AVRG		1217		9.26094

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Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
S 189 C22-C36	1212	1243	1254	983	998	849					
	887						AVRG		1061		16.25775
S 187 Oklahoma	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 182 C8-C11	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 183 C12-C14	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 186 C8-C30	1288	1566	1311	1183	1348	1347					
	1023						AVRG		1295		12.83732
S 184 C15-C20	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
S 185 C21-C30	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

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Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 181 C28-34	37635	113821	492805	1773731	2693736	4225756	8848489	WLINR	-93.75983	310		0.98631	<-
S 177 C10-38	1227	1306	1269	1168	1333	1335	1009	AVRG		1235		9.41980	
S 178 C10-25	1225	1306	1269	1168	1332	1334	1009	AVRG		1235		9.41788	
S 179 C12-24	1188	1220	1172	1066	1216	1219	921	AVRG		1143		9.78389	
174 C10	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
175 C28	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-
176 C36	+++++	+++++	+++++	+++++	+++++	+++++	+++++	QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000	<-

1/x

r=0.993

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	30000.0000 Level 7											
S 173 C24-C36	991	1063	1051	818	813	690						
	737						AVRG		881		17.36259	
S 170 Jet Fuel JP4	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+000	0.000e+000		0.000e+000	<-
S 2 Jet Fuel JP-8	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	
S 3 Diesel Range Organics	1225	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.42295	
S 4 C10 - C36	1226	1306	1269	1168	1333	1335						
	1009						AVRG		1235		9.42159	
S 180 C25-36	845	916	936	716	701	582						
	605						AVRG		757		18.94941	

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Report Date : 10-Mar-2009 06:05

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 1 o-Terphenyl	363	1073	5582	31467	57296	123759					
	+++++						LINR	2.03947	1663		0.99413
$ 6 n-Octacosane	1182	1230	1280	1207	1394	1333					
	+++++						AVRG		1271		6.35327

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TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Last Edit : 10-Mar-2009 05:57 dybash

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

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Report Date: 10-Mar-2009 06:05

Calibration History

Method : \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B\DR01.m
Start Cal Date: 09-MAR-2009 16:49
End Cal Date : 10-MAR-2009 23:22
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration HF 3/10/09

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
10-MAR-2009 ~~23~~:22	C25-36	018B1801.D
09-MAR-2009 ~~19~~:38	DROICAL	010B1001.D
Cal Level: 2 , Cal Amount: 250.00000		
09-MAR-2009 ~~22~~:54	C25-36	017B1701.D
09-MAR-2009 ~~19~~:10	DROICAL	009B0901.D
Cal Level: 3 , Cal Amount: 1000.00000		
09-MAR-2009 ~~22~~:26	C25-36	016B1601.D
09-MAR-2009 ~~18~~:42	DROICAL	008B0801.D
Cal Level: 4 , Cal Amount: 5000.00000		
09-MAR-2009 ~~21~~:58	C25-36	015B1501.D
09-MAR-2009 ~~18~~:14	DROICAL	007B0701.D
Cal Level: 5 , Cal Amount: 7500.00000		
09-MAR-2009 ~~21~~:30	C25-36	014B1401.D
09-MAR-2009 ~~17~~:46	DROICAL	006B0601.D
Cal Level: 6 , Cal Amount: 15000.00000		
09-MAR-2009 ~~21~~:02	C25-36	013B1301.D
09-MAR-2009 ~~17~~:17	DROICAL	005B0501.D
Cal Level: 7 , Cal Amount: 30000.00000		
09-MAR-2009 ~~20~~:34	C25-36	012B1201.D
09-MAR-2009 ~~16~~:49	DROICAL	004B0401.D

Continuing Calibration

Ccal Level Mode: GLOBAL LEVEL 4

10-MAR-2009 23:50	C25-36	019B1901.D
09-MAR-2009 22:26	C25-36	016B1601.D
09-MAR-2009 20:06	DROICAL	011B1101.D
09-MAR-2009 18:42	DROICAL	008B0801.D

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\030909B1.B/019B1901.D
Report Date: 03/10/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 019B1901.D
Analysis Type: NONE

Injection Date: 10-MAR-2009 23:50
Lab Sample ID: RRO SS GSV030209
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	1000.0000	947.1579	5.3	15.0
173 C24-C36	1000.0000	921.2974	7.9	15.0
180 C25-36	1000.0000	897.8620	10.2	15.0
181 C28-34	1000.0000	913.1193	8.7	15.0

Average %D = 8.01

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0413091.B/020B2001.D
Report Date: 04/14/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 020B2001.D
Analysis Type: NONE

Injection Date: 13-APR-2009 19:36
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\041309

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4830.2231	3.4	15.0
173 C24-C36	5000.0000	4799.9894	4.0	15.0
180 C25-36	5000.0000	4798.9248	4.0	15.0
181 C28-34	5000.0000	5286.2577	5.7	15.0

Average %D = 4.28

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0413091.B/033B3301.D
Report Date: 04/14/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 033B3301.D
Analysis Type: NONE

Injection Date: 14-APR-2009 01:41
Lab Sample ID: RRO L4 GSV43009
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\041309

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
189 C22-C36	5000.0000	4945.1315	1.1	15.0
173 C24-C36	5000.0000	4892.0394	2.2	15.0
180 C25-36	5000.0000	4811.7439	3.8	15.0
181 C28-34	5000.0000	5379.5620	7.6	15.0

Average %D = 3.65

Sequence: C:\HPCHEM\2\SEQUENCE\U030909B.S

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L7 GSV025509				
5	Vial 5	DRO L6 GSV025609				
6	Vial 6	DRO L5 GSV025709				
7	Vial 7	DRO L4 GSV018009				
8	Vial 8	DRO L3 GSV025809				
9	Vial 9	DRO L2 GSV025909				
10	Vial 10	DRO L1 GSV026009				
11	Vial 11	DRO SS GSV026109				
12	Vial 12	RRO L7 GSV029609				
13	Vial 13	RRO L6 GSV029709				
14	Vial 14	RRO L5 GSV029809				
15	Vial 15	RRO L4 GSV029509				
16	Vial 16	RRO L3 GSV029909				
17	Vial 17	RRO L2 GSV030009				
18	Vial 18	RRO L1 GSV030109				
19	Vial 19	RRO SS GSV030209				
20	Vial 20	K74TE1AA,MB				
21	Vial 21	K74TE1AC,LCS				
22	Vial 22	K74TE1AD,LCSD				
23	Vial 23	K68CJ2AE,159-2				
24	Vial 24	K68CQ1AP,159-3S				
25	Vial 25	K68CQ1AQ,159-3D				
26	Vial 26	K68CQ2AE,159-3				
27	Vial 27	K68CV2AE,159-4				
28	Vial 28	K7AQ02AE,223-1				
29	Vial 29	K7AQ72AE,223-3				
30	Vial 30	DRO L4 GSV018009				
31	Vial 31	RRO L4 GSV029509				
32	Vial 32	K7ARA2AE,223-4				
33	Vial 33	K7ARE2AE,223-5				
34	Vial 34	K7ARM2AE,223-7				
35	Vial 35	K7ARW2AE,223-8				
36	Vial 36	DRO L4 GSV018009				
37	Vial 37	RRO L4 GSV029509				

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L4 GSV045109				
5	Vial 5	K9WD31AA,MB				
6	Vial 6	K9WD31AC,LCS				
7	Vial 7	K9R1V1AC,283-1				10
8	Vial 8	K9R1V1AK,283-1S				10
9	Vial 9	K9R1V1AL,283-1D				10
10	Vial 10	K9R2T1AC,283-23				10
11	Vial 11	K90F51AA,MB				
12	Vial 12	K90F51AC,LCS				
13	Vial 13	K90F51AD,CLSD				
14	Vial 14	K51CM1AC,150-17				
15	Vial 15	K9WJF1AA,MB				
16	Vial 16	K9WJF1AC,LCS				
17	Vial 17	K9Q8T1AC,195-2				
18	Vial 18	K9Q8W1AC,195-3				
19	Vial 19	DRO L4 GSV045109				
20	Vial 20	RRO L4 GSV43009				
21	Vial 21	K91LC1AA,MB				
22	Vial 22	K91LC1AC,LCS				
23	Vial 23	K91LC1AD,RRO				
24	Vial 24	K9V0Q1AD,238-1				
25	Vial 25	K902P1AC,109-1				
26	Vial 26	K90231AC,109-2				
27	Vial 27	K90241AC,109-3				
28	Vial 28	K90241AG,109-3S				
29	Vial 29	K90241AH,109-3D				
30	Vial 30	K90241AJ,109-3S				
31	Vial 31	K90241AK,109-3D				
32	Vial 32	DRO L4 GSV045109				
33	Vial 33	RRO L4 GSV43009				
34	Vial 34	K9WJH1AA,MB				
35	Vial 35	K9WJH1AC,LCS				
36	Vial 36	K9Q4W1AM,182-1				
37	Vial 37	K9Q5H1A0,182-3				
38	Vial 38	K9Q621AU,182-14				
39	Vial 39	K9Q621AU,182-18				
40	Vial 40	K9V5J1AV,259-3				
41	Vial 41	K9V7H1AH,263-11				
42	Vial 42	K9V781AH,263-12				
43	Vial 43	K9V8A1AH,263-13				
44	Vial 44	K9V8D1AH,263-14				
45	Vial 45	K9V8D1A2,263-14S				
46	Vial 46	DRO L4 GSV045109				
47	Vial 47	K9V8D1A3,263-14D				
48	Vial 48	K9V8F1AH,263-15				
49	Vial 49	K9V8G1AH,263-16				
50	Vial 50	K9V8K1AH,263-17				
51	Vial 51	DRO L4 GSV045109				

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L7 GSV02550	030909b1.b/004B0401.D	DRO L7 GSV025509	o-Terphenyl	BAS
DRO L6 GSV02560	030909b1.b/005B0501.D	DRO L6 GSV025609	o-Terphenyl	BAS
DRO L5 GSV02570	030909b1.b/006B0601.D	DRO L5 GSV025709	o-Terphenyl	BAS
DRO L4 GSV01800	030909b1.b/007B0701.D	DRO L4 GSV018009	o-Terphenyl	BAS
DRO L3 GSV02580	030909b1.b/008B0801.D	DRO L3 GSV025809	o-Terphenyl	BAS
DRO L2 GSV02590	030909b1.b/009B0901.D	DRO L2 GSV025909	o-Terphenyl	BAS
DRO L1 GSV02600	030909b1.b/010B1001.D	DRO L1 GSV026009	o-Terphenyl	BAS
DRO SS GSV02610	030909b1.b/011B1101.D	DRO SS GSV026109	o-Terphenyl	BAS
RRO L7 GSV02960	030909b1.b/012B1201.D	RRO L7 GSV029609	No Manual Integrations	
RRO L6 GSV02970	030909b1.b/013B1301.D	RRO L6 GSV029709	No Manual Integrations	
RRO L5 GSV02980	030909b1.b/014B1401.D	RRO L5 GSV029809	No Manual Integrations	
RRO L4 GSV02950	030909b1.b/015B1501.D	RRO L4 GSV029509	No Manual Integrations	
RRO L3 GSV02990	030909b1.b/016B1601.D	RRO L3 GSV029909	No Manual Integrations	
RRO L2 GSV03000	030909b1.b/017B1701.D	RRO L2 GSV030009	No Manual Integrations	
RRO L1 GSV03010	030909b1.b/018B1801.D	RRO L1 GSV030109	No Manual Integrations	
RRO SS GSV03020	030909b1.b/019B1901.D	RRO SS GSV030209	No Manual Integrations	

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

HF 4/14/09

JG 4/14/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L4 GSV04510	0413091.b/019B1901.D	DRO L4 GSV045109	o-Terphenyl	BAS
RRO L4 GSV43009	0413091.b/020B2001.D	RRO L4 GSV43009	No Manual Integrations	
K91LC1AA	0413091.b/021B2101.D	MB	No Manual Integrations	
K91LC1AC	0413091.b/022B2201.D	LCS	o-Terphenyl	BAS
K91LC1AD	0413091.b/023B2301.D	RRO	n-Octacosane	BAS
K91LC1AD	0413091.b/023B2301.D	RRO	o-Terphenyl	BAS
K902P1AC	0413091.b/025B2501.D	109-1	n-Octacosane	BAS
K90231AC	0413091.b/026B2601.D	109-2	No Manual Integrations	
K90241AC	0413091.b/027B2701.D	109-3	n-Octacosane	BAS
K90241AG	0413091.b/028B2801.D	109-3S	n-Octacosane	BAS
K90241AG	0413091.b/028B2801.D	109-3S	o-Terphenyl	BAS
K90241AH	0413091.b/029B2901.D	109-3D	n-Octacosane	BAS
K90241AH	0413091.b/029B2901.D	109-3D	o-Terphenyl	BAS
K90241AJ	0413091.b/030B3001.D	109-3S	n-Octacosane	BAS
K90241AJ	0413091.b/030B3001.D	109-3S	o-Terphenyl	BAS
K90241AK	0413091.b/031B3101.D	109-3D	n-Octacosane	BAS
K90241AK	0413091.b/031B3101.D	109-3D	o-Terphenyl	BAS
DRO L4 GSV04510	0413091.b/032B3201.D	DRO L4 GSV045109	o-Terphenyl	BAS
RRO L4 GSV43009	0413091.b/033B3301.D	RRO L4 GSV43009	No Manual Integrations	

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

INF
4/14/09

JL 4/14/09

General Chemistry

CLP-Like Forms

Lot ID: D9D110109

Methods: ASTM D 2216-90

Associated Samples: -001 through -003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S18
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-001
Matrix:	SOLID	**Lab WorkOrder:**	K902P
% Moisture:	13	**Date/Time Collected:**	04/10/09 12:00
Basis:	Wet	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/13/09 13:00
QC Batch ID:	9103230	**Date/Time Analyzed:**	04/13/09 13:00
Sample Aliquot:	17.31 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Reva M. Golden	RG	**13**	0.0	0.10	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S19
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-002
Matrix:	SOLID	**Lab WorkOrder:**	K9023
% Moisture:	14	**Date/Time Collected:**	04/10/09 12:00
Basis:	Wet	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/13/09 13:00
QC Batch ID:	9103230	**Date/Time Analyzed:**	04/13/09 13:00
Sample Aliquot:	17.84 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Reva M. Golden	RG	**14**	0.0	0.10	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S20
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-003
Matrix:	SOLID	**Lab WorkOrder:**	K9024
% Moisture:	16	**Date/Time Collected:**	04/10/09 12:00
Basis:	Wet	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/13/09 13:00
QC Batch ID:	9103230	**Date/Time Analyzed:**	04/13/09 13:00
Sample Aliquot:	17.86 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Reva M. Golden	RG	**16**	0.0	0.10	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	INTRA-LAB QC
Lot/SDG Number:	D9D110109	**MSD Lab Sample ID:**	D9D080269-001X
Matrix:	SOLID	**MSD Lab WorkOrder:**	K9RXA
% Moisture:	10	**Date/Time Collected:**	04/07/09 10:10
Basis:	Wet	**Date/Time Received:**	04/08/09 08:45
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	04/13/09 13:00
QC Batch ID:	9103230	**Date/Time Analyzed:**	04/13/09 13:00
MSD Sample Aliquot:		**Instrument ID:**	BAL
MSD Dilution Factor:	1		

Analyte	RPD Limit	Sample Result	C	Duplicate Result	C	RPD	Q
Percent Moisture	15	10		12		12	

TestAmerica Denver

Sample Receiving Checklist

Lot #: D9D110109 Date/Time Received: 4/11/9 0815

Company Name & Sampling Site: North Wind Cannon AFB

PM to Complete This Section: *Yes* *No* *Yes* *No*

Residual chlorine check required: ☐ ☒ Quarantined : ☐ ☒

Quote #: 82143-A

Special Instructions:

A: 4/14/09

R: 4/14/09

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures (°C): 3.8

N/A	Yes	No		Initials
☐	☑	☐	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	AG
	☑	☐	2. Coolers scanned for radiation. Is the reading ≤ to background levels? Yes: ✓ No:____	
	☑	☐	3. Chain of custody present? If no, document on CUR.	
	☐	☑	4. Bottles broken and/or are leaking? If yes, document on CUR.	
	☐	☑	5. Multiphasic samples obvious? If yes, document on CUR.	
	☑	☐	6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.	
☑	☐	☐	7. pH of all samples checked and meet requirements? If no, document on CUR.	
	☑	☐	8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
	☑	☐	9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
☑	☐	☐	10. Were VOA samples without headspace? If no, document on CUR.	
☑	☐	☐	11. Were VOA vials preserved? Preservative ☐HCl ☐4±2°C ☐Sodium Thiosulfate ☐ Ascorbic Acid	
	☐	☑	12. Did samples require preservation with sodium thiosulfate?	
☑	☐	☐	13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
☑	☐	☐	14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
☐	☑	☐	15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☐	☑	16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☑	☐	17. Are analyses with short holding times requested?	
	☑	☐	18. Was a quick Turn Around (TAT) requested?	

\QA\Edit\FORMS\Sample Receiving\Sample Receiving Checklist 9-2-08

TestAmerica Denver

Sample Receiving Checklist

Lot # D9D110109

Login Checks:

Initials

N/A	Yes	No		
	☑	☐	19.	Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.
☐	☑	☐	20.	Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.
	☑	☐	21.	Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?
☐	☑	☐	22.	Were special log in instructions read and followed?
☑	☐	☐	23.	Were AFCEE metals logged for refrigerated storage?
	☑	☐	24.	Were tests logged checked against the COC? Which samples were confirmed? All
☐	☑	☐	25.	Was a Rush form completed for quick TAT?
☐	☑	☐	26.	Was a Short Hold form completed for any short holds?
	☐	☑	27.	Were special archiving instructions indicated in the General Comments? If so, what were they?

Labeling and Storage Checks:

Initials

☑	☐	☐	28.	Was the subcontract COC signed and sent with samples to bottle prep?
	☑	☐	29.	Were sample labels double-checked by a second person?
☐	☑	☐	30.	Were sample bottles and COC double checked for dissolved/filtered metals by a second person?
	☑	☐	31.	Did the sample ID, Date, and Time from label match what was logged?
☑	☐	☐	32.	Were stickers for special archiving instructions affixed to each box? See #27
☑	☐	☐	33.	Were AFCEE metals stored refrigerated?

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

FedEx Express US Airbill 8692 6512 9065 0200 Form ID No. **FedEx Retrieval Copy**

1 From
Date 4.10.00 Sender's FedEx Account Number 1823-2015-3
Sender's Name DAVE Wykoff Phone 505 372-9541
Company North Wind
Address ~~PO~~ 1350 Central Ave Dept./Floor/Suite/Room
City Los Alamos State NM ZIP 87544

2 Your Internal Billing Reference

3 To
Recipient's Name Pat McEntee Phone 303 7360107
Company Test Amer. CA
Recipient's Address 4955 Yarrow St
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room
Address ~~PO~~
To request a package be held at a specific FedEx location, print FedEx address here.
City ARVADA State CO ZIP 80002

8692 6512 9065

4a Express Package Service *Packages up to 150 lbs.*
1 [✓] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
5 [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
6 [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
3 [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
20 [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.
FedEx Envelope rate not available. Minimum charge: One-pound rate.
* To most locations.

4b Express Freight Service *Packages over 150 lbs.*
7 [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
8 [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
83 [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.
* Call for Confirmation:
** To most locations.

5 Packaging
6 [ ] FedEx Envelope* 2 [ ] FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. 3 [ ] FedEx Box 4 [ ] FedEx Tube 1 [✓] Other
* Declared value limit $500.

6 Special Handling Include FedEx address in Section 3.
3 [✓] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
1 [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
31 [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.
[✓] No 4 [ ] Yes As per attached Shipper's Declaration. [ ] Yes Shipper's Declaration not required. 6 [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No. [ ]
1 [✓] Sender Acct. No. in Section 1 will be billed 2 [ ] Recipient 3 [ ] Third Party 4 [ ] Credit Card 5 [ ] Cash/Check
[redacted]
Total Packages 1 Total Weight 36 [redacted]
†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details. Credit Card Auth.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.
[ ] No Signature Required — Package may be left without obtaining a signature for delivery.
10 [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
34 [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

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Chain of Custody Record

Sampler ID _____

Temperature on Receipt 3.8°C

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client: North Wind	Project Manager: Tom Matzen	Date: 4-10-09	Chain of Custody Number: 110701
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 1
City / State: LD / Zip Code	Site Contact: Dwykoff	Lab Contact: P McEntee	
Project Name and Location (State): CANNON AFB	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Cl/Cit	Analysis: THP-GRO	THP-DRO/ORO	Special Instructions/ Conditions of Receipt
SWMU31 S18	4.10.09	1200				✓	1						2	✓	✓	
SWMU31 S19	4.10.09	1200				✓	1						2	✓	✓	
SWMU31 S20	4.10.09	1200				✓	1						4	✓	✓	MS/MSD

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☑ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

1. Relinquished By: Dal Sup	Date: 4.10.09	Time: 1400	1. Received By: [signature]	Date: 4/11/9	Time: 0815
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Table of Contents

Volatile GC

Supporting Documentation

Sample Sequence, Chromatograms

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot ID: D9D110109

Client: North Wind

Method: 8015 GRO

Associated Samples: 1-3

Batch #(s): 9104158

I certify that, to the best of my knowledge, the attached package represents a complete and accurate copy of the original data.

Signature/Date: Lynnea Garrett 4/14/09

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

Cannon AFB
Clovis, New Mexico

Lot # D9I180142

Michelle Klinger

North Wind, Inc.
1425 Higham Street
Idaho Falls, ID 83402

Patrick McEntee
Project Manager

September 21, 2009

Case Narrative
Lot D9I180142

With the exception of the below mentioned anomalies, standard analytical protocols were followed in the analysis of the samples. All laboratory QC samples analyzed in conjunction with the samples in this project were within established control limits with any exceptions noted.

The test results presented in this report meet all requirements of NELAC and any exceptions are noted. This report shall not be reproduced, except in full, without written permission from the laboratory.

Sample Receipt
Ten solid samples and a trip blank were received under chain of custody by TestAmerica Denver on September 18, 2009.

The cooler temperature at receipt was acceptable at 3.1°C.

Two trip blank vials were received at the laboratory, but were not listed on the associated chain-of-custody. The trip blank sample was logged as a solid for 8015 GRO analysis, per the sample containers received.

As the collection times for the GRO and DRO samples are different the GRO and DRO samples were logged as separate samples. The % Moisture values from the DRO samples will be used for the %Moisture for the GRO samples.

All sample containers were received intact.

Gasoline Range Organics, Method SW846 8015B
Gasoline range organics are present in the method blank associated with QC batch 9264273. Because the concentration in the method blank is at a level less than half of the reporting limit, corrective action is deemed unnecessary.

MS/MSD analyses were performed on sample D9I180142-009 as requested and were in control.

Extractable Petroleum Hydrocarbons C10-C24, Method SW846 8015B
MS/MSD analyses were performed on sample D9I180142-004 as requested and were in control.

Percent Moisture, ASTM D 2216-90
The sample duplicate performed on samples from this lot was in control.

Quality Control Definitions of Terms

Term	Definition
Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which are spiked with known amounts of representative target analytes and required surrogates. A LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. An LCSD is a second Laboratory Control Sample.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried throughout he entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.
Sample Duplicate	A second aliquot of an environmental sample, taken form the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative to the precision for other samples in the batch.
Method Detection Limit "MDL"	The method detection limit is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from replicate analyses of low level standards in a typical representative matrix.
Reporting Limit "RL"	The STL reporting limit is normally the lowest level at which measurements become quantitatively meaningful, i.e., the quantitation limit, which is approximately three times the MDL. Some projects require RLs that are less than the quantitation limit to achieve particular maximum contaminant levels (MCLs) or relevant and appropriate requirements (ARARs), but RLs cannot be less than the statistically determined MDL.

Quality Control Definitions of Qualifiers

Qualifier	Definition
J	The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F	The analyte was positively identified but the associated numerical value is above the MDL and below the RL.
Q	The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.
B	The analyte was found in an associated blank, as well as in the sample.
M	A matrix effect was present.
U, MSB	The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.
U, DIL	The recovery was not calculated because the sample was diluted four times or greater.
N	Inorganics: Spiked analyte recovery is outside stated control limits.
a	Organics: Spiked analyte recovery is outside stated control limits.
*	Surrogate or LCS is outside control limits.
UJ	The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte specific quality control criteria.

METHODS SUMMARY

D9I180142

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Extractable Petroleum Hydrocarbons	SW846 8015B	
Method for Determination of Water Content of Soil	ASTM D 2216-90	ASTM D2216-90
Volatile Petroleum Hydrocarbons	SW846 8015B	SW846 5035

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D9I180142

ANALYTICAL METHOD	ANALYST	ANALYST ID
ASTM D 2216-90	Braden H. Peterson	6733
SW846 8015B	Brian Ream	000323
SW846 8015B	Teresa L. Williams	002510

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D9I180142

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LK2XD	001	SWMU31S21	09/16/09	16:25
LK2XN	002	SWMU31S22	09/16/09	16:30
LK2XP	003	SWMU31S23	09/16/09	16:22
LK2XQ	004	SWMU31S24	09/16/09	16:33
LK2XR	005	SWMU31S25	09/16/09	16:34
LK2XX	006	SWMU31S21	09/16/09	16:50
LK2X1	007	SWMU31S22	09/16/09	16:55
LK2X2	008	SWMU31S23	09/16/09	17:00
LK2X4	009	SWMU31S24	09/16/09	16:35
LK2X5	010	SWMU31S25	09/16/09	16:45
LK2X6	011	TRIPBLANK	09/16/09	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9I180142

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SO	SW846 8015B		9261295	9261180
	SO	ASTM D 2216-90		9261405	9261254
002	SO	SW846 8015B		9261295	9261180
	SO	ASTM D 2216-90		9261405	9261254
003	SO	SW846 8015B		9261295	9261180
	SO	ASTM D 2216-90		9261405	9261254
004	SO	SW846 8015B		9261295	9261180
	SO	ASTM D 2216-90		9261405	9261254
005	SO	SW846 8015B		9261295	9261180
	SO	ASTM D 2216-90		9261405	9261254
006	SO	SW846 8015B		9264273	9264155
	SO	ASTM D 2216-90		9261405	9261254
007	SO	SW846 8015B		9264273	9264155
	SO	ASTM D 2216-90		9261405	9261254
008	SO	SW846 8015B		9264273	9264155
	SO	ASTM D 2216-90		9261405	9261254
009	SO	SW846 8015B		9264273	9264155
	SO	ASTM D 2216-90		9261405	9261254
010	SO	SW846 8015B		9264273	9264155
	SO	ASTM D 2216-90		9261405	9261254
011	SO	SW846 8015B		9264273	9264155

Volatile GC

CLP-Like Forms

Lot ID: D9I180142

Method: SW846 8015B – GRO

Associated Samples: -006 through -011

Batch: 9264273

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S21
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-006
Matrix:	SOLID	**Lab WorkOrder:**	LK2XX1AA
% Moisture:	8.2	**Date/Time Collected:**	09/16/09 16:50
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 21:28
Sample Aliquot:	11.4 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**1.2**	0.35	1.1	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	84	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S22
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-007
Matrix:	SOLID	**Lab WorkOrder:**	LK2X11AA
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:55
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 13:34
Sample Aliquot:	11.06 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.37	0.37	1.2	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	84	64	148	

Form 1 Analysis Data Sheet Equivalent

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S23
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-008
Matrix:	SOLID	**Lab WorkOrder:**	LK2X21AA
% Moisture:	11	**Date/Time Collected:**	09/16/09 17:00
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 14:50
Sample Aliquot:	10.4 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.36	0.36	1.1	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	79	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-009
Matrix:	SOLID	**Lab WorkOrder:**	LK2X41AA
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:35
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 22:01
Sample Aliquot:	11.68 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.37	0.37	1.1	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	80	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S25
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-010
Matrix:	SOLID	**Lab WorkOrder:**	LK2X51AA
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:45
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 17:02
Sample Aliquot:	11.76 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	0.37	0.37	1.1	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	87	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	TRIPBLANK
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-011
Matrix:	SOLID	**Lab WorkOrder:**	LK2X61AA
% Moisture:		**Date/Time Collected:**	09/16/09 00:00
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 13:01
Sample Aliquot:	5 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.49**	0.32	1.0	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	105	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I210000-273B
Matrix:	SOLID	**Lab WorkOrder:**	LK6RP1AA
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 12:14
Sample Aliquot:	5.04 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	**0.43**	0.32	1.0	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	102	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Surrogate Recovery Summary

Lab Name: TESTAMERICA DENVER **Extraction** A4BKJA4

Lot/SDG Number: D9I180142 **QC Batch ID:** 9264273

Client ID	Work Order	SRG1	SRG2	SRG3	SRG4	SRG5	SRG6	SRG7	SRG8	TOT OUT
SWMU31S22	LK2X11AA	84								0
SWMU31S23	LK2X21AA	79								0
SWMU31S24	LK2X41AA	80								0
SWMU31S24 MS	LK2X41AD	92								0
SWMU31S24 MSD	LK2X41AE	92								0
SWMU31S25	LK2X51AA	87								0
TRIPBLANK	LK2X61AA	105								0
SWMU31S21	LK2XX1AA	84								0
INTRA-LAB BLANK	LK6RP1AA	102								0
CHECK SAMPLE	LK6RP1AC	109								0
DUPLICATE CHECK	LK6RP1AD	109								0

Surrogate Number	Surrogate Name	Lower Control Limit	Upper Control Limit
SRG 1	Chlorobenzene	64	148

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I210000-273C
Matrix:	SOLID	**Lab WorkOrder:**	LK6RP1AC
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 11:08
Sample Aliquot:	5.09 g	**Instrument ID:**	B
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Gasoline Range Organics	5.40	6.69	124		57 - 146

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	109	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I210000-273L
Matrix:	SOLID	**Lab WorkOrder:**	LK6RP1AD
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 11:41
Sample Aliquot:	5.09 g	**Instrument ID:**	B
Dilution Factor:	1		

Analyte	True	Found	C	% Rec	Q	RPD	Q	QC Limits	
								% Rec	RPD
Gasoline Range Organics	5.40	6.71		124		0.37		57 - 146	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	109	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**MS Lab Sample ID:**	D9I180142-009S
Matrix:	SOLID	**MS Lab WorkOrder:**	LK2X41AD
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:35
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 15:56
MS Sample Aliquot:	10.61 g	**Instrument ID:**	B
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Gasoline Range Organics	2.97	0.37	U	2.93		99		57 - 146

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	92	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**MSD Lab Sample ID:**	D9I180142-009D
Matrix:	SOLID	**MSD Lab WorkOrder:**	LK2X41AE
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:35
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 10:15
QC Batch ID:	9264273	**Date/Time Analyzed:**	09/18/09 16:29
MSD Sample Aliquot:	10.61 g	**Instrument ID:**	B
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Gasoline Range Organics	2.97	0.37	U	2.84		96		3.2		57 - 146	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	92	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Method Blank Summary

Lab Name:	TESTAMERICA DENVER	**Lab File ID:**	208F0701.
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I210000-273B
Matrix:	SOLID	**Lab Work Order:**	LK6RP1AA
Analysis Method:	8015B	**Date/Time Extracted:**	09/18/09 10:15
Extraction Method:	A4BKJA4	**Date/Time Analyzed:**	09/18/09 12:14
QC Batch ID:	9264273	**Instrument ID:**	B

Client ID	Sample Work Order #	Lab File ID	Date Analyzed	Time Analyzed
SWMU31S22	LK2X11AA	208F0701.	09/18/09	13:34
SWMU31S23	LK2X21AA	210F0901.	09/18/09	14:50
SWMU31S24	LK2X41AA	307F2201.	09/18/09	22:01
SWMU31S24 MS	LK2X41AD S	212F1101.	09/18/09	15:56
SWMU31S24 MSD	LK2X41AE D	213F1201.	09/18/09	16:29
SWMU31S25	LK2X51AA	214F1301.	09/18/09	17:02
TRIPBLANK	LK2X61AA	207F0601.	09/18/09	13:01
SWMU31S21	LK2XX1AA	306F2101.	09/18/09	21:28
CHECK SAMPLE	LK6RP1AC C	204F0301.	09/18/09	11:08
DUPLICATE CHECK	LK6RP1AD L	205F0401.	09/18/09	11:41

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Last Edit : 09-Feb-2009 12:44 pavlakoa

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\112F0801.D
Level 2: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\111F0701.D
Level 3: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\110F0601.D
Level 4: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D
Level 5: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\108F0401.D
Level 6: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\107F0301.D

Compound	20.0000 Level 1	50.0000 Level 2	100.0000 Level 3	200.0000 Level 4	500.0000 Level 5	1000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 2 GRO - C6 to C10	6388	6130	6328	6782	6863	6848	AVRG		6557		4.78875	
S 3 C6 - C12	160531	360106	725181	1541820	3882447	7714423	WLINR	-0.68398	7546		0.99766	1/AM7 2
S 163 GRO (C5-C12)	170146	377989	762994	1625734	4096273	8172973	WLINR	-0.73409	7959		0.99728	1/AM7 2
4 1-Chloro-4-Fluorobenzene	8252	8267	8266	8558	8582	8584	AVRG		8418		2.04177	
$ 1 Trifluorotoluene	8668	8547	8501	8779	8859	8931	AVRG		8714		1.97120	
$ 5 Chlorobenzene	10454	10483	10430	10776	10756	10768	AVRG		10611		1.61425	

AP
2/9/09

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Last Edit : 09-Feb-2009 12:44 pavlakoa

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response

Report Date: 09-Feb-2009 12:45

Calibration History

Method : \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\8015.m
Start Cal Date: 05-FEB-2009 14:52
End Cal Date : 05-FEB-2009 17:27
Last Cal Level: 1
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 20.00000		
05-FEB-2009 17:27	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\112F0801.D
Cal Level: 2 , Cal Amount: 50.00000		
05-FEB-2009 16:55	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\111F0701.D
Cal Level: 3 , Cal Amount: 100.00000		
05-FEB-2009 16:24	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\110F0601.D
Cal Level: 4 , Cal Amount: 200.00000		
05-FEB-2009 15:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D
Cal Level: 5 , Cal Amount: 500.00000		
05-FEB-2009 15:21	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\108F0401.D
Cal Level: 6 , Cal Amount: 1000.00000		
05-FEB-2009 14:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\107F0301.D

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 4

2/9/09

06-FEB-2009 03:54	GRO.A.C5_C12	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\216F2801.D
05-FEB-2009 15:52	all	\\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B\109F0501.D

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\020509I1.B/113F0901.D
Report Date: 02/09/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 113F0901.D
Analysis Type: WATER

Injection Date: 05-FEB-2009 17:58
Lab Sample ID: ICV #0037-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\02

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	29.8157	0.6	15.0
162 GRO - C6 to C10	200.0000	223.6824	11.8	15.0
163 GRO (C5-C12)	200.0000	222.8006	11.4	15.0
0 C6 - C12	200.0000	221.8616	10.9	20.0
0 1-Chloro-4-Fluorobenzene	30.0000	28.6257	4.6	15.0
161 Chlorobenzene	30.0000	31.0233	3.4	15.0

Average %D = 7.13

2/9/04

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\0918091.B/203F0201.D
Report Date: 09/21/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 203F0201.D
Analysis Type: WATER

Injection Date: 18-SEP-2009 10:07
Lab Sample ID: CCV #0276-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\09180

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D	
139 Trifluorotoluene	30.0000	35.1229	17.1	15.0	<-
162 GRO - C6 to C10	200.0000	174.4691	12.8	15.0	
0 1-Chloro-4-Fluorobenzene	30.0000	33.7981	12.7	15.0	
161 Chlorobenzene	30.0000	32.9497	9.8	15.0	

Average %D = 13.1

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\0918091.B/215F1401.D
Report Date: 09/21/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 215F1401.D
Analysis Type: WATER

Injection Date: 18-SEP-2009 17:39
Lab Sample ID: CCV #0276-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\09180

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	33.1170	10.4	15.0
162 GRO - C6 to C10	200.0000	179.5128	10.2	15.0
0 1-Chloro-4-Fluorobenzene	30.0000	31.5027	5.0	15.0
161 Chlorobenzene	30.0000	30.6060	2.0	15.0

Average %D = 6.92

Data File: \\DenSvr03\Public\chem\GCV\GC_B.i\0918091.B/308F2301.D
Report Date: 09/21/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_B.i
Lab File ID: 308F2301.D
Analysis Type: WATER

Injection Date: 18-SEP-2009 22:33
Lab Sample ID: CCV #0276-09
Method File: \\DenSvr03\Public\chem\GCV\GC_B.i\09180

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
139 Trifluorotoluene	30.0000	30.3857	1.3	15.0
162 GRO - C6 to C10	200.0000	171.1079	14.4	15.0
0 1-Chloro-4-Fluorobenzene	30.0000	29.3913	2.0	15.0
161 Chlorobenzene	30.0000	29.2193	2.6	15.0

Average %D = 5.09

Sequence: C:\HPCHEM\2\SEQUENCE\B020509.S

Sequence Table (Front Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 105	RT 1 #0045-09				
2	Vial 106	RT 2 #0336-08				
3	Vial 107	L6(1000)#0052-09				
4	Vial 108	L5(500) #0052-09				
5	Vial 109	L4(200) #0052-09				
6	Vial 110	L3(100) #0052-09				
7	Vial 111	L2(50) #0052-09				
8	Vial 112	L1(20) #0052-09				
9	Vial 113	ICV #0037-09				
10	Vial 114	RINSE				
11	Vial 115	LCS #0008-09				
12	Vial 116	LCSD #0008-09				
13	Vial 201	RINSE				
14	Vial 202	RINSE				
15	Vial 203	MB #0034-09 KR				
16	Vial 204	K6FF51A3,176-9 DNR				
17	Vial 205	K6L381AD,176-2				
18	Vial 206	K6L4M1AP,176-3				
19	Vial 207	K6L4R1AP,176-4				
20	Vial 208	K6L4W1AP,176-5				
21	Vial 209	K6L4X1AE,176-6				
22	Vial 210	K6L4X1D4,176-6S				
23	Vial 211	K6L4X1D5,176-6D				
24	Vial 212	K6L5J1AQ,176-7				
25	Vial 213	K6L5L1A3,176-8				
26	Vial 214	RINSE				
27	Vial 215	MB #0034-09				
28	Vial 216	CCV #0049-09				

Sequence Table (Back Injector):

No entries - empty table!

Sequence: C:\HPCHEM\2\SEQUENCE\B091809.S

Sequence Table (Front Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 202	RT #0265-09				
2	Vial 203	CCV #0276-09				
3	Vial 204	LCS #028509				
4	Vial 205	LCSD #0285-09				
5	Vial 206	MB #0260-09				
6	Vial 207	LK2X61AA,142-11				
7	Vial 208	LK2X11AA,142-7				
8	Vial 209	LK2XX1AA,142-6 -RR-conf				
9	Vial 210	LK2X21AA,142-8				
10	Vial 211	LK2X41AA,142-9 -RR -BP				
11	Vial 212	LK2X41AD,142-9S				
12	Vial 213	LK2X41AE,142-9D				
13	Vial 214	LK2X51AA,142-10				
14	Vial 215	CCV #0276-09				
15	Vial 216	LCS #028509				
16	Vial 301	LCSD #0285-09				
17	Vial 302	MB #0260-09				
18	Vial 303	LKREP1A8,171-1				
19	Vial 304	LKREP1A8,171-1S				
20	Vial 305	LKREP1A8,171-1D				
21	Vial 306	LK2XX1AA,142-6				
22	Vial 307	LK2X41AA,142-9				
23	Vial 308	CCV #0276-09				

Sequence Table (Back Injector):

No entries - empty table!

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RT 1 #0045-09	020509i1.b/105F0101.D	RT 1 #0045-09	No Manual Integrations	
RT 2 #0336-08	020509i1.b/106F0201.D	RT 2 #0336-08	No Manual Integrations	
L6(1000)#0052-0	020509i1.b/107F0301.D	L6(1000)#0052-09	No Manual Integrations	
L5(500) #0052-0	020509i1.b/108F0401.D	L5(500) #0052-09	No Manual Integrations	
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	Trifluorotoluene	BAS
L4(200) #0052-0	020509i1.b/109F0501.D	L4(200) #0052-09	Chlorobenzene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	Trifluorotoluene	BAS
L3(100) #0052-0	020509i1.b/110F0601.D	L3(100) #0052-09	Chlorobenzene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	Trifluorotoluene	BAS
L2(50) #0052-09	020509i1.b/111F0701.D	L2(50) #0052-09	Chlorobenzene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	1-Chloro-4-Fluorobenzene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	Trifluorotoluene	BAS
L1(20) #0052-09	020509i1.b/112F0801.D	L1(20) #0052-09	Chlorobenzene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	1-Chloro-4-Fluorobenzene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	Trifluorotoluene	BAS
ICV #0037-09	020509i1.b/113F0901.D	ICV #0037-09	Chlorobenzene	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

9/21

9/21/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
RT #0265-09	0918091.b/202F0101.D	RT #0265-09	No Manual Integrations	
CCV #0276-09	0918091.b/203F0201.D	CCV #0276-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0276-09	0918091.b/203F0201.D	CCV #0276-09	Trifluorotoluene	BAS
CCV #0276-09	0918091.b/203F0201.D	CCV #0276-09	Chlorobenzene	BAS
LK6RP1AC	0918091.b/204F0301.D	LCS #028509	1-Chloro-4-Fluorobenzene	BAS
LK6RP1AC	0918091.b/204F0301.D	LCS #028509	Chlorobenzene	BAS
LK6RP1AD	0918091.b/205F0401.D	LCSD #0285-09	1-Chloro-4-Fluorobenzene	BAS
LK6RP1AD	0918091.b/205F0401.D	LCSD #0285-09	Chlorobenzene	BAS
LK6RP1AA	0918091.b/206F0501.D	MB #0260-09	No Manual Integrations	
LK2X61AA	0918091.b/207F0601.D	142-11	No Manual Integrations	
LK2X11AA	0918091.b/208F0701.D	142-7	No Manual Integrations	
LK2XX1AA	0918091.b/209F0801.D	142-6	No Manual Integrations	
LK2X21AA	0918091.b/210F0901.D	142-8	No Manual Integrations	
LK2X41AA	0918091.b/211F1001.D	142-9	No Manual Integrations	
LK2X41AD	0918091.b/212F1101.D	142-9S	1-Chloro-4-Fluorobenzene	BAS
LK2X41AD	0918091.b/212F1101.D	142-9S	Chlorobenzene	BAS
LK2X41AE	0918091.b/213F1201.D	142-9D	1-Chloro-4-Fluorobenzene	BAS
LK2X41AE	0918091.b/213F1201.D	142-9D	Chlorobenzene	BAS
LK2X51AA	0918091.b/214F1301.D	142-10	No Manual Integrations	
CCV #0276-09	0918091.b/215F1401.D	CCV #0276-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0276-09	0918091.b/215F1401.D	CCV #0276-09	Trifluorotoluene	BAS
CCV #0276-09	0918091.b/215F1401.D	CCV #0276-09	Chlorobenzene	BAS
LK2XX1AA	0918091.b/306F2101.D	142-6	1-Chloro-4-Fluorobenzene	BAS
LK2XX1AA	0918091.b/306F2101.D	142-6	Chlorobenzene	BAS
LK2X41AA	0918091.b/307F2201.D	142-9	No Manual Integrations	
CCV #0276-09	0918091.b/308F2301.D	CCV #0276-09	1-Chloro-4-Fluorobenzene	BAS
CCV #0276-09	0918091.b/308F2301.D	CCV #0276-09	Trifluorotoluene	BAS
CCV #0276-09	0918091.b/308F2301.D	CCV #0276-09	Chlorobenzene	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

9/21

9/21/09

Semivolatile GC

CLP-Like Forms

Lot ID: D9I180142

Method: SW846 8015B – DRO (C10– C24)

Associated Samples: -001 through -005

Batch: 9261295

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S21
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-001
Matrix:	SOLID	**Lab WorkOrder:**	LK2XD1AA
% Moisture:	8.2	**Date/Time Collected:**	09/16/09 16:25
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 11:16
Sample Aliquot:	28.8 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Teresa L. Williams	TW	**46**	1.1	4.4	

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	92	47	142	
630-02-4	n-Octacosane	111	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S22
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-002
Matrix:	SOLID	**Lab WorkOrder:**	LK2XN1AA
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:30
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 11:44
Sample Aliquot:	29.7 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Teresa L. Williams	TW	1.1	1.1	4.6	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	108	47	142	
630-02-4	n-Octacosane	94	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S23
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-003
Matrix:	SOLID	**Lab WorkOrder:**	LK2XP1AA
% Moisture:	11	**Date/Time Collected:**	09/16/09 16:22
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 12:12
Sample Aliquot:	31.62 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Teresa L. Williams	TW	**1.6**	1.1	4.5	F

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	89	47	142	
630-02-4	n-Octacosane	95	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-004
Matrix:	SOLID	**Lab WorkOrder:**	LK2XQ1AA
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:33
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 12:40
Sample Aliquot:	31.17 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Teresa L. Williams	TW	1.1	1.1	4.6	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	103	47	142	
630-02-4	n-Octacosane	95	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S25
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-005
Matrix:	SOLID	**Lab WorkOrder:**	LK2XR1AA
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:34
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 14:04
Sample Aliquot:	30.63 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Teresa L. Williams	TW	1.1	1.1	4.6	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	105	47	142	
630-02-4	n-Octacosane	106	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180000-295B
Matrix:	SOLID	**Lab WorkOrder:**	LK2591AA
% Moisture:		**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 10:21
Sample Aliquot:	30.88 g	**Instrument ID:**	U
Dilution Factor:	1	**Extraction Method:**	3550B

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1845	Diesel Range Organics (C10-C24)	Teresa L. Williams	TW	0.99	0.99	4.0	U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	113	47	142	
630-02-4	n-Octacosane	99	25	162	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Surrogate Recovery Summary

Lab Name: TESTAMERICA DENVER **Extraction** A13KIA4

Lot/SDG Number: D9I180142 **QC Batch ID:** 9261295

Client ID	Work Order	SRG1	SRG2	SRG3	SRG4	SRG5	SRG6	SRG7	SRG8	TOT OUT
INTRA-LAB BLANK	LK2591AA	99	113							0
SWMU31S22	LK2XN1AA	94	108							0
SWMU31S24 MS	LK2XQ1AD	95	79							0
SWMU31S24 MSD	LK2XQ1AE	98	84							0
SWMU31S25	LK2XR1AA	106	105							0
CHECK SAMPLE	LK2591AC	93	87							0
SWMU31S21	LK2XD1AA	111	92							0
SWMU31S23	LK2XP1AA	95	89							0
SWMU31S24	LK2XQ1AA	95	103							0

Surrogate Number	Surrogate Name	Lower Control Limit	Upper Control Limit
SRG 1	n-Octacosane	25	162
SRG 2	o-Terphenyl	47	142

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180000-295C
Matrix:	SOLID	**Lab WorkOrder:**	LK2591AC
% Moisture:	0.0	**Date/Time Collected:**	
Basis:	Wet	**Date/Time Received:**	
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 10:48
Sample Aliquot:	31.73 g	**Instrument ID:**	U
Dilution Factor:	1		

Analyte	True	Found	%Rec	Q	Limits
Diesel Range Organics (C10-C24)	63.0	58.9	94		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
84-15-1	o-Terphenyl	87	47	142	
630-02-4	n-Octacosane	93	25	162	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**MS Lab Sample ID:**	D9I180142-004S
Matrix:	SOLID	**MS Lab WorkOrder:**	LK2XQ1AD
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:33
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 13:08
MS Sample Aliquot:	31.54 g	**Instrument ID:**	U
MS Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MS Result	C	% Rec	Q	QC Limit
Diesel Range Organics (C10-C24)	72.6	1.1	U	56.8		78		51 - 153

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
630-02-4	n-Octacosane	95	25	162	
84-15-1	o-Terphenyl	79	47	142	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**MSD Lab Sample ID:**	D9I180142-004D
Matrix:	SOLID	**MSD Lab WorkOrder:**	LK2XQ1AE
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:33
Basis:	Dry	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	09/18/09 11:45
QC Batch ID:	9261295	**Date/Time Analyzed:**	09/19/09 13:36
MSD Sample Aliquot:	31.32 g	**Instrument ID:**	U
MSD Dilution Factor:	1		

Analyte	Spike Amount	Sample Result	C	MSD Result	C	% Rec	Q	RPD	Q	QC Limits	
										% Rec	RPD
Diesel Range Organics (C1	73.2	1.1	U	60.3		82		6.0		51 - 153	50

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
630-02-4	n-Octacosane	98	25	162	
84-15-1	o-Terphenyl	84	47	142	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Method Blank Summary

Lab Name:	TESTAMERICA DENVER	**Lab File ID:**	056B5601.
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180000-295B
Matrix:	SOLID	**Lab Work Order:**	LK2591AA
Analysis Method:	8015B	**Date/Time Extracted:**	09/18/09 11:45
Extraction Method:	A13KIA4	**Date/Time Analyzed:**	09/19/09 10:21
QC Batch ID:	9261295	**Instrument ID:**	U

Client ID	Sample Work Order #	Lab File ID	Date Analyzed	Time Analyzed
CHECK SAMPLE	LK2591AC C	056B5601.	09/19/09	10:48
SWMU31S21	LK2XD1AA	057B5701.	09/19/09	11:16
SWMU31S22	LK2XN1AA	058B5801.	09/19/09	11:44
SWMU31S23	LK2XP1AA	059B5901.	09/19/09	12:12
SWMU31S24	LK2XQ1AA	060B6001.	09/19/09	12:40
SWMU31S24 MS	LK2XQ1AD S	061B6101.	09/19/09	13:08
SWMU31S24 MSD	LK2XQ1AE D	062B6201.	09/19/09	13:36
SWMU31S25	LK2XR1AA	063B6301.	09/19/09	14:04

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Last Edit : 24-Aug-2009 10:00 GC_U.i

Calibration File Names:
Level 1: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\018B1801.D
Level 2: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\017B1701.D
Level 3: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\016B1601.D
Level 4: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\015B1501.D
Level 5: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\014B1401.D
Level 6: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\013B1301.D
Level 7: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\012B1201.D

SEE CALIBRATION HISTORY

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
S 192 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	WLINR	0.000e+000	0.000e+000		0.000e+000 <-
S 191 C10-C32	312795	723047	3326424	12623543	18994930	35599052	81605012	WLINR	-31.47994	2605		0.99539
S 190 C10-C24	308365	722282	3324118	12615740	18985123	35563905	81501769	WLINR	-30.49348	2602		0.99540
S 188 C10-C22	307468	715157	3296089	12530201	18849444	35279012	80805231	WLINR	-30.90178	2581		0.99545

*All weighted Linear are 1/x

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Last Edit : 24-Aug-2009 10:00 GC_U.i

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
S 189 C22-C36	314709	519080	2287865	10349202	18241428	32213357	58475825	WLINR	-48.20667	2080		0.99371
S 187 Oklahoma	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 182 C8-C11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 183 C12-C14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 186 C8-C30	310735	801277	3393838	12770714	19280417	36057359	82587512	WLINR	-37.54252	2637		0.99532
S 184 C15-C20	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
S 185 C21-C30	+++++	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Last Edit : 24-Aug-2009 10:00 GC_U.i

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	30000.0000 Level 7										
S 181 C28-34	120361	175454	769005	3671088	6260348	12167982					
	21037569						WLINR	-42.68623	752		0.99402
S 177 C10-38	321037	725028	3330866	12625477	18996308	35612254					
	81632850						WLINR	-33.84641	2605		0.99539
S 178 C10-25	308638	722701	3325330	12618473	18988160	35586549					
	81563701						WLINR	-30.44732	2604		0.99539
S 179 C12-24	280527	663805	3003243	11331176	17142312	32208164					
	73456062						WLINR	-32.62381	2347		0.99559
174 C10	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000 <-
175 C28	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000 <-
176 C36	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						QUAD	0.000e+000	0.000e+000	0.000e+000	0.000e+000 <-

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Last Edit : 24-Aug-2009 10:00 GC_U.i

Compound	100.0000 Level 1 / 30000.0000 Level 7	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
S 173 C24-C36	263347	418587	1860322	8871568	15636307	27124789						
	48674309						WLINR	-44.20422	1752		0.99191	
S 170 Jet Fuel JP4	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+000	0.000e+000		0.000e+000	<-
S 2 Jet Fuel JP-8	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						AVRG		0.000e+000		0.000e+000	
S 3 C10-C28(DRO)	309503	722879	3325685	12622578	18993547	35594515						
	81599618						WLINR	-30.60314	2605		0.99539	
S 4 C10 - C36	317459	723630	3328196	12624119	18995531	35607098						
	81615169						WLINR	-32.76205	2605		0.99540	
S 180 C25-36	229748	352907	1581265	7667757	13485928	23383044						
	41515401						WLINR	-44.73372	1504		0.99100	

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Last Edit : 24-Aug-2009 10:00 GC_U.i

Compound	100.0000 Level 1	250.0000 Level 2	1000.0000 Level 3	5000.0000 Level 4	7500.0000 Level 5	15000.0000 Level 6	30000.0000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 1 o-Terphenyl	1488	2953	14430	64006	99299	171987	+++++	QUAD	0.26650	0.00033	6.276e-010	0.99917
$ 6 n-Octacosane	2617	3822	15496	64261	93176	167659	+++++	WLINR	-0.62737	2355		0.99501

TestAmerica

INITIAL CALIBRATION DATA

Start Cal Date : 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Quant Method : ESTD
Target Version : 4.14
Integrator : Falcon
Method file : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Last Edit : 24-Aug-2009 10:00 GC_U.i

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

Report Date: 24-Aug-2009 10:14

Calibration History

Method : \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\DR01.m
Start Cal Date: 22-AUG-2009 20:39
End Cal Date : 23-AUG-2009 03:12
Last Cal Level: 2
Last Cal Type : Continuing Calibration

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 100.00000		
23-AUG-2009 03:12	C25-36(RRO)	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\018B1801.D
22-AUG-2009 23:28	DROICAL	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\010B1001.D
Cal Level: 2 , Cal Amount: 250.00000		
23-AUG-2009 02:44	C25-36(RRO)	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\017B1701.D
22-AUG-2009 23:00	DROICAL	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\009B0901.D
Cal Level: 3 , Cal Amount: 1000.00000		
23-AUG-2009 02:16	C25-36(RRO)	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\016B1601.D
22-AUG-2009 22:32	DROICAL	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\008B0801.D
Cal Level: 4 , Cal Amount: 5000.00000		
23-AUG-2009 01:48	C25-36(RRO)	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\015B1501.D
22-AUG-2009 22:04	DROICAL	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\007B0701.D
Cal Level: 5 , Cal Amount: 7500.00000		
23-AUG-2009 01:20	C25-36(RRO)	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\014B1401.D
22-AUG-2009 21:35	DROICAL	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\006B0601.D
Cal Level: 6 , Cal Amount: 15000.00000		
23-AUG-2009 00:52	C25-36(RRO)	\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\013B1301.D
22-AUG-2009 21:07	DROICAL	

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|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\005B0501.D                |
+-----------------+-----------------+-------------------------------------+

+-----------------+-----------------+-------------------------------------+
| Cal Level: 7 , Cal Amount: 30000.00000                                |
+=======================================================================+
|23-AUG-2009 00:24 |C25-36(RRO)      |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\012B1201.D
|22-AUG-2009 20:39 |DROICAL          |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\004B0401.D
+-----------------+-----------------+-------------------------------------+
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Continuing Calibration
Ccal Level Mode: BY SAMPLE

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+-----------------+-----------------+-------------------------------------+
|23-AUG-2009 21:33 |C25-36(RRO)      |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\057B5701.D
|23-AUG-2009 18:15 |C25-36(RRO)      |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\050B5001.D
|23-AUG-2009 17:46 |C10-22ccv        |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\049B4901.D
|23-AUG-2009 11:34 |C10-22ccv        |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\036B3601.D
|23-AUG-2009 15:23 |C10-22-36        |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\044B4401.D
|22-AUG-2009 23:56 |DROICAL          |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\011B1101.D
|22-AUG-2009 22:04 |DROICAL          |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\007B0701.D
|23-AUG-2009 21:05 |C10-22ccv        |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\056B5601.D
|23-AUG-2009 18:43 |C10-22-36        |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\051B5101.D
|23-AUG-2009 03:40 |C25-36(RRO)      |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\019B1901.D
|23-AUG-2009 01:48 |C25-36(RRO)      |
|\\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B\015B1501.D
+-----------------+-----------------+-------------------------------------+
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Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0822091.B/011B1101.D
Report Date: 08/24/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 011B1101.D
Analysis Type: SOIL

Injection Date: 22-AUG-2009 23:56
Lab Sample ID: DRO SS GSV852-09
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
188 C10-C22	1000.0000	881.6891	11.8	15.0
190 C10-C24	1000.0000	904.3739	9.6	15.0
178 C10-25	1000.0000	908.4342	9.2	15.0
186 C8-C30	1000.0000	924.6399	7.5	15.0
0 C10-C28(DRO)	1000.0000	909.7958	9.0	15.0
191 C10-C32	1000.0000	909.1225	9.1	15.0
179 C12-24	1000.0000	916.1543	8.4	15.0
165 C10 - C36	1000.0000	908.1518	9.2	15.0
177 C10-38	1000.0000	907.5234	9.2	15.0
139 o-Terphenyl	5.0000	4.7515	5.0	15.0
162 n-Octacosane	5.0000	5.5694	11.4	15.0

Average %D = 9.03

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0918091.B/054B5401.D
Report Date: 09/21/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 054B5401.D
Analysis Type: SOIL

Injection Date: 19-SEP-2009 09:53
Lab Sample ID: DRO L4 GSV909-09
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\091

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
190 C10-C24	5000.0000	4876.9456	2.5	15.0
0 C10-C28(DRO)	5000.0000	4874.5605	2.5	15.0
191 C10-C32	5000.0000	4873.7796	2.5	15.0
165 C10 - C36	5000.0000	4872.4660	2.6	15.0
0 o-Terphenyl	25.0000	26.1900	4.8	15.0
0 n-Octacosane	25.0000	25.3329	1.3	15.0

Average %D = 2.69

Data File: \\DenSvr03\Public\chem\GCS\GC_U.i\0918091.B/066B6601.D
Report Date: 09/21/2009

CONTINUING CALIBRATION COMPOUNDS
PERCENT DRIFT REPORT

Instrument ID: GC_U.i
Lab File ID: 066B6601.D
Analysis Type: SOIL

Injection Date: 19-SEP-2009 15:28
Lab Sample ID: DRO L4 GSV909-09
Method File: \\DenSvr03\Public\chem\GCS\GC_U.i\091

COMPOUND	EXPECTED CONC.	MEASURED CONC.	%D	MAX %D
190 C10-C24	5000.0000	5067.8250	1.4	15.0
0 C10-C28(DRO)	5000.0000	5069.8639	1.4	15.0
191 C10-C32	5000.0000	5069.5378	1.4	15.0
165 C10 - C36	5000.0000	5068.3365	1.4	15.0
0 o-Terphenyl	25.0000	28.5791	14.3	15.0
0 n-Octacosane	25.0000	27.1659	8.7	15.0

Average %D = 4.75

Sequence: C:\HPCHEM\2\SEQUENCE\U082209.S

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L7 GSV 846-09				
5	Vial 5	DRO L6 GSV 847-09				
6	Vial 6	DRO L5 GSV 848-09				
7	Vial 7	DRO L4 GSV909-09				
8	Vial 8	DRO L3 GSV910-09				
9	Vial 9	DRO L2 GSV 911-09				
10	Vial 10	DRO L1 GSV 912-09				
11	Vial 11	DRO SS GSV 852-09				
12	Vial 12	RRO L7 GSV 915-09				
13	Vial 13	RRO L6 GSV 916-09				
14	Vial 14	RRO L5 GSV 917-09				
15	Vial 15	RRO L4 GSV 918-09				
16	Vial 16	RRO L3 GSV 919-09				
17	Vial 17	RRO L2 GSV 920-09				
18	Vial 18	RRO L1 GSV 921-09				
19	Vial 19	RRO SS GSV 922-09				
20	Vial 20	GSV0887-09 SURR				
21	Vial 21	LH9D21AA,MB				
22	Vial 22	LH9D21AC,LCS	10-28			
23	Vial 23	LH9D21AD,LCSD				
24	Vial 24	LH5R41A6,353-2				
25	Vial 25	LH6HP1AG,133-1				
26	Vial 26	LH7FK1AE,239-1				
27	Vial 27	LH9EJ1AA,MB				
28	Vial 28	LH9EJ1AC,LCS				
29	Vial 29	LH9EJ1AD,LCSD	10-36			
30	Vial 30	LH5061AA,367-1				2
31	Vial 31	LH5081AA,367-2				
32	Vial 32	LH5091AA,367-3				2
33	Vial 33	LH51A1AA,367-4				
34	Vial 34	LH51C1AA,367-5				5
35	Vial 35	LH51F1AA,367-7				2
36	Vial 36	DRO L4 GSV909-09				
37	Vial 37	LJDXL1AA,MB	10-22, 10-28, 22-36			
38	Vial 38	LJDXL1AC,LCS				
39	Vial 39	LHTG21AP,297-14S				
40	Vial 40	LHTG21AQ,297-14D				
41	Vial 41	LHTG22AM,297-14				
42	Vial 42	LH04K1AL,296-1 } RR w/ RRO CCVs — RPE2X				
43	Vial 43	LH0431AL,296-3				
44	Vial 44	LH7WM1AA,290-1				
45	Vial 45	LH7W01AA,290-2				MeCl2 lot #H58501
46	Vial 46	LH7W21AA,290-3				
47	Vial 47	LH7W31AA,290-4				
48	Vial 48	LH7W51AA,290-5				
49	Vial 49	DRO L4 GSV909-09				
50	Vial 50	RRO L4 GSV919-09				
51	Vial 51	LJ3MT1AA,MB				
52	Vial 52	LJEMT1AC,LCS				
53	Vial 53	LH0421A5,296-2				5
54	Vial 54	LH0421A6,296-2S				5

quence: C:\HPCHEM\2\SEQUENCE\U082209.S

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
55	Vial 55	LH0421A7,296-2D				5
56	Vial 56	DRO L4 GSV909-09				
57	Vial 57	RRO L4 GSV919-09				

Sequence: C:\HPCHEM\2\SEQUENCE\U091809.S

Sequence Table (Front Injector):

No entries - empty table!

Sequence Table (Back Injector):

Quantification Part:

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
1	Vial 1	PRIMER				
2	Vial 2	CH2CL2				
3	Vial 3	MARKER				
4	Vial 4	DRO L4 GSV909-09				
5	Vial 5	RRO L4 GSV919-09				
6	Vial 6	LKXKN1AA,MB				
7	Vial 7	LKXKN1AC,LCS				
8	Vial 8	LKXKN1AD,LCS				
9	Vial 9	LKV2T1AW,142-1				
10	Vial 10	LKV2T1C4,142-1S				
11	Vial 11	LKV2T1C5,142-1D				
12	Vial 12	LKV2T1C6,142-1S				
13	Vial 13	LKV2T1C7,142-1D				
14	Vial 14	LKV3D1AW,142-2				
15	Vial 15	DRO L4 GSV909-09				
16	Vial 16	RRO L4 GSV919-09				
17	Vial 17	LKRR11AA,MB				
18	Vial 18	LKRR11AC,LCS				
19	Vial 19	LKMD81AC,158-2				
20	Vial 20	LKMEH1AC,158-3				
21	Vial 21	LKMGD1AC,163-1				
22	Vial 22	LKMGF1AA,163-2				
23	Vial 23	LKMGK1AA,163-3				
24	Vial 24	LKMGL1AC,163-4				
25	Vial 25	LKMGP1AA,163-5				
26	Vial 26	LKNNV1A7,320-3				
27	Vial 27	LKNPA1AJ,320-5				
28	Vial 28	LKNPD1AJ,320-7				
29	Vial 29	DRO L4 GSV909-09				
30	Vial 30	LKNPD1DT,320-7S				
31	Vial 31	LKNPD1DU,320-7D				
32	Vial 32	LKN5M1A7,115-1				
33	Vial 33	LKN611AJ,115-3				
34	Vial 34	LKXK31AA,MB				
35	Vial 35	LKXK31AC,LCS				
36	Vial 36	LKXK31AD,LCSD				
37	Vial 37	LKVW31A3,125-1				
38	Vial 38	LKXK61AA,MB				
39	Vial 39	LKXK61AC,LCS				
40	Vial 40	LKXK61AD,LCSD				
41	Vial 41	LKR1J1AE,135-1				
42	Vial 42	LKR1V1AE,135-2				
43	Vial 43	DRO L4 GSV909-09				
44	Vial 44	LKR171AQ,135-3				
45	Vial 45	LKR171D3,135-3S				
46	Vial 46	LKR171D4,135-3D				
47	Vial 47	LKR2N1AQ,135-4				
48	Vial 48	LKR2Q1AQ,135-5				
49	Vial 49	LKR2V1AQ,135-6				
50	Vial 50	LKV2K1AC,134-5				
51	Vial 51	LKV2R1AC,134-6				
52	Vial 52	LKV221AC,134-7				
53	Vial 53	LKV251AC,134-8				
54	Vial 54	DRO L4 GSV909-09				

1259468

258132

1259493

9259490

Sequence: C:\HPCHEM\2\SEQUENCE\U091809.S

Line	Location	SampleName	SampleAmount	ISTDAmt	Multiplier	Dilution
55	Vial 55	LK2591AA,MB				
56	Vial 56	LK2591AC,LCS				
57	Vial 57	LK2XD1AA,142-1				
58	Vial 58	LK2XN1AA,142-2				
59	Vial 59	LK2XP1AA,142-3				
60	Vial 60	LK2XQ1AA,142-4				
61	Vial 61	LK2XQ1AD,142-4S				
62	Vial 62	LK2XQ1AE,142-4D				
63	Vial 63	LK2XR1AA,142-5				
64	Vial 64	LK2XD1AA,142-1 DNR				5
65	Vial 65	LK2XP1AA,142-3				5
66	Vial 66	DRO L4 GSV909-09				
67	Vial 67	LK1711AA,MB				
68	Vial 68	LK1711AC,LCS				
69	Vial 69	LK1711AD,LCSD				
70	Vial 70	LK0K21AD,173-1				
71	Vial 71	LK0LP1AD,173-2				
72	Vial 72	LK0L31AC,178-1 RD @ 5X				
73	Vial 73	LK0ME1AC,178-4				
74	Vial 74	LK0MF1AC,178-5				
75	Vial 75	LK0MH1AC,178-6 DNR				
76	Vial 76	LK0MH1AC,178-6				10
77	Vial 77	DRO L4 GSV909-09				

1261285

926580

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L7 GSV846-0	0822091.b/004B0401.D	DRO L7 GSV846-09	o-Terphenyl	BAS
DRO L7 GSV846-0	0822091.b/004B0401.D	DRO L7 GSV846-09	n-Octacosane	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10-C28(DRO)	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10 - C36	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10-38	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10-25	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C12-24	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C8-C30	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10-C22	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10-C24	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	C10-C32	BAS
DRO L6 GSV847-0	0822091.b/005B0501.D	DRO L6 GSV847-09	o-Terphenyl	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10-C28(DRO)	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10 - C36	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10-38	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10-25	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C12-24	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C8-C30	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10-C22	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10-C24	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	C10-C32	BAS
DRO L5 GSV848-0	0822091.b/006B0601.D	DRO L5 GSV848-09	o-Terphenyl	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10-C28(DRO)	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10 - C36	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10-38	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10-25	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C12-24	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C8-C30	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10-C22	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10-C24	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	C10-C32	BAS
DRO L4 GSV909-0	0822091.b/007B0701.D	DRO L4 GSV909-09	o-Terphenyl	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10-C28(DRO)	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10 - C36	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10-38	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10-25	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

DDD 9/21/09

JL 9/21/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C12-24	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C8-C30	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10-C22	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10-C24	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	C10-C32	BAS
DRO L3 GSV910-0	0822091.b/008B0801.D	DRO L3 GSV910-09	o-Terphenyl	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10-C28(DRO)	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10 - C36	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10-38	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10-25	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C12-24	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C8-C30	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10-C22	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10-C24	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	C10-C32	BAS
DRO L2 GSV911-0	0822091.b/009B0901.D	DRO L2 GSV911-09	o-Terphenyl	BAS
DRO L1 GSV912-0	0822091.b/010B1001.D	DRO L1 GSV912-09	o-Terphenyl	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10-C28(DRO)	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10 - C36	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10-38	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10-25	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C12-24	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C8-C30	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10-C22	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10-C24	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	C10-C32	BAS
DRO SS GSV852-0	0822091.b/011B1101.D	DRO SS GSV852-09	o-Terphenyl	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

JDW 9/21/09

YL 9/21/09

MANUAL INTEGRATION SUMMARY REPORT

Sample Name	Data File	Lot No.	Compound	Code
DRO L4 GSV909-0	0918091.b/054B5401.D	DRO L4 GSV909-09	o-Terphenyl	BAS
LK2591AA	0918091.b/055B5501.D	MB	No Manual Integrations	
LK2591AC	0918091.b/056B5601.D	LCS	o-Terphenyl	BAS
LK2XD1AA	0918091.b/057B5701.D	142-1	n-Octacosane	BAS
LK2XD1AA	0918091.b/057B5701.D	142-1	o-Terphenyl	BAS
LK2XN1AA	0918091.b/058B5801.D	142-2	n-Octacosane	BAS
LK2XP1AA	0918091.b/059B5901.D	142-3	n-Octacosane	BAS
LK2XQ1AA	0918091.b/060B6001.D	142-4	No Manual Integrations	
LK2XQ1AD	0918091.b/061B6101.D	142-4S	C10-C28(DRO)	BAS
LK2XQ1AD	0918091.b/061B6101.D	142-4S	C10 - C36	BAS
LK2XQ1AD	0918091.b/061B6101.D	142-4S	C10-C24	BAS
LK2XQ1AD	0918091.b/061B6101.D	142-4S	C10-C32	BAS
LK2XQ1AD	0918091.b/061B6101.D	142-4S	o-Terphenyl	BAS
LK2XQ1AE	0918091.b/062B6201.D	142-4D	o-Terphenyl	BAS
LK2XR1AA	0918091.b/063B6301.D	142-5	No Manual Integrations	
DRO L4 GSV909-0	0918091.b/066B6601.D	DRO L4 GSV909-09	o-Terphenyl	BAS

Legend

BAS - Baseline Event
BID - Baseline ID
SP - Split Peak
TAIL - Peak Tailing or Fronting
NOID - Analyte not Identified by the Data System
MSIN - Mis-Integrated
MSID - Analyte Misidentified by the Data System

9/21/09

9/21/09

General Chemistry

CLP-Like Forms

Lot ID: D9I180142

Methods: ASTM D 2216-90

Associated Samples: -001 through -010

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S21
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-001
Matrix:	SOLID	**Lab WorkOrder:**	LK2XD
% Moisture:	8.2	**Date/Time Collected:**	09/16/09 16:25
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	16.49 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**8.2**	0.0	0.10	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S22
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-002
Matrix:	SOLID	**Lab WorkOrder:**	LK2XN
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:30
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	17.26 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**13**	0.0	0.10	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S23
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-003
Matrix:	SOLID	**Lab WorkOrder:**	LK2XP
% Moisture:	11	**Date/Time Collected:**	09/16/09 16:22
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	16.99 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**11**	0.0	0.10	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-004
Matrix:	SOLID	**Lab WorkOrder:**	LK2XQ
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:33
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	16.45 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**13**	0.0	0.10	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S25
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-005
Matrix:	SOLID	**Lab WorkOrder:**	LK2XR
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:34
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	17.46 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**13**	0.0	0.10	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S21
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-006
Matrix:	SOLID	**Lab WorkOrder:**	LK2XX
% Moisture:	8.2	**Date/Time Collected:**	09/16/09 16:50
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	16.49 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**8.2**	0.0	0.10	

Form 1 Analysis Data Sheet Equivalent

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S22
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-007
Matrix:	SOLID	**Lab WorkOrder:**	LK2X1
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:55
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	17.26 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**13**	0.0	0.10	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S23
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-008
Matrix:	SOLID	**Lab WorkOrder:**	LK2X2
% Moisture:	11	**Date/Time Collected:**	09/16/09 17:00
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	16.99 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**11**	0.0	0.10	

Form 1 Analysis Data Sheet Equivalent

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S24
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-009
Matrix:	SOLID	**Lab WorkOrder:**	LK2X4
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:35
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	16.45 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	**13**	0.0	0.10	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S25
Lot/SDG Number:	D9I180142	**Lab Sample ID:**	D9I180142-010
Matrix:	SOLID	**Lab WorkOrder:**	LK2X5
% Moisture:	13	**Date/Time Collected:**	09/16/09 16:45
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
Sample Aliquot:	17.46 g	**Instrument ID:**	BAL
Dilution Factor:	1	**Extraction Method:**	D2216-90

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q1028	Percent Moisture	Braden H. Peterson	BP	13	0.0	0.10	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S21 DUP
Lot/SDG Number:	D9I180142	**MSD Lab Sample ID:**	D9I180142-001X
Matrix:	SOLID	**MSD Lab WorkOrder:**	LK2XD
% Moisture:	8.2	**Date/Time Collected:**	09/16/09 16:25
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
MSD Sample Aliquot:	16.85 g	**Instrument ID:**	BAL
MSD Dilution Factor:	1		

Analyte	RPD Limit	Sample Result	C	Duplicate Result	C	RPD	Q
Percent Moisture	15	8.2		7.1		15	

Form 6 Duplicate Analysis Data Sheet Equivalent

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Wet Chemistry Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S21 DUP
Lot/SDG Number:	D9I180142	**MSD Lab Sample ID:**	D9I180142-006X
Matrix:	SOLID	**MSD Lab WorkOrder:**	LK2XX
% Moisture:	8.2	**Date/Time Collected:**	09/16/09 16:50
Basis:	Wet	**Date/Time Received:**	09/18/09 09:00
Analysis Method:	D 2216-90	**Date Leached:**	
Unit:	%	**Date/Time Extracted:**	09/18/09 14:00
QC Batch ID:	9261405	**Date/Time Analyzed:**	09/18/09 14:00
MSD Sample Aliquot:	16.85 g	**Instrument ID:**	BAL
MSD Dilution Factor:	1		

Analyte	RPD Limit	Sample Result	C	Duplicate Result	C	RPD	Q
Percent Moisture	15	8.2		7.1		15	

Form 6 Duplicate Analysis Data Sheet Equivalent

TestAmerica Denver

Sample Receiving Checklist

Lot #: D9I180142 Date/Time Received: 9/18/09 0900

Company Name & Sampling Site: NorthWind Cannon AFB

PM to Complete This Section: *Yes* *No* *Yes* *No*

Residual chlorine check required: ☐ ☒ Quarantined : ☐ ☒

Quote #: ~~82149~~ 82143

Special Instructions:

A: 9/21

R: 9/21

Time Zone:

• EDT/EST • CDT/CST • MDT/MST • PDT/PST • OTHER

Unpacking Checks:

Cooler #(s): _____ _____ _____ _____ _____ _____ _____ _____

Temperatures (°C): 3.1° _____ _____ _____ _____ _____ _____ _____

N/A	*Yes*	*No*		*Initials*
☐	☒	☐	1. Cooler seals intact? (N/A if hand delivered) If no, document on CUR.	AB
	☒	☐	2. Coolers scanned for radiation. Is the reading ≤ to background levels? Yes: ✓ No: ____	
	☒	☐	3. Chain of custody present? If no, document on CUR.	
	☐	☒	4. Bottles broken and/or are leaking? If yes, document on CUR.	
	☐	☒	5. Multiphasic samples obvious? If yes, document on CUR.	
	☒	☐	6. Proper container & preservatives used? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR.	
☒	☐	☐	7. pH of all samples checked and meet requirements? If no, document on CUR.	
	~~☒~~	~~☐~~	~~8. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.~~	
	☒	☐	9. Did chain of custody agree with labels ID and samples received? If no, document on CUR.	
☒	☐	☐	10. Were VOA samples without headspace? If no, document on CUR.	
☒	☐	☐	11. Were VOA vials preserved? Preservative ☐HCl ☐4±2°C ☐Sodium Thiosulfate ☐ Ascorbic Acid	
	☐	☒	12. Did samples require preservation with sodium thiosulfate?	
☒	☐	☐	13. If yes to #11, did the samples contain residual chlorine? If yes, document on CUR.	
☒	☐	☐	14. Sediment present in dissolved/filtered bottles? If yes, document on CUR.	
☐	☒	☐	15. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☐	☒	16. Receipt date(s) > 48 hours past the collection date(s)? If yes, notify PA/PM.	
	☐	☒	17. Are analyses with short holding times requested?	
	☒	☐	18. Was a quick Turn Around (TAT) requested?	

TestAmerica Denver

Sample Receiving Checklist

Lot # D9I180142

Login Checks:

N/A	Yes	No		Initials
	☑	☐	19. Sufficient volume provided for all analysis requested? (ref. Attachment D of SOP# DV-QA-0003) If no, document on CUR, and contact PM before proceeding.	
☐	☑	☐	20. Is sufficient volume provided for client requested MS, MSD or matrix duplicates? If no, document on CUR, and contact PM before proceeding.	
	☑	☐	21. Did the chain of custody includes "received by" and "relinquished" by signatures, dates, and times?	
☐	☑	☐	22. Were special log in instructions read and followed?	
☑	☐	☐	23. Were AFCEE metals logged for refrigerated storage?	
	☑	☐	24. Were tests logged checked against the COC? Which samples were confirmed? 1	
☐	☑	☐	25. Was a Rush form completed for quick TAT?	
☑	☐	☐	26. Was a Short Hold form completed for any short holds?	
	☐	☑	27. Were special archiving instructions indicated in the General Comments? If so, what were they?	

Labeling and Storage Checks:

				Initials
☑	☐	☐	28. Was the subcontract COC signed and sent with samples to bottle prep?	
	☑	☐	29. Were sample labels double-checked by a second person?	
☑	☐	☐	30. Were sample bottles and COC double checked for dissolved/filtered metals by a second person?	
	☑	☐	31. Did the sample ID, Date, and Time from label match what was logged?	
☑	☐	☐	32. Were stickers for special archiving instructions affixed to each box? See #27	
☑	☐	☐	33. Were AFCEE metals stored refrigerated?	

Document any problems or discrepancies and the actions taken to resolve them on a Condition Upon Receipt Anomaly Report (CUR).

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 3.1 CORR IR1 9-18-09

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
~~USACE~~ NWT	TOM MATZEN	9-16-09	126346
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
1124 SUMMERFIELD WAY	785-~~83~~ 760-6617		

City	State	Zip Code	Site Contact	Lab Contact
LAWRENCE	KS	66049	TOM MATZEN	PAT McENTEE

Project Name and Location (State): CANNON AFB SWMU 31

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		Analysis (Attach list if more space is needed): DRO	GRO										Special Instructions/ Conditions of Receipt
SWMU31S21	9-16-09	1625				X		X							1											24 HR TURN
SWMU31S22	↓	1630				↓		↓							1											↓
SWMU31S23	↓	1622				↓		↓							1											↓
SWMU31S24	↓	1633				↓		↓							1											↓
SWMU31S24 MS/MSD	↓	1633				↓		↓							1											↓
SWMU31S25	↓	1634				↓		↓							1											↓

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☒ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Thomas A. Matzen	9-17-09	1110	1. Received By: Amy Bindel	9/18/09	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Sampler ID _____

Temperature on Receipt 3.1

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
NWI	TOM MATZEN	9-16-09	126347
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
1124 SUMMERFIELD WAY	785-760-6617		

City	State	Zip Code	Site Contact	Lab Contact
LAWRENCE	KS	66049	TOM MATZEN	PAT McENTEE

Project Name and Location (State): CANNON AFB SWMU-31

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis (Attach list if more space is needed): GRO											Special Instructions/ Conditions of Receipt
SWMU31S21	9-16-09	1650				X								X	1											24 HR TURN
SWMU31S22	↓	1655				↓								↓	1											↓
SWMU31S23		1700													1											
SWMU31S24		1635													1											
SWMU31S24 MS		1635													1											
SWMU31S24 MSD		1635													1											
SWMU31S25	↓	1645				↓								↓	1											↓

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☒ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: Thomas A. Matzen	9-17-09	1110	1. Received By: [signature]	9/18/09	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Data Validation Report – Sample Delivery Group D9D110109

This report contains the results of the review and validation of the specified data package performed by Kishor Gala, North Wind, Inc., Denver, Colorado.

Introduction

This data validation report covers samples taken from Cannon Air Force Base, New Mexico, on April 10, 2009. Three soil samples were collected and sent to TestAmerica Laboratories, Denver, Colorado for analyses. The specific samples and analyses included in this validation report are:

Sample Delivery Group	Sample ID	Matrix	Collection Date	Analyses
D9D110109	SWMU31S18	Soil	04/10/2009 12:00	Pct. Solids (ASTM D 2216-90) GRO (SW846 8015) DRO (C_{10}- C_{24}, 8015B) RRO (C_{24} – C_{36}, 8015B)
	SWMU31S19	Soil	04/10/2009 12:00	Pct. Solids (ASTM D 2216-90) GRO (SW846 8015) DRO (C_{10}- C_{24}, 8015B) RRO (C_{24} – C_{36}, 8015B)
	SWMU31S20	Soil	04/10/2009 12:00	Pct. Solids (ASTM D 2216-90) GRO (SW846 8015) DRO (C_{10}- C_{24}, 8015B) RRO (C_{24} – C_{36}, 8015B)

Pct. Solids = Percent Solids, ASTM = American Society for Testing and Materials, GRO = Gasoline Range Organics, DRO = C_{10}- C_{24} Diesel Range Organics, RRO = C_{24} – C_{36} Residual Range Organics.

These data were validated against the laboratory's QA/QC limits using the guidelines and practices published in the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA, October 1999), and in the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (USEPA, October 2004) (NFG), and in conjunction with the Basewide Quality Assurance Project Plan for Holloman AFB.

Sample Handling and Holding times

All samples were properly preserved, transferred under chain-of-custody to the laboratory, received at the laboratory at 3.8^0C. The samples were analyzed within the required holding time.

Blanks

The laboratory method blanks were correctly batched with the corresponding field samples.

- Batch 9104158 – Gasoline range organics (GRO) were detected in the method blank at a concentration of 0.38 µg/Kg. GRO was also detected in samples SWMU31S18 and SWMU31S19 at concentrations ranging from 0.42 to 1.3 mg/Kg; less than 5 times the blank concentration. The GRO presence in the site samples is believed to be emanating from the laboratory and considered not present in the site samples. The GRO result for the site sample SWMU31S18 was qualified as not detected ("U") and the result was raised to the moisture-corrected reporting limit because the reported result was less than the corrected reporting limit. The GRO result for sample SWMU31S19 was also qualified and not detected ("U"), but the reported result of 1.3 mg/Kg was not changed because it was greater than the corrected reporting limit.
- Batch 9102015 – Diesel range organics (DRO) were detected in the method blank at a concentration of 1.1 µg/Kg; however, DRO was not detected in the site samples. Therefore, data qualification was unnecessary.
- Batch 9102015 – Residual range organics (RRO) were not detected in the laboratory blank.

Laboratory control sample/laboratory control sample duplicate

- Batch 9104158 – The GRO recoveries in the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were acceptable. The relative percent difference (RPD) between the duplicate analyses was also acceptable.
- Batch 9102015 – The LCS recoveries for DRO and RRO were acceptable.

Surrogate Recoveries

The surrogate recoveries were acceptable for all samples and analyses.

Matrix spike/matrix spike duplicates

Sample SWMU31S20 was used for the MS/MSD analyses. The GRO. DRO and RRO recoveries and RPD were acceptable.

Project specific quality assurance/quality control

A field duplicate was not included in this sample delivery group.

Compound quantitation and reporting limits

All samples were analyzed without dilution..

Overall assessment of data

Overall, the data are suitable for the intended data usage. All analyses were performed, and the data met the required QC criteria except where noted. The data analyses are considered complete. Qualified data are presented below.

Data Qualification			
Sample Delivery Group	**Sample ID**	**Analyte**	**Qualification**
D9D110109	SWMU31S18	Gasoline range organics	1.2 U
	SWMU31S19	Gasoline range organics	1.3 U

Data Validation Report – Sample Delivery Group D9I180142

This report contains the results of the review and validation of the specified data package performed by Kishor Gala, North Wind, Inc., Denver, Colorado.

Introduction

This data validation report covers samples taken from Cannon Air Force Base, New Mexico, on September 16, 2009. Five oil samples were collected and sent to TestAmerica Laboratories, Denver, Colorado for analyses. The specific samples and analyses included in this validation report are:

Sample Delivery Group	Sample ID	Matrix	Collection Date	Analyses
D9I180142	SWMU31S21	SO	9/16/2009 4:25	D 2216-90 8015B-DRO
		SO	9/16/2009 4:50	D 2216-90 8015B-GRO
	SWMU31S22	SO	9/16/2009 4:30	D 2216-90 8015B-DRO
		SO	9/16/2009 4:55	D 2216-90 8015B-GRO
	SWMU31S23	SO	9/16/2009 4:22	D 2216-90 8015B-DRO
		SO	9/16/2009 5:00	D 2216-90 8015B-GRO
	SWMU31S24	SO	9/16/2009 4:33	D 2216-90 8015B-DRO
		SO	9/16/2009 4:35	D 2216-90 8015B-GRO
	SWMU31S25	SO	9/16/2009 4:34	D 2216-90 8015B-DRO
		SO	9/16/2009 4:45	D 2216-90 8015B-GRO
	TRIPBLANK	SQ	9/16/2009 0:00	8015B-GRO

Pct. Solids = Percent Solids, ASTM = American Society for Testing and Materials, GRO = Gasoline Range Organics, DRO = C_{10}- C_{24} Diesel Range Organics.

The data were validated against the laboratory's QA/QC limits using the guidelines and practices published in the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA-540-R-08-01, June 2008*, and in conjunction with the Basewide Quality Assurance Project Plan for Cannon AFB.

Sample Handling and Holding times

All samples were properly preserved, transferred under chain-of-custody to the laboratory, received at the laboratory at 3.1^0C and 3.3^0C. The samples were analyzed within the required holding time.

Blanks

The laboratory method blanks were correctly batched with the corresponding field samples.

- **Batch 9264273.** Gasoline range organics (GRO) contamination of 0.43 mg/Kg was reported in the method blank. GRO was also reported in the field sample SWMU31S21 (1.2 mg/Kg) and in the trip blank (0.49 mg/Kg). Because the sample concentrations were less than five times the blank level, the sample data were qualified as not detected (U). Further, the result for trip blank was raised to the reporting limit of 1 mg/Kg because the reported result was less than the reporting limit.

Laboratory control sample/laboratory control sample duplicate

The laboratory control sample (LCS) recoveries were acceptable.

Surrogate Recoveries

The surrogate recoveries were acceptable for all samples and analyses.

Matrix spike/matrix spike duplicates

Sample SWMU21S24 was used for the MS/MSD analyses. The spike recoveries and relative percent difference (RPD) were acceptable.

Project specific quality assurance/quality control

A field duplicate was not included in this sample delivery group

Compound quantitation and reporting limits

Samples were analyzed without a need for dilution.

Overall assessment of data

Overall, the data are suitable for the intended data usage as qualified. All analyses were performed, and the data met the required QC criteria except as noted. The data analyses are considered complete. The GRO data were qualified as not detected in sample SWMU31S21 and in the trip blank. The qualified data are as follows. The qualified data sheets are attached to this report.

Data Qualification			
Sample Delivery Group	**Sample ID**	**Analyte**	**Qualification**
D9I180142	SWMU31S21	Gasoline Range Organics	1.2 U
	TRIPBLANK	Gasoline Range Organics	1 U

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North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S18
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-001
Matrix:	SOLID	**Lab WorkOrder:**	K902P1AA
% Moisture:	13	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 12:39
Sample Aliquot:	5.97 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	1.2 ~~0.42~~	0.37	1.2	~~F~~ U KG

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	85	64	148	

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THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	**Client Sample ID:**	SWMU31S19
Lot/SDG Number:	D9D110109	**Lab Sample ID:**	D9D110109-002
Matrix:	SOLID	**Lab WorkOrder:**	K90231AA
% Moisture:	14	**Date/Time Collected:**	04/10/09 12:00
Basis:	Dry	**Date/Time Received:**	04/11/09 08:15
Analysis Method:	8015B	**Date Leached:**	
Unit:	mg/kg	**Date/Time Extracted:**	04/11/09 10:00
QC Batch ID:	9104158	**Date/Time Analyzed:**	04/13/09 13:08
Sample Aliquot:	5.68 g	**Instrument ID:**	B
Dilution Factor:	1	**Extraction Method:**	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	~~1.2~~ ~~1.3~~	0.38	1.2	U

KG

No change

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	86	64	148	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	Client Sample ID:	SWMU31S21
Lot/SDG Number:	D9I180142	Lab Sample ID:	D9I180142-006
Matrix:	SOLID	Lab WorkOrder:	LK2XX1AA
% Moisture:	8.2	Date/Time Collected:	09/16/09 16:50
Basis:	Dry	Date/Time Received:	09/18/09 09:00
Analysis Method:	8015B	Date Leached:	
Unit:	mg/kg	Date/Time Extracted:	09/18/09 10:15
QC Batch ID:	9264273	Date/Time Analyzed:	09/18/09 21:28
Sample Aliquot:	11.4 g	Instrument ID:	B
Dilution Factor:	1	Extraction Method:	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	1.2	0.35	1.1	

u

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	84	64	148	

KL

Form 1 Analysis Data Sheet Equivalent

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

North Wind, Inc.

Cannon AFB, New Mexico

Analysis Data Sheet

Lab Name:	TESTAMERICA DENVER	Client Sample ID:	TRIPBLANK
Lot/SDG Number:	D9I180142	Lab Sample ID:	D9I180142-011
Matrix:	SOLID	Lab WorkOrder:	LK2X61AA
% Moisture:		Date/Time Collected:	09/16/09 00:00
Basis:	Wet	Date/Time Received:	09/18/09 09:00
Analysis Method:	8015B	Date Leached:	
Unit:	mg/kg	Date/Time Extracted:	09/18/09 10:15
QC Batch ID:	9264273	Date/Time Analyzed:	09/18/09 13:01
Sample Aliquot:	5 g	Instrument ID:	B
Dilution Factor:	1	Extraction Method:	5035

CAS No.	Analyte	Analyst Name	Initials	Conc.	MDL	RL	Q
Q796	Gasoline Range Organics	Brian Ream	BR	1.0 ~~0.49~~	0.32	1.0	~~E~~ U

CAS No.	Surrogate	% Rec	Lower Limit	Upper Limit	Q
108-90-7	Chlorobenzene	105	64	148	

KG

Form 1 Analysis Data Sheet Equivalent