DEPARTMENT OF THE AIR FORCE

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HOLLOMAN AIR FORCE BASE, NEW MEXICO

AUG 3 0 2007

MEMORANDUM FOR NEW MEXICO ENVIRONMENT DEPARTMENT
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FROM: 49 CES/CD
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Subject: Submittal of Supplemental information pertaining to RCRA Facility Investigation LF-10 (SWMUs 101 & 109) and LF-29 (SWMU 104) Holloman AFB, NM

1. Holloman AFB is providing supplemental information pertaining to RCRA Facility Investigation of LF-10 (SWMUs 101 & 109) and LF-29 (SWMU 104). The purpose of this report is to obtain additional site-specific physical and analytical data to address NMED concerns and obtain NFA concurrence and removal of the sites from Table A of the Holloman AFB RCRA Part B Permit.

2. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3. If you have any questions, please contact Mr. George Fish at 505-572-5395.

A. DAVID BUDAK
Deputy Base Civil Engineer

Attachments:
(see next page)

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Global Power for America

Attachments:
1. A copy of Supplemental RCRA Facility Investigation LF-10 and LF-29
2. An electronic copy of this document via compact disk

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SUPPLEMENTAL RCRA FACILITY INVESTIGATION
LF-10 (SWMUS 101 AND 109) AND
LF-29 (SWMU 104)
HOLLOMAN AIR FORCE BASE
ALAMOGORDO, NEW MEXICO

Air Force Center for Environmental Excellence
Brooks City-Base, Texas

July 2007

SUPPLEMENTAL RCRA FACILITY INVESTIGATION
LF-10 (SWMUS 101 & 109) AND LF-29 (SWMU 104)
HOLLOMAN AIR FORCE BASE
ALAMOGORDO, NEW MEXICO

Prepared for

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Contract No. F41624-03-D-8602
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July 2007

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Document Certification

Supplemental RCRA Facility Investigation Report,
LF-10 (SWMUs 101 and 109), and LF-29 (SWMU 104)
July 2007

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Deborah Hartell
Chief, Restoration Section

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This Supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) report was prepared by HydroGeoLogic, Inc. (HGL) on behalf of Holloman Air Force Base (AFB) for the New Mexico Environment Department (NMED) under contract to the Air Force Center for Environmental Excellence, Contract No.F41624-03-D-8602, Task Order No. 037. This Supplemental RFI report presents the results of supplemental RFI field investigation activities conducted at the following Holloman AFB Environmental Restoration Program (ERP) sites / Solid Waste Management Units (SWMUs):

- LF-10 (SWMUs 101 & 109) - Old Main Base Landfill
- LF-29 (SWMU 104) - Former Army Landfill

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LIST OF ACRONYMS, SYMBOLS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
µg/L	microgram per liter
%	percent
%LEL	percent lower explosive limit
%R	percent recoveries
AFB	Air Force Base
AOC	Area of Concern
bgs	below ground surface
Bhate	Bhate Environmental Associates
BN/AE	base/neutral/acid extractables
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CES	Civil Engineering Squadron
DCA	dichloroethane
DDESB	DoD Explosives Safety Board
DoD	Department of Defense
DPT	direct-push technology
DRMO	Defense Reutilization and Marketing Office
D-TPH	diesel-range total petroleum hydrocarbons
EQ	Environmental Quotient
ERP	Environmental Restoration Program
ft/day	feet per day
ft/ft	feet per foot
ft/year	feet per year
GPS	global positioning system
G-TPH	gasoline-range total petroleum hydrocarbons
HERO	Hazards of Electromagnetic Radiation to Ordnance
HGL	HydroGeoLogic, Inc.
HHMSSL	Human Health Medium Specific Screening Level
HSWA	Hazardous Solid Waste Amendment
IRP	Installation Restoration Program
LCS	laboratory control sample
LTM	long term monitoring

MCL	Maximum Contaminant Level
MD	munitions debris
MDL	method detection limit
MEC	munitions and explosives of concern
mg/kg	milligram per kilogram
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
msl	mean sea level
MW	monitoring well
NFA	no further action
ng	nanogram
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMGWQ	New Mexico Groundwater Quality
NOD	notice of deficiency
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photoionization detector
PR	Preliminary Review
QAPP	Quality Assurance Project Plan
QC	quality control
Radian	Radian Corporation, Inc.
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SDG	sample delivery group
SOB	Statement of Basis
SOP	standard operating procedure
SSLs	Soil Screening Levels
SVOCs	semi-volatile organic compounds
SWMU(s)	Solid Waste Management Unit(s)
TDS	total dissolved solids
TCE	trichloroethene
TPH	total petroleum hydrocarbon
TRPH	total recoverable petroleum hydrocarbons

USACE	U.S. Army Corps of Engineers
USAF	United States Department of the Air Force
USDA	U.S. Department of Agriculture
U.S. EPA	U.S. Environmental Protection Agency
U.S. EPA Reg VI	U.S. Environmental Protection Agency Region VI
UXO	unexploded ordnance
VOC	volatile organic compound
VSI	Visual Site Inspection
WRRI	New Mexico Water Resources Research Institute

SUPPLEMENTAL RCRA FACILITY INVESTIGATION
LF-10 (SWMU 101 & 109) AND LF-29 (SWMU 104)
HOLLOMAN AIR FORCE BASE
ALAMOGORDO, NEW MEXICO

1.0 INTRODUCTION

This Supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) report was prepared by HydroGeoLogic, Inc. (HGL) on behalf of Holloman Air Force Base (AFB) for the New Mexico Environment Department (NMED) under contract to the Air Force Center for Environmental Excellence, Contract No.F41624-03-D-8602, Task Order No. 037. This Supplemental RFI report presents the results of supplemental RFI field investigation activities conducted at the following Holloman AFB Environmental Restoration Program (ERP) sites / Solid Waste Management Units (SWMUs):

- LF-10 (SWMUs 101 & 109) - Old Main Base Landfill
- LF-29 (SWMU 104) - Former Army Landfill

1.1 INVESTIGATION PURPOSE

ERP sites LF-10 and LF-29 are listed in Appendix 4-A Table A of the facility's RCRA permit (NM6572124422-2) (NMED, 2004a); requiring the sites to be investigated and undergo corrective action if warranted. Remedial investigations (RIs) and biennial groundwater compliance long term monitoring (LTM) have been conducted historically at both sites. Upon review of the RI and LTM data, NMED determined in 2004 that additional characterization of LF-10 and LF-29 would be required before no further action (NFA) approval and removal from the Holloman AFB RCRA Part B Permit would be considered (United States Department of the Air Force [USAF], 2004).

The purpose of this supplemental RFI for each site was to obtain additional site-specific physical and analytical data to address NMED concerns and obtain NFA concurrence and removal of the sites from Table A of the Holloman AFB RCRA Part B Permit.

The work described herein was performed in accordance with the project workplans (HGL, 2005a, 2005b, 2006c), the response to the RFI workplan Notice of Deficiency (NOD) (HGL, 2006b), and discussions during a NMED site visit (HGL, 2006d), as approved in NMED correspondence dated 29 August 2006.

1.2 REPORT ORGANIZATION

This supplemental RFI report is organized into six sections. Section 1 is this introduction. Section 2 presents the overall Holloman AFB environmental setting while Section 3 documents supplemental RFI field activities conducted at the two sites. Sections 4 (LF-10) and 5 (LF 29)

present site-specific background and environmental setting information, summarize former investigation activities and results (evaluated against current screening criteria), document supplemental RFI activities and analytical results, evaluate results of the collected data, and provide conclusions and recommendations based on this information. References cited in this report are provided in Section 6. Supporting information including field sample data sheets included as appendices.

2.0 HOLLOMAN AIR FORCE BASE ENVIRONMENTAL SETTING

The environmental setting information in the following subsections is reproduced primarily from the Radian Corporation, Inc. (Radian) 29-site Remedial Investigation report (Radian, 1992b), unless cited otherwise.

2.1 LOCATION

Holloman AFB is situated in south-central New Mexico, in the northwest-central part of Otero County. The Base is located about 75 miles northeast of El Paso, Texas, and about seven miles west of Alamogordo, New Mexico. The Base occupies about 50,000 acres in the northeast quarter of section Township 17 South, Range 8 East. Additional land extending northward is occupied by the White Sands Missile Range testing facilities. A facility location map is included as Figure 2.1. The locations of ERP sites LF-10 and LF-29, in relation to the surrounding facility, are shown on Figure 2.2.

2.2 DEMOGRAPHICS

Alamogordo is the county seat of Otero County, and the only town of appreciable size within 30 to 50 miles of the Base. The population of Alamogordo was 23,535 in 1975, and has since grown to about 31,000. The economy of Alamogordo depends largely upon Holloman AFB and other military installations in the area. Approximately 5,500 people live at Holloman AFB.

2.3 CLIMATE

The climate in the Tularosa Basin is arid, with low annual rainfall and low relative humidity. The surrounding mountain ranges greatly influence the local weather. They modify approaching weather systems and provide orographic lifting, which produces summer thunderstorms.

Holloman AFB receives most of its total annual rainfall from thunderstorm activity from May through October. Winter is generally dry and is characterized by clear skies and erratic snowfall. The period from March through May is characterized by strong southerly wind flow and periods of blowing dust and sand. Mean annual precipitation is 7.9 inches. The mean annual lake evaporation rate, commonly used as an estimate of the mean annual evapotranspiration rate, is approximately 67 inches per year. As presented by Huff in the 49th Annual New Mexico Water Conference Proceedings (New Mexico Water Resources Research Institute [WRRI], 2005), approximately 30,000 acre-feet/year of groundwater left the Tularosa basin through evapotranspiration under 1995 conditions.

2.4 TOPOGRAPHY

The Base is located in the Tularosa Basin, which is part of a 170-mile-long structural depression. The basin is bounded to the south by a low topographic divide near the New Mexico/Texas state line; to the west by the uplifted Organ, San Andres, and Oscura Mountains; to the north by Chupadera Mesa; and to the east by the uplifted Jicarilla and

Sacramento Mountains. The interior plain has low relief with altitudes ranging from about 4,000 feet above mean sea level (msl) in the southwestern portion of the basin to about 4,400 feet above msl in the northeastern portion. The surrounding mountains rise abruptly to altitudes of 7,000 to 12,000 feet above msl.

Surface runoff from the mountains bordering the basin has deposited extensive alluvial fans on the interior plain. The Tularosa Basin is a closed basin from which no surface water drains. Near the Base, the ground surface is gently undulating and is composed of alluvial fan deposits, eolian dunes, and flat-bottomed playas (pan-shaped depressions carved by wind erosion). To the west of the Base lie the gypsum sand dune fields of White Sands National Monument. A regional topographic map is provided as Figure 2.3.

2.5 GEOLOGY

The Tularosa Basin is the easternmost extension of the Basin and Range Province of the western United States. The basin was created by Cenozoic extensional, or normal, faulting of a sequence of Precambrian- through Tertiary-age sedimentary and igneous rocks. These rocks are exposed in the fault scarps bounding the basin floor. The basin is a graben, or downthrown block, bounded by the upthrown fault blocks of the San Andres and Sacramento Mountains. A geologic map of the Tularosa Basin is provided as Figure 2.4; a generalized cross-section of the Basin is provided as Figure 2.5.

During the Permian period of the Paleozoic era (approximately 270 million years ago), southern New Mexico was covered by a shallow sea. Limestone and sandstone were deposited, forming thick sedimentary units. Toward the end of the Mesozoic era (approximately 70 million years ago), the major mountain building activities that formed the Rocky Mountains took place. During these events, southern New Mexico emerged from the ocean as the earth's crust upwarped gently in that area. During the Cenozoic era (beginning approximately 70 million years ago), basin and range formation was initiated in what is now the southwestern United States. Approximately 10 million years ago, Cenozoic faulting formed the graben structure known as the Tularosa Basin. During this process, arched portions of rock collapsed between large-scale, north-south trending faults. The Tularosa Basin is a central downthrown area, bounded on the east and west by fault block mountains. Bedded Permian strata can be seen along the faces of the Sacramento and San Andres Mountains. Permian limestones also occur west of the Base in a low bedrock outcrop near Hurtz Spring. Sediments have been filling the basin continuously since its formation.

Recently (less than 10 million years ago), lava flows erupted along existing fault planes created during active basin development. The Carrizozo lava flow north of the Base is an example of such an eruption.

Permian Huew and Yeso Limestones are exposed in a north-south bedrock high beginning south of Holloman AFB in the Jarilla Mountains trending north through Tres Hermanos and Twin Buttes. The bedrock high extends through a small outcrop near Hurtz Spring west of the Base and through Tularosa Peak on the Base north of the test track. A schematic east west cross-sectional view of the southern basin is shown in Figure 2.5. The bedrock

outcrops represent a large, buried, down-faulted block. The fault block is tilted to the east slightly and plunges to the north. The fault is en-echelon to the basin-forming fault at the base of the Sacramento Mountains. The fault is buried by sedimentary deposits in the Holloman area, but is suspected to trend north-south in line with the bedrock outcrops described. This tilted fault block divides the larger Tularosa Basin/White Sands area from the Alamogordo sub-basin. The schematic cross-section shows the relationship between the Tularosa Basin and Alamogordo sub-basin. West of Holloman AFB (near Hurtz Spring), the main Tularosa Basin begins. It is bounded on the east by the near-vertical fault associated with the bedrock high between the Alamogordo sub-basin and the main Tularosa Basin, and on the west by the fault at the foot of the San Andres Mountains. Fault scarps and aligned springs are the predominant physical expression of this faulting. Shallow Permian rocks, including the Yeso and Hueco Formations, are the groundwater source for these springs. The Yeso Formation outcrops several hundred feet south of Hurtz Spring.

The Tularosa Basin is a bolson, or a basin that has no surface drainage outlet. Bolson deposits refer to sediments carried by water into a closed basin. The bolson fill in the Tularosa Basin is derived from the erosion of limestone, dolomite, and gypsum in the surrounding mountains. Coarser material is deposited at the base of the mountains while finer material is carried to the basin's interior. The bolson fill deposits thin out from Alamogordo toward the western edge of the sub-basin, ranging in thickness from 4,000 feet near Alamogordo to less than 100 feet near Hurtz Spring. Bolson fill deposits are 8,000 feet thick or more in the central portion of the Tularosa Basin.

Near-surface geologic conditions at Holloman AFB have been established during previous investigations. The near-surface bolson deposits consist of sediments that are of alluvial, eolian, and lacustrine or playa origin. Alluvial fan deposits are characteristically laterally discontinuous units of interbedded sands, silts, and clays. The eolian deposits consist of gypsum sands. The eolian and alluvial fan deposits are often indistinguishable because the wind simultaneously reworks alluvial fan sediments and deposits gypsum sands, resulting in an intermingling of the two. Lacustrine or playa deposits in the area consist of medium to high plasticity clays containing gypsum crystals and other salts. Lacustrine deposits are juxtaposed with alluvial fan and eolian deposits throughout the Base. A generalized cross section across the Base is provided as Figure 2.6. The uppermost deposits (generally top fifteen feet) at the Base are typically silty sands, grading vertically and laterally into silts and small lenses of clay and sand. These are typical alluvial fan sediments, which commonly exhibit lateral variability because they are deposited as lobes. A 5 to 8-foot thick clay unit grades laterally into a silty, clayey sand, which underlies the alluvial sediments. These are lacustrine or playa deposits, which typically display less vertical variability than alluvial deposits but are also laterally discontinuous. These lacustrine clays almost always are highly plastic and contain abundant gypsum crystals. Below this, sands grading into silty sands, and underlain by silts, are present, and are again characteristic of alluvial fan sediments. Lenses/beds of lacustrine clay underlie these sediments.

2.6 SOILS

The United States Department of Agriculture (USDA) Soil Conservation Service has identified two soil associations in the vicinity of Holloman AFB: the Holloman-Gypsum Land-Yesum complex, and the Mead silty clay loam. The permeability of these soil horizons ranges from 4×10^{-4} to 1×10^{-3} centimeters per second. A soil distribution map of the Holloman AFB and surrounding area, as presented in the Soil Conservation Service Soil Survey of Otero Area, New Mexico (USDA, 1981), is provided as Figure 2.7.

Most of the surficial soils at the Base are the well-drained, sandy loam and gypsum of the Holloman-Gypsum Land-Yesum complex. The soils of this association are formed from alluvial and eolian gypsiferous sediments. The Holloman unit makes up about 35 percent (%) of the complex. The soil unit is light brown to pink, very fine, sandy loam with a high gypsum content. The soil is moderately permeable, calcareous, and mildly to moderately alkaline. The Gypsum land unit makes up about 30% of the complex. It is soft to hard white gypsum, typically overlain by less than one inch of very fine, sandy loam. The Yesum unit, which makes up 20% of the complex, is light brown to pinkish-white, very fine sandy loam that is also high in gypsum. It is moderately permeable, calcareous, and mildly alkaline (USDA, 1981).

The Mead silty clay loam soil occurs over a small area of the Base. This soil consists of reddish-brown, silty clay loam, clay loam, and clay with a high salt content. The Mead soil unit is derived from fine grained alluvium deposited over lacustrine sediments. The soil has low permeability, and available water capacity is low. This soil is moderately calcareous, and moderately to strongly alkaline. The soil has a layer of salt that is more soluble than gypsum (USDA, 1981).

2.7 SURFACE WATER

The Tularosa Basin is a closed basin with no surface water drainage. Water is lost to evaporation, transpiration, and infiltration, or collects in Lake Lucero, the lowest point in the basin, approximately 20 miles southwest of Holloman AFB.

The Base is crossed by several southwest-trending arroyos as shown in Figure 2.8, which control surface drainage in the undeveloped part of the Base. These arroyos are: Hay Draw, in the far northern part of the Base; Malone Draw and Ritas Draw, which drain into Lost River; and Dillard Draw to the east, which runs in a southwesterly direction near the southern boundary of the Base. Lost River, the largest arroyo, is dammed near the western boundary of the Base to prevent runoff from the Base from entering White Sands National Monument. Runoff from Lost River, Malone Draw, and Ritas Draw collects in the dammed area and either evaporates or infiltrates.

2.8 HYDROGEOLOGY

Groundwater occurs in unconfined conditions in the unconsolidated bolson deposits beneath Holloman AFB. The primary source of recharge for groundwater in the bolson aquifer is

percolation of rainfall and stream infiltration through the coarse, unconsolidated alluvial fan deposits along the western flank of the Sacramento Mountains. Water migrates downward into the bolson fill aquifer and flows downgradient through progressively finer-grained sediments into the basin. The depth to groundwater decreases from 270 feet (or more) near the mountains to less than 5 feet to 50 feet below the ground surface (bgs) at Holloman AFB. The hydraulic gradient is steep in the recharge zones at the base of the mountains, but then flattens out as groundwater migrates into the valley. Results of the 1992 RI indicated that groundwater gradients at the Base are very low, ranging from about 9×10^{-4} feet per foot (ft/ft) to 7×10^{-3} ft/ft. Groundwater discharge occurs either through evapotranspiration, springs or seeps along steep-sided arroyos, or into closed playa lakes such as Lake Lucero, the regional groundwater discharge area.

Groundwater flow direction at Holloman AFB is influenced by the surface water flow along southwest trending arroyos. In general, groundwater flow direction is west and southwest depending upon the immediate proximity of these drainage features; a basewide regional groundwater elevation contour map is provided as Figure 2.9. In the southeastern portion of the Base, regional groundwater flows southwest, following the Dillard Draw surficial drainage system. In the northern portion of the Base, groundwater flows to the west, following the Ritas Draw, Malone Draw, and Lost River drainages. An apparent divide between these two drainage subsystems is seen in the northeast-central part of the Base north of LF-29. The greatest local effects on groundwater flow direction occur at sites located closest to the arroyos.

Hydraulic conductivity estimates were derived from slug tests performed during previous investigations. These estimates and estimates of seepage velocity for each site are presented in the site-specific sections of this RFI report.

Groundwater in the Tularosa Basin is of potable quality at the recharge areas in close proximity to the Sacramento Mountains, but becomes increasingly mineralized as it flows downgradient toward the interior of the basin. This natural degradation of water quality can be attributed to slow groundwater migration from recharge to discharge areas, and the presence of readily soluble minerals in the bolson sediments. The groundwater beneath Holloman AFB is designated as unfit for human consumption because it naturally exceeds total dissolved solids (TDS) and sulfate thresholds. TDS values presented in the 1992 RI report ranged from 1,600 milligrams per liter (mg/L) to 66,000 mg/L, averaging over 17,000 mg/L. Sulfate and chloride average concentrations were on the order of 4,000 mg/L and 6,000 mg/L, respectively. Using the *Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy* (U.S. Environmental Protection Agency [U.S. EPA], 1986), the groundwater can be classified as IIIB, i.e. not a source or a potential source of drinking water. Class III groundwater is characterized as having a TDS concentration greater than 10,000 mg/L and a low degree of interconnection to adjacent surface waters or groundwaters of a higher class, as is the case at Holloman AFB. Regulated water under the New Mexico Water Quality Control Commission regulations is also defined by this 10,000 mg/L TDS threshold.

2.9 BASE INSTALLATION RESTORATION PROGRAM

The Installation Restoration Program (IRP) at Holloman AFB commenced in 1982 when CH2MHill was retained by the Air Force to conduct the Holloman AFB records search. Department of Defense (DoD) Policy, directed by Defense Environmental Quality Program Memorandum 81-5, directed that suspected problems at DoD sites associated with past hazardous material disposal be evaluated and addressed. The IRP was developed to comply with RCRA; under Sections 6003 and 3012 of RCRA, Federal agencies were directed to assist the U.S. EPA and state agencies to inventory past disposal sites and make the information available to the requesting agencies. To fulfill this policy, DoD implemented a four-phase IRP that formed the basis for remedial actions at DoD installations under the provisions of Comprehensive Environmental Response, Compensation and Liability Act. Phase I, the records search, is the identification of potential problems. Follow-on phases in the four-phase process included fieldwork (Phase II), remedial alternative evaluation (Phase III), and remedial action (Phase IV).

The Holloman AFB records search included a detailed review of pertinent installation records, contact with 16 government organizations for documents relevant to the records search effort, and a Base site visit conducted in May 1983. Activities conducted during the Base site visit included interviews with 54 past and present Base employees, a ground tour of Base facilities, a detailed search of installation records, and a helicopter overflight to identify past disposal areas. The Records Search, submitted in August 1983, identified 43 sites. Based on the Records Search results, Holloman AFB completed EPA Form 8900-1, Notification of Hazardous Waste Site Activity, for 34 of the sites, in December 1983. The forms were submitted to U.S. EPA Region VI in March 1984.

In September 1988, the RCRA Facility Assessment (RFA) Preliminary Review (PR) / Visual Site Inspection (VSI) was completed by A.T. Kearney and DPRA Incorporated for U.S. EPA Region VI. In accordance with RCRA, Holloman AFB had initially submitted a RCRA Part A Permit Application (a request for interim status for existing facilities and the initial permitting step for new facilities) in November 1980 for 11 SWMUs; a Part B Permit Application (describing how the facility is designed, constructed, maintained, and operated to be protective of public health and the environment, as well as release prevention measures and a contingency plan in the event of a spill or release) for the Defense Reutilization and Marketing Office (DRMO) Hazardous Waste Storage Facility was submitted by Holloman AFB at U.S. EPA's request in July 1985. The 1984 Hazardous and Solid Waste Amendments (HSWA) provided new authority to U.S. EPA to require comprehensive corrective actions at SWMUs and other areas of concern (AOCs) at interim status facilities. These corrective actions were intended to address unregulated releases of hazardous constituents. The intent of the RFA was to support this authority by identifying releases or potential releases warranting further investigation. The RFA PR/VSI process identified 228 SWMUs (35 of which no longer existed or could not be located) and 21 AOCs at Holloman AFB. Five additional SWMUs and 1 AOC were identified at the Primate Research Institute operated by New Mexico State University on Holloman AFB property. The SWMUs and AOCs included all 43 IRP sites previously identified by Holloman AFB.

Both LF-10 (SWMUs 101 and 109), the Old Main Base Landfill, and LF-29 (SWMU 104), the Former Army Landfill, are included in the Base IRP and were placed on the original 1991 Holloman RCRA permit issued jointly by U.S. EPA Region VI and NMED. Multiple phases of investigation, as well as LTM, have been conducted during that time. This work and the most recent phase of investigation are presented in the site-specific sections of this report.

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FIGURES

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Revised: 03/10/06 TH
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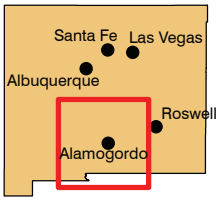
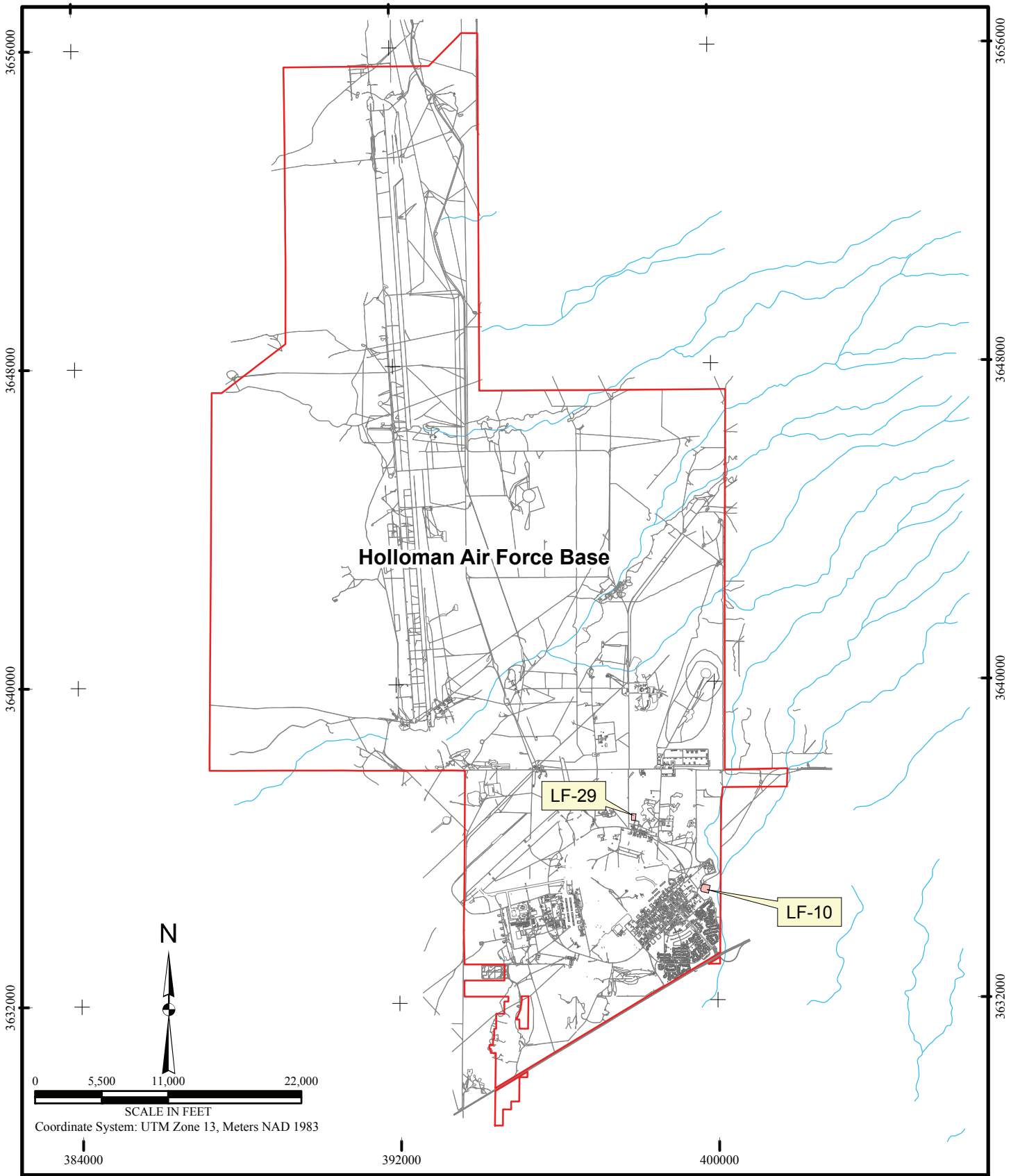


Figure 2.1
Facility Location Map
Holloman AFB



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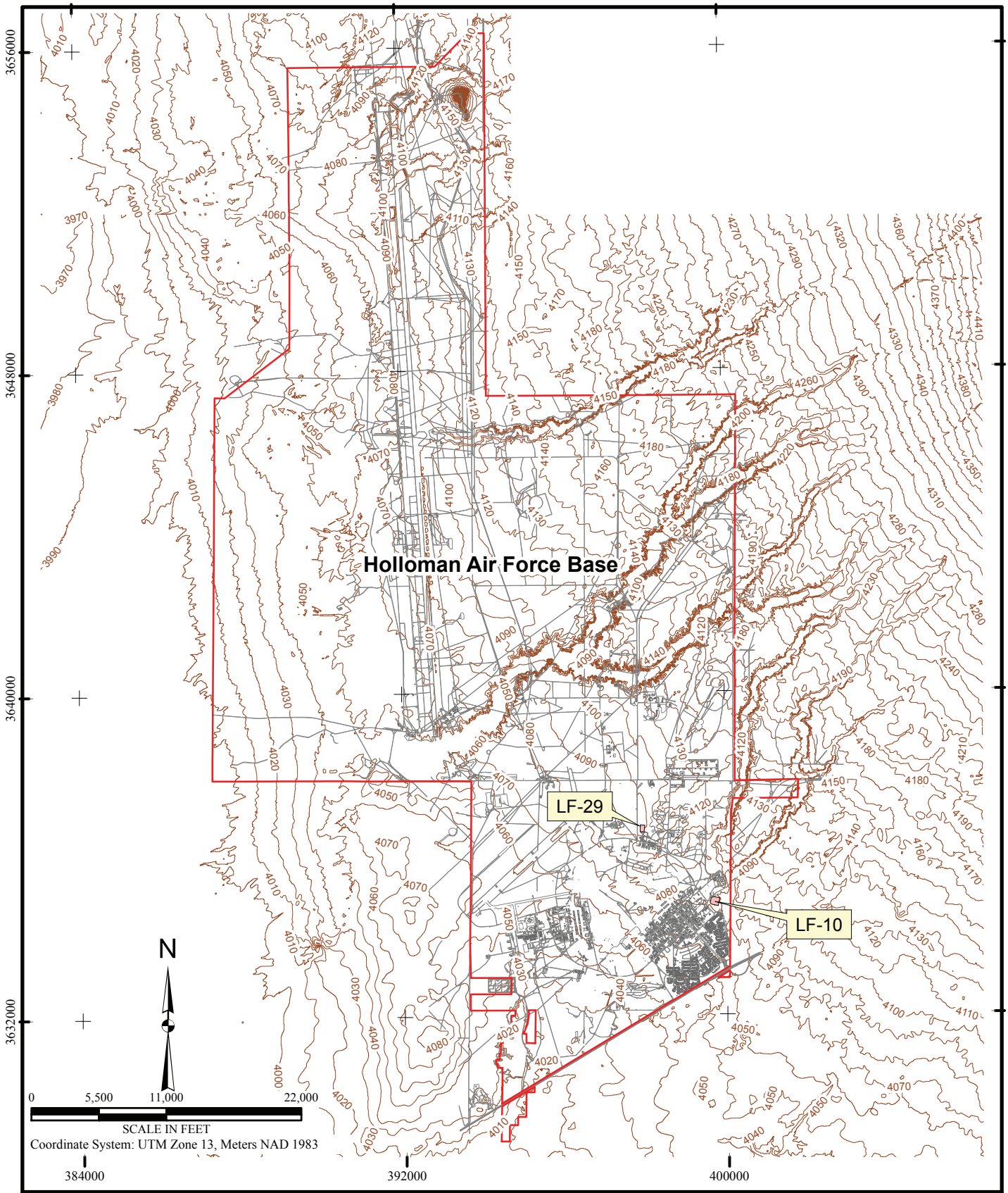
Revised: 05/11/07 PS
Map Source: Holloman AFB

Legend

- Holloman AFB Boundary
- Building/Structure
- Operable Unit Boundary (Approx.)

Figure 2.2
Facility Layout Map
Holloman AFB



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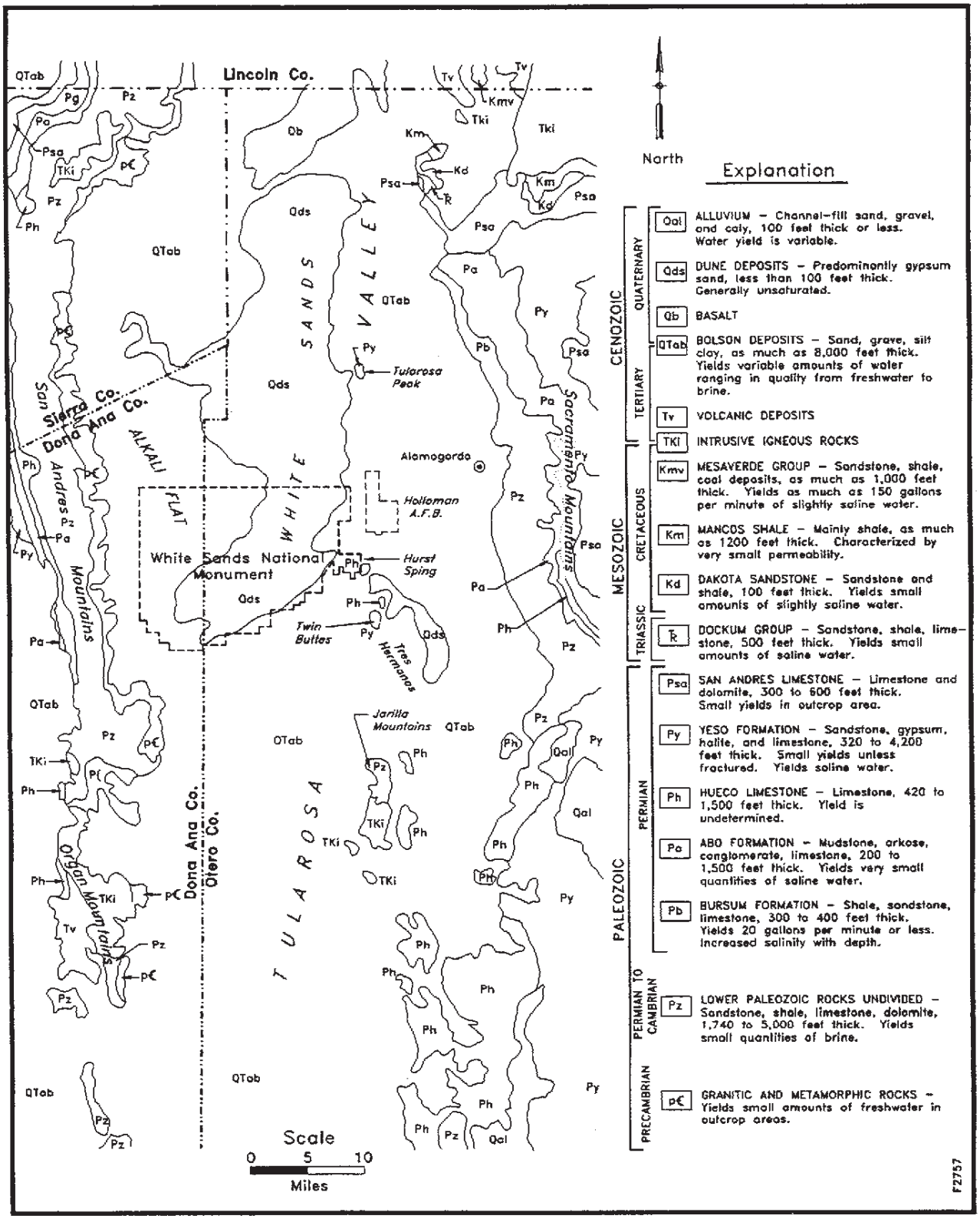
Revised: 11/14/06 TB
Map Source: Holloman AFB

Legend

- Holloman AFB Boundary
- Building/Structure
- Operable Unit Boundary (Approx.)
- Topographic Contour and Associated Elevation (feet MSL)

Figure 2.3
Regional
Topographic Map
Holloman AFB



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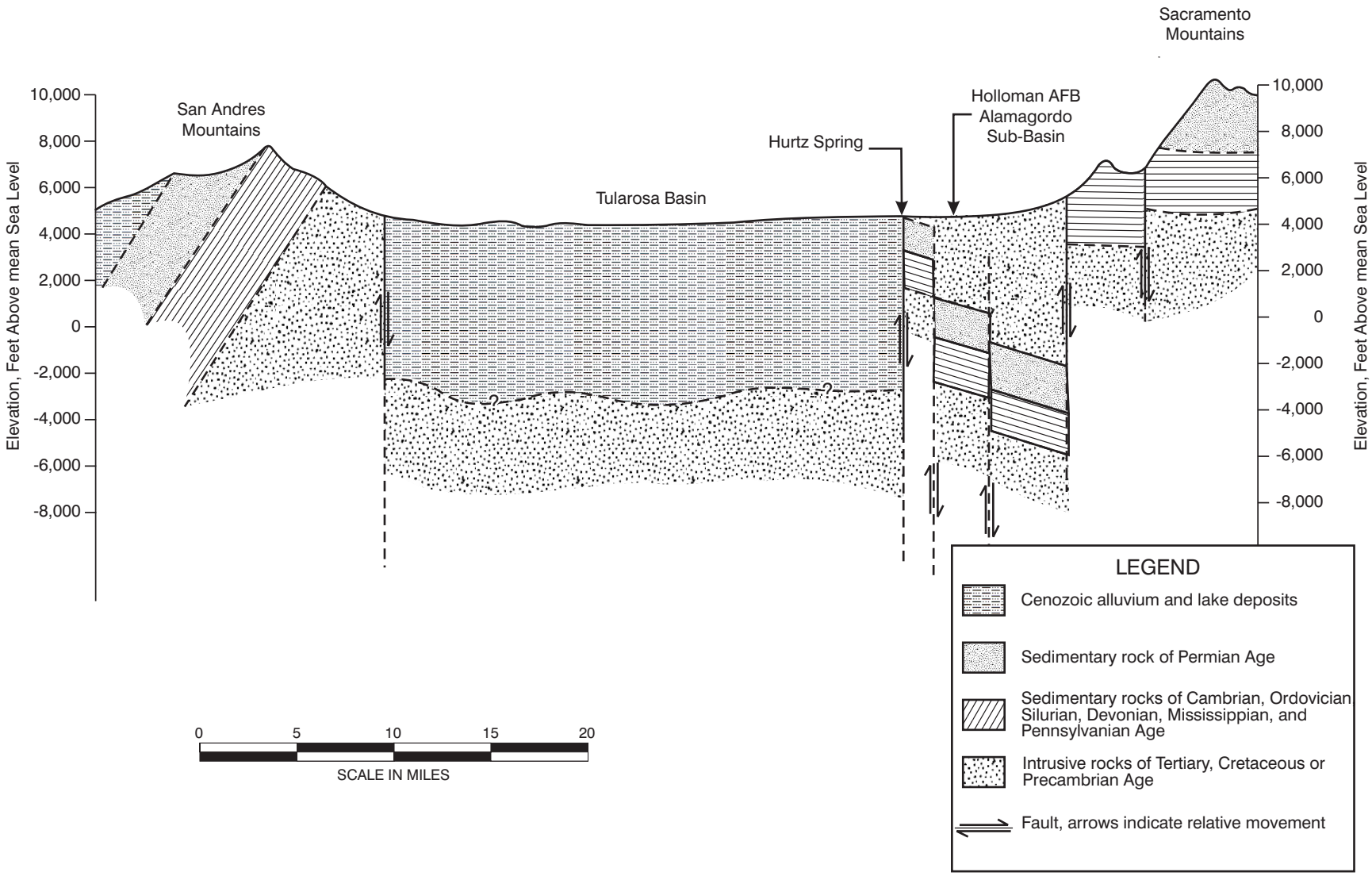
Revised: 11/14/06 TB
Source: Orr and Myers, 1986

Figure 2.4
Geologic Map of the Tularosa Basin



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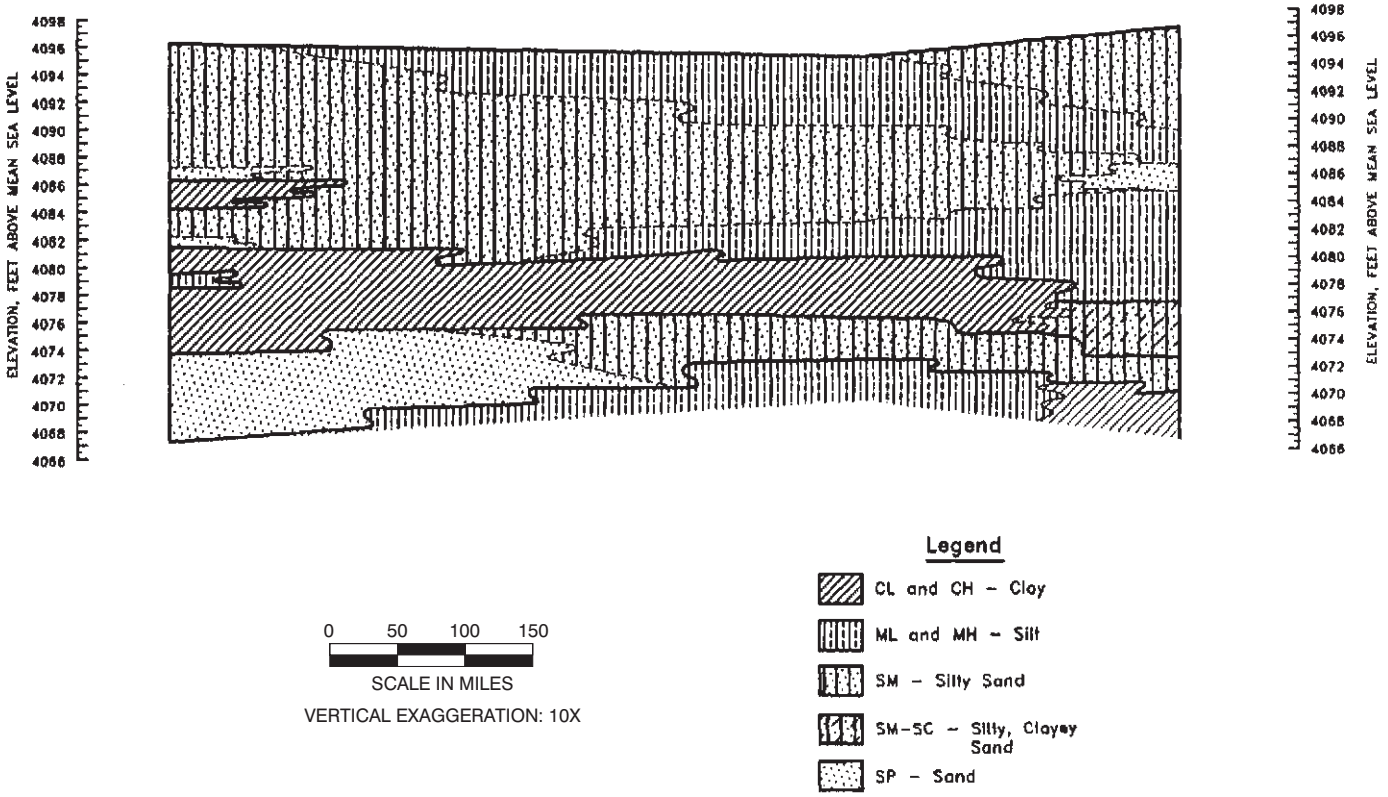
Revised: 0507/07 TH
Source: Radian, 1992

Figure 2.5
Generalized Cross Section
Tularosa Basin



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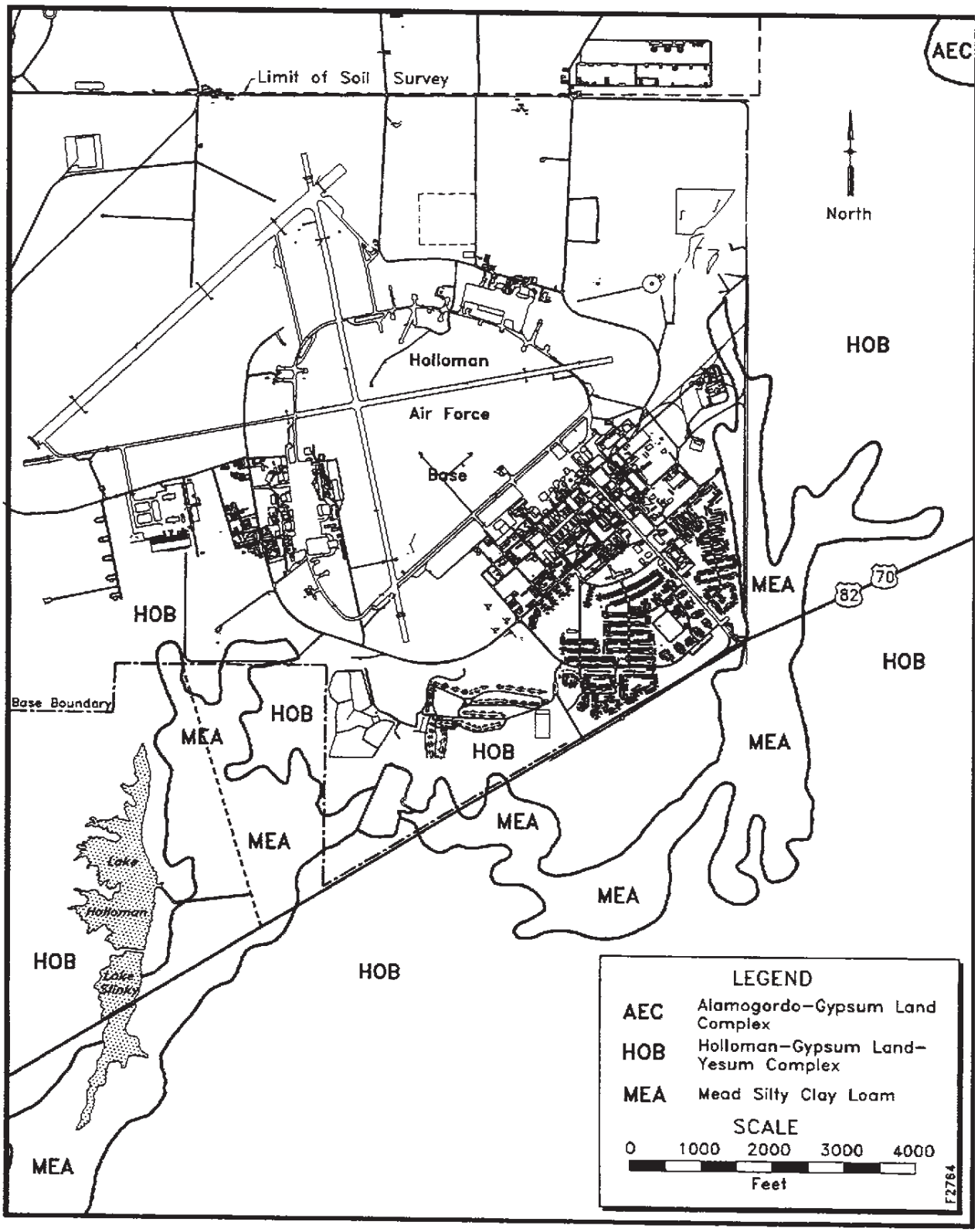
Revised: 05/07/07 TH
Source: Radian, 1992

Figure 2.6
Generalized Near-Surface Geologic Cross Section
Holloman AFB



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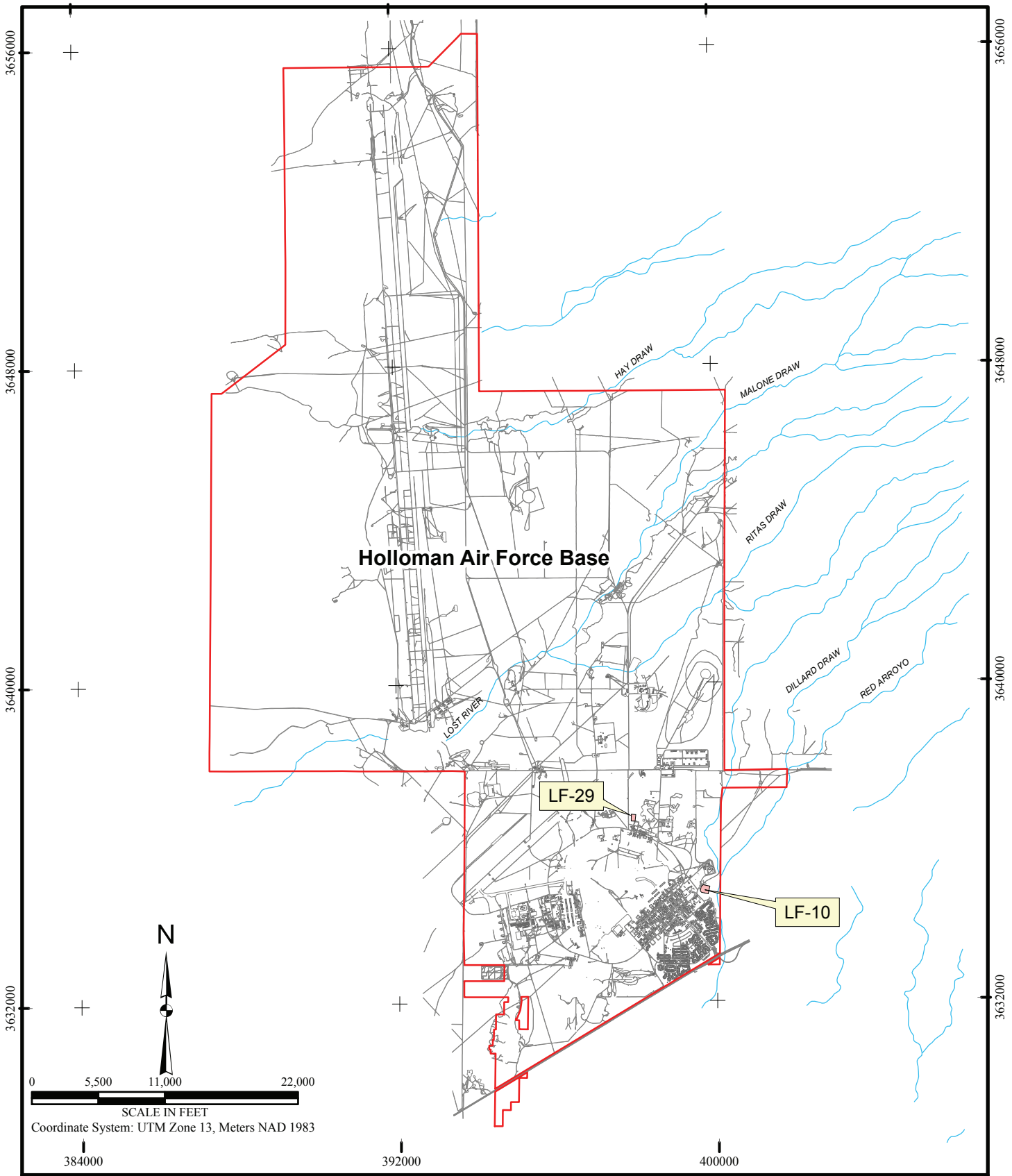
Revised: 05/07/07 TH
Source: USDA, 1981

Figure 2.7
Distribution of Soils at Holloman AFB



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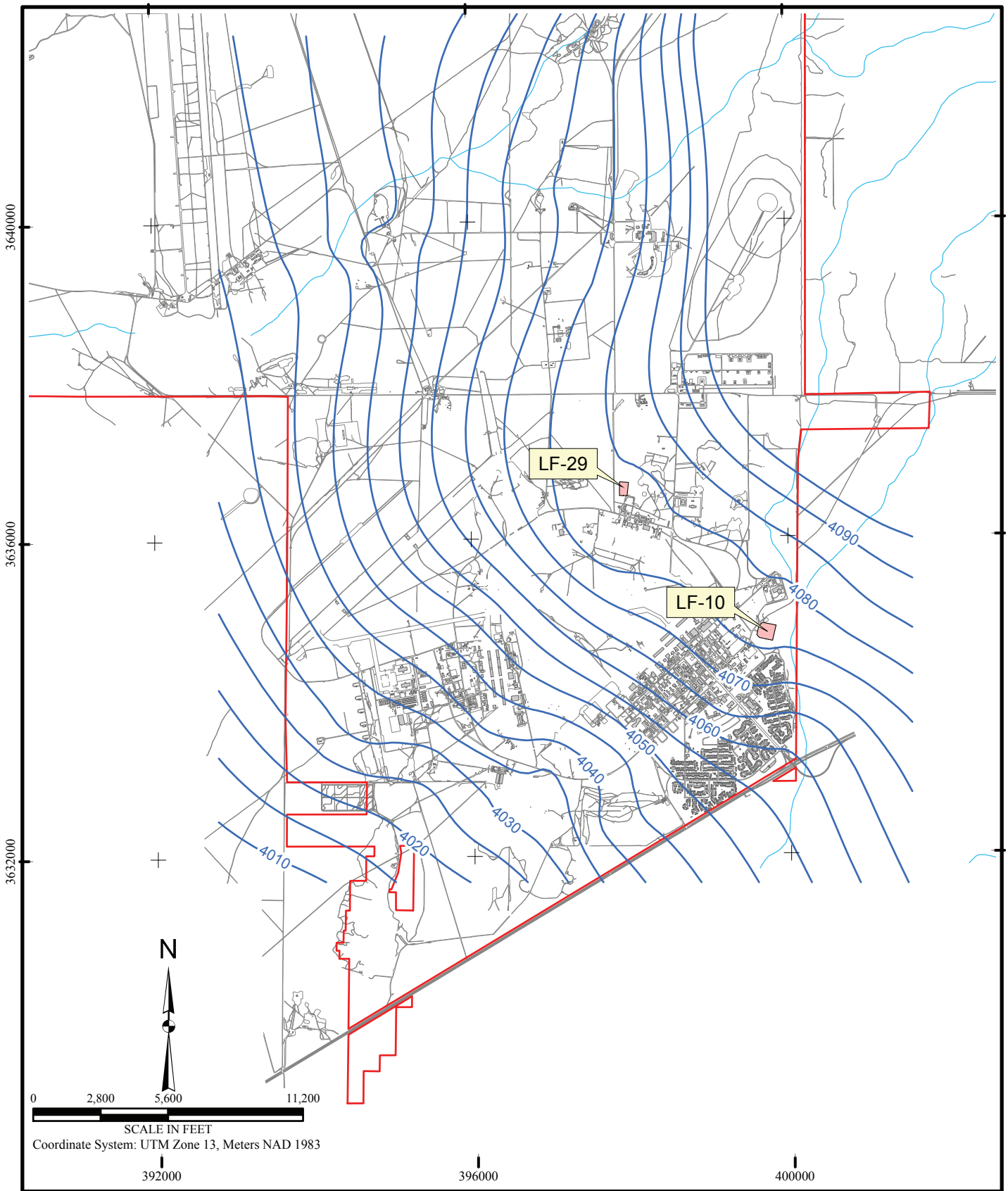
Revised: 11/14/06 TB
Map Source: Holloman AFB

Legend

- Holloman AFB Boundary
- Building/Structure
- Operable Unit Boundary (Approx.)

Figure 2.8
Surface Drainage
Holloman AFB



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Revised: 05/18/07 TPD
Map Source: Holloman AFB

Legend

- Holloman AFB Boundary
- Building/Structure
- Operable Unit Boundary (Approx.)
- Groundwater Contour 1993 (ft MSL)

Figure 2.9
Groundwater Elevation Contour Map
Holloman AFB

3.0 SUPPLEMENTAL RFI FIELD ACTIVITIES

Supplemental RFI activities conducted at LF-10 and LF-29 were designed to address NMED requirements for additional characterization and, if justifiable, to satisfy NMED NFA criterion 5, namely, that the sites have been adequately characterized and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use. Specifically, NMED requested that the additional characterization activities include the following:

- Refine the LF-10 landfill boundaries;
- Characterize and document the landfill waste material (if present);
- Quantitatively evaluate the soil quality beneath the landfills; and
- Assess the perchlorate and TDS groundwater concentrations beneath LF-29.

The work described herein was performed in accordance with the project workplans (HGL, 2005a, 2005b, 2006c), the response to the RFI workplan NOD (HGL, 2006b), and discussions during a NMED site visit (HGL, 2006d), as approved in NMED correspondence dated 29 August 2006. Minor deviations to the proposed work occurred and are described in detail below and in the site-specific sections of this report.

3.1 GEOPHYSICAL SURVEYING

Non-invasive geophysical surveying, consisting of a terrain conductivity survey and/or a magnetic survey, was conducted at the two landfills in late September and early October 2005 to delineate the LF-10 landfill boundaries and identify potential discrete waste disposal locations within the landfills (i.e., locate significant metallic or magnetically susceptible anomalies that would indicate the potential presence of hazardous waste storage and/or disposal containers. Specific information regarding terrain conductivity and magnetic surveying activities is presented below in Sections 3.1.1 and 3.1.2, respectively.

The LF-10 and LF-29 geophysical survey results were presented in a technical memorandum (HGL, 2006c), submitted to NMED in January 2006 as Appendix A of the Response to NOD, Supplemental RFI Work Plan (HGL, 2006b). The technical memorandum documented the geophysical survey field activities and associated assumptions, discussed the results of the surveys, presented conclusions based on the obtained data, and included the geophysical survey report. For the completeness of this supplemental RFI report, the conclusions provided in the geophysical survey technical memorandum have been included in the site-specific sections of this RFI report. A copy of the Technical Memorandum has also been included in this report as Appendix A.

3.1.1 Terrain Conductivity Surveying

A Geonics Limited Model EM-31 Mark2 terrain conductivity instrument was utilized to measure lateral soil conductivity changes at LF-10. Due to the naturally high conductive soils encountered at Holloman AFB, the metal-detection (in-phase) component of the electromagnetic survey was adversely and significantly compromised and could not be used as

proposed in the RFI work plan (HGL, 2005a). Consequently, the electromagnetic survey strategy was modified to utilize only the quadrature (conductivity) component of the electromagnetic method. A magnetometer was used to detect buried metallic debris as described in the next section.

The EM-31 Mark2 system operates on magnetic induction and Maxwell's Law, whereby an electromagnetic field is transmitted through the soil and the associated electrical field current is ultimately picked up by the receiver and correlated directly to soil conductivity. The Mark2's fixed intercoil spacing of 3.66 meters (12 feet) produces an ellipsoidal electromagnetic field that is approximately 20 feet wide and 40 feet high and typically penetrates subsurface soils to a depth of 20 feet and laterally 10 feet. However, the highly conductive soils present beneath Holloman AFB most likely lessened the effective signal penetration depth to approximately 10 feet.

At LF-10, the electromagnetic survey was conducted utilizing a 50-foot line spacing. A two reading per second sampling rate was employed, translating into a 1.5-foot station spacing along each line. A terrain conductivity survey was not conducted at LF-29, since metallic debris was the primary target.

3.1.2 Magnetometer Surveying

Geometrics, Inc. Model G-858 and Model G-856 total-field magnetometers were utilized for magnetic surveying at the landfills. The G-858 magnetometer with a single sensor total-field configuration was utilized for surveying activities. The G-856 unit was employed strictly as a site-specific fixed based station, recording changes in the Earth's daily (diurnal) magnetic field when magnetic surveys were being conducted. Readings from the fixed base station surveys were subsequently removed from each day's total-field magnetic survey, yielding true residual data. Due to the potential presence of buried munitions and explosives of concern (MEC), a Hazards of Electromagnetic Radiation to Ordnance (HERO) certified G-858 was employed at LF-29.

Calibration testing of the G-858 magnetometer at LF-10 indicated that a 2-meter line spacing provided 100 percent survey coverage. Therefore, a 2-meter line spacing was employed at both LF-10 and LF-29. A 10 reading per second sampling rate, translating to a station spacing of 0.3 feet along each line, was selected for the magnetic surveys.

3.1.3 Global Positioning

A Trimble ApGPS 132, a high-performance Global Positioning System (GPS) receiver, was utilized to provide precision guidance of the survey lines during the magnetometer and terrain conductivity surveys. GPS surveys typically have an accuracy of $\pm$ 0.5 meters.

3.1.4 Geophysical Survey Data Processing

No post-survey data processing was performed on the EM-31 data. Post-survey processing of the magnetic data included: global dropout removal, global duplicate time removal, global

spike removal, custom range despiking, GPS offset, removal of diurnal magnetic field, and heading error removal.

3.2 PASSIVE SOIL GAS SAMPLING

Passive soil gas surveys were performed at LF-10 and LF-29 using the EMFLUX® passive Soil Gas Method, a verified U.S. EPA technology method under the U.S. EPA Technology Verification Program. The method is described fully in U.S. EPA Publication EPA/600/R-98/096. A copy of this publication was submitted to NMED as an appendix to the supplemental workplan Response to NOD (HGL, 2006b).

At each soil gas sample location, a stainless steel slide hammer or gasoline-powered one-man auger was used to complete a soil boring to a maximum depth of four feet bgs or until refusal was encountered. An electric hand-held drill fitted with a 1¼-inch drill bit was used to core a hole through concrete or asphalt pavement when present. Soil borings are not a general requirement of the EMFLUX® passive Soil Gas Method; however, the presence of caliche beneath portions of LF-10 and LF-29 was considered to be a potential barrier for the vertical migration of soil gas, if present at depth. Consequently, soil borings were drilled at all soil gas sample locations to allow vertical migration of subsurface soil vapors to occur more freely (O'Neil, 2005).

Once a soil boring was completed to the maximum depth of four feet bgs or refusal was encountered, an EMFLUX® sampler was installed at the sample location in accordance with laboratory provided instructions (HGL, 2006b). After installation, the samplers were covered with soil for gravel- and soil-covered areas, or concrete at paved locations.

The passive soil gas samplers were allowed to sit undisturbed for approximately 72 hours in accordance with laboratory recommendations. Once removed from the subsurface, the samplers were inspected for defects and appropriately labeled. After the sample was retrieved, the associated sample boring was resurfaced to grade with like material (i.e., soil or concrete). The collected samples were submitted to an offsite laboratory (Beacon Laboratories) for volatile organic compound (VOC) analysis.

Site-specific information regarding installation of the passive soil gas samples at LF-10 and LF-29 are included in Sections 4 (LF-10) and 5 (LF-29).

3.3 SUBSURFACE SOIL ASSESSMENT

3.3.1 Borehole Drilling

A subsurface soil investigation was conducted at both LF-10 and LF-29 using a direct-push technology (DPT) drill rig. Soil borings were specifically located adjacent to potential areas of contamination implied from robust magnetic and/or terrain conductivity anomalies and elevated VOC concentrations detected in passive soil gas samples. At LF-10, several borings were also located along the perimeter of the landfill boundary, as defined from the geophysical survey, to verify the absence of landfill waste material.

The soil borings were advanced through the subsurface soil to the underlying water table, or to approximately two feet below the base of the landfill material/identified contamination (based on visual observations and field screening results), whichever occurred deeper. During borehole advancement, soil samples were continuously collected using a decontaminated, 2-inch diameter, stainless-steel macrocore sampler fitted with disposable acetate liners. The samplers were hydraulically advanced through the subsurface in four foot increments. Upon achieving a four foot push, the sampler was removed from the subsurface and the acetate line extracted from the sampler. The liner was then opened and the contained soils were lithologically characterized, visually inspected, and field screened using a photoionization detector (PID). The collected data, including the presence or absence of waste material and evidence of contamination, was recorded on individual boring logs for each site. Completed boring logs for LF-10 and LF-29 are included as Appendix B.

Upon completion of soil sampling activities, drill spoils were returned to their respective boreholes if there was no visual evidence of contamination and VOCs were not detected with a PID. The upper two feet of the borings were then backfilled with bentonite chips and finished to grade with like material (i.e., surface soil in unpaved areas, gravel in gravel areas, and concrete in concrete paved areas).

Prior to backfill, vapors emanating from soil borings encountering waste material at LF-10 were screened using a landfill gas meter equipped with a methane sensor, a carbon dioxide sensor, an oxygen sensor, and percent lower explosive limit (%LEL) sensor.

3.3.2 Subsurface Soil Sampling

Soil samples were collected from several of the soil borings at each site for laboratory analysis. Soil sampling protocols varied for each site, and are therefore primarily discussed in the site-specific sections of this RFI report (i.e., Section 4 and 5). Generally, soil samples selected for laboratory analysis typically showed evidence of contamination or were collected immediately beneath identified waste materials or near geophysical anomalies or adjacent to soil gas sample locations where VOCs were previously detected.

Upon collection, the samples were appropriately labeled, placed on ice, and transported to the off-site laboratory using the laboratory courier service. Completed field sample data sheets for the soil samples submitted for laboratory analysis are provided in Appendix C.

3.4 LF-29 SUPPLEMENTAL GROUNDWATER SAMPLING

NMED agreed to suspend compliance LTM at LF-10 after the 2003 round. However, due to increased regulatory concern regarding perchlorate at munitions sites, NMED requested the groundwater underlying LF-29 be sampled for perchlorate and TDS as part of the LF-29 supplemental RFI (NMED, 2006b). Consequently, all eight groundwater monitoring wells at LF-29 were purged and sampled for perchlorate. LF-29 groundwater samples were not analyzed for TDS during the supplemental RFI groundwater sampling event; rather, TDS

analysis was conducted on the 2005 biennial groundwater compliance LTM samples collected in December 2005.

3.4.1 Synoptic Water Level Measurements

Prior to groundwater purging and sampling, synoptic water levels were collected from all eight onsite monitoring wells. The water levels were obtained by lowering an electronic audible sounding probe attached to a graduated tape, marked to the nearest 0.01 foot, into the well. The graduate tape and weighted probe was lowered until the audible alarm sounded, indicating contact with water (i.e., the top of the water table). The measurement on the tape was recorded to the nearest 0.01 foot as "Depth to Water". The audible alarm was then turned off and the electronic probe lowered to the bottom of the well. The corresponding measurement on the graduated tape, to the nearest 0.01 foot, was then recorded as "Total Well Depth". The weighted probe was then removed from well and decontaminated in accordance with the workplan (HGL, 2005a) before repeating the process in the next well. The groundwater level measurements were recorded on the individual groundwater sample data sheets located in Appendix C.

3.4.2 Groundwater Sampling

Disposable, 2-inch diameter, polyethylene bailers affixed with disposable polypropylene rope were used to purge and sample the LF-29 groundwater monitoring wells in accordance with Holloman AFB standard operating procedures (SOPs). The bailers were gently lowered into the wells, allowing water from the well to flow into the bailer. The bailer was then brought to the surface and the contained water removed. This process was repeated until approximately three well volumes were removed from each well. After each well volume, groundwater water quality parameters, including temperature, pH, specific conductance, turbidity, dissolved oxygen, and oxidation-reduction potential, were measured using a water quality meter and separate turbidity meter. These measurements were recorded on individual Groundwater Field Sampling Data sheets, which are included in Appendix C.

After three well volumes were purged, the disposable polyethylene bailers were used to fill the appropriate sample bottles using the direct pour method. The samples bottles were then appropriate labeled, placed on ice, and transported to the off-site laboratory using the laboratory courier service. Specific groundwater purging and sampling information is discussed in Section 5 (LF-29). Chain-of-custodies for the collected samples are included in Appendix C.

3.5 INVESTIGATION DERIVED WASTE

No investigation derived waste requiring offsite disposal was generated during the Supplemental RFIs. Due to a lack of visual contamination and VOCs detected in the soils using a PID, all excavated soils were used to backfill the respective boreholes in accordance with Holloman AFB SOPs. All decontamination water and well purge water was allowed to evaporate.

3.6 DATA ASSESSMENT

Data validation activities were conducted in accordance with the supplemental workplan Quality Assurance Project Plan (HGL, 2005b) as modified in the supplemental RFI workplan response to NOD (HGL, 2006b).

3.7 DATA SCREENING

Analytical data obtained from previous investigations and the supplemental RFIs were evaluated against applicable regulatory screening data as specified in Appendix 4-F Section III.1.2 of the Holloman AFB Hazardous Waste Permit No. NM6572124422 (NMED, 2004a). Data evaluation consisted of a direct comparison to applicable screening criteria. The associated screening criteria are included on the individual analytical data tables. Specifically, the following regulatory criteria were used to evaluate the analytical data:

- **Soils**:
  - NMED residential, industrial, and construction worker Soil Screening Levels (SSLs) (NMED, 2006c).
  - U.S. EPA Region VI Human Health Medium Specific Screening Levels (HHMSSL) if NMED SSLs were not available (NMED, 2004a; U.S. EPA Reg VI, 2007).
    - The U.S. EPA Region VI HHMSSL for total chromium was used to evaluate chromium analytical data since the HHMSSL for total chromium assumes a 1:6 ratio between hexavalent and trivalent chromium.

- **Unsaturated Sediment**:
  - NMED residential, industrial, and construction worker, NMED SSLs (NMED, 2006c).
  - U.S. EPA Region VI HHMSSL (U.S. EPA Reg VI, 2007) if NMED SSLs not available (NMED, 2004a).
    - The U.S. EPA Region VI HHMSSL for total chromium was used to evaluate chromium analytical data since the HHMSSL for total chromium assumes a 1:6 ratio between hexavalent and trivalent chromium.

- **Groundwater** (for reference only in cases where TDS exceeds 10,000 mg/L):
  - New Mexico Groundwater Quality (NMGWQ) standards, New Mexico Administrative Code (NMAC) 20.6.2.3103.
  - U.S. EPA Maximum Contaminant Levels (MCLs).
  - U.S. EPA Region VI tap water HHMSSL (U.S. EPA Reg VI, 2007) for perchlorate.

4.0 LF-10 (SWMUS 101 AND 109) – OLD MAIN BASE LANDFILL

4.1 LOCATION

LF-10 is located in the southeastern portion of Holloman AFB, southwest of the airfield, and bounded to the west by Creosote Avenue and to the north by Arkansas Avenue. The location of LF-10, with respect to the surrounding facility, is shown on Figure 2.1.

4.2 SITE DESCRIPTION

LF-10 encompasses approximately 20 acres and is currently only partially developed. One building, Building 121, is located in the northeastern portion of the site. Building 121 is a slab-on-grade building that is surrounded by a concrete-paved vehicle parking log which is in turn surrounded on three sides by a gravel-paved equipment and supply storage lot. Building 121 is currently used to house the Civil Engineering Squadron (CES) 316. Personnel are generally present between 0600 and 1700 Monday through Friday. Equipment and supplies present include a motor home, spools of wiring, fencing, piping, and an old truck. The gravel lot is also used by facility personnel for calisthenics. A chain-link fence surrounds the building and supporting lots. Several large lightning protection poles are located within the fenced-in compound. Access to the building compound is restricted to authorized personnel only.

Outside the fenced-in compound, LF-10 is primarily undeveloped. The surface is composed of packed-soil with sporadic fragments of former sanitary disposal items (e.g., ceramic plates, silverware, piping, wiring, bottle fragments, tires, etc.). The area is sparsely vegetated, with shrubs occurring almost exclusively along the southern edge of the Building 121 chain-link fence where a drainage swale is present.

Several wooden utility poles cross the western and southern portion of the site and a slab-on-grade, concrete cinder block utility building is present in the northwestern portion of the site. An electrical substation has been constructed in the far southeastern portion of the site. In addition, the southern portion of the former landfill is used as a material recycling stockpile area by the Base. Stockpiles of asphalt, soil, concrete rubble, and gravel were observed during the current field investigation. The surface of the stockpile area is primarily composed of a mixture of packed soil, gravel, and concrete.

A layout map of LF-10 is included as Figure 4.1. Photographs of the site are included in Appendix D.

4.3 WASTE HISTORY

LF-10 was a former base sanitary landfill that received base domestic solid waste between 1942 and 1958, when the landfill was closed in accordance with DoD protocols in place at that time. A base incinerator had also been located in this area in the past and ash from this operation was reportedly buried in the landfill. Landfilling was conducted using trench and fill methods.

4.4 SITE-SPECIFIC ENVIRONMENTAL SETTING

4.4.1 Topography

The current overall topography of LF-10 is relatively flat with a general southwesterly dip. Minor variations in the topography occur to promote surface water runoff, and as a result of soil subsidence within the former disposal trenches. In the northern portion of LF-10, within the Building 121 complex, linear shallow depressions have warped the concrete pavement of the vehicle parking lot. Along the western edge of the former landfill and within the Building 121 complex, shallow depressions have also developed. Precipitation typically accumulates within these depressions during and immediately after rain events. Due to the unpaved and primarily un-vegetated condition of the units, the paved condition of the northern portion of the site and the arid climate of Holloman AFB, the majority of precipitation falling onto site soils most likely evaporates or infiltrates into the underlying soils, with minimal runoff.

LF-10 is bounded to the east by Dillard Draw, an arroyo (Photograph LF10-10 in Appendix D). A southeasterly dipping slope, ranging from 10 to 20 feet high, separates LF-10 from the base of the arroyo. The steepness of the slope varies from a steep dip along the northeastern and southeastern edges of the site to a more gradual slope along the east-central edge of the site.

4.4.2 Surface Water

No permanent surface water bodies are present onsite. Dillard Draw is the closest surface water body feature to LF-10, and abuts the site to the east as discussed above.

4.4.3 Soils

The soils underlying LF-10 are classified by the USDA Soil Conservation Service as belonging to the well-drained, sandy loam and gypsum of the Holloman-Gypsum Land-Yesum complex (USDA, 1981). As discussed in Section 2.6, the Holloman-Gypsum Land-Yesum complex is formed from alluvial and eolian gypsiferous sediments. The Mead Silty Clay Loam appears to be present along the extreme eastern edge of the site, predominantly within Dillard Draw. This soil consists of reddish-brown, silty clay loam, clay loam, and clay with a high salt content.

4.4.4 Geology

Based on historic and supplemental RFI subsurface investigation activities, LF-10 is underlain by a heterogeneous layering of sands, silts, and clays. The shallow subsurface is generally underlain with layers of silty sands, sandy clays, and sandy silts; however, silty clay to clay is the predominant sediment material encountered beneath LF-10, increasing in concentration with depth. Caliche and gypsum precipitates were encountered in many of the borings; as shallow as 1 foot bgs and up to 32 feet bgs. Previous investigation and supplemental RFI soil boring logs are included in Appendix B.

Based on magnetic geophysical survey results and visual observations, disposal trenches are present beneath a significant portion of the site, trending in a north-northwest to south-southeast orientation. Metallic and magnetically susceptible materials appear to be relatively uniformly distributed through the landfill and disposal trenches, no significant concentration of magnetic anomalies were identified at the site. Landfill material encountered in the soil borings completed through the disposal trenches included reworked native sandy soils, gravel, paper, plastic sheeting, wiring, ceramics, broken glass, nylon rope, and burnt and unburnt cut timber. Landfill materials, when encountered, were typically encountered between 4 and 10 feet bgs.

4.4.5 Hydrogeology

Groundwater occurs beneath LF-10 as a shallow unconfined aquifer within the underlying silt, silty sand, and clay sediments. A groundwater potentiometric surface map of the underlying water table based on the 2003 groundwater elevation data is included as Figure 4.2.

Depth to water at the site in 2003 (excluding monitoring well [MW]-5, several hundred feet to the northeast), ranged from approximately 6.7 feet below grade at MW-4 to 10.9 feet below grade at MW-2. Field slug tests were conducted during the RI to estimate hydraulic conductivity at the sites. Hydraulic conductivity for individual wells, in feet per day (ft/day), is as follows:

- MW1 0.57 ft/day
- MW2 0.57 ft/day
- MW3 1.13 ft/day
- MW4 0.57 ft/day
- MW5 2.55 ft/day
- MW6 0.26 ft/day
- MW7 0.57 ft/day

Using an average hydraulic conductivity of 0.886 feet per day, a hydraulic gradient of 0.003 ft/ft (from the 2003 LTM event), and an estimated porosity of 30%, the linear groundwater flow velocity across the site is estimated to be 0.009 feet per day, or 3.3 feet per year (ft/year).

4.5 PREVIOUS INVESTIGATIONS

As summarized in the Supplemental RFI workplan (HGL, 2005a), several investigations were previously conducted at ERP site LF-10. A discussion of the former investigations and the associated results, as presented in the supplemental RFI workplan (HGL, 2005a), is presented below. Previous investigation soil and groundwater sample locations are shown on Figure 4.3.

4.5.1 1987 Subsurface Investigation

A subsurface investigation was conducted by Holloman AFB in November 1987 to determine why the SPACECOM Building (Building 121) was exhibiting signs of differential settling and concrete distress. Seven borings were advanced by the U.S. Army Corps of Engineers (USACE) predominantly south of Building 121. According to a narrative description of this effort, landfill material was encountered in four borings south of the building and in one boring east of the building. The locations of the 1987 borings, as well as 1982 borings advanced by USACE in support of the Building 121 construction effort, are shown on Figure 4.3. Boring logs for these borings are not located in the Administrative record, and no samples were obtained for analysis. The 1987 subsurface investigation concluded that trash existed under the majority of the hardstand with a maximum thickness of approximately 10 feet, and that trash lenses were variable and intermittent across the site.

4.5.2 Remedial Investigation

A RI was conducted on the site to further investigate the potential level of contamination at the site and to establish the subsurface extent of the landfill, in part to support a proposed construction project. During the RI, seven monitoring wells, designated MW-1 through MW-7, were installed, 14 soil borings advanced into the subsurface, and three Dennison cores (i.e., undisturbed samples for geotechnical purposes) were obtained. The RI monitoring well and soil boring locations are also depicted on Figure 4.3.

During the RI, the general boundaries of the landfill were determined in the field by visual observations and test borings. Monitoring wells MW-2 through MW-5 were installed in areas not observed to contain fill material, thus encircling the landfill.

Soil samples were obtained and analyzed for VOCs, RCRA metals, total recoverable petroleum hydrocarbons (TRPH), and base/neutral/acid extractable (BN/AE) organic compounds. Samples from 8A25-523 from the depth intervals 7.5 to 10.5 feet bgs were within the landfill material and exhibited elevated PID readings. The sample from depth interval 13.5 to 15 feet bgs appears to have been collected at the water table interface. In boring 8A25-524, depth interval of 7.5 to 9.0 feet bgs, the sample was obtained where fill (i.e., a nylon rope) was observed. The sample from this boring at 12.5 to 14 feet bgs appears to be associated with the underlying water table interface. All samples from borings 8A25-528 and 8A25-532 were taken below the water table at intervals where elevated PID readings were observed.

Analytical results of the soil samples are presented in Table 4.1. Low levels of VOCs were detected in the two soil samples exhibiting elevated PID readings; the total maximum VOC concentration was low, at 0.264 milligrams per kilogram (mg/kg), in sample 8A25-532, 15.0 to 16.5 feet bgs. All results were below current NMED SSLs (NMED, 2006c). Only one BN/AE, di-n-butylphthalate (a common laboratory contaminant), was detected (at a concentration of 0.480 mg/kg in one sample, 8A25-532D, at 15.0 to 16.5 feet bgs), well below current NMED SSLs. All metals were determined in the RI to be within background ranges. A comparison to current human health-based NMED SSLs shows that manganese was

above the construction worker SSL in four samples (one being a duplicate). The construction worker SSLs are very low, due to inhalation pathway of particulates potentially generated during construction activities. The samples where manganese construction worker SSLs were exceeded were either at the water table interface, within the capillary fringe and moist, or below the water table and saturated, indicating minimal potential for dust generation and risk.

Analytical results of the RI groundwater sampling event are presented on Table 4.2. Groundwater samples were analyzed for VOCs, BN/AE compounds, pesticides, polychlorinated biphenyls (PCBs), TRPH, and metals. Analytical results were compared to NMGWQ standards and U.S. EPA MCLs. TDS concentrations at LF-10 are well above 10,000 mg/L, and these comparisons are for reference only, since 10,000 mg/L defines the applicability of groundwater standards pursuant to NMAC 20.6.2.3101.

VOCs were not present in any of the samples. BN/AE and pesticide compounds were detected at low concentrations in upgradient wells, but, none were present in downgradient wells. Low concentrations (3 mg/L) of TRPH were detected in MW-3 and MW-4, but no targeted contaminants were present based on the VOC and BN analyses.

Three downgradient wells contained total metals above background/upgradient concentrations and groundwater standards. MW-1, screened immediately below landfill material, contained manganese at a concentration of 1,604 micrograms per liter (μg/L), above the NMGWQ human health standard of 200 μg/L. Manganese was also present above the standard in MW-6, at a concentration of 1,204 μg/L. Nickel was present in MW-1 at a concentration of 218 μg/L, slightly above the NMGWQ irrigation standard of 200 μg/L. Mercury was marginally above the NMGWQ human health standard of 2 μg/L, at a concentration of 2.012 μg/L. All other downgradient concentrations of metals were below background and/or upgradient concentrations.

The RI risk assessment selected benzene, 2-butanone, 2,4-dinitrotoluene, phenol, aldrin, heptachlor epoxide, beryllium, cadmium, chromium, nickel, 1-ethyl-2-methyl-benzene and 1,3,5-trimethyl-benzene as "indicator chemicals" or chemicals of concern for the site. The exposure assessment identified only one possible quantifiable exposure pathway for these indicator chemicals: leaching from contaminated subsurface soil to groundwater, with contaminated subsurface soil the source, leaching the mechanism, and groundwater the release transport medium. A hypothetical off-base well locally downgradient of the site was chosen as the worst case exposure point. The route of concern selected was ingestion of groundwater by livestock, the receptor. Modeling was used to determine concentrations of indicator chemicals at the exposure point and concentrations were compared with standards and criteria. Heptachlor epoxide, 2-butanone, 1-ethyl-2-methyl-benzene and 1,3,5-trimethyl-benzene do not have standards or criteria; therefore, a toxicity assessment was performed for all these chemicals. To attain toxic doses of these chemicals, a receptor would have to ingest more than 111,400 liters of groundwater at the exposure point. Based on the risk assessment, it was deemed unlikely that a receptor would be adversely affected from constituents LF-10, and it was concluded that LF-10 posed no significant risk to public health or the environment.

4.5.3 Decision Document

The Decision Document concluded that the only control measure considered for LF-10 was the no action measure. The basis for this control measure was the Baseline Risk Assessment's conclusion that Site LF-10 posed no significant risk to public health or the environment. NMED concurred with the 1990 Decision Document in correspondence dated September 26, 1991. Although Holloman requested that that LF-10 be removed from the draft RCRA Permit in light of this, the U.S. EPA kept the site on Table 1 of the permit, pending U.S. EPA review of the IRP study results. The Holloman RCRA permit was issued jointly by U.S. EPA Region VI and NMED with an effective date of September 25, 1991.

4.5.4 Compliance Groundwater Monitoring

The first round of LTM at LF-10 was conducted from August 23 through September 13, 1995 in accordance with the LTM field sampling plan finalized by EBASCO/GTI in July 1995. This report references a Decision Document for LF-10 signed by the Base Commander and NMED in April 1994, which recommended 10 years of LTM at biennial intervals, consistent with other LTM sites at Holloman AFB. LTM continued every two years through 2003, which completed the required 5 rounds of sampling.

The initial LTM program included sampling and analysis of wells MW-2, MW-3, MW-4, and MW-6 for VOCs, metals, and organochlorine pesticides. Based on the lack of detections of the majority of constituents, NMED approved of the recommendations in the 2001 LTM report to limit 2003 sampling to arsenic, barium, manganese, and selenium. This approval is provided in Appendix E of the supplemental RFI workplan (HGL, 2005a). LTM data is provided in Table 4.3. With the exception of lead in the first round of sampling, no constituents in downgradient wells have exceeded standards and background/upgradient concentrations. Based on this, the 2003 LTM report recommended closeout of the site.

As provided by Bhate Environmental Associates (Bhate) in the Final 2003 LTM report (Bhate, 2003), TDS concentrations at the site have ranged from 16,700 mg/L (MW-7) to 59,300 mg/L (MW-5) in June 2002, 13,300 mg/L (MW-7) to 74,300 mg/L (MW-5) in September 2002, and 17,700 mg/L (MW-7) to 74,900 mg/L (MW-5) in March 2003.

4.5.5 Statement of Basis

Holloman AFB submitted a Statement of Basis (SOB) summary in February 2004 requesting NFA and subsequent removal of the site from the Holloman AFB Part B RCRA permit. Upon submittal of the SOB summary, NMED conducted a site visit of LF-10. At the conclusion of site visit, NMED informed Holloman AFB that LTM could be suspended but NFA for LF-10 would only be considered after additional characterization was performed at the site. Additional characterization requirements are summarized in USAF correspondence of May 21, 2004 (USAF, 2004), and NMED correspondence of August 10, 2004 (NMED, 2004b).

4.6 SUPPLEMENTAL RFI FIELD ACTIVITIES AND RESULTS

Supplemental RFI activities were conducted at LF-10 between September 2005 and May 2006 in accordance with the supplemental RFI workplans (HGL, 2005a, 2005b, 2006c), and the response to the RFI workplan NOD (HGL, 2006b). Minor deviations from the workplan occurred and are discussed under the respective topics. Field sampling activities included a non-invasive geophysical survey to potentially identify former disposal pits/trenches, a passive soil gas survey, and a subsurface soil investigation. A field investigation summary table is provided as Table 4.4. The geophysical surveys and initial soil gas survey methodologies and results were presented in Attachment A of the NMED in the Response to NOD as a Technical Memorandum. This Technical Memorandum served as the basis to answer some NMED comments on the project workplan, as well as provided the basis for soil sampling locations at LF-10. Therefore, the conclusions of the geophysical and initial soil gas surveys are briefly re-iterated herein, as they provide the basis for the additional soil gas survey work and soil boring program presented in this report. The Technical Memorandum is provided as Appendix A.

4.6.1 Geophysical Survey Conclusions

The geophysical survey conducted at LF-10 consisted of an electromagnetic survey and a magnetic survey. The geophysical survey was conducted to delineate the extent of the landfill and identify areas within the landfill containing significant metallic anomalies. The geophysical surveys were extended beyond the inferred limits of the landfill established during previous studies in an effort to confirm the landfill boundaries. Approximately 24 acres of the site and immediate surroundings were surveyed.

The terrain conductivity survey results are provided on Figure 4.4. High conductivity regions, when they were not associated with surface structures such as fence lines, lightning poles, and subsurface utility access ports, were attributed to changes in moisture content. Higher conductivities were most commonly associated with water-saturated gypsum soils located within the arroyo drainage channel, or topographic lows where water saturated soils were encountered approximately 0.5 to 2 feet bgs in many of the soil borings completed in these areas during the soil gas survey (e.g., Photograph LF10-06, Appendix D). Several negative conductive anomalies were identified within the concrete-paved vehicle parking lot. The low conductive anomalies were attributed to rebar within the concrete pavement or possible voids spaces between the pavement and the underlying soils as observed during the visual site inspection.

At LF-10, the G-858 unit was configured as a vertical dual-sensor gradiometer to minimize the effects of cultural "noise" associated with the myriad surface metallic observed at the site (e.g., rebar, buildings, vehicles, surficial debris). Calibration testing of the G-858 magnetometer at LF-10 indicated that a two-meter line spacing provided 100 percent survey coverage. Therefore, a two-meter line spacing and a 10 reading per second sampling rate was employed at LF-10. The area magnetically surveyed and the results are denoted on Figure 4.5. Excluding onsite metallic or magnetically susceptible structures, large discrete magnetic anomalies were not identified beneath LF-10. Rather, LF-10 is underlain by

numerous northwest-southeast trending linear magnetic anomalies which represent former disposal trenches, consistent with common historic DoD trench/fill landfill practices. The magnetic highs and lows within the linear anomalies were not robust; however, a sufficient amount of metal must be present for the linear anomalies to be detected during the gradiometer magnetic survey. These anomalies cross the entire LF-10 area as shown on the figure. The linear anomalies generally disappear beneath the developed sections of the landfill, the result of reworking during the construction of the Building 121 complex or due to signal interferences from metallic or magnetically susceptible objects present around the Building 121 complex. The shallow depressions present across the Building 121 parking lot trend in the same direction as the magnetic anomalies indicating the former disposal trenches are still present in this area beneath the Building 121 complex. In addition to the linear magnetic anomalies, scattered magnetic anomalies were observed along the western and northern survey boundaries and within the arroyo. These anomalies were associated with surficial debris and metallic and magnetically susceptible objects.

4.6.2 Passive Soil Gas Assessment

A passive soil gas survey of LF-10 was conducted concurrently with the non-invasive geophysical survey between September 28 and October 5, 2005. As discussed in the soil gas and geophysical survey result technical memorandum (HGL, 2006c), the soil gas survey was conducted using a 100-foot by 100 foot grid spacing, equating to 1 sample per 0.2 acres. The 2005 soil gas survey was completed across the entire landfill as defined by historic sampling results. The boundaries of the landfill based on the previously collected data are depicted on Figure 4.6. The 100-foot sample spacing was considered reasonable given the method's high performance during a pilot study of an U.S. EPA soil gas test site using a 200 foot sample spacing in order to evaluate a VOC groundwater plume approximately 30 to 50 feet bgs. This was confirmed to be acceptable with NMED in the response to NOD.

Several soil gas sample locations were relocated or removed from the survey due to presence of surface obstructions (e.g., buildings, vehicles, and an electrical substation) and subsurface utilities. The southern boundary of the survey was defined by the northern extent of several recyclable debris (e.g., concrete, asphalt, soil, gravel) stockpiles and an electrical substation. In addition, several sample locations were repositioned away from features that might dilute soil gas sample concentrations such as groundwater monitoring wells; subsurface utility vaults; and pavement fractures, joints, and underlying pavement cavities.

A total of 107 soil gas samples were installed across the site in 2005 and sampled for VOCs. Installation and sampling activities were conducted in accordance with the methods specified by the off-site soil gas laboratory. The locations of the 2005 soil gas survey samples are shown on Figure 4.6. Associated soil gas sample field data sheets are included in Appendix C. Upon review of the 2005 soil gas survey results and interpretation of the geophysical survey data, the LF-10 landfill was determined to extend further south and west than historic data suggested. Consequently, a second passive soil gas survey was conducted in May 2006 as proposed in the Response to NOD. These additional soil gas samples were installed west and south of the 2005 soil gas sample survey and on the same grid spacing employed during the 2005 survey. Approximately 32 additional passive soil gas samples were installed and

sampled three days later as part of this subsequent effort. The locations of the additional soil gas samples are also depicted on Figure 4.6. Associated soil gas sample data sheets are also included in Appendix C.

A total of 139 soil gas samples (107 from 2005 and 32 from 2006) were submitted for 40 target VOCs using gas chromatography/mass spectrometry instrumentation following modified EPA Method 8260B procedures.

Table 4.5 summarizes positive soil gas analytical results obtained from the survey. Twelve VOCs (chloroform, benzene, ethylbenzene, n-butylbenzene, naphthalene, tetrachloroethene [PCE], toluene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, trichloroethene [TCE], and xylenes) were detected in the soil gas samples. 1,2,4-Trimethylbenzene was detected in every soil gas sample collected including trip blanks during the survey. Toluene and m&p-xylenes were detected in many of the samples including one or more of the trip blanks. Because the three VOCs were positively detected in the trip blanks, all three VOCs were considered indicative of blank contamination.

The nine remaining VOCs were detected sporadically across LF-10. Concentration maps for chloroform, TCE, PCE, 1,3,5-trimethylbenzene, n-butylbenzene, and naphthalene are included as Figures 4.7 through 4.12, respectively. With the exception of a few sample locations VOC detections of these six compounds were low and at unique locations (i.e., detected concentrations of one VOC were not co-located with another VOC). Several of the VOCs (i.e., chloroform [Figure 4.7], n-butylbenzene [Figure 4.11] and naphthalene [Figure 4.12]), when detected, were generally detected in several adjacent sample locations across LF-10, suggesting localized areas of potential contamination. The remaining VOCs were detected at discrete sample locations, suggesting a distinct area of contamination.

The majority of the VOCs detected in the soil gas samples were detected in the central, western, and southern portions of LF-10. Chloroform was detected primarily in the central to south-central portion of the landfill, ranging from 14 nanograms (ng) to 56 ng. TCE, at 14 ng and 606 ng, was detected in two samples located along the survey's southern boundary while PCE, ranging from 14 ng to 103 ngs, was detected sporadically across LF-10. Sample LF10-N100E200 contained PCE (62 ng) and TCE (14 ng). 1,3,5-Trimethylbenzene (25 ng to 79 ng) and n-butylbenzene (27 ng to 49 ng) were detected at relatively similar concentrations throughout the central portion of the landfill. Naphthalene was detected primarily in the western north-central portion of the landfill (ranging from 26 ng to 143 ng) and along the survey's south-central boundary (34 ng to 65 ng).

No VOCs were positively detected along the survey's eastern and northern borders. The lack of VOC detections along the northern and eastern survey boundaries suggests the soil gas survey has extended beyond the influence of the landfill, if the landfill contents are a source of soil gas VOC detections.

Based on soil gas survey results, both halogenated and fuel-related VOCs are present in the soil gas of LF-10. Nine VOCs were detected in the soil gas samples; however, three of the

VOCs, 1,2,4-trimethylbenzene, toluene, and xylenes, were detected in the trip blanks, suggesting that their detections were the result of blank contamination.

The six remaining VOCs were detected sporadically across LF-10; and with the exception of a few sample locations, were not detected in the same samples. Halogenated VOCs were detected primarily in the central, southern, and western portions of the landfill. Fuel-related VOCs were detected across LF-10 but primarily within the central portion of the landfill. For the most part, no VOCs were detected within 200 feet of the northern and eastern survey boundaries.

TCE was detected in only 2 of the 143 soil gas samples (Figure 4.8). Both samples were located in the south central portion of the landfill near the electrical substation. All TCE soil gas results were bounded by non-detect results. PCE was detected in 11 soil gas samples (Figure 4.9). The PCE detections were primarily in the east central portion of the landfill the southwestern central portion of the landfill and along the western boundary of the soil gas survey. With the exceptions of the PCE detections along the western survey boundary, all PCE detections were bounded by non-detect results. Chloroform was detected in seven soil gas samples, all within the west-central to central portion of the landfill (Figure 4.7). Naphthalene was detected in multiple samples with the highest concentrations present in the north-central portion of the landfill, beneath the Building 121 complex (Figure 4.12). 1,3,5-Trimethylbenzene and n-butylbenzene were also detected in multiple samples but sporadically across the site and at low concentrations. As with TCE, all chloroform, naphthalene, 1,3,5-trimethylbenzene and n-butylbenzene soil gas detections were bounded with non-detect results.

The soil gas survey results were used to locate borings for sampling and analysis, as described in the next section.

4.6.3 DPT Subsurface Soil Assessment

Fourteen soil borings, designated as HGLSB10-01 through HGLSB10-14, were completed at and surrounding LF-10 in May 2006 (Figure 4.13). All subsurface soil sampling activities were conducted in accordance with the LF-10 Response to NOD letter submitted to NMED in March 2006 (HGL, 2006a). Based on elevated PCE soil gas detections along the western soil gas survey boundary, an additional boring, designated HGLSB10-15, was drilled in June 2006.

The LF-10 subsurface soil assessment was conducted to meet three objectives:

1) Characterize the waste material within the landfill;
2) Assess the soil quality beneath the landfill waste; and
3) Verify the extent of the landfill as defined by the 2005 geophysical survey and the 2005 and 2006 passive soil gas surveys.

To address objectives (1) and (2), eight soil borings were completed within the landfill. These borings were located using a GPS to specifically target identified disposal trenches with higher concentrations of metallic or magnetically susceptible debris as observed from the magnetic survey data, and/or from soil gas survey sample locations where higher than average VOC concentrations were detected. Borings HGLSB10-01 through HGLSB10-08 were therefore completed to determine the presence or absence of landfill waste material, visually identify the material comprising the landfill waste if present, and assess the soil quality beneath the landfill waste. The locations of the eight borings are shown on Figure 4.13.

The eight borings were completed to maximum depths ranging between 10 and 24 feet bgs. During borehole advancement, soil samples were continuously collected for lithologic characterization, visual inspection, and field screening with a PID. The workplan specified that if contamination was suspected, based on visual observations and/or field screening results, a sample of the material would be collected and analyzed for VOCs, semi-volatile organic compounds (SVOCs), gasoline-range total petroleum hydrocarbons (G-TPH), diesel-range total petroleum hydrocarbons (D-TPH), and RCRA metals. In addition, a soil sample from immediately below the landfill waste was to be collected and analyzed for VOCs, SVOCs, G-TPH, D-TPH, and RCRA metals.

Landfill waste and subsurface soil quality assessment boring logs and associated field sample data sheets are included in Appendices B and C, respectively.

To address objective (3), six additional soil borings were completed along the perimeter of the geophysical-defined landfill boundary and one boring was completed where PCE was detected along the edge of the soil gas survey. Borings HGLSB10-09 through HGLSB10-14 were completed along the perimeter of the landfill boundary as defined by the magnetic survey data obtained during the 2005 geophysical survey. The locations of the boundary assessment borings are shown on Figure 4.13. These seven borings were completed to maximum depths ranging between 5 and 20 feet bgs, well below the depth at which landfill waste was detected during this or previous investigations. The majority of the boundary assessment borings were completed between 10 and 15 feet bgs; only boring HGLSB10-14 was completed to 5 feet bgs due to the borings's location within Dillard Draw and the presence of saturated soils immediately below the surface.

Landfill boundary assessment boring logs and associated field sample data sheets are included in Appendices B and C, respectively. No landfill waste material was encountered in any of these boundary assessment borings.

4.6.3.1 Characterization of Landfill Waste Material

Geophysical survey and subsurface soil sampling verified the maximum extent of the landfill on all sides and verified the presence of landfill waste within the subsurface of LF-10. No landfill waste was observed in the seven borings completed beyond the geophysical survey defined landfill boundary. The extent of the landfill, the borings where no waste was encountered, and the borings where waste was encountered are depicted on Figure 4.14. A

description of the landfill waste encountered in the soil borings completed at LF-10 is included as Table 4.6.

During the supplemental RFI subsurface soil assessment, the waste material encountered included reworked native soils, glass, newsprint, thin-ply plastic sheeting, burnt and unburnt cut timber, nylon rope, ash, vinyl, scrap metal, gravel, concrete fragments, silverware, ceramics, rubber fragments, and cardboard. Landfill debris was observed in supplemental RFI borings HGLSB10-03 through HGLSB10-07. A slight sheen was observed on wood fragments retrieved from boring HGLSB10-07. No elevated PID readings were recorded within the waste material, and there was no visual evidence of contamination or leachate. No waste was encountered in boring HGLSB10-08 or within the landfill boundary assessment borings (HGLSB10-09 through HGLSB10-15).

Methane monitoring results from the supplemental RFI borings encountering landfill waste is presented on Table 4.7. Methane was detected from 0.02% to 2.2%, with the highest concentration detected in boring HGLSB10-05. Consequently, the %LELs ranged from 4 to 44, with the highest %LEL also located at HGLSB10-05. This location contained unburned timbers, which is the likely source of methane at this location.

4.6.3.2 Soil Quality Characterization

A sample was retrieved from borings HGLSB10-03, -04, -05, -06, and -07 immediately below the waste material. One sample was retrieved from boring HGLSB10-07 at the soil interval corresponding to immediately above the underlying shallow groundwater water bearing zone. Three VOCs (n-butylbenzene, naphthalene, and p-cymene), SVOC fluoranthene, D-TPH, and five metals (arsenic, barium, chromium, lead, and mercury) were detected in one or more of the six soil samples (and duplicate) collected from LF-10. None of the detected analytes exceeded NMED residential, industrial, or construction SSLs. A summary of the supplemental RFI soil analytical results is included as Table 4.8.

4.7 DATA QUALITY ASSESSMENT

A brief assessment of LF-10 data quality is provided in the following subsections. Detailed information regarding the data and assessment findings and responses are included in the data validation packages provided in Appendix E.

Six soil samples and one duplicate sample were submitted for laboratory analysis. The analytical data for the samples are presented in sample delivery group (SDG) 6051928.

4.7.1 Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test. The reporting limit met method or contractual requirements. All data reviewed were acceptable. The following minor issues were identified and resolved, including:

- The "J" flagging of several VOC, SVOC, D-TPH, and metal analyte results for being reported below the reporting limit but greater than the Method Detection Limit (MDL).

4.7.2 Precision and Accuracy

Quality control (QC) data, including matrix spike (MS) / matrix spike duplicates (MSD), surrogates, and laboratory control sample (LCS) recoveries were used to assess the precision and accuracy for the LF-10 soil samples. All samples were properly preserved and analyzed within the required holding time for soil samples. All initial and continuing calibration QC criteria were reviewed and were acceptable. The frequency of analysis and percent recoveries (%R) of the second source calibration verifications were reviewed and determined to be acceptable. The following minor issues were identified and resolved during data validation:

- A single matrix spike for G-TPH in one QC Batch was out of criteria, but no data qualifier flags are recommended.
- Surrogate spikes were added to all samples, QC checks, and blanks as required by the reference method. For SVOC analysis, a single surrogate was out of criteria and the %R for two surrogates in a fraction were out of criteria. No data qualifier flags were recommended. For G-TPH analysis, one or both surrogates were out of criteria for several samples. For D-TPH analysis, the %R for one surrogate was out of criteria. Since all other QC checks were in criteria, no data qualifier flags are recommended.

4.7.3 Comparability

Comparability represents the confidence with which one data set can be compared to another. In accordance with the approved Quality Assurance Project Plan (QAPP) (HGL, 2005b), data are comparable when collection techniques, measurement methods, and reporting procedures are equivalent for the samples within a sample set. Implementation of appropriate procedures for sampling and shipping, as specified in the QAPP (HGL, 2005b), were performed. Within the data sets, it was concluded that results were comparable to each other.

4.7.4 Representativeness

Representativeness was assessed by use of field duplicate and blank samples. Method and field blank samples were analyzed to determine potential contamination from laboratory or shipping procedures. Overall, representativeness was considered satisfactory, except as noted below.

- For VOC analyses, several target analytes were detected in the six method blanks and the trip blank associated with all samples. For the affected results, either the sample result was raised to the reporting limit, or the reporting limit was raised to the observed value.

- G-TPH were detected in three of the method blanks associated with all samples. For one result, the reporting limit was raised to the observed value.
- D-TPH were detected in one method blank associated with all six samples. The affected results were evaluated and two results were raised to the reporting limit.

4.7.5 Completeness

Completeness is defined as the percentage of the total number of analytical results requested that are judged to be valid, including estimated (J-flagged) values, in accordance with the QAPP (HGL, 2005b). Completeness of the laboratory analysis for the LF-10 soil samples was determined to be 100%, within acceptable data quality objective limits.

4.7.6 Usability

Based on the data review and validation, the analytical data were determined to be useable for their intended purpose.

4.8 NATURE AND EXTENT OF CONTAMINATION

4.8.1 Landfill Waste Material

The non-invasive magnetic surveying data obtained during this supplemental RFI results indicates LF-10 is underlain with northwest-southeast linear-trending rows of trenches containing metallic or magnetically susceptible debris. The presence of several of these trenches can be observed due to settling and compaction issues resulting in the warping the Building 121 vehicle parking lot's concrete pavement. Review of the magnetic data indicates the presence of metallic and/or magnetically susceptible debris is fairly uniform across the site; magnetic anomaly hotspots potentially indicating buried hazardous waste storage or disposal canisters were not encountered.

Historic and supplemental RFI assessment of the landfill material beneath LF-10 indicates the landfill material consists of reworked soils mixed with municipal refuse. Landfill waste was observed 17 historic borings and in 7 of the supplemental RFI borings. Figure 4.14 identifies the historic and supplemental RFI borings where landfill waste was encountered. The waste was generally observed in layers separated by layers of reworked soil layers between 2 and 5 feet bgs and extending to 5 to 11 feet bgs. Within boring SB10-03, glass fragments were observed at 19 to 20 feet bgs; however, given the depth to water beneath LF-10 (i.e., 10 to 12 feet bgs), its unlikely trenching 7 to 10 feet below the water table was conducted and therefore it is assumed that this material may have been carried by the drill rods to this depth. Waste encountered across LF-10 included gravel, paper, plastic sheeting, wiring, nylon rope, ash, ceramics, broken glass, nylon rope, and fragments of burnt and unburnt cut timber. A breakdown of the waste encountered in the LF-10 soil borings is provided as Table 4.6. Large fragments of construction debris (e.g., concrete, piping, rebar, etc.) were not observed within LF-10. No visible contamination staining or elevated PID readings were recorded during supplemental RFI activities except when burnt wood

fragments were encountered. Slightly elevated PID readings (i.e., <5 ppm) and sheens were encountered sporadically and primarily only when burnt wood fragments were observed. Leachate was not observed within or beneath the landfill material. Methane was encountered at very low levels at some locations; a higher methane concentration was encountered in only one location, where unburned timber was found.

4.8.2 Soil Contamination

Passive soil gas sampling data indicated the presence of several halogenated and petroleum-related VOC at low levels. Soil screening during subsurface investigations and subsurface soil sampling and analysis targeting areas where the highest soil gas concentrations were recorded show no VOC contamination. Soil samples collected from beneath the LF-10 waste have been analyzed for VOCs, SVOCs, BN/AE, organochlorine pesticides, PCBs, G-TPH, D-DTPH, and metals. Although several analytes have been detected, none have been reported at concentrations exceeding current human-health-based NMED SSLs with the exception of manganese during the 1988 RI. Manganese was detected borings 8A25-523, 8A25-524, and 8A25-528 at concentrations exceeding the NMED construction worker SSL. All of the borings are located in the north-central portion of LF-10. The manganese concentrations exceeding the construction worker SSL were detected between 9 and 12 feet bgs and at 22 feet bgs. As concluded in the RI, given the lack of other metals in the associated samples above background and screening criteria, it is likely the detected concentrations reflect background conditions. Furthermore, because these concentrations were found either at the water table interface within the capillary fringe or below the water table, they do not pose a dust inhalation hazard, since they are moist to saturated.

4.8.3 Groundwater Contamination

Groundwater beneath LF-10 was sampled during the 1988 RI and for five biennial sampling events (1995 through 2003). Historically, the groundwater beneath and downgradient of LF-10 has been analyzed for VOCs, SVOCs, total petroleum hydrocarbons (TPH), pesticides/PCBs, and metals. During the 1988 RI, manganese, mercury, and nickel were detected above background and NMED screening criteria. Based on the RI results, mercury and nickel were removed from the compliance LTM target analyte list with NMED approval. Based on compliance LTM results, the LF-10 target analytes were reduced, with NMED approval, to arsenic, barium, manganese, and selenium. None of these metals have been detected above background and U.S. EPA MCLs and/or NMED NMGWQ standards. After 2003, NMED agreed to suspend LTM at the site.

4.9 FATE AND TRANSPORT

Based on the collected data, no soil contamination is present at the site as a result of former landfill disposal activities. Likewise, groundwater contamination is also not present, demonstrated by the RI and several years of LTM. TDS concentrations in groundwater at the site are naturally well above 10,000 mg/L.

4.10 CONCLUSIONS

Supplemental RFI activities have determined a significant portion of the 20 acre LF-10 site is underlain with linear trenches containing municipal debris (ash, burnt and unburned wood, cardboard, paper, plastic sheeting, ceramics, silverware, glass, etc.) which was periodically burned prior to burial. Containers potentially used for the storage and/or dispose of hazardous materials were not encountered within the landfill waste observed or evident from the geophysical data. Based on the extent of the metallic or magnetically susceptible debris within the landfill waste and the lack of landfill waste observed during the subsurface landfill boundary assessment, the maximum extent of the landfill on all sides has been determined.

Passive soil gas data indicates the sporadic presence at low levels of several halogenated VOCs (i.e., TCE, PCE, and chloroform) and a wide-distribution of fuel related VOCs (i.e., naphthalene, 1,3,5-trimethylbenzene, n-butybenzene) at low levels. Several of the fuel-related VOCs have been detected in the soil underlying the landfill waste and underlying groundwater, but not above criteria. Halogenated VOCs have not been detected in the underlying media. Contamination or generation of leachate within or downgradient of the landfill has not been observed or indicated in any medium at the site since studies began in 1988.

4.11 RECOMMENDATIONS

Based on the analytical results obtained during the 1988 RI, 10 years of compliance LTM, and this supplemental RFI, contamination of the underlying and downgradient media at the site has not occurred in the nearly 50 years that the landfill has been closed. As required by NMED, both the extent of the landfill (Figure 4.14) and the type of waste encountered were characterized during the supplemental RFI. Consequently, NFA status is recommended for LF-10 under NMED Criterion 3 and a class III permit modification to remove the site from the active corrective action portion of the RCRA permit is requested. The site was closed in 1958; landfills that operated prior to 14 May 1989 are exempt from closure plan requirements (NMAC 20.9.1.501, draft) and final cover requirements do not apply for landfills that closed prior to 9 October 1991 (NMAC 20.9.1.500 A (11)). As a condition for receiving NFA status, the Air Force will put in place land use controls that assure that proper procedures and contingencies are in place that limit exposure to landfill wastes, monitor site conditions, and properly dispose of landfill materials, should development of the site occur in the future. Furthermore, periodic methane monitoring within Building 121 is recommended for one year to ensure that methane is not present within the Building at unacceptable levels (greater than 25% LEL).

FIGURES

File X:\AFC002\Holloman_AFB\TO37\Maps\LF-10_LF-29_Supp_RFI\LF10_Layout.mxd
Project: AFC002-037-04-02-05
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Unit Boundary Implied by Geophysics
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well

Figure 4.1
LF-10
(SWMU 101 and 109)
Layout Map

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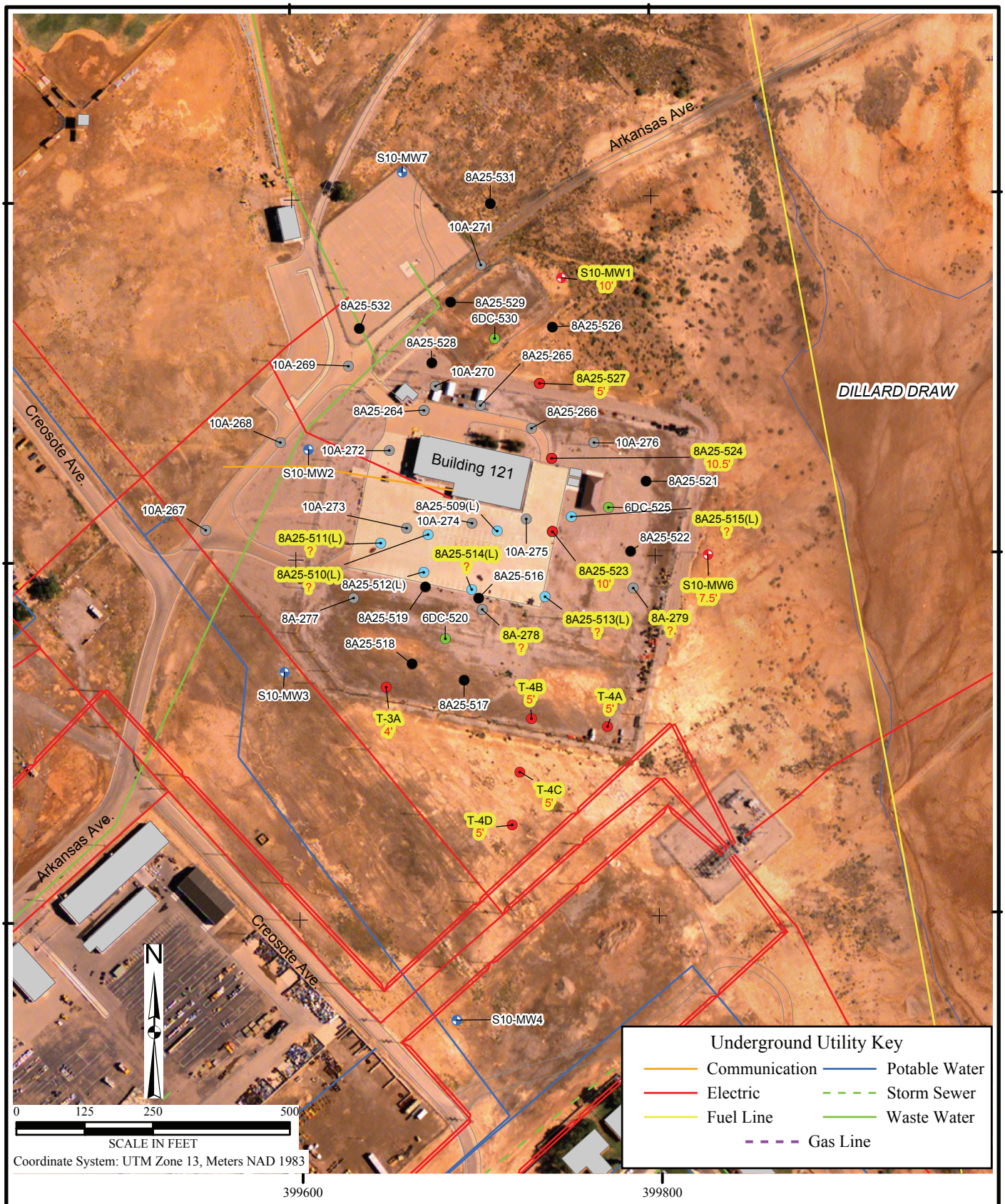
Project: AFC002-037-04-02-05
Revised: 05/09/07 PS
Map Source: Holloman AFB

Legend

- Monitoring Well
- Groundwater Elevation Contour
- 4074 Groundwater Elevation (msl) (Apr. 2003)
- Groundwater Flow
- Unit Boundary Implied by Geophysics
- Chainlink Fence

Figure 4.2
LF-10 Shallow Groundwater Potentiometric Surface Map (April 2003)



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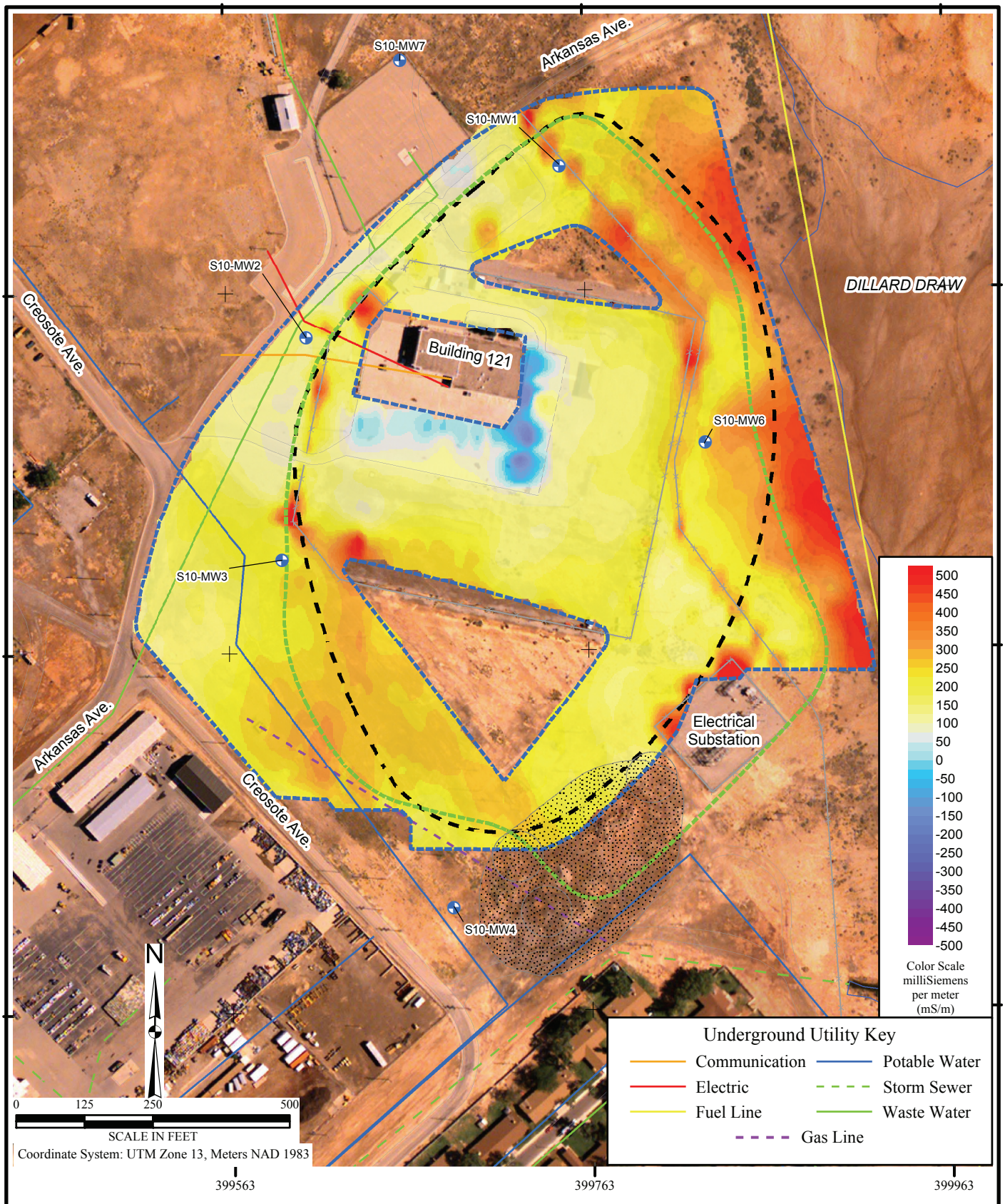
Project: AFC002-037-04-02-02
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Dennison Core Sample (1988)
- RI Boring (1988)
- Monitoring Well
- COE Boring, Nov. 1987
- COE Boring, June 1982
- Boring/Well with Depth to Bottom of Waste (5')

Highlighted sample locations indicate waste found.

Figure 4.3
Previous Investigation Soil and Groundwater Sample Locations



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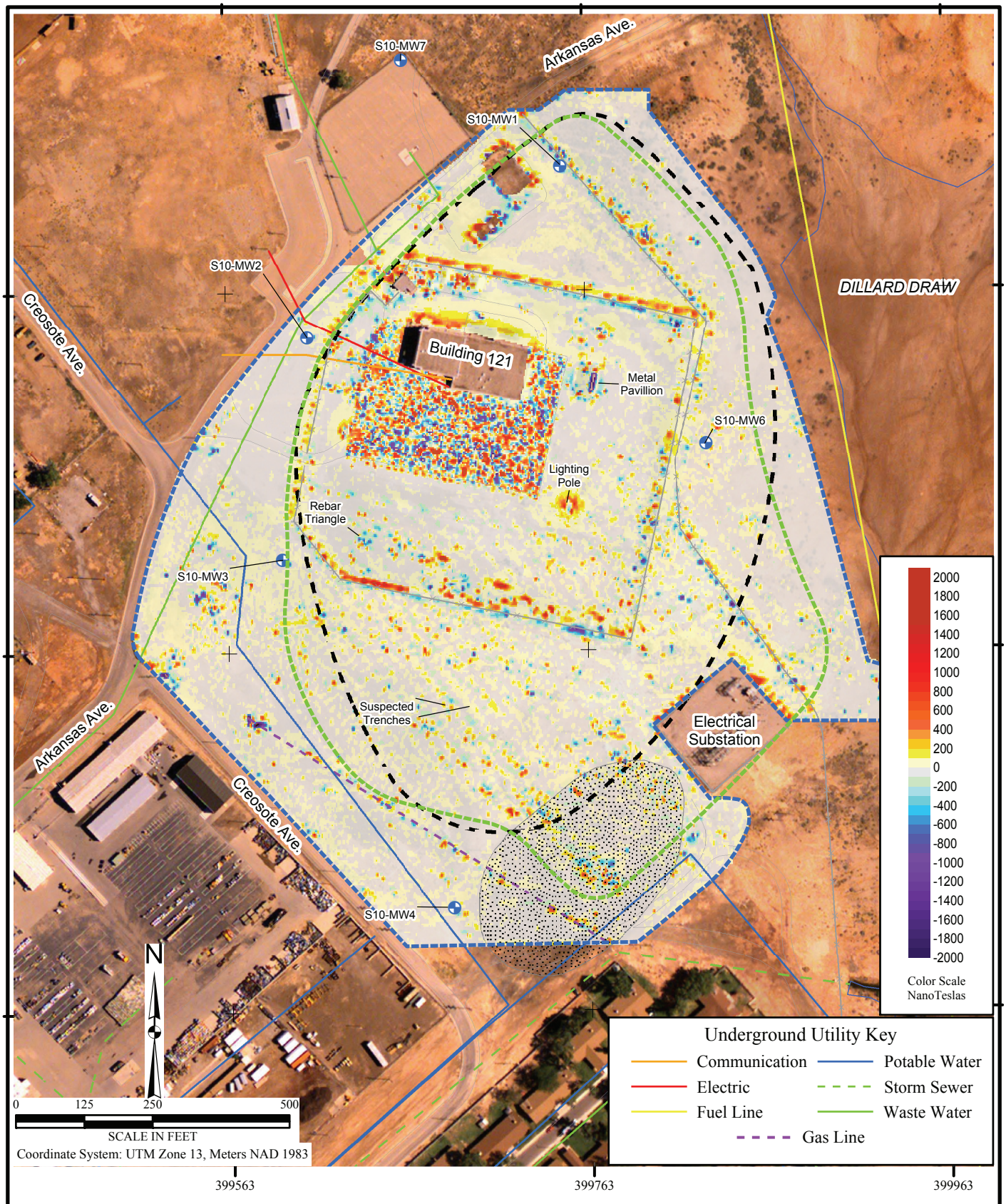
Project: AFC002-037-04-02-05
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Terrain Conductivity Survey Boundary
- Unit Boundary Implied by Geophysics
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well

Figure 4.4
LF-10
Terrain Conductivity Survey Map



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Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Magnetic Survey Boundary
- Unit Boundary Implied by Geophysics
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well

Figure 4.5
LF-10
Magnetic Survey Map

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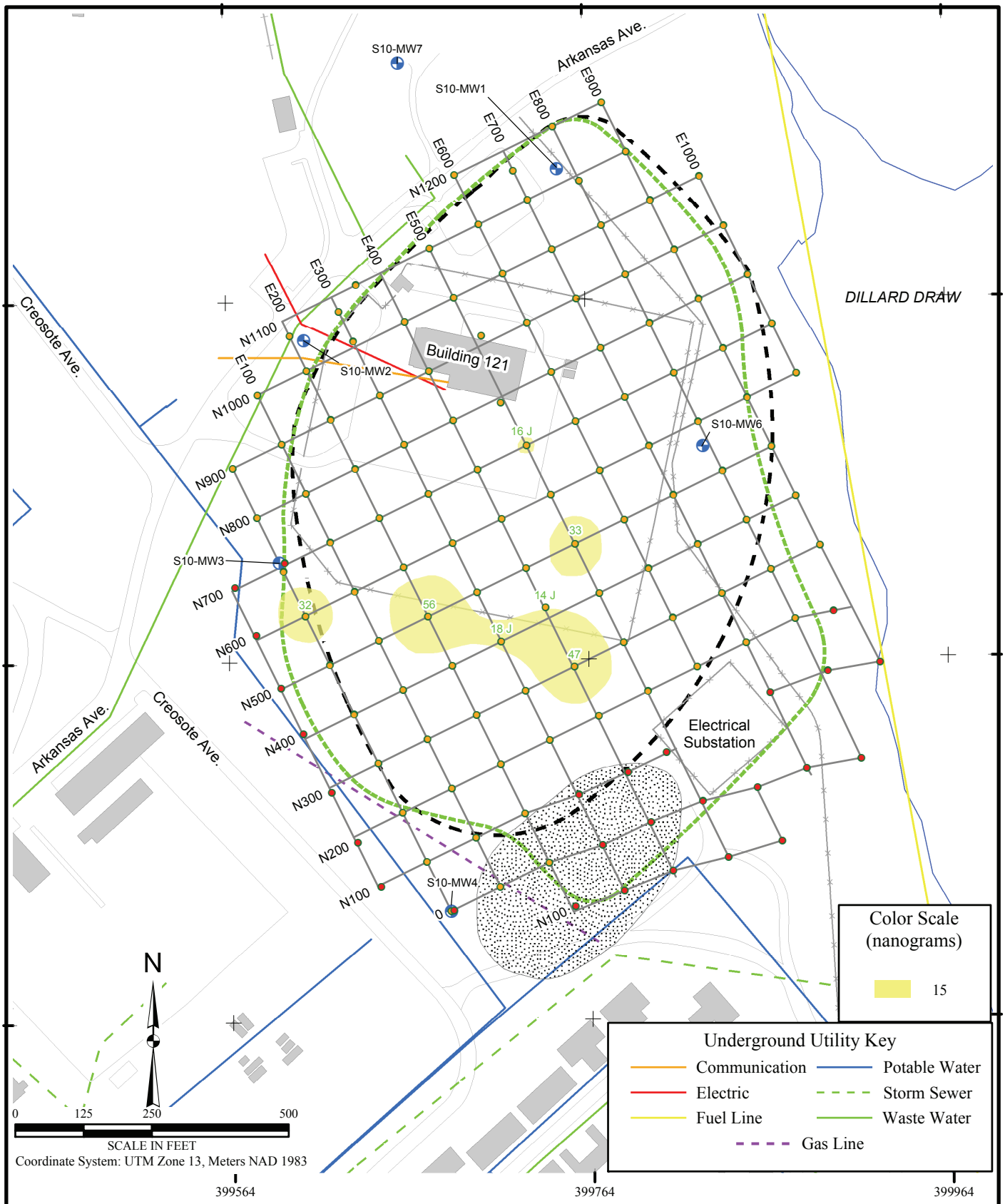
Project: AFC002-037-04-02-05
Revised: 11/14/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- Monitoring Well

Figure 4.6
LF-10
Soil Gas Survey
Sample Location Map



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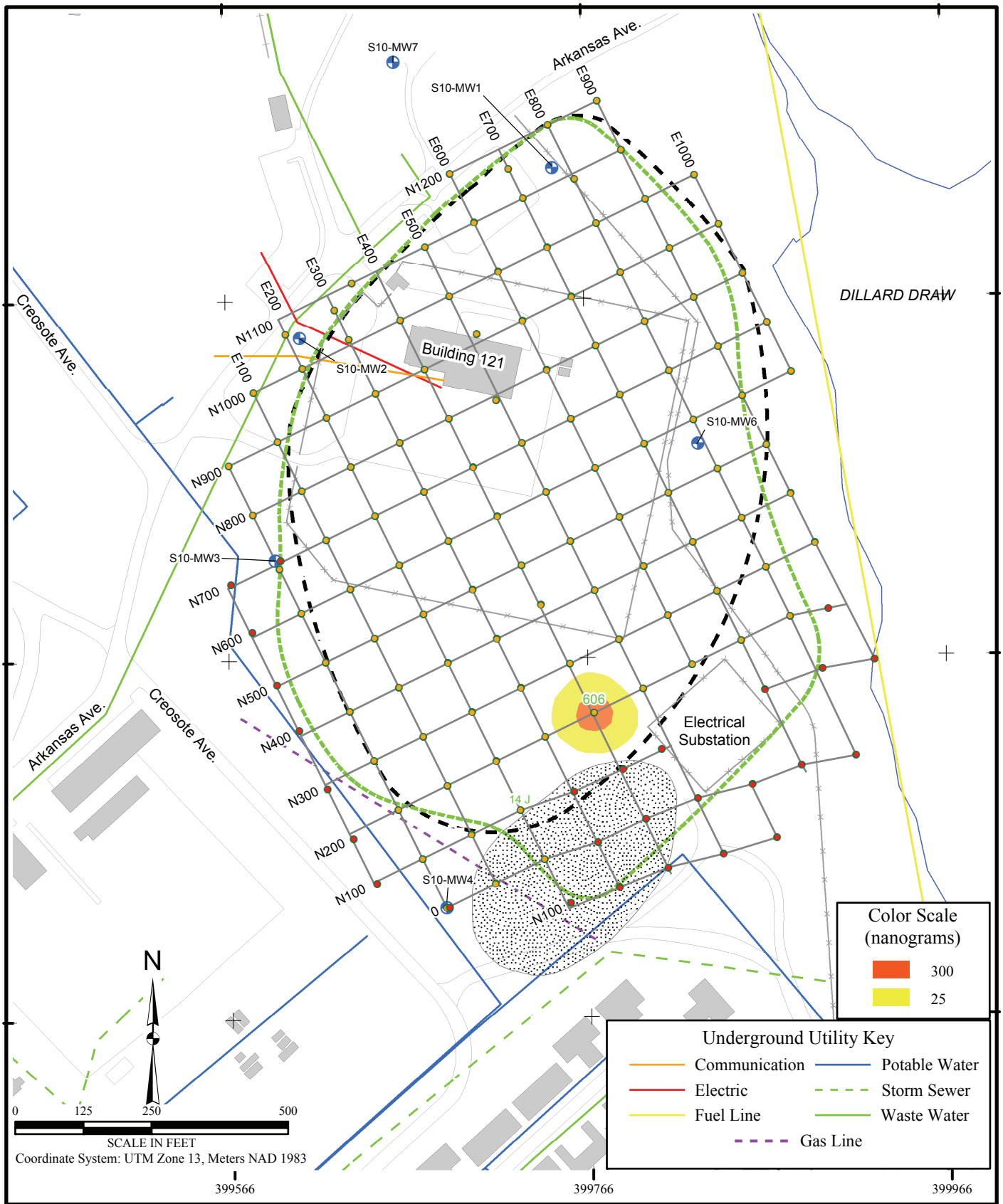
Project: AFC002-037-04-02-03
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Chainlink Fence
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- 33 — Positive Soil Gas Concentration (Nanograms)
- J — Estimated Positive Detection (ng/trap)

Figure 4.7
LF-10
Soil Gas Survey Results
Chloroform Concentrations



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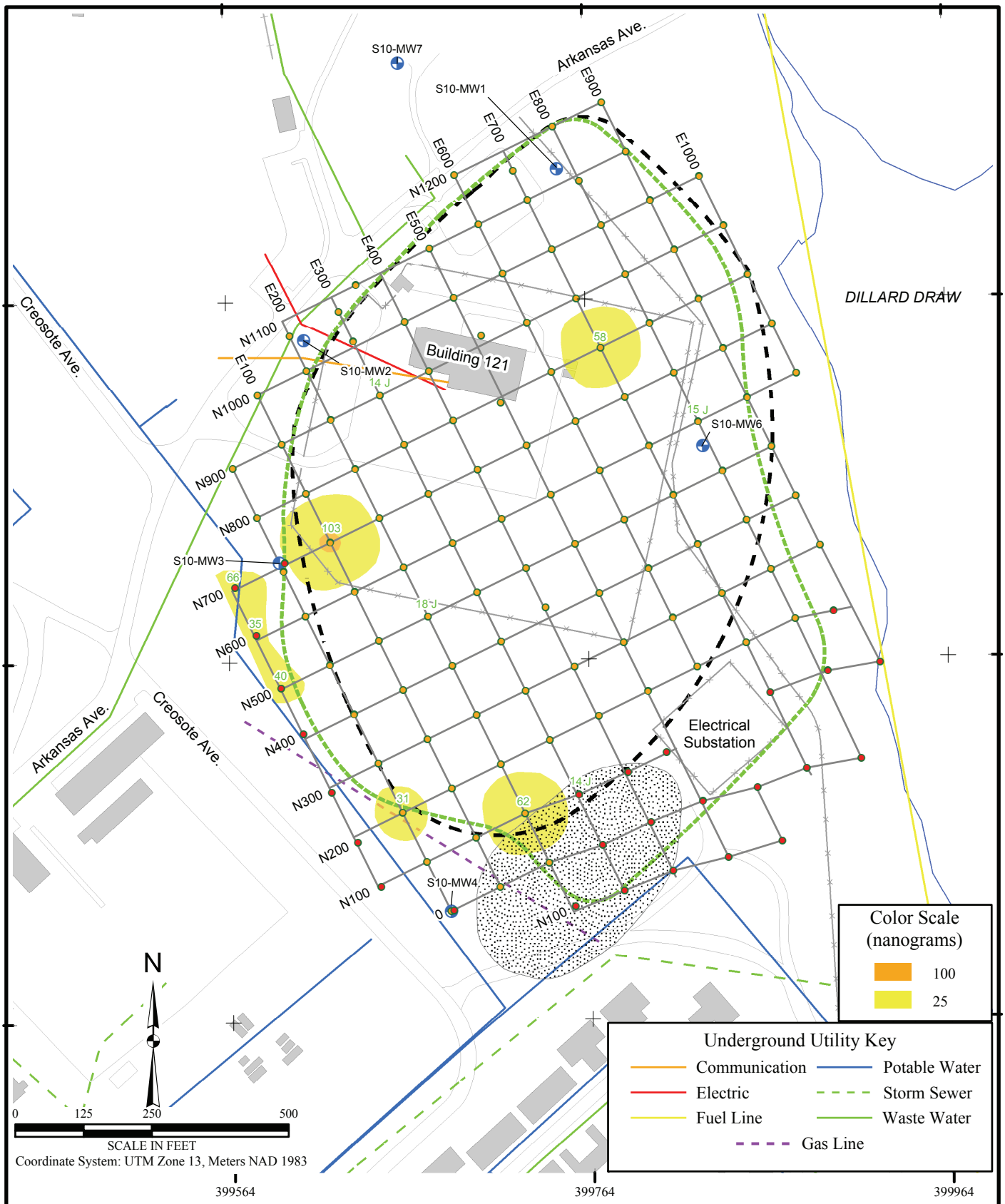
Project: AFC002-037-04-02-03
Revised: 05/10/07 PS
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Chainlink Fence
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- 606 Positive Soil Gas Concentration (Nanograms)

Figure 4.8
LF-10
Soil Gas Survey Results
Trichloroethene Concentrations



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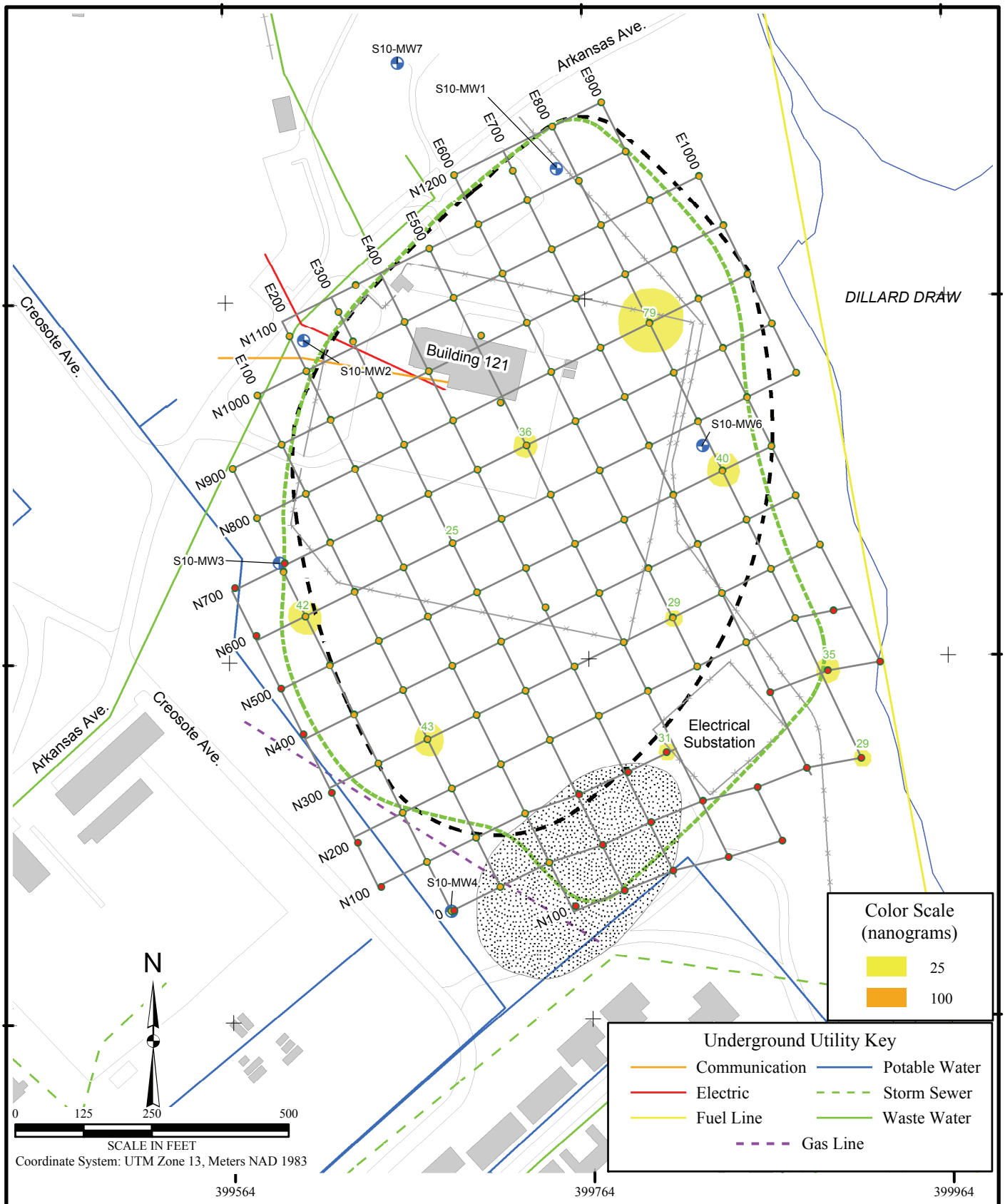
Project: AFC002-037-04-02-03
Revised: 05/10/07 PS
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Chainlink Fence
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- 62 Positive Soil Gas Concentration (Nanograms)
- J Estimated Positive Detection (ng/trap)

Figure 4.9
LF-10
Soil Gas Survey Results
Tetrachloroethene Concentrations



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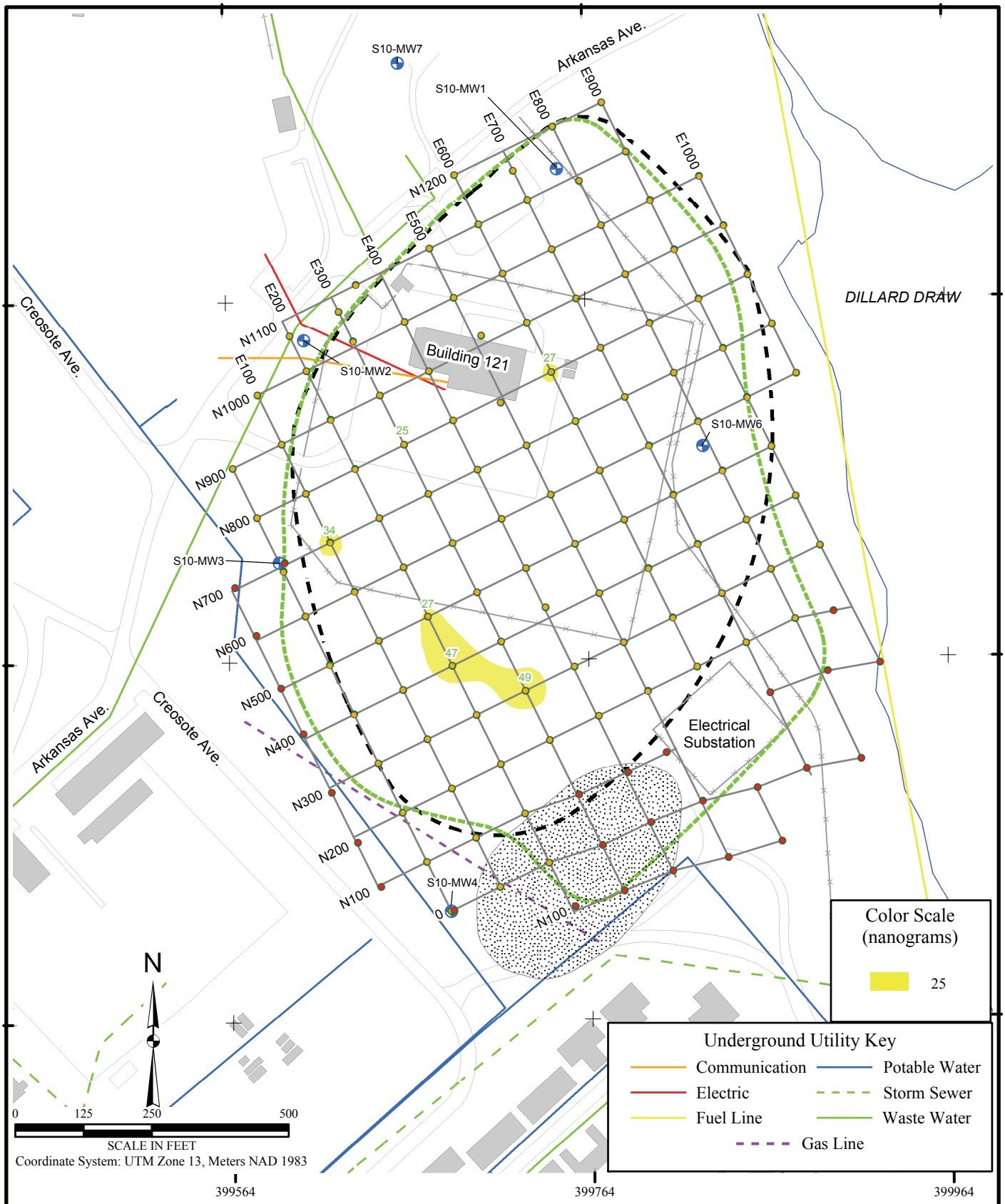
Project: AFC002-037-04-02-03
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Chainlink Fence
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- 40 Positive Soil Gas Concentration (Nanograms)

Figure 4.10
LF-10
Soil Gas Survey Results
1,3,5-Trimethylbenzene Concentrations



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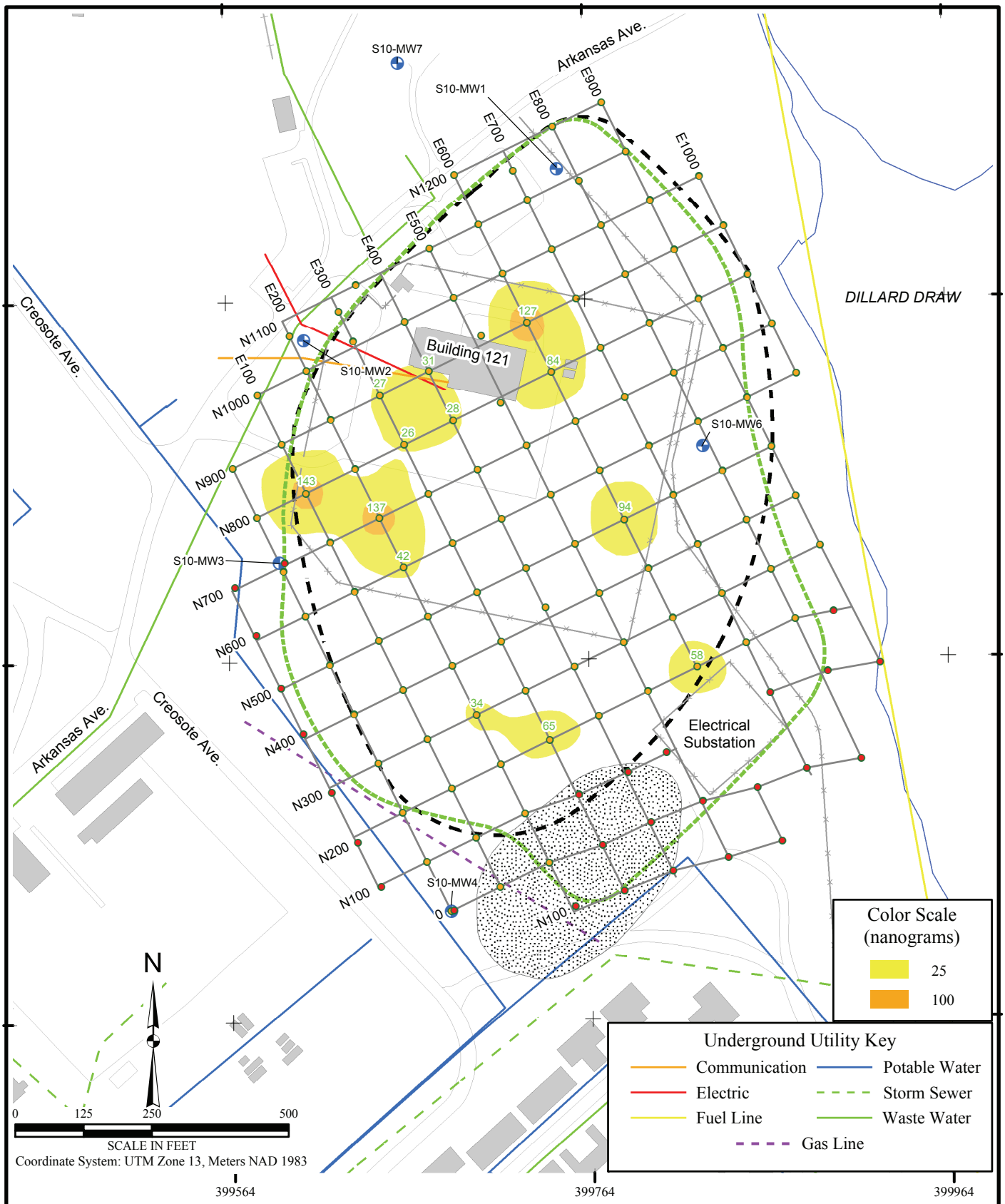
Project: AFC002-037-04-02-03
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Chainlink Fence
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- 47 Positive Soil Gas Concentration (Nanograms)

Figure 4.11
LF-10
Soil Gas Survey Results
n-Butylbenzene Concentrations



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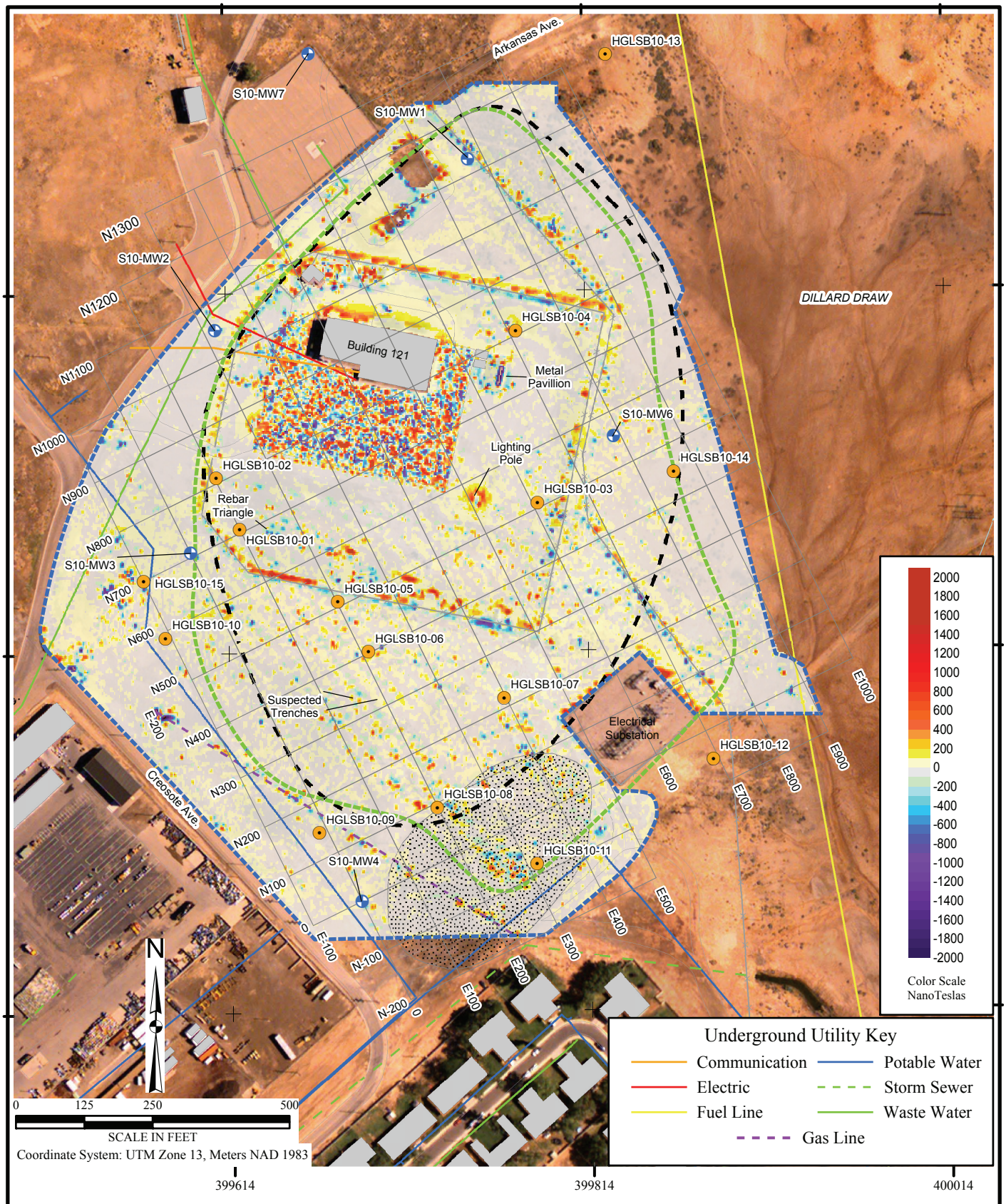
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Chainlink Fence
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample (October 2005)
- Soil Gas Sample (May 2006)
- 34 Positive Soil Gas Concentration (Nanograms)

Figure 4.12
LF-10
Soil Gas Survey Results
Naphthalene Concentrations



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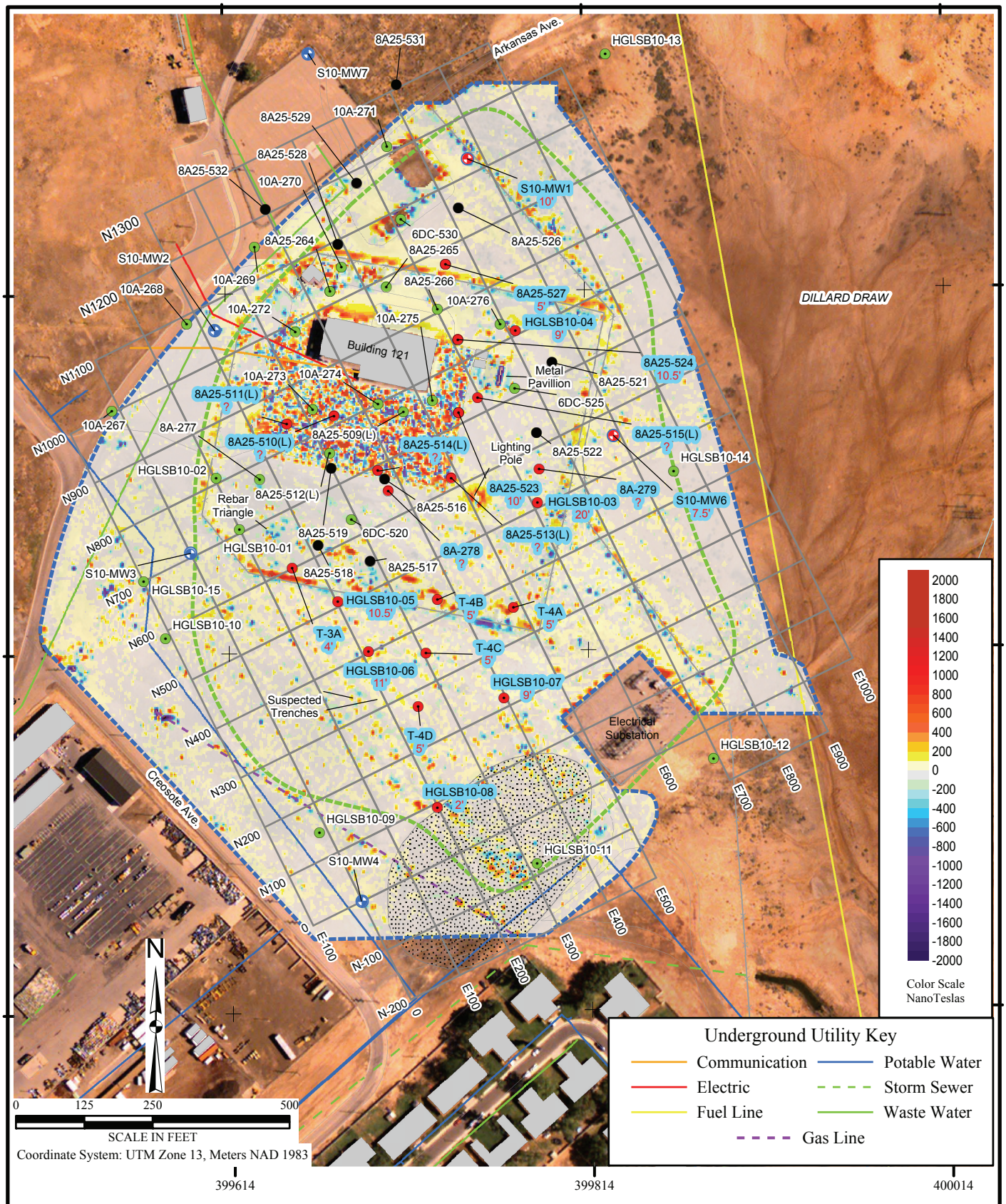
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Magnetic Survey Boundary
- Unit Boundary Implied by Geophysics
- Chainlink Fence
- Monitoring Well
- Soil Boring(Supplemental RFI)
- Stockpile of Recyclable Construction Material

Figure 4.13
LF-10
Soil Boring Locations



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Project: AFC002-037-04-02-05
Revised: 05/18/07 Pd
Map Source: Holloman AFB

Legend

- Magnetic Survey Boundary
- Unit Boundary Implied by Geophysics
- Chainlink Fence
- RI Boring (1988)
- Monitoring Well
- Monitoring Well Completed Through Landfill Waste
- No Waste Encountered
- Borings with Depth to Bottom of Waste
- Stockpile of Recyclable Construction Material

Figure 4.14
Landfill Waste Encountered Beneath LF-10

TABLES

Table 4.1
LF-10 1988 Remedial Investigation Soil Analytical Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[1]	NMED Soil Screening Levels[2]			Soil Borings											
		Residential	Industrial/ Occupational	Construction Worker	8A25-523			8A25-524			8A25-528		8A25-532		8A25-532-D	
Depth					7.5-9'	9-10.5'	13.5-15'	7.5-9'	12.5-14'	12.5-14'D	22.5-24'	27.5-29'	15-16.5'	27.5-29'	13.5-15'	27.5'
Volatiles (mg/kg)																
Acetone	--	28,100	100,000	98,500	NA	NA	NA	NA	NA	NA	NA	NA	0.034	NA	0.047	NA
Benzene	--	10.3	25.8	174	NA	NA	NA	NA	NA	NA	0.03	0.026	0.005	0.003	0.006	NA
2-Butanone	--	31,800	48,700	48,700	NA	NA	NA	NA	NA	NA	NA	NA	0.21	NA	0.24	NA
Ethylbenzene	--	128	128	128	NA	NA	NA	NA	NA	NA	NA	NA	0.004	NA	0.005	NA
Hexane	--	38	38	38	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006	NA	NA
Toluene	--	252	252	252	NA	NA	NA	NA	NA	NA	NA	NA	0.002	NA	0.003	NA
1,1,1-Trichloroethane	--	563	563	563	NA	NA	NA	NA	NA	NA	NA	NA	0.004	NA	0.005	NA
Xylene	--	82	82	82	NA	NA	NA	NA	NA	NA	NA	NA	0.005	NA	0.002	NA
TRPH (mg/kg)	**--**	520[3]	1,120[3]	--[3]	NA	36	NA	20	51	NA	21	25	49	69	NA	61
BNAE Organic																
Di-n-Butylphthalate	--	6,110	68,400	23,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.48	NA
Metals (mg/kg)																
Arsenic	6.9	3.9	17.7	85.2	NA	*5*	3	2	NA	NA	1	NA	NA	NA	NA	NA
Barium	84.4	15,600	100,000	60,200	NA	50	79	81	37	42	81	26	41	120	NA	NA
Beryllium	1.3	156	2,250	56.2	NA	2	2	2	2	2	2	2	2	2	NA	NA
Cadmium	1.0	39	564	154	NA	2	3	5	3	5	7	7	8	9	NA	NA
Chromium	24.6	210[4]	450[4]	500[4]	NA	20	12	13	6	10	16	5	7	6	NA	NA
Copper	21.2	3,130	45,400	12,400	NA	28	23	31	27	30	18	24	19	21	NA	NA
Iron	6,362	23,500	100,000	92,900	NA	*16,415*	*9,236*	*10,428*	2,763	4,967	*10,624*	3,351	2,260	4,452	NA	NA
Lead	12.3	400	800	800	NA	5	3	4	0.5	1.6	4	0.8	0.5	1.6	NA	NA
Manganese	146.9	3,590	48,400	150	NA	*176*	108	89	*683*	*562*	*216*	67	2	64	NA	NA
Nickel	18.1	1,560	22,700	6,190	NA	18	13	18	16	19	25	21	25	27	NA	NA
Silver	0.73	391	5,680	1,550	NA	NA	2	2	3	3	2	2	2	3	NA	NA
Sodium	5,000	--	--	--	NA	3,557	2,588	3,149	1,606	1,551	1,813	1,519	372	771	NA	NA
Zinc	48.7	23,500	100,000	92,900	NA	44	26	31	15	68	31	12	10	15	NA	NA

Notes:
NA = not analyzed
NMED = New Mexico Environment Department
mg/kg = milligrams per kilogram
TRPH = Total recoverable petroleum hydrocarbons
BNAE = base/neutral/acid extractables
-- = not applicable; not detected

(1) Radian (1992c) and Radian (1993b)
(2) Obtained from Table A-1 (NMED, 2006c)
(3) Diesel SSLs used as a surrogate for TRPH (obtained from Table 2a [NMED, 2006a])
(4) Source: Region 6 Human Health Specific Screening Levels (EPA Reg VI, 2007)
(5) Chromium VI used as a surrogate for Total Chromium

Results underlined and *italics* exceed Human Health Standard and are greater than the background values.

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.2
LF-10 1988 Remedial Investigation Groundwater Analytical Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[1]	US EPA MCL	NMGWQ Standard[2]	Monitoring Well						
				Upgradient Wells						
				MW-2	MW-5	MW-7	MW-1	MW-3	MW-4	MW-6
BA/NE (µg/L)										
2,4-Dinitrotoluene	--	--	--	ND	ND	57	ND	ND	ND	ND
Isophorone	--	--	--	ND	ND	64	ND	ND	ND	ND
2-Methylnapthalene	--	--	--	3	ND	ND	ND	ND	ND	ND
Napthalene	--	--	--	15	ND	ND	ND	ND	ND	ND
Phenol	--	--	5	10	ND	ND	ND	ND	ND	ND
Pesticides/PCB (µg/L)										
Aldrin	--	--	--	ND	ND	0.17	ND	ND	ND	ND
Endosulfan I	--	--	--	ND	ND	0.53	ND	ND	ND	ND
Endrin	--	2	--	ND	ND	0.12	ND	ND	ND	ND
Heptachlor Epoxide	--	0.2	--	ND	ND	*0.86*	ND	ND	ND	ND
Methoxychlor	--	40	--	1.1	ND	ND	ND	ND	ND	ND
TRPH (µg/L)	--	--	--	ND	ND	ND	ND	3	3	ND
Tentatively Identified Compounds (µg/L)										
1-Ethyl-2-Methylbenzene	--	--	--	113	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	--	--	--	49	ND	ND	ND	ND	ND	ND
Metals (µg/L)										
Antimony	89.6	6	--	ND	ND	*38*	ND	*36*	*47*	ND
Arsenic	72.3	10	100	*< 125**	*< 125**	*43*	*21*	6	*21*	*< 50**
Barium	929.3	2,000	1,000	230	286	677	637	169	492	474
Beryllium	3.8	4	--	*6*	*6*	*20*	*20*	*6*	***14***	***11***
Cadmuim	8.3	5	10	ND	ND	*14*	*7*	ND	5	*12*
Chromium	234	100	50	*51*	37	*124*	*108*	25	*52*	*75*
Copper	38.6	1,300[3]	1,000	109	115	179	259	108	191	140
Cyanide	--	200	200	ND	ND	ND	40	ND	ND	ND
Iron	--	--	1,000	*19,990*	*23,083*	*100,485*	*83,308*	*16,561*	*42,660*	*58,313*
Lead	19.9	15 [2]	50	*< 200**	*< 70**	*50*	*38*	*22*	*18*	***< 500****

Table 4.2 (continued)
LF-10 1988 Remedial Investigation Groundwater Analytical Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[1]	US EPA MCL	NMGWQ Standard[2]	Monitoring Well						
				Upgradient Wells						
				MW-2	MW-5	MW-7	MW-1	MW-3	MW-4	MW-6
Manganese	--	--	200	*316*	*575*	*976*	***1,604***	184	*389*	***1,204***
Mercury	0.03	2	2	0.881	ND	ND	0.294	0.427	***2.012***	ND
Nickel	43.6	--	200	134	145	154	***218***	77	130	70
Selenium	79.3	50	50	*< 70**	*< 500**	*< 500**	15	37	13	***< 500****
Silver	7.3	--	50	16	ND	6	26	11	17	22
Sodium	--	--	--	8,749,720	20,438,320	1,420,871	2,817,036	8,544,135	3,269,065	13,427,300
Thallium	94.3	2	--	*< 200**	*< 175**	ND	ND	ND	ND	*< 20**
Zinc	253.4	--	10,000	128	100	333	261	73	124	195

Notes:

ND = Not detected
-- = not applicable; not detected
US EPA = U.S. Environmental Protection Agency
MCL = Maximum Contaminant Level
NMGWQ = New Mexico Groundwater Quality
NMAC = New Mexico Administrative Code
BN/AE = base, neutral, extractable
PCB = poly-chlorinated biphenyls
TRPH = total recoverable petroleum hydrocarbons
μg/L = micrograms per liter
* Elevated detection limit due to matrix interference

(1) Radian, 1993b
(2) NMAC 20.6.2.3103
(3) Action Level

Results underlined in **BOLD** and *italics* exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values.
Results in **BOLD** and *italics* exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values.
Results in *italics* exceed USEPA or NMGWQ standards but are below background and/or upgradient levels.

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.3
LF-10 Groundwater Compliance Long Term Monitoring Analytical Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

	BACKGROUND[4]	US EPA MCL	NMGWQ Standard[5]	MW-2 (upgradient)					MW-3				
				Aug-95	Sep-97	Sep-99	Sep-01	Apr-03	Aug-95	Sep-97	Sep-99	Sep-01	Apr-03
VOCs[1] (mg/L)													
Acetone	--	--	--	ND	ND	<5	NA	NA	ND	ND	<5	NA	NA
1,2-Dichloroethane	--	5.00	10	ND	ND	<3	NA	NA	ND	ND	<3	NA	NA
Methylene chloride	--	--	100	6.6UB	ND	<3	NA	NA	ND	ND	<3	NA	NA
Metals[2] (mg/L)													
Arsenic	35.4	10	100	ND	ND	*15.5 B (J)*	*10.1*	*21.1*	10	ND	*18.5 B (J)*	*11.9*	*21.2*
Barium	85.2	2,000	1,000	ND	ND	11.4 B (J)	9.5 B	8.09 J	ND	ND	13.5 B (J)	12.1	9.6 J
Cadmium	7.4	5	10	ND	ND	0.5B	NA	NA	ND	ND	0.5B	NA	NA
Chromium	7.2	100	50	ND	ND	10.6 (J)	<20	NA	ND	ND	<0.6	<20	NA
Iron	--	--	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.6	15[6]	50	ND	ND	<1.5	<10 (UJ)	NA	***98***	ND	<1.5	<10 (UJ)	NA
Manganese	--	--	200	ND	ND	2.2 B (J)	<10 (UJ)	<10	ND	ND	3.3 B (J)	1.1 B (J)	<10
Selenium	85.3	50	50	ND	ND	14.6 B (J)	7.9 B	6.41 UJ	ND	ND	14.2 B (J)	8.5 B	<19
Silver	6.7	--	50	ND	ND	<0.5	NA	NA	ND	ND	6.2 B (J)	NA	NA
Organochlorine Pesticides[3] (mg/L)													
all	--	--	--	ND	ND	NA	NA	NA	ND	ND	NA	NA	NA

Notes:
(1) Unless otherwise reported, no VOCs were detected prior to 2001 using EPA Method 8260B.
(EPA Method 8260A was used to analyze for VOCs in the 1995 and 1997 programs.)
(2) Unless otherwise reported, no metals were detected using EPA Methods 6010B Trace & 7470A.
(3) Unless otherwise reported, no organochlorine pesticides were detected prior to '99 using EPA Method 8081A.
(EPA Method 8080A was used to analyze for organochlorine pesticides in the 1995 and 1997 programs.)
(4) Radian, 1993b.
(5) NMAC 20.6.2.3103
(6) Action Level

Laboratory qualifiers--assigned as a result of internal laboratory data assessment procedures
J - estimated value; less than CRDL but greater than or equal to IDL
UB - Qualifies as non-detct due to presence of analyte in associated laboratory blank
EPA Qualifiers--assigned as a result of independent data validation
(J) - Estimated value
(UJ) - Estimated value blow the reporting limit
2003 Validation Qualifiers
J - Estimated value detected less than the CRDL but greater than the reporting limit.
UJ - Estimated as a non-detect at the detection limit.

Results in **BOLD** and *italics* exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in BOLD and italics exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values
Results in italics exceed USEPA or NMGWQ standards but are below background and/or upgradient levels
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

CRDL - Contract-required Detection Limit
IDL - Instrument Detection Limit
NA - not analyzed
-- - not applicable, not detected
VOC's - volatile organic compounds
µg/L - micrograms per liter
NMGWQ = New Mexico Groundwater Quality
NMAC = New Mexocp Administrative Code
US EPA = U.S. Environmental Protection Agency
MCL = Maximum Contaminant Level
< = less than reported value

Table 4.3 (continued)
LF-10 Groundwater Compliance Long Term Monitoring Analytical Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

	BACKGROUND[4]	US EPA MCL	NMGWQ Standard[5]	MW-4					MW-6				
				Aug-95	Sep-97	Sep-99	Sep-01	Apr-03	Aug-95	Sep-97	Sep-99	Sep-01	Apr-03
VOCs[1] (mg/L)													
Acetone	--	--	--	--	--	1 J	NA	NA	--	--	<5	NA	NA
1,2-Dichloroethane	--	5.00	10	--	--	<3	NA	NA	--	--	1 J	NA	NA
Methylene chloride	--	--	100	--	--	<3	NA	NA	--	--	<3	NA	NA
Metals[2] (mg/L)													
Arsenic	35.4	10	100	*13*	*17 J*	*14.9 B (J)*	*11.7*	*19.3*	10	*17 J*	*20.6 B (J)*	*11.9*	*25.9*
Barium	85.2	2,000	1,000	--	20	30.9 B (J)	28.4	9.88 J	--	--	12.2 B (J)	11.4	8.29 J
Cadmium	7.4	5	10	--	--	1.2 B	NA	NA	--	--	<0.3	NA	NA
Chromium	7.2	100	50	--	--	1.2 B (J)	<20	NA	--	--	<0.6	<20	NA
Iron	--	--	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.6	15[6]	50	***150***	--	<1.5	<10 (UJ)	NA	***42***	--	<1.5	<10 (UJ)	NA
Manganese	--	--	200	--	80	114 J	80.2 (J)	71.3	--	110	50.5 (J)	18.2 (J)	66.7
Selenium	85.3	50	50	--	--	12.7 B (J)	8.4 B	<13.9	--	--	10.6 B (J)	3.9 B	<11.2
Silver	6.7	--	50	--	--	1.4 B (J)	NA	NA	--	--	<0.5	NA	NA
Organochlorine Pesticides[3] (mg/L)													
all	--	--	--	--	--	NA	NA	NA	--	--	NA	NA	NA

Notes:
(1) Unless otherwise reported, no VOCs were detected prior to 2001 using EPA Method 8260B.
(EPA Method 8260A was used to analyze for VOCs in the 1995 and 1997 programs.)
(2) Unless otherwise reported, no metals were detected using EPA Methods 6010B Trace & 7470A.
(3) Unless otherwise reported, no organochlorine pesticides were detected prior to '99 using EPA Method 8081A.
(EPA Method 8080A was used to analyze for organochlorine pesticides in the 1995 and 1997 programs.)
(4) Radian, 1993b.
(5) NMAC 20.6.2.3103
(6) Action Level

Laboratory qualifiers--assigned as a result of internal laboratory data assessment procedures
J - estimated value; less than CRDL but greater than or equal to IDL
UB - Qualifies as non-detct due to presence of analyte in associated laboratory blank
EPA Qualifiers--assigned as a result of independent data validation
(J) - Estimated value
(UJ) - Estimated value blow the reporting limit
2003 Validation Qualifiers
J - Estimated value detected less than the CRDL but greater than the reporting limit.
UJ - Estimated as a non-detect at the detection limit.

Results in **BOLD** and *italics* exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in BOLD and italics exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values
Results in italics exceed USEPA or NMGWQ standards but are below background and/or upgradient levels
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

CRDL - Contract-required Detection Limit
IDL - Instrument Detection Limit
NA - not analyzed
-- - not applicable, not detected
VOC's - volatile organic compounds
µg/L - micrograms per liter
NMGWQ = New Mexico Groundwater Quality
NMAC = New Mexocp Administrative Code
US EPA = U.S. Environmental Protection Agency
MCL = Maximum Contaminant Level
< = less than reported value

Table 4.4
LF-10 Supplemental RFI Field Activity Summary
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Field Activitiy	Soil Borings	Samples Collected	Field Screening	Laboratory Analyses	Objective
Geophysical Survey	--	--		--	Delineate the extent of the landfill; identify potential contamination hotspots
Soil Gas Survey	143	143	PID	VOCs	Identify potential contamination hotspots
Subsurface Soil Assessment					
Landfill Waste and underlying Soil Quality Assessment	8	6	lithologic logging, visual inspection, PID, methane meter	VOCs, SVOCs, G-TPH, D-TPH, RCRA metals	Determine the presence or absence of landfill waste
					Visually characterize the landfill waste (if present)
					Assess the soil quality beneath the buried waste
Landfill Boundary Assessment	7(1)	0	lithologic logging, visual inspection, PID	VOCs, SVOCs, G-TPH, D-TPH, RCRA metals	Verify the landfill boundaries

Notes:
VOC = volatile organic compound
SVOC = semi-volatile organic compound
G-TPH = gasoline-range total petroleum hydrocarbons
D-TPH = diesel-range total petroleum hydrocarbons
RCRA = Resource Conservation and Recovery Act
-- = not applicable
PCE = tetrachloroethene
PID = photoionization detector
(1) Boring HGLSB10-15 was completed to assess soil quality at elevated PCE detection outside geophysically defined landfill boundary
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	Meth Blk	Trip-1	LF10-N800E100	LF10-N500E300	LF10-N600E700	LF10-N1000E600	LF10-N700E400	LF10-N900E200	LF10-N600E200
Lab File ID:	05100803	05100816	05100817	05100818	05100819	05100820	05100821	05100822	05100823
Received Date:		10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	**33**	**30**	**34**	**31**	<25	**29**	<25	<25
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	**31**	<25	**30**	<25	<25
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	**27**	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	**94**	**88**	**113**	**191**	**69**	**138**	**75**	**96**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	**143**	<25	<25	<25	<25	<25	**42**
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N600E600	LF10-N900E700	LF10-N900E400	LF10-N800E200	LF10-N600E300	LF10-N900E600	LF10-N800E800	LF10-N800E400	LF10-N800E300
Lab File ID:	05100824	05100825	05100826	05100827	05100828	05100829	05100830	05100831	05100832
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	**28**	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**66**	<25	**28**	**65**	**30**	**101**	**120**	**161**	**59**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	**42**	<25	<25	<25	<25	**41**	**39**	**61**	**37**
Bromoform	**41**	<25	**29**	**43**	<25	**62**	**70**	**100**	**41**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**35**	<25	**26**	**38**	<25	**51**	**59**	**81**	**36**
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	**25**	<25	**79**	<25	<25
1,3-Dichlorobenzene	**152**	**68**	**140**	**209**	**98**	**268**	**295**	**377**	**137**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	**25**
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	**31**	<25	<25	**127**	<25	**28**	**26**

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N700E100	LF10-N900E500	LF10-N800E700	LF10-N800E500	LF10-N900E300	LF10-N700E300	LF10-N1100E350	LF10-N700E700	LF10-N800E600
Lab File ID:	05100833	05100834	05100835	05100836	05100837	05100838	05100839	05100840	05100841
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**100**	**59**	**83**	<25	<25	<25	**75**	**64**	**106**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	**103**	<25	**58**	<25	**14 J**	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	**59**	<25	**30**	<25	<25	<25	**34**	<25	**67**
Bromoform	**65**	**31**	**51**	<25	<25	<25	**52**	**39**	**83**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**59**	**27**	**44**	<25	<25	<25	**46**	**31**	**72**
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**184**	**121**	**231**	**98**	**123**	**91**	**241**	**161**	**294**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	**34**	<25	<25	<25	<25	<25	<25	<25	**27**
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	**26**	**27**	<25	<25	<25	**84**

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N700E500	LF10-N700E200	LF10-N1000E400	LF10-N700E600	Trip-2	LF10-N100E700	Meth Blk	LF10-N600E0	LF10-N900E100
Lab File ID:	**05100842**	**05100843**	**05100844**	**05100845**	**05100846**	**05100847**	**05100903**	**05100904**	**05100905**
Received Date:	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**		**10/6/2005**	**10/6/2005**
Units:	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	**16 J**	<25	<25	<25	<25	<25	<25	**32**	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**44**	**44**	**66**	**51**	**55**	**51**	<25	**33**	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	**38**	<25	<25	<25	<25	<25	<25
Bromoform	**29**	**25**	**47**	**33**	**26**	**36**	<25	**29**	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**27**	<25	**40**	**29**	<25	**32**	<25	**27**	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**36**	<25	<25	<25	<25	<25	<25	**42**	<25
1,3-Dichlorobenzene	**132**	**101**	**164**	**123**	**110**	**185**	<25	**145**	**50**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	**137**	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N900E800	LF10-N1000E300	LF10-N500E500	LF10-N500E100	LF10-N1000E100	LF10-N1000E800	LF10-N1100E500	LF10-N400E500	LF10-N700E0
Lab File ID:	05100906	05100907	05100908	05100909	05100910	05100911	05100912	05100913	05100914
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	**33**	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**62**	**54**	**48**	**27**	**56**	**39**	**66**	**42**	**42**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Bromoform	**41**	**30**	**28**	<25	**31**	**31**	**42**	**26**	**26**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**36**	**26**	<25	<25	**27**	**26**	**33**	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**185**	**129**	**131**	**112**	**129**	**150**	**193**	**117**	**98**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N1070E300	LF10-N1100E800	LF10-N400E400	LF10-N600E500	LF10-N600E100	LF10-N1000E200	LF10-N1100E790	LF10-N600E400	LF10-N500E600
Lab File ID:	05100915	05100916	05100917	05100918	05100919	05100920	05100921	05100922	05100923
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	**14 J**	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	<25	**38**	**89**	**75**	**36**	**35**	**27**	**38**	**48**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	**32**	<25	<25	<25	<25	<25
Bromoform	<25	**26**	**41**	**50**	**26**	**30**	<25	**27**	**28**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	**36**	**44**	<25	**27**	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	**28**	<25	<25
1,3-Dichlorobenzene	**63**	**138**	**218**	**208**	**113**	**156**	**95**	**110**	**140**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	**94**

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N500E0	LF10-N900E0	LF10-N1160E700	LF10-N1200E600	LF10-N500E400	LF10-N400E100	LF10-N800E0	LF10-N1070E200	Trip-3
Lab File ID:	**05100924**	**05100925**	**05100926**	**05100927**	**05100928**	**05100929**	**05100930**	**05100931**	**05100932**
Received Date:	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**
Units:	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**44**	**73**	**79**	**32**	<25	**53**	**26**	<25	**41**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	**37**	<25	<25	<25	<25	<25	<25
Bromoform	**33**	**37**	**53**	**25**	<25	**32**	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**26**	**31**	**46**	<25	<25	**26**	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**128**	**161**	**200**	**112**	**58**	**136**	**86**	**83**	**87**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N200E200	LF10-N400E600	LF10-N400E700	LF10-N600E800	LF10-N190E0	LF10-N100E200	LF10-N300E600	LF10-N400E900	LF10-N500E800
Lab File ID:	05100933	05100934	05100935	05100936	05100937	05100938	05100939	05100940	05100941
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	**14 J**	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**52**	**43**	**79**	**47**	**29**	**51**	**30**	**36**	**55**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	**15 J**	**31**	**62**	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	**27**	<25	<25	<25	<25	<25	<25
Bromoform	**35**	**26**	**43**	**31**	<25	**41**	<25	**29**	**33**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**32**	<25	**38**	**25**	<25	**35**	<25	**29**	**29**
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	**29**	<25	**40**
1,3-Dichlorobenzene	**178**	**113**	**177**	**125**	**93**	**233**	**108**	<25	**147**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N200E100	LF10-N100E0	LF10-N300E500	LF10-N300E800	LF10-N600E900	LF10-N300E0	Meth Blk	LF10-N010E0	LF10-N300E400
Lab File ID:	05100942	05100943	05100944	05100945	05100946	05100947	05101003	05101004	05101005
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005		10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	**47**
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**43**	**33**	**40**	**45**	**119**	**51**	<25	**58**	**65**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	**51**	<25	<25	<25	<25
Bromoform	**41**	<25	**28**	**29**	**87**	**25**	<25	**31**	**46**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**35**	<25	<25	**26**	**73**	<25	<25	**26**	**38**
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**194**	**112**	**108**	**126**	**376**	**97**	<25	**114**	**192**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N200E700	LF10-N500E700	LF10-N300E100	LF10-N0E100	LF10-N500E200	LF10-N300E700	LF10-N500E900	LF10-N400E0	LF10-N100E100
Lab File ID:	05101006	05101007	05101008	05101009	05101010	05101011	05101012	05101013	05101014
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	**56**	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	<25	<25	**74**	**44**	**43**	**44**	**53**	**58**	**81**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	**18 J**	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	**34**	<25	<25	<25	<25	<25	**27**
Bromoform	<25	<25	**45**	<25	<25	<25	**32**	**40**	**49**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	**36**	<25	<25	<25	**27**	**35**	**42**
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	**43**	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**83**	**68**	**145**	**78**	**114**	**92**	**133**	**177**	**214**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	**27**	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N300E200	LF10-N700E800	LF10-N400E800	Trip-4	LF10-N200E400	LF10-N0E200	LF10-N900E900	LF10-N900E1000	LF10-N700E1000
Lab File ID:	**05101015**	**05101016**	**05101017**	**05101018**	**05101019**	**05101020**	**05101021**	**05101022**	**05101023**
Received Date:	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**
Units:	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	**606**	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**53**	**100**	**55**	**35**	<25	**33**	**27**	<25	**33**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	**29**	**44**	<25	<25	<25	<25	<25	<25
Bromoform	**28**	**52**	**42**	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	**42**	**40**	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**116**	**198**	**188**	**107**	**59**	**102**	**83**	**63**	**100**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	**34**	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N1100E900	LF10-N400E300	LF10-N300E300	LF10-N200E300	LF10-N400E200	LF10-N800E900	LF10-N1000E1000	LF10-N700E900	LF10-N1000E900
Lab File ID:	**05101024**	**05101025**	**05101026**	**05101027**	**05101028**	**05101029**	**05101030**	**05101031**	**05101032**
Received Date:	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**	**10/6/2005**
Units:	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**	**ng/trap**
ANALYTES (8260 Modified)									
1,1-Dichloroethene									
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	**18 J**	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	<25	**54**	**33**	<25	**37**	**31**	**43**	**43**	**32**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
Bromoform	<25	**27**	<25	<25	**25**	<25	<25	**34**	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	**31**	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**69**	**119**	**77**	**95**	**120**	**92**	**117**	**108**	**116**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	**49**	<25	**47**	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	**65**	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	LF10-N1000E700	LF10-N200E600	LF10-N200E500	LF10-N1000E500	LF10-N800E1000	LF10-N600E1000	TRIP-4	N-100, E400	N-100, E500	N-100, E600
Lab File ID:	05101033	05101034	05101035	05101036	05101037	05101038	06060140.D	06060141.D	06060142.D	06060143.D
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap	ng	ng	ng	ng
ANALYTES (8260 Modified)										
1,1-Dichloroethene										
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	<25	**66**	<25	**50**	**33**	<25	**36**	**156**	**202**	**133**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25	<25	**32**	**44**	**29**
Bromoform	<25	<25	<25	**33**	<25	<25	<25	**38**	**47**	**30**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	**27**	<25	<25	<25	**29**	**36**	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	**31**	<25
1,3-Dichlorobenzene	**68**	**89**	**82**	**164**	**94**	**64**	<25	**78**	**86**	**56**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	**58**	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	N0, E300	N0, E400	N0, E500	N0, E600	METH. BL.	N0,E700	N0,E800	N-80,E200	N-90,E300	N100,E300	N100,E400	N100,E480
Lab File ID:	06060144.D	06060145.D	06060146.D	06060147.D	06060203.D	06060204.D	06060205.D	06060206.D	06060207.D	06060208.D	06060209.D	06060210.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006		5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
ANALYTES (8260 Modified)												
1,1-Dichloroethene												
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**148**	**121**	**165**	**120**	<25	**136**	**93**	**172**	**146**	**133**	**105**	**58**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**17 J**	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	**33**	**28**	**30**	**24**	<25	**28**	**32**	**37**	**34**	**30**	<25	<25
Bromoform	**36**	<25	**32**	**28**	<25	**31**	**52**	**40**	**34**	**32**	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	**28**	<25	**25**	<25	<25	<25	**39**	**32**	**27**	**25**	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25	**29**	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**68**	**43**	**43**	**53**	<25	**47**	**76**	**55**	**66**	**65**	**49**	**34**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**33**

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.5 (continued)
LF-10 Soil Gas Survey VOC Analytical Results
LF-10 (SWMUs 101 and 109) Supplemental RFI
Holloman AFB, New Mexico

Client Sample ID:	N100,E700	N100,E800	N100,E900	N200,E-100	N200,E875	N300,E-100	N400,E-100	N500,E-100	N600,E-100	N700,E-100
Lab File ID:	06060211.D	06060212.D	06060213.D	06060214.D	06060215.D	06060216.D	06060217.D	06060218.D	06060219.D	06060220.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
ANALYTES (8260 Modified)										
1,1-Dichloroethene										
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichloropropane	**123**	**170**	**73**	**97**	**98**	**54**	**73**	**143**	**67**	**161**
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	**40**	**35**	**66**
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	**25**	**38**	<25	<25	**26**	<25	<25	**27**	<25	**31**
Bromoform	**27**	**46**	<25	**25**	<25	<25	<25	**32**	<25	**31**
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	**37**	<25	<25	<25	<25	<25	**26**	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	**35**	<25	<25	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	**47**	**98**	**33**	**42**	**41**	**27**	**40**	**53**	**39**	**34**
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
B = Detected in method blank
J = Estimated value below reported quantitation level
< = Reported value less than method detection limit
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.6
LF-10 Landfill Waste Description
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Boring	Landfill Material		Material Encountered	Distribution in Subsurface	Highest PID in the Fill
	Top (ft bgs)	Bottom (ft bgs)			
PREVIOUS INVESTIGATION GROUNDWATER MONITORING WELLS					
S10-MW1	5.5	10	Dark gray landfill material (i.e., paper, trash, green sludge)	One layer	340
T-3A (well test boring)	4	4	Trash	Layer(?)	NP
T-4A (well test boring)	0	5	Landfill material	Mixed within soil unit	NP
T-4B (well test boring)	0	5	Landfill material	Mixed within soil unit	NP
T-4C (well test boring)	0	5	Landfill material	Mixed within soil unit	NP
T-4D (well test boring)	0	5	Landfill material	Mixed within soil unit	NP
S10-MW6	3	7.5	Wood chips / Landfill material	Mixed within soil unit	16(1)
PREVIOUS INVESTIGATION BORINGS					
8A25-510(L)	NP	NP	NP	NP	NP
8A25-511(L)	NP	NP	NP	NP	NP
8A25-513(L)	NP	12.5	Vials	NP	NP
8A25-514(L)	NP	NP	Dark greenish-sludge with strong odor	13	NP
8A25-515(L)	NP	NP	NP	NP	NP
825-523	4	10	Trash	Lenses between sand layers	200
8A25-524	5	10.5	Trash (nylon rope)	Mixed within soil unit	0.1
8A25-527	0.75	5	Landfill material	Mixed within soil unit	0.4
8A-278	NP	NP	NP	NP	NP
SUPPLEMENTAL RFI BORINGS					
HGLSB10-03	3.9	11	glass, vinyl, cut timber, scrap metal, burnt wood, paper	Lenses between sand layers	2.3
HGLSB10-04	7	9	concrete gravel, pebbles	layer	0
HGLSB10-05	2	10.5	cut timber, concrete gravel (green stained), rubber, glass, porcelain	Lenses between sand layers	0
HGLSB10-06	3	11	cardboard, paper, burnt wood, glass	Mixed within soil unit	0
HGLSB10-07	2	9	burnt wood with slight sheen	Mixed within soil unit	0
HGLSB10-08	1.5	2	wood, paper	One layer	0

ft = foot
bgs = below ground surface
PID = photoionization detector
NP = not provided
? = unknown

(1) Obtained from soil immediately below waste material

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.7
LF-10 Landfill Vapor Monitoring Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Boring[1]	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	LEL (%)
HGLSB10-01	NM	NM	NM	NM
HGLSB10-02	NM	NM	NM	NM
HGLSB10-03	0.04	0.00	19.60	8
HGLSB10-04	0.03	0.00	19.20	6
HGLSB10-05	2.2	0.00	19.00	44
HGLSB10-06	0.02	0.00	19.60	4
HGLSB10-07	0.02	0.00	18.60	4
HGLSB10-08	NM	NM	NM	NM

Notes:
LEL = lower explosive level
% = precentage
NM = not measured (waste material not consistantly observed during borehole advancement)

(1) Only Supplemental RFI borings encountering waste were screened with methane meter

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 4.8
LF-10 Supplemental RFI Soil Analytical Results
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	NMED Soil Screening Levels[1]			SB10-03 15-May-2006 20.00-22.00 ft.				SB10-04 15-May-2006 8.00-10.00 ft.		SB10-05 15-May-2006 10.00-11.00 ft.		SB10-06 15-May-2006 11.00-12.00 ft.		SB10-07 15-May-2006 10.00-11.00 ft.		SB10-07 15-May-2006 13.00-14.00 ft.	
	Residential	Industrial	Construction	Val	Q	Val[6]	Q[6]	Val	Q	Val	Q	Val	Q	Val	Q	Val	Q
Volatile Organic Compounds (ug/kg)																	
n-Butylbenzene	62,100	62,100	62,100	0.116	U	0.116	U	0.116	U	1.8	J	1.45	J	0.116	U	0.116	U
Naphthalene	79,500	300,000	262,000	0.258	U	4.55	J	6.76	J	4.76	J	3.77	J	3.16	J	2.78	J
p-Cymene (p-Isopropyltoluene)	NA	NA	NA	0.105	U	0.105	U	0.105	U	1.21	J	0.105	U	0.105	U	0.105	U
Semi-Volatiles Organic Compounds (ug/kg)																	
Fluoranthene	2,290,000	24,400,000	8,730,000	45.6	U	45.6	U	45.6	U	45.6	U	45.6	U	116	J	45.6	U
Other Compounds (mg/kg)																	
Diesel Fuel	520[2]	1,120[2]	NA	7.28	U	12.8	J	7.28	U	7.28	U	7.28	U	12.8	J	9.48	J
Metals (mg/kg)																	
Arsenic	3.90	17.70	85.2	1.73		3.36		0.228	U	3.07		0.228	U	0.228	U	1.34	J
Barium	15,600	100,000	60,200	43.8		46.3		24.7		23		23.3		17.8		27.7	
Chromium, total	210[3]	450[3]	500[3]	7.73		9.77		2.73		5.71		2.05		1.97		3.82	
Lead	400	800	800	22.2		47.1		3.5		8.52		3.53		2.25		4.36	
Mercury	6.11[5]	68.4[5]	23.8[5]	0.046		0.027	J	0.068		0.012	J	0.0088	U	0.0088	U	0.0088	U

Notes:
NMED = New Mexico Environment Department
μg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ft = feet
Val = validated result
Q = qualifier
NA = not applicable
U = non-detect result, value presented indicates reporting limit
J = positive detection with reported concentration between the method dection limit and the reporting limit
(1) Obtained from Table A-1 (NMED, 2006c)
(2) Obtained from Table 2a (NMED, 2006a)
(3) Obtained from Region 6 Human Health Medium Specific Screening Levels (EPA Reg VI, 2007)
(4) Screening criteria for Chromium VI used as a surrogate for chromium
(5) Screening criteria for methyl mercury used as a surrogate for mercury
(6) Duplicate
US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

5.0 LF-29 (SWMU 104) – FORMER ARMY LANDFILL

5.1 LOCATION

LF-29 is located in the south-central portion of Holloman AFB, north of the airfield and north of Building 1001. Vehicle access is provided via Dezonia Road, an unpaved service road. The location of LF-29, with respect to the surrounding facility, is shown on Figure 2.1.

5.2 SITE DESCRIPTION

LF-29 is a rectangular shaped, 5-acre parcel of land surrounded on all sides by a 3-foot high soil berm (Figure 5.1). Based on a visual inspection of the berm, the berm appears to be composed of reworked native soils and shows evidence of erosion and undermining by local wildlife. The site is moderately vegetated with shrubs, dwarf trees, and cacti. Within the bermed area, the site is essentially level; however, some depressions are present suggesting former disposal pits/trenches. Debris consisting of scrap metal, aircraft parts, and munitions were observed throughout LF-29 but primarily clustered into several distinct piles. Munitions debris (MD) encountered at the surface during the current investigation included include two 5-inch Zuni Rocket Motor and small piles of tail boom and fin assemblies. MEC identified at the site include three parachute flare illumination devices. No stained soils or stressed vegetation were observed during RFI field investigations. Photographs of LF-29 are included in Appendix D.

The area surrounding LF-29 is generally flat and moderately vegetated with shrubs, dwarf trees, and cacti. To the north, east, and west, the area surrounding the site is generally devoid of debris; however, to the south, aircraft parts, scrap metal, and empty 55-gallon drums were observed close to the site. ERP site SS-61 is located approximately 600 feet to the southeast.

5.3 WASTE HISTORY

Based on available records, the U.S. Army used LF-29 between the early 1950s to 1975 as a disposal site for spent munitions and missiles (HGL, 2005a).

5.4 SITE-SPECIFIC ENVIRONMENTAL SETTING

5.4.1 Topography

The topography of LF-29 has been modified as a result of historic disposal practices and subsequent construction of the soil berm around the site. The current overall topography of LF-29 within the berm is relatively flat.

5.4.2 Surface Water

No permanent surface water bodies were observed within, crossing, or lie adjacent to the site. Due to the unpaved and moderately vegetated condition of the unit, precipitation falling onto LF-29 soils will most likely evaporate or infiltrate into the underlying soils.

5.4.3 Soils

The soils underlying LF-29 are classified by the USDA Soil Conservation Service as belonging to the well-drained, sandy loam and gypsum of the Holloman-Gypsum Land-Yesum complex (USDA, 1981). As discussed in Section 2.6, the Holloman-Gypsum Land-Yesum complex is formed from alluvial and eolian gypsiferous sediments.

5.4.4 Geology

Based on historic and supplemental RFI subsurface investigation activities, LF-29 is underlain by a heterogeneous layering of sands, silts, and clays. A cross section of the western perimeter of LF-29 is included as Figure 5.2. Outside the disposal area, the shallow subsurface is composed primarily of silty sand and silt. Silty sands dominate in the northern portion of the unit and grade laterally into a silt to the south. The upper silt unit generally has a maximum thickness of six feet, centered in the vicinity monitoring well MW-29-03. The shallow silty sand unit underlies the upper silt unit to a maximum depth of 15 feet bgs. The silty sand unit is in-turn underlain by silt and clay which is underlain by silty sands and sands. Previous investigation and supplemental RFI soil boring logs are included in Appendix B.

5.4.5 Hydrogeology

Groundwater occurs beneath LF-29 as a shallow unconfined aquifer within the underlying silt, silty sand, and clay sediments. A groundwater potentiometric surface map of the underlying water table based on July 2006 groundwater elevation data is included as Figure 5.3. Based on the groundwater elevations obtained during the July 2006 supplemental groundwater sampling event, groundwater beneath LF-29 flows to the west. Based on groundwater elevations measured during the December 2005 compliance LTM event, groundwater flows in a northerly direction (Figure 5.4).

During the LF-29 RI, groundwater elevations obtained indicated groundwater in the area of LF-29 flowed northwest. Hydraulic conductivities for the wells established during RI slug tests area as follows:

- MW-29-01 0.609 ft/day
- MW-29-02 2.94 ft/day
- MW-29-03 0.854 ft/day

Groundwater flow velocity estimated in the RI was at a rate of 3 to 15 ft/year.

5.5 PREVIOUS INVESTIGATIONS

As summarized in the Supplemental RFI workplan (HGL, 2005a), several investigations were previously conducted at ERP site LF-29. A discussion of the former investigations and the associated results, as presented in the supplemental RFI workplan (HGL, 2005a), is presented

below. Previous investigation soil and groundwater sample locations are shown on Figure 5.1.

5.5.1 Records Search and Visual Site Inspection

The Records Search for LF-29 indicated that from the early 1950s to 1975, spent munitions and missiles were disposed of by the Army at this site located near the north base building area. Since no known hazardous waste materials were disposed of at the site, it was not rated using the Hazardous Assessment Ranking Method. The records search concluded no further investigation was warranted.

Based on a VSI of the site, the RFA concluded the purpose of the Former Army Landfill was the disposal of missiles and spent munitions. It established that the landfill is located north of the Test Group Headquarter Area, but the exact location was unknown. The VSI indicated the potential for release to be low for air and surface water and high for soil/groundwater and subsurface gas generation if hazardous materials had been disposed in the landfill. The actual potential for release was unknown since it was not known whether hazardous constituents were disposed in this area. LF-29 was placed on Table 1 of the 1991 RCRA permit.

5.5.2 Remedial Investigation

An RI was conducted at LF-29 and included within a "29-site" RI report (Radian, 1992a). The LF-29 RI indicated that the site boundaries were defined by a small berm that extends 400 feet in a north-south direction and 350 feet in an east-west direction. However, debris was observed outside of the berm along the landfill's southern border. The RI noted that the debris within the landfill appeared to be primarily construction debris.

Four monitor wells, designated as MW-29-01 through MW-29-04, were initially installed based on an assumed south-southwest groundwater flow direction. The drilling logs and well completion reports for these wells are also included in Appendix B. With respect to the landfill, three wells were located in assumed downgradient locations (MW-29-02, MW-29-03, MW-29-04) and one well was installed in an assumed upgradient location (MW-29-01) with respect to the landfill (Figure 5.1). However, based on groundwater elevation measurements obtained during the RI, groundwater flow to the northwest, indicating there was only one downgradient well (MW-29-02).

One round of groundwater samples was analyzed for VOCs, total metals, organophosphorus and organochlorine pesticides, PCBs, explosives, chlorinated herbicides, anions, and TDS. Table 5.1 presents these results. Organophosphorus pesticides, chlorinated herbicides, explosives, and PCBs were not present in any of the samples. 4,4'-DDD was detected and second column confirmed a low concentration of 0.028 μg/L in upgradient well MW-29-03. With respect to VOCs, methylene chloride was detected in all samples and is attributable to laboratory contamination. Chloroform was present in upgradient wells MW-29-03 and MW-29-04 at concentrations of 22 μg/L and 6.2 μg/L, respectively. No inorganics were present in the downgradient well at concentrations above upgradient/background concentrations. Based on these data, groundwater appeared to be unaffected by the site.

The exposure evaluation determined that there were no existing or potential human receptors for this site. Therefore, human health risks were not calculated. Groundwater modeling indicated that the contaminants of concern would not reach Malone Draw. Thus, the environmental quotient (EQ) for aquatic organisms was zero. The EQ for the black-tailed jackrabbit was 1.3E-05. The EQ values for the White Sands pupfish and the black-tailed jackrabbit indicate no adverse environmental effects. Therefore, no action was proposed.

Although the risks to human health and the environment were considered acceptable and the no action alternative was appropriate based on the data, the RI recommended that two monitoring wells be installed for further additional characterization.

5.5.3 Phase II RCRA Facility Investigation

During the Phase II RFI, three additional monitoring wells were installed downgradient of LF-29 (MW-29-06, MW-29-07, and MW-29-08) and one additional well was installed upgradient of the site (MW-29-05). Flow direction measured during the Phase II RI was to the north-northwest. The drilling logs and well completion reports for these wells are also included in Appendix B. All wells, with the exception of LF-29-01 were sampled and analyzed for VOCs, metals, organochlorine pesticides, herbicides, and explosives as part of the Phase II effort. The analytical results are presented in Table 5.2. No constituents were present above standards in downgradient wells at concentrations above background/upgradient concentrations. No explosives were present in the downgradient wells. VOCs were detected in downgradient wells at concentrations below upgradient well concentrations. Site SS-61, located southeast and upgradient of LF-29, where a benzene and 1,2-dichloroethane (DCA) plume have been confirmed, is the source of these compounds.

The final Phase II RFI Report for Table 1 SWMUs, dated June 1997 and prepared by Foster Wheeler/Radian, recommended NFA for the site with 10 years of LTM. Consequently, Holloman AFB added LF-29 to the LTM program in 1997. NMED correspondence of April 1998 concurred with this approach (HGL, 2005a).

5.5.4 Compliance Groundwater Monitoring

LTM has been conducted at LF-29 since 1997 in conjunction with the other landfill sites. LTM activities initially included sampling the upgradient well (MW-29-01) and three downgradient wells (MW-29-06, MW-29-07, and MW-29-08). A west-northwest groundwater flow path was observed during the 1997 event. After the 1999 event, analysis for SVOCs was discontinued with NMED approval. After the 2001 event, VOC analysis were limited to target VOCs 1,2-DCA and chloroform.

The 2005 RFI workplan proposed to expand the 2005 LTM event to include monitoring wells MW-29-03, MW-29-04, and MW-29-05. In addition, the full analyte target list was analyzed as well as expanded to include five additional VOCs (sec-butylbenzene, tert-butylbenzene, o-dichlorobenzene, isopropylbenzene, and TCE) and TDS.

LTM results are provided on Table 5.3 as presented in the Final 2005 LTM report (Bhate, 2006). Historically, 1,2- DCA and chloroform have been detected with 1,2-dichloroethane the only VOC detected above background and applicable screening criteria. During the December 2005 LTM event, benzene, sec- and tert-butylbenzene, o-dichlorobenzene, isopropylbenzene, and TCE were detected along with chloroform and 1,2-DCA. Both 1,2-DCA and TCE were detected above NMGWQ standard (1,2-DCA) and MCLs (1,2-DCA and TCE). However, all but 1,2-DCA and chloroform were detected only in the upgradient well MW-29-05, located between LF-29 and SS-61. In addition, the highest 1,2-DCA concentration was also detected in upgradient well MW-29-05. Based on groundwater flow paths and contaminant distribution, the detected groundwater impacts appear to be related to ERP site SS-61, located approximately 600 feet southwest. ERP site SS-61 has a known benzene and 1,2-DCA groundwater plume. The LF-29 December 2005 1,2-DCA, TCE, and TDS groundwater concentrations are depicted on Figure 5.4. NMED agreed to suspend LTM at the site in correspondence dated 4 October 2006 pending results of this supplemental RFI.

5.6 SUPPLEMENTAL RFI FIELD ACTIVITIES

Supplemental RFI activities were conducted at LF-29 between September 2005 and July 2006 in accordance with the supplemental RFI workplan (HGL, 2005a) and Response to NOD (HGL, 2006b). Minor deviations from the workplan occurred and are discussed under the respective topics. Field sampling activities included a non-invasive geophysical survey to identify areas of buried metallic debris, a passive soil gas survey, and a subsurface soil investigation. Detailed descriptions of the LF-29 supplemental RFI field activities are presented below. A field investigation summary table of the supplemental RFI field activities is provided as Table 5.4.

5.6.1 Non-Invasive Geophysical Survey

A non-invasive magnetic survey was conducted at LF-29 (SWMU 104) using a HERO certified G-858 meter. The survey encompassed approximately 5 acres (Figure 5.4) extending beyond the bermed boundary of the site on all four sides. LF-29 is a rectangular-shaped unit surrounded by a soil berm on all four sides. The floor of LF-29 is relatively flat and moderately vegetated. Magnetically susceptible and non-magnetically susceptible aircraft debris was observed across the entire site. Because LF-29 contained numerous occurrences of scattered surface metal debris, a horizontal dual-sensor non-gradiometer configuration was utilized to achieve a 1-meter line spacing so that all causative bodies would be surveyed at the site. The area surveyed is depicted on Figure 5.5.

5.6.2 Passive Soil Gas Assessment

A passive soil gas survey was conducted across LF-29 in May 2006 using EMFLUX® samplers and the same methodology employed at LF-10. In accordance with the sampling scheme set forth in the Supplemental RCRA Facility Investigation Addendum – Passive Soil Gas and Geophysical Survey Results, Technical Memorandum (HGL, 2006c), soil gas samples were installed across LF-29 on a 100-foot grid spacing to limit the amount of intrusive work within

the area because of MEC concerns. In areas of significant geophysical anomalies, soil gas samples were installed on a 50-foot grid spacing. Due to the variation in the presence of surface debris and geophysical anomalies, the soil gas sampling grid was shifted slightly to the southeast to locate a higher number of soil gas samples around observed and/or identified debris. The locations of the soil gas samples are shown on Figure 5.6.

A total of 73 soil gas samples were installed at LF-29 and analyzed for VOCs. Soil gas sample field data sheets are included in Appendix C.

5.6.3 DPT Subsurface Soil Assessment

Eleven soil borings were completed in June 2006 in accordance with the procedures outlined in the supplemental RFI Addendum Response to NOD (HGL, 2006b). The borings were specifically located to characterize soils where significant geophysical anomalies were found, as well as where soil gas samples contained elevated VOCs. The locations of the LF-29 soil borings are depicted on Figure 5.7.

The 11 borings were advanced to the underlying water table, ranging between 18 and 26.5 feet bgs. During borehole advancement, continuous soil sampling was conducted for lithologic characterization, visual inspection, field screening with a PID, and potential laboratory analysis. Supplemental RFI LF-29 boring logs are included in Appendix B.

Seven soil samples and one duplicate were collected from the soil borings completed at LF-29. Due to the lack of waste material and evidence of soil contamination based on field screening results and visual observations, four of the soil samples were collected at the soil/groundwater interface. The remaining two (plus the duplicate) samples were collected from the shallow subsurface, at soil intervals corresponding to encountered debris. All seven soil samples and the duplicate were analyzed for VOCs, SVOCs, G-TPH, D-TPH, RCRA metals, explosives, and perchlorate. Subsurface soil sampling data sheets are included in Appendix C.

5.6.4 Anomaly Avoidance Procedures

Prior to intrusive activities, a visual inspection of the LF-29 surface was conducted by an HGL Senior UXO Supervisor. A Senior UXO Supervisor as defined by the DoD Explosives Safety Board (DDESB) Technical Publication 18 has the requisite training and over 10 years experience to plan, coordinate, and supervise all explosive operations, range clearance, and munitions response activities. The Senior UXO Supervisor identified potential MEC/MD on the surface, flagged them, and recorded their locations (Figure 5.8). Additional information regarding the nature and disposition of these items is provided in Section 5.9.1. Once identified, the areas containing the items were avoided. During borehole advancement, MEC clearing was conducted using a subsurface magnetic sensor. The magnetic sensor was lowered into the advancing borehole in four foot increments until 10 feet bgs, at which time, subsurface MEC clearing was discontinued. If metallic or magnetically susceptible debris was detected during borehole advancement, the associated boring was relocated off of the potential MEC/MD. During the course of the subsurface investigations, both SB29-D6 and SB29-L4 were relocated due to potential MEC/MD in the subsurface. SB29-D6 and SB29-L4

were relocated southwest of their proposed locations approximately 15 feet and 5 feet, respectively.

5.6.5 Supplemental RFI Groundwater Sampling

A 2005 supplemental groundwater sampling event was conducted at LF-29 in July 2006 in accordance with the supplemental RFI addendum response to NOD (HGL, 2006b). The supplemental groundwater sampling event was conducted to determine the presence or absence of perchlorate and, if present, the compound's concentration in the groundwater beneath the site. Historically, perchlorate has not been a target analyte of concern for LF-29 during compliance LTM.

Groundwater sampling activities were conducted in accordance with the workplan and Holloman AFB SOPs. All eight wells were purged and sampled using disposable bailers. The collected groundwater samples were submitted for perchlorate analysis. Groundwater sample data sheets are included in Appendix C.

TDS analysis was conducted during the December 2005 compliance LTM event (Bhate, 2006).

5.7 DATA QUALITY ASSESSMENT

A brief assessment of LF-29 data quality is provided in the following subsections. Detailed information regarding the data and assessment findings and responses are included in the data validation packages provided in Appendix E. The analytical data for the groundwater samples are presented in SDG D6G180345. The analytical data for the soil samples are presented in SDG 6061925, D6F210285, and D6F270298. Table 5.5 identifies the location of sample results by SDG.

5.7.1 Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test. The reporting limit met method or contractual requirements. All data reviewed were acceptable. The following minor issues were identified and resolved, including:

- The "J" flagging of several perchlorate groundwater results for being reported below the reporting limit but greater than the MDL.
- The "J" flagging of several VOC, SVOC, D-TPH, perchlorate, and metals soil results for being reported below the reporting limit but greater than the MDL.

5.7.2 Precision and Accuracy

QC data, including MS/MSD, surrogates, and LCS recoveries were used to assess the precision and accuracy for the nine LF-29 groundwater samples. All samples were properly preserved and analyzed within the required holding time for groundwater samples. All initial and continuing calibration QC criteria were reviewed and were acceptable. The frequency of

analysis and %R of the second source calibration verifications were reviewed and determined to be acceptable. Surrogate spikes were added to all samples, QC checks, and blanks as required by the reference method. All data reviewed were acceptable.

5.7.3 Comparability

Comparability represents the confidence with which one data set can be compared to another. In accordance with the approved QAPP (HGL, 2005b), data are comparable when collection techniques, measurement methods, and reporting procedures are equivalent for the samples within a sample set. Implementation of appropriate procedures for sampling and shipping, as specified in the QAPP (HGL, 2005b), were performed. Within the data sets, it was concluded that results were comparable to each other.

5.7.4 Representativeness

Representativeness was assessed by use of field duplicate and blank samples. Method and field blank samples were analyzed to determine potential contamination from laboratory or shipping procedures. Overall, representativeness was considered satisfactory, except as noted below.

- Twenty-three target analytes were detected in the method blank associated with the soil samples in QC Batch No. 27546, two of which were common laboratory contaminants, and 22 analytes were detected in the soil method blank in QC Batch No. 27694, three of which were common laboratory contaminants. Ten target analytes were detected in the Trip Blank from June 16, 2006, and seven were detected in the Trip Blank from June 17, 2006. For the affected results, either the sample result was raised to the reporting limit, or the reporting limit was raised to the observed value.
- G-TPH were detected in all of the method blanks associated with all samples soil samples. Because the samples were all reported as not detected, no data qualifier flags are recommended.

5.7.5 Completeness

Completeness is defined as the percentage of the total number of analytical results requested that are judged to be valid, including estimated (J-flagged) values, in accordance with the QAPP (HGL, 2005b). Completeness of the laboratory analysis for the LF-29 samples was determined to be 100%, within acceptable data quality objective limits.

5.7.6 Usability

Based on the data review and validation, the analytical data were determined to be useable for their intended purpose.

5.8 SUPPLEMENTAL RFI INVESTIGATION RESULTS

5.8.1 Geophysical Survey

Several magnetic anomalies were identified at LF-29, primarily within the central and central-northern portion of the landfill (Figure 5.5). Seven distinct magnetic anomalies were identified at the site and likely represent buried metallic debris. However, the surface of LF-29 is littered with magnetically susceptible and non-magnetically susceptible debris, which may have significantly contributed to instrument response.

5.8.2 Passive Soil Gas Assessment

The results of the VOC soil gas survey are presented on Table 5.6. VOCs detected in the LF-29 soil gas samples include: ethylbenzene, toluene, xylenes-m&p, xylenes-o, 1,3,5-trimethylbenzene, and 1,2,4-trimethyl-benzene. Toluene and 1,2,4-trimethylbenzene were detected in nearly every soil gas sample and several trip blanks/method blanks, which is similar to results obtained during the 2005 and 2006 LF-10 soil gas sampling event. This suggests the reported toluene and 1,2,4-trimethylbenzene positive detections are suspect and possibly related to laboratory contamination, or artifacts of sampling.

The remaining positively detected VOCs were detected sporadically across the site. The maximum concentrations of all of the positively detected VOCs, with the exception of 1,3,5-trimethylbenzene were detected in one sample, K3. K3 is located near an identified geophysical anomaly and surface debris. Figure 5.9 presents the benzene, toluene, ethylbenzene, and total xylenes (BTEX) soil gas concentrations detected across LF-29, although benzene was not detected and toluene results most likely reflect non-site-related sample contamination.

5.8.3 DPT Subsurface Soil Assessment

Carbon disulfide, diethyl phthalate, D-TPH, perchlorate, and six metals (barium, cadmium, chromium, lead, mercury, and silver) were detected in one or more of the LF-29 soil samples. No explosives or G-TPH were detected in the soil samples. The soil analytical results are summarized on Table 5.7. The majority of the analytes reported were detected in sample SB29-L6, collected from debris observed in the shallow subsurface. Perchlorate was detected in six of the seven soil samples ranging from 0.31 micrograms per kilogram (μg/kg) to 1.8 μg/kg. All of the analytes detected in the LF-29 soil samples were reported at concentrations well below applicable screening criteria.

5.8.4 Supplemental RFI Groundwater Sampling

Perchlorate was detected in six of the eight groundwater samples collected from LF-29 groundwater monitoring wells. The perchlorate analytical results are summarized in Table 5.8 and presented on Figure 5.9.

Detected perchlorate concentrations ranged from 0.29 μg/L in MW-29-05 to 4.9 μg/L in MW-29-01, the upgradient well. The highest downgradient perchlorate concentration was

1.3 μg/L. Perchlorate was not detected in MW-29-03 and MW-29-04, two cross-gradient wells. None of the wells contained perchlorate concentrations above the U.S. EPA Region IV perchlorate HHMSSL tap water value (24.5 μg/L).

LF-29 groundwater samples were analyzed for TDS during the December 2005 biennial compliance LTM event (Bhate, 2006). LF-29 TDS results have been included with the December 2005 LTM data presented in Table 5.3. Upgradient TDS concentrations ranged from 17,700 mg/L in MW-29-05 to 32,200 mg/L in MW-29-01. Downgradient TDS concentrations range from 7,660 mg/L (MW-29-03) to 17,800 mg/L (MW-29-06). The average TDS concentration at LF-29 was 17,067 mg/L in December 2005.

5.9 NATURE AND EXTENT OF CONTAMINATION

5.9.1 Waste Material

Construction, aircraft, MEC, and MD debris was observed on the surface and in the shallow subsurface (less than 4 feet bgs) of LF-29. No soil staining, stressed vegetation, PID readings above background, containers potentially containing hazardous materials, or leachate was observed on the surface, in the shallow subsurface, or at the soil/groundwater interface within the boundaries of LF-29.

While compiling this report and photographic log, HGL identified with confirmation from the US Army Corps of Engineers that the MEC shown on Photograph 29-09 in Appendix D is a cluster bomblet used to deliver biological warfare agent (BWA). Documentation (OP-3142, dated January 1963) on the bomblet (E61R4), indicate that the bomblets would be released by an explosive charge from a cylinder (E133R3) at height in cluster bomb fashion, then they would arm as they free-fell from the sky and detonate upon impact, dispersing the agent in aerosol form. A cylinder, which would have contained 544 bomblets, is shown on Photograph 29-04. The agent used was brucella suis, which causes flu-like symptoms. The stockpile was supposed to have been destroyed around 1969. These dates are consistent with the period of reported usage of LF-29 by the Army as a disposal site, and evidence suggests that these munitions were tested at Holloman AFB.

Base EOD and Army Tech Escort from Aberdeen Proving Ground characterized the bomblets further and found them to be de-militarized, or that they had never contained BWA. They proceeded to remove all surface debris from LF-29 for disposal in accordance with DoD EOD practices.

5.9.2 Soil Contamination

Based on the results of the subsurface soil assessment and analytical soil data evaluation using applicable screening criteria, no soil contamination is present at LF-29.

5.9.3 Groundwater Contamination

The only groundwater contaminants detected above applicable screening criteria since investigation activities commenced in 1992 are attributable to SS-61, a site located hydraulically upgradient of LF-29. No groundwater contamination associated with LF-29 is present. TDS of the groundwater is naturally above 10,000 mg/L at the site.

5.10 CONCLUSIONS

Based on supplemental RFI investigation results, historic sampling results, and compliance monitoring, former disposal activities at LF-29 have not impacted soil and groundwater quality. Construction debris, aircraft parts, MEC, and MD were encountered on the surface of LF-29 and in the shallow subsurface (i.e., within the top 4 feet of soil) beneath LF-29.

5.11 RECOMMENDATIONS

Given the absence of impact to site media, no additional media characterization is recommended. Based on the discovery of potential BWA-containing MEC, site controls should be reinforced to restrict unauthorized access to the site. The Air Force, now that surface debris has been removed from the site, intends to perform another geophysical survey that will identify the presence of anomalies that are attributable exclusively to subsurface debris. Based on the results, the Air Force envisions performing an interim removal action of subsurface MEC/MD at the site. While covering the site and implementing land use controls may have been the preferred alternative prior to this discovery, the Air Force will often opt for removal of MEC/MD at a site where a strong potential exists for chemical/biological warfare agents to be present.

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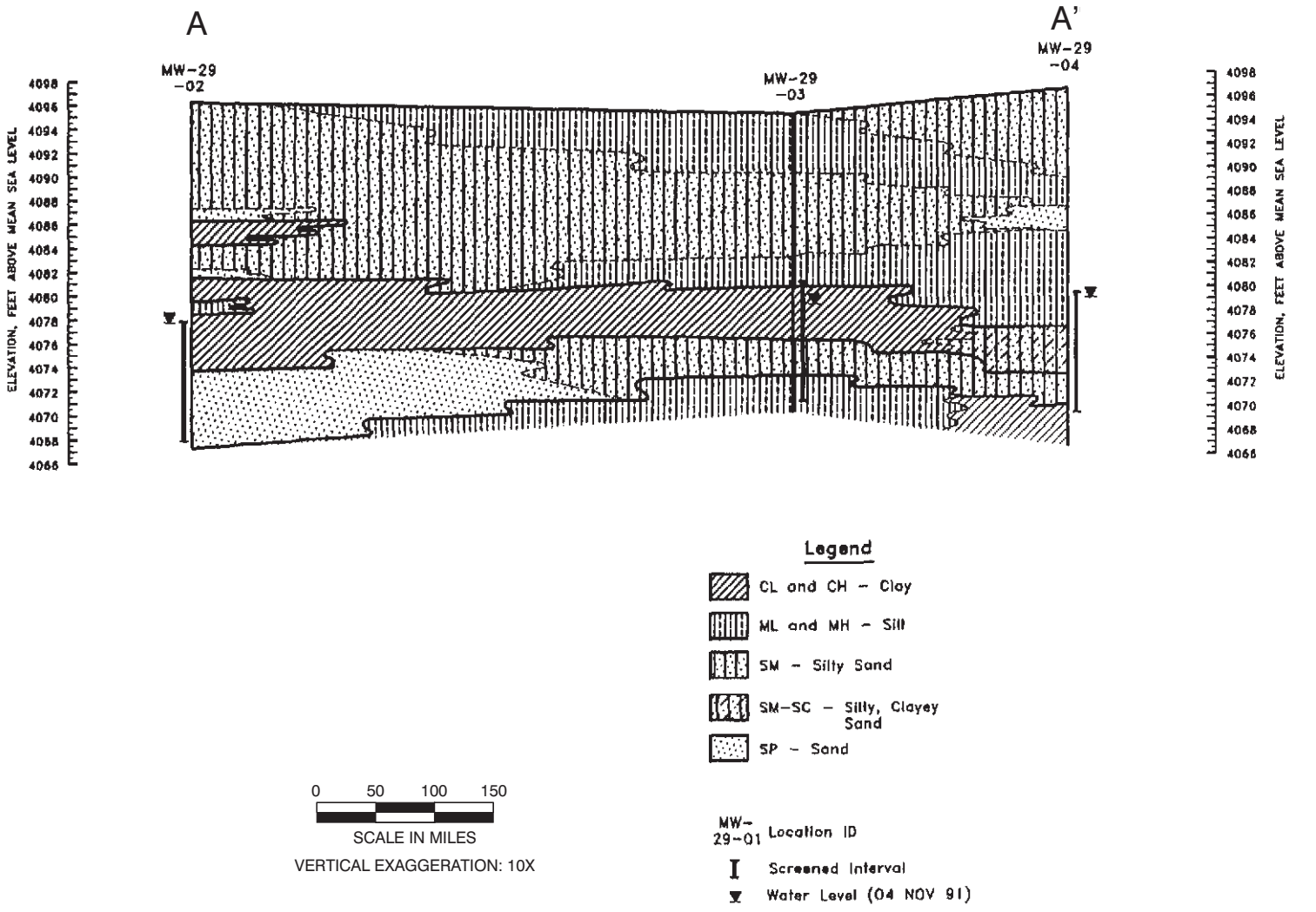
FIGURES

File X:\AFC002\Holloman_AFB\TO37\Maps\LF-10_LF-29_Supp_RFI\LF-29.mxd
Project: AFC002-037-04-07-05-02
Revised: 05/09/07 PS
Map Source: Holloman AFB

Legend

- Operable Unit Boundary (Base GIS)
- A — A' Line of Section
- Electric
- Potable Water
- Waste Water
- Monitoring Well

Figure 5.1
LF-29 (SWMU 104)
Layout Map



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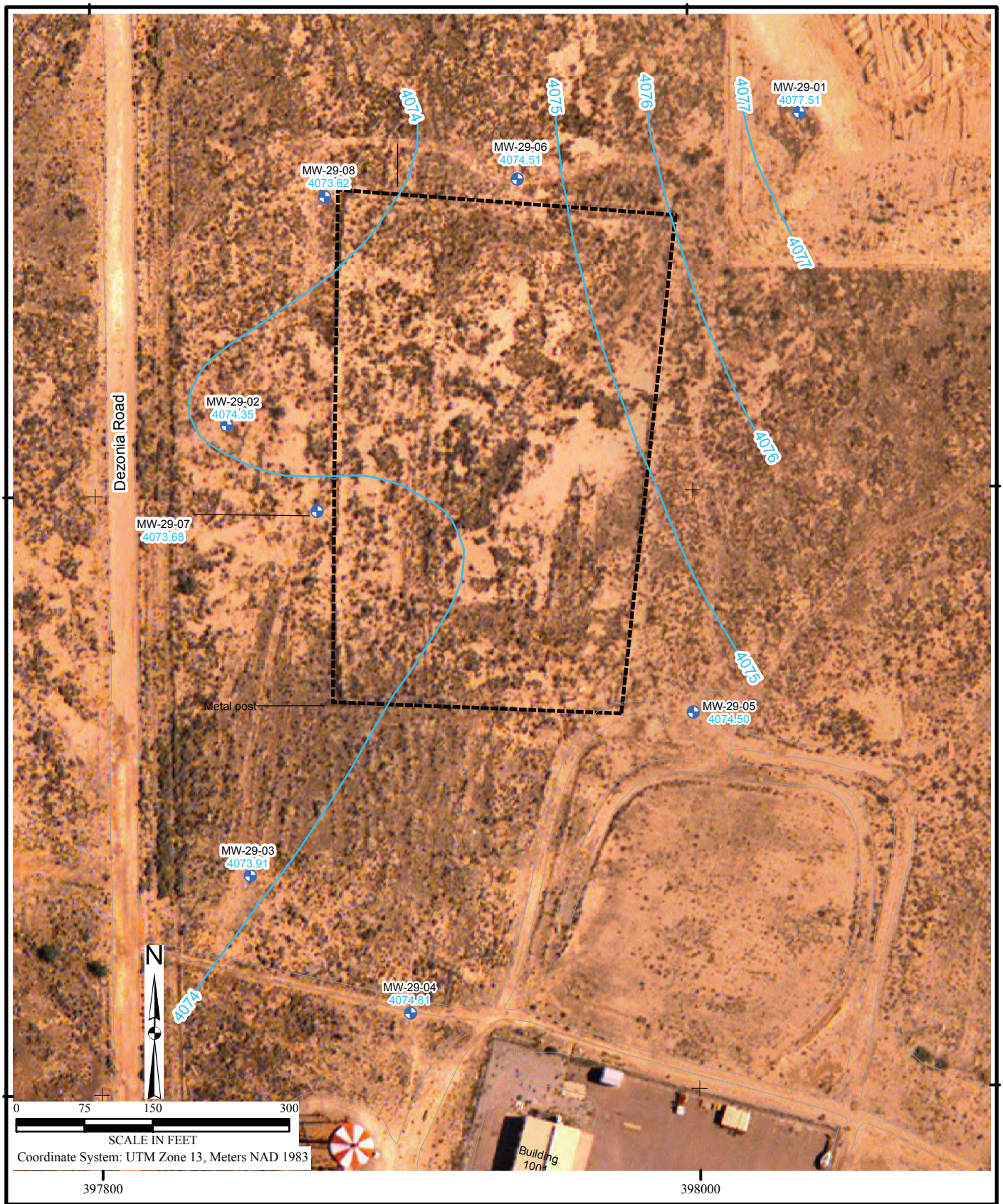
Project: AFC002-037-04-07
Revised: 05/07/07 TH
Source: Radian, 1992

Figure 5.2
Geologic Cross Section
LF-29



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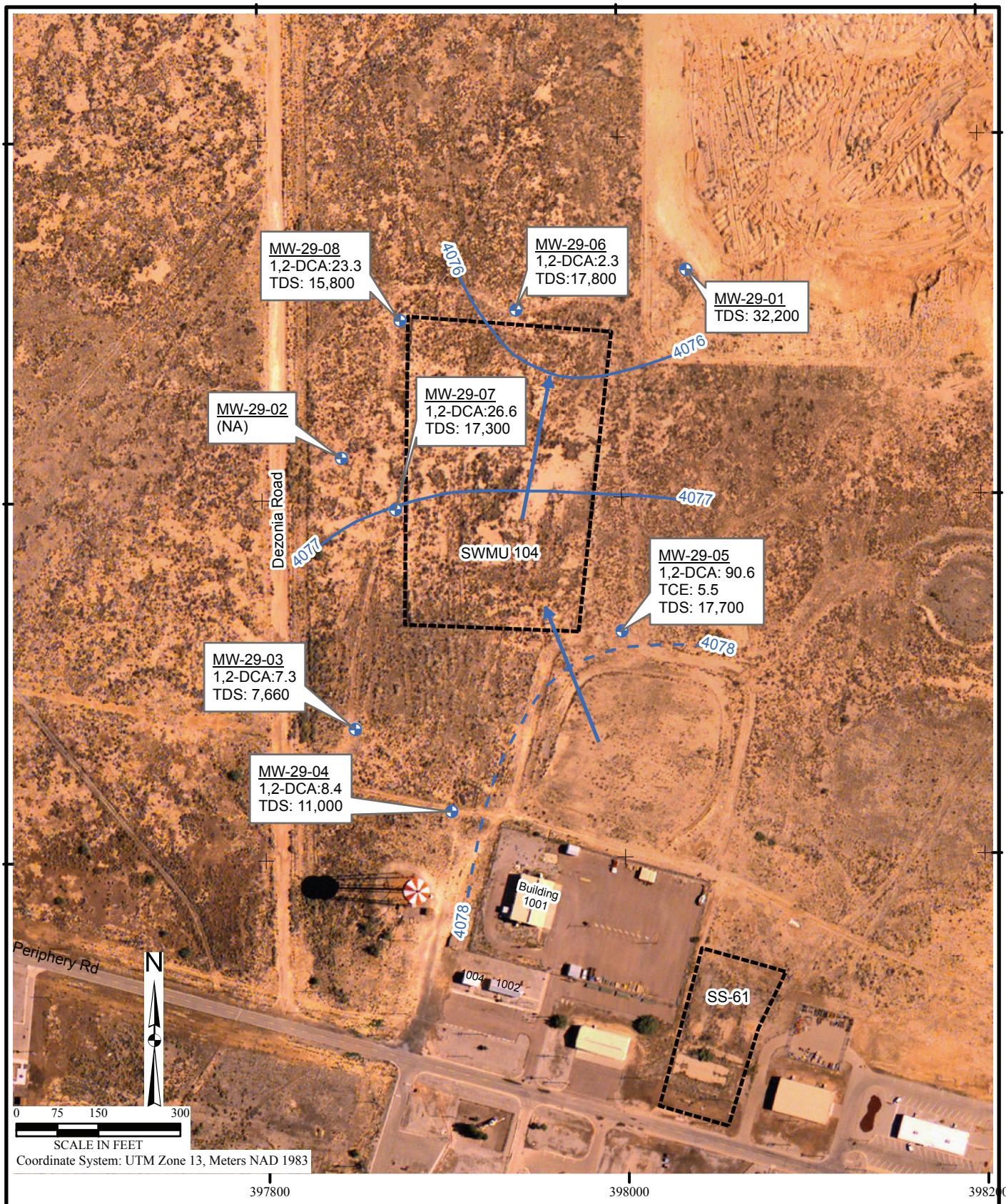
Project: AFC002-037-04-07-05
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Groundwater Elevation Contour

Figure 5.3
LF-29
Shallow Groundwater Potentiometric Surface Map (July 2006)



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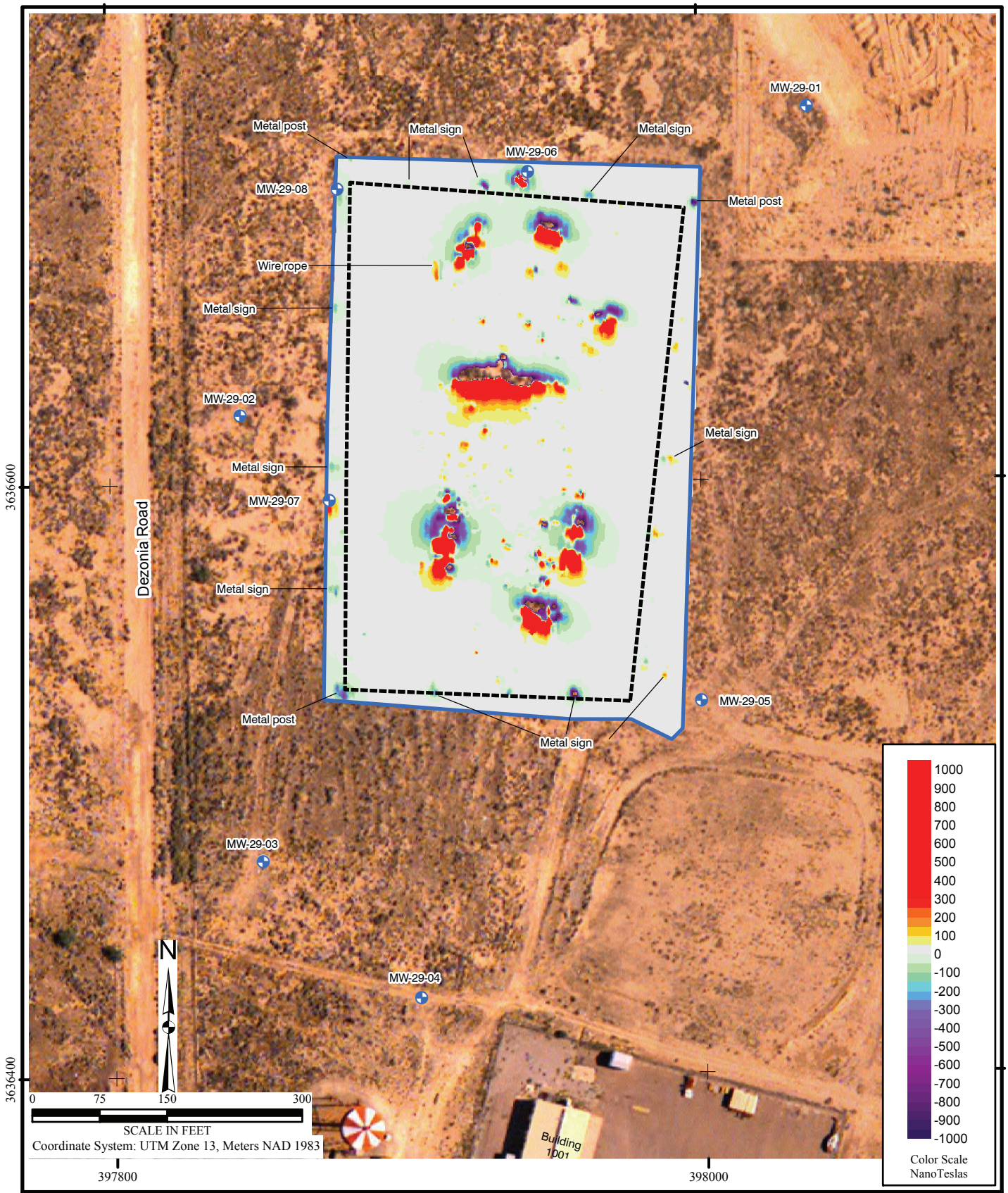
Project: AFC002-037-04-07-05
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- -4078- Groundwater Elevation Contour (Dashed Where Inferred)
- Groundwater Flow Direction

VOC concentrations µg/L
TDS concentrations mg/L
NA - not analyzed

Figure 5.4
LF-29
December 2005
1,2-DCA, TCE, and TDS Concentrations



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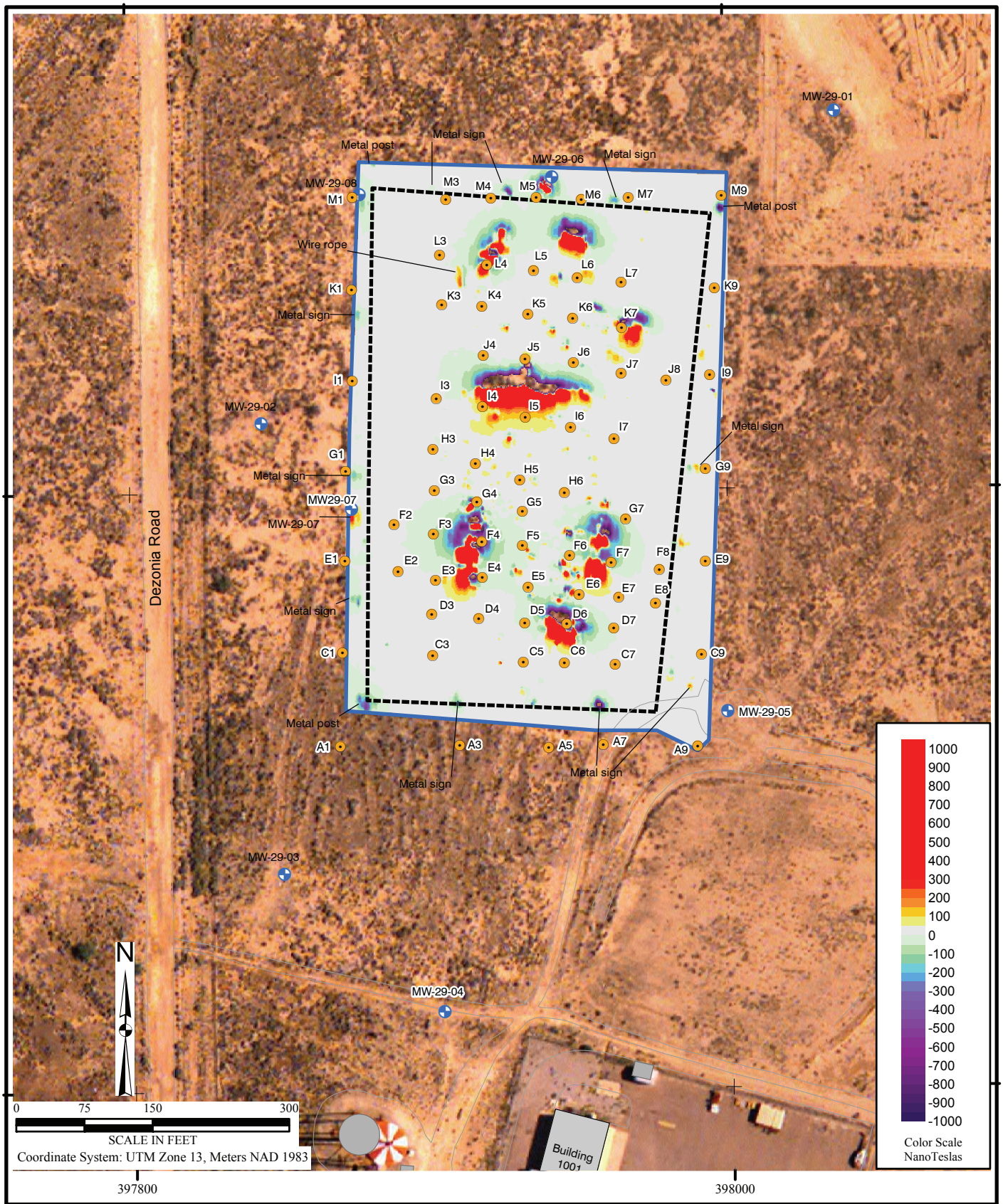
Project: AFC002-037-04-07-05
Revised: 05/11/07 PS
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

Figure 5.5
LF-29
Magnetic Survey Map



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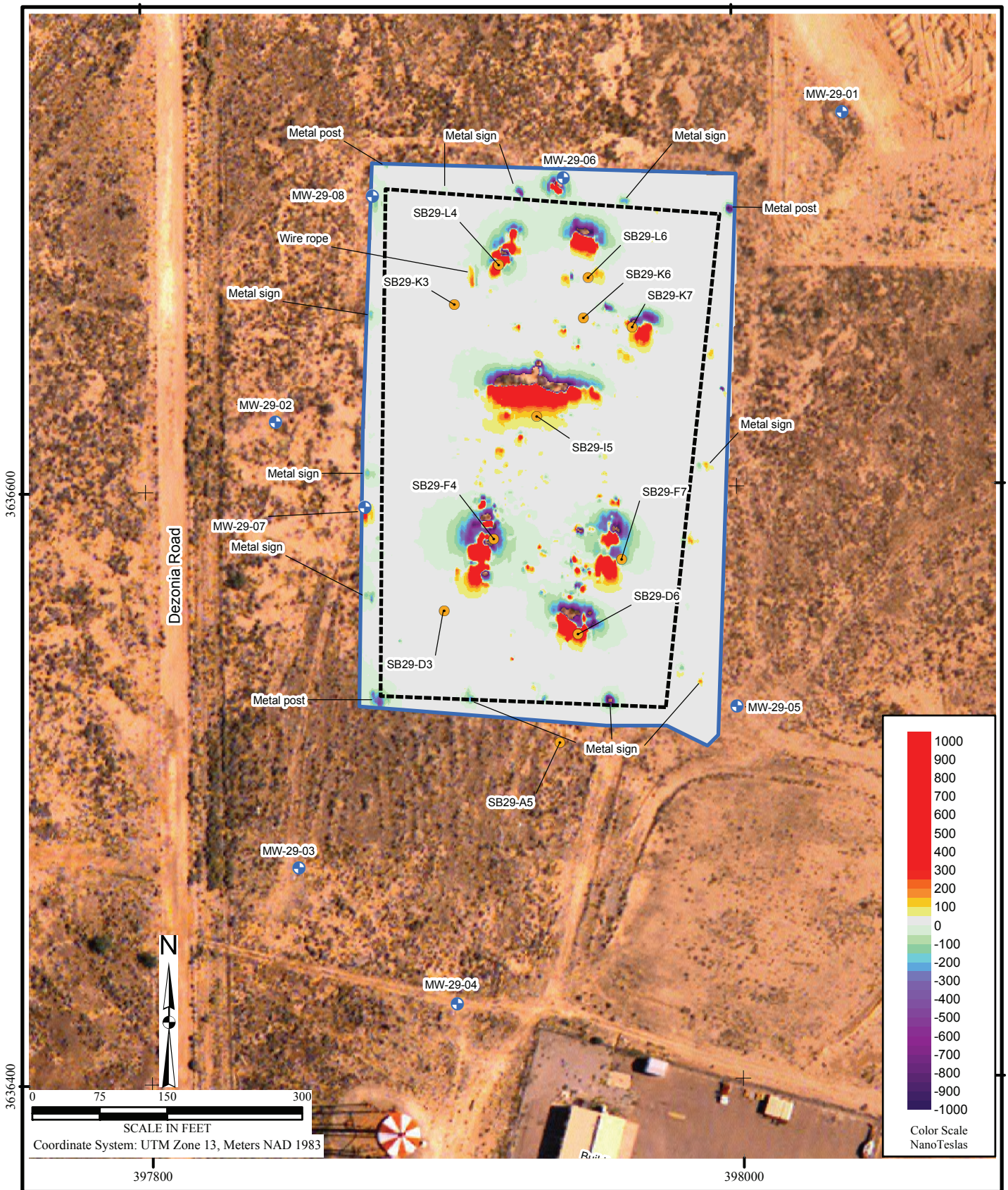
Project: AFC002-037-04-07-05
Revised: 05/11/07 PS
Map Source: Holloman AFB

Legend

- Monitoring Well
- Soil Gas Sample
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

Figure 5.6
LF-29
Soil Gas Survey Sample Location Map



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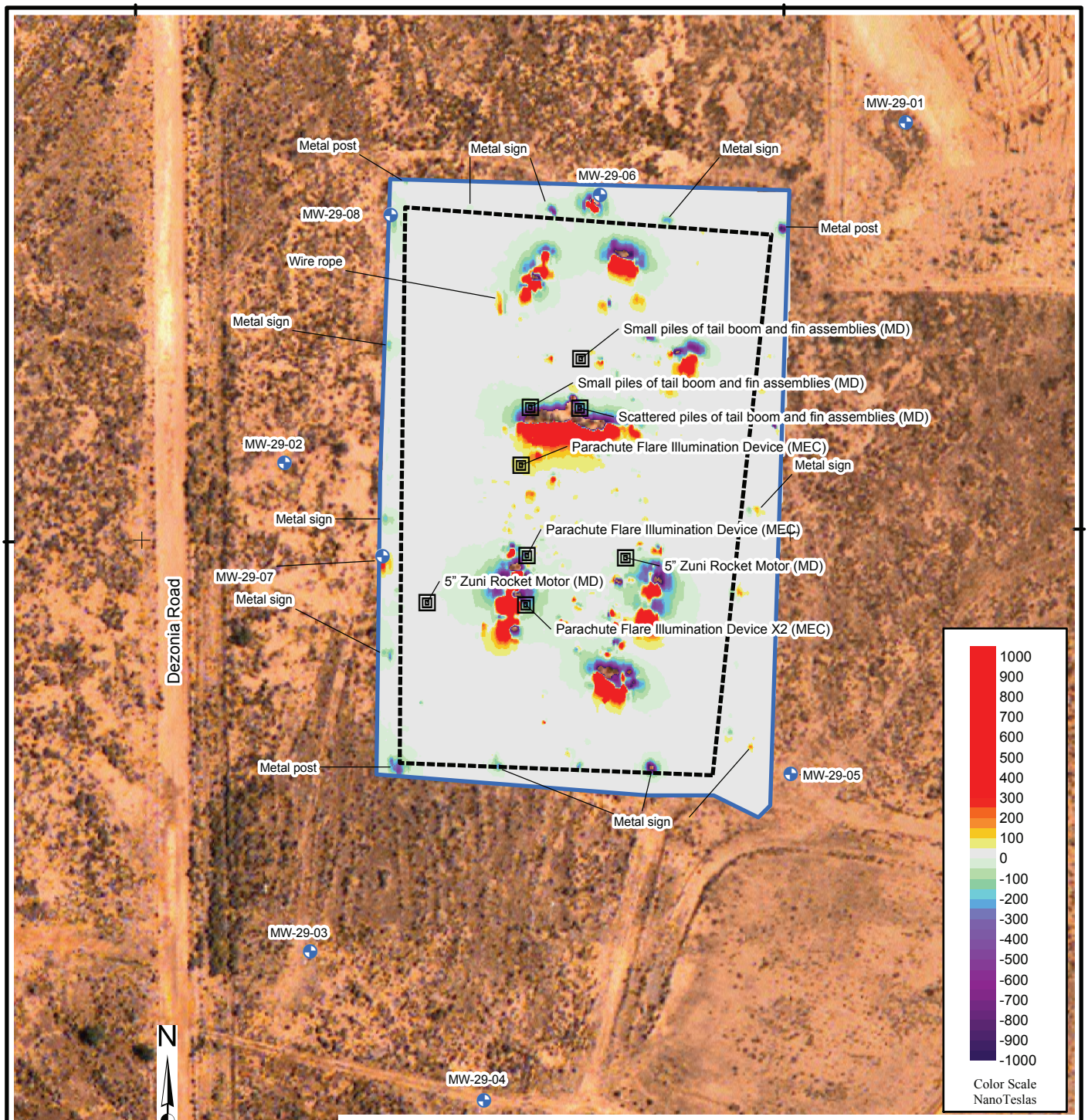
Project: AFC002-037-04-07-05
Revised: 05/14/07 PS
Map Source: Holloman AFB

Legend

- Monitoring Well
- Subsurface Soil Sample
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

Figure 5.7
LF-29
Soil Boring Locations



Munitions and explosives of concern (MEC). This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks.

Munitions Debris. Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. Inert munitions-related material recovered during an MEC removal.

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Project: AFC002-037-04-07-05
Revised: 05/11/07 PS
Map Source: Holloman AFB

Legend

- Monitoring Well
- Subsurface Soil Sample
- Munitions and Explosives of Concern (MEC)/ Munitions Debris (MD)
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

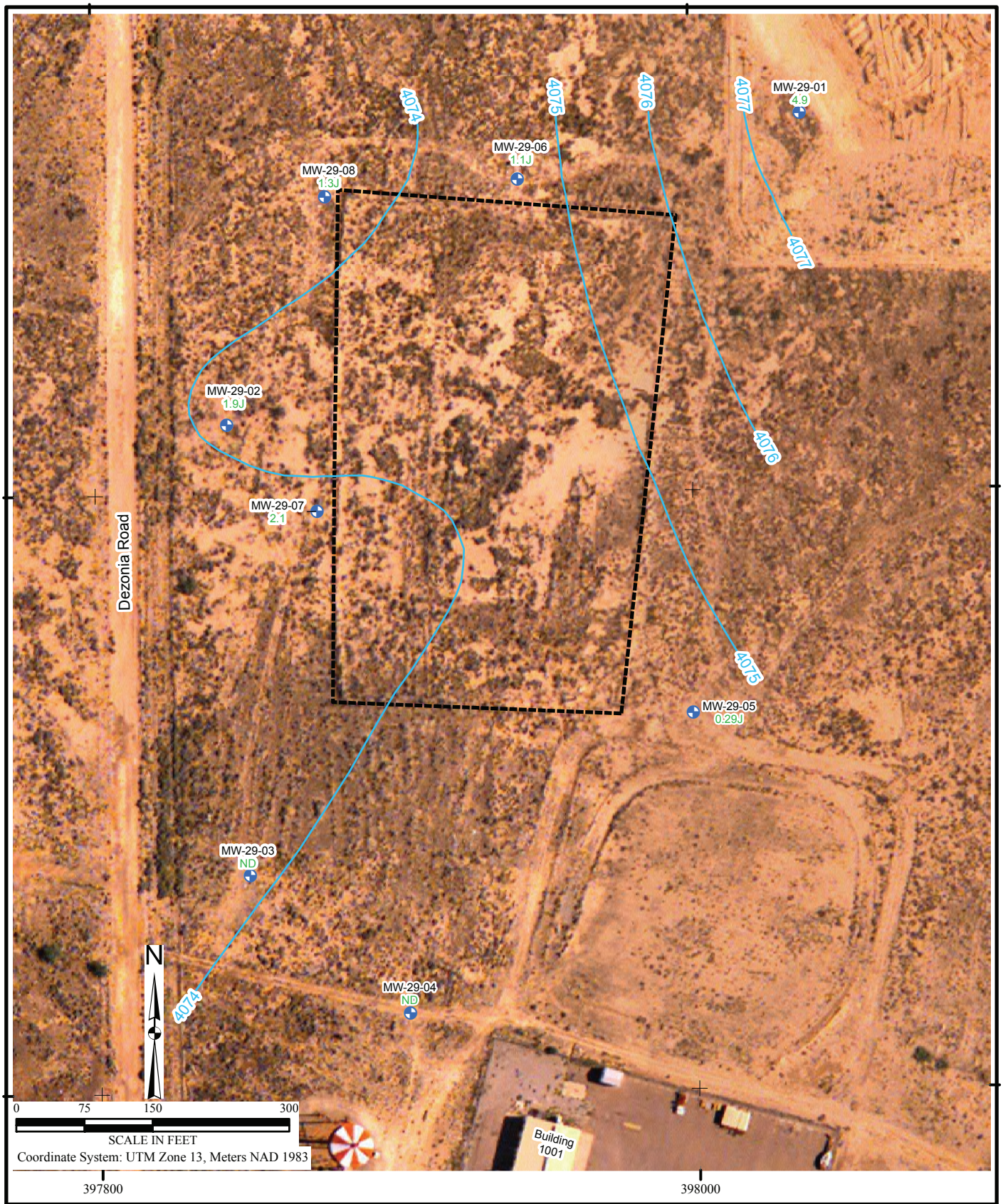
Figure 5.8
LF-29
Munitions and Explosives of Concern / Munitions Debris

File X:\AFC002\Holloman_AFB\TO37\Maps\ LF-10_LF-29_Supp_RFI\BTEX_Results.mxd
Project: AFC002-037-04-07-05
Revised: 05/14/07 PS
Map Source: Holloman AFB

Legend

- Monitoring Well
- Soil Gas Sample
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary
- 185 BTEX Concentration in Nanograms per Trap

Figure 5.9
LF-29
Soil Gas BTEX Concentrations



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Project: AFC002-037-04-07-05
Revised: 05/18/07 PD
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- 4074 Groundwater Elevation Contour (July 2005)
- 4.9 Perchlorate Concentration in µg/L
- ND Non-Detect
- J Estimated Positive Detection

Figure 5.10
LF-29
Groundwater Perchlorate Concentrations

TABLES

Table 5.1
LF-29 1991 Remedial Investigation Groundwater Analytial Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyses	Background[1]	US EPA MCL	NMGWQ Standard[2]	Monitoring Wells			
				MW-29-03[3]	MW-29-04[3]	MW-29-01[3]	MW-29-02
EPA 160.1- Total Dissolved Solids (mg/L)	43,600	--	1,000	*7,100*	*6,000*	*21,000*	*21,000*
EPA 300.0- Chloride (mg/L)	19,600	--	250	*1,100*	*1,000*	*7,800*	*6,900*
EPA 300.0- Sulfate (mg/L)	7,470	--	600	*3,200*	*2,800*	*4,900*	*5,800*
EPA 340.2- Fluoride (mg/L)	4.7	4	1.6	1.1	< 0.10	1.4	1.1
EPA 353.1- Nitrate-Nitrite (mg/L)	98	10	10	*6.4*	*11*	*11*	9.0
EPA 365.2- Total Phosphorous (mg/L)	0.75	--	--	0.07	0.063	0.77	0.49
SW6010- Metals (µg/L)							
Antimony	89.6	6	--	*< 100*	*< 100*	*230*	*(20)*
Beryllium	3.8	4	--	< 2	< 2	*4.9*	*4.5*
Chromium	234	100	50	*< 100*	*< 100*	*66*	(20)
Copper	38.6	1,300[4]	1000	< 20	< 20	110	73
Nickel	43.6	--	200^	< 20	< 20	97	61
Zinc	253.4	--	10,000	< 20	< 20	180	130
SW7421- Lead (µg/L)	19.9	15*	50	< 3	< 3	10 Z	15
SW7740 - Selenium (µg/L)	79.3	50	50	< 6.9	6.2	18	25
SW8080 - Organochlorine Pesticides and PCBs (µg/L)							
4,4'- DDD	--	--	--	0.028 C	< 0.0094	< 0.0096	< 0.010
SW8240 - Volatile Organics (µg/L)							
Chloroform	--	--	100	22	6.2	< 5.0	< 5.0
Methylene chloride	--	--	100	1.5 J	5.4	9.3 B	11

Notes:
C = Presence and quantitation of analyte confirmed by second column analysis.
J = Detected below the reported detection limit.
B = Analyte detected in labratory blank analysis, no blank subtraction performed.
Z = SW6010, SW7421 - Analyte detected in method blank.
-- = not applicable, not detected
US EPA = U.S. Environmental Protection Agency

MCL = Maximum Contaminatn Level
NMGWQ = New Mexico Groundwater Quality
NMAC = New Mexico Administrative Code
mg/L = milligrams per liter
µg/L = micrograms per liter

(1) Source for Inorganic Results: Radian (1992b). Source for Metals Radian (1993a).
(2) NMAC 20.6.2.3103
(3) Upgradient monitoring wells
(4) Action Level

Results in **BOLD** and *italics* exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in **BOLD** and *italics* exceed NMGWQ Standards for Human Health and are greater than the background and upgradient values
Results in italics exceed USEPA or NMGWQ standards but are below background and/or upgradient levels

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.2
LF-29 1997 Phase II RFI Groundwater Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[1]	EPA MCL	NMGWQ Standard[2]	MW 29-03[3]	MW 29-04[3]	MW 29-05[3]	MW-29-02	MW 29-06	MW 29-07	MW 29-08
SW6010 (µg/L)										
Aluminum	--	--	5,000	32	1,700	*10,300*	1,200	***12,400***	3,100	***12,400***
Barium	930	2,000	1,000	< DL	< DL	98	< DL	190	< DL	140
Calcium	--	--	--	540,000	659,000	1,010,000	690,000	191,190,000	637,000	985,000
Iron	--	--	1,000	240	*1,400*	*9,600*	*1,600*	***12,300***	*3,400*	***17,400***
Magnesium	--	--	--	310,000	539,000	1,100,000	1,070,000	931,000	806,000	829,000
Magnanese	--	--	200	ND	< DL	*8,900*	ND	*430*	72	*280*
Nickel	43.6	--	200	ND	ND	ND	ND	< DL	ND	< DL
Potassium	--	--	--	< DL	26,200	< DL	< DL	< DL	< DL	< DL
Sodium	--	--	--	725,000	1,590,000	4,380,000	4,460,000	4,270,000	3,550,000	3,890,000
Thallium	94.3	2	--	ND	ND	ND	ND	ND	< DL	< DL
Vanadium	434.4	--	--	26	29	ND	< DL	< DL	< DL	< DL
Zinc	253.4	--	10,000	< DL	ND	ND	ND	ND	ND	ND
SW7060 (µg/L)										
Arsenic	72.3	10	100	< DL	< DL	*15*	< DL	< DL	< DL	9
SW7421 (µg/L)										
Lead	19.9	15	50	ND	< DL	< DL	< DL	< DL	< DL	< DL
SW7740 (µg/L)										
Selenium	79.3	50	50	< DL	< DL	< DL	< DL	< DL	< DL	< DL
SW8080 (µg/L)										
4,4'-DDE	--	--	--	ND	ND	0.0015 J	ND	ND	ND	ND
Endosulfan II	--	--	--	ND	ND	0.002	ND	ND	ND	ND
beta-BHC	--	--	--	ND	ND	0.024	ND	ND	ND	ND
delta-BHC	--	--	--	0.0046 J	0.0043 J	0.0091 J	0.0050 J	ND	ND	0.0048 Jb
SW8150 (µg/L)										
2,4,5-TP (Silvex)	--	50	--	ND	ND	0.0086 J	ND	ND	NA	ND
Dicamba	--	--	--	ND	ND	0.073 J	ND	ND	NA	ND
SW8240 (µg/L)										
1,2 Dichloroethane	--	5	10	ND	ND	*350*	*9.3*	*9.6*	.82 J	*8.7*
2-Chloroethyl vinyl ether	--	--	--	ND	ND	ND	0.64 J	ND	ND	ND
Acetone	--	--	--	ND	ND	ND	ND	ND	ND	5.6 Jb
Benzene	--	5	10	0.18 Jb	0.19 Jb	*3,100*	0.20 Jb	ND	0.13 Jb	0.14 Jb
Bromodichloromethane	--	--	--	ND	ND	ND	ND	ND	0.41 J	ND
Chloroform	--	--	100	11	2.0 J	ND	1.4 J	ND	4.4 J	0.22 J
Methylene chloride	--	--	100	0.82 JB	1.0 JB	23 J	0.98JB	1.1 JB	1.4 JB	1.2 Jb
Toluene	--	1,000	750	0.29 Jb	0.38 Jb	ND	0.37 Jb	ND	ND	0 20 Jb
Total xylenes	---	10,000	620	0.49 Jb	1.3 Jb	35 J	0.61 Jb	0.75 JB	0.45 Jb	1.3 Jb
SW8330 (µg/L)										
1,3,5-Trinitrobenzene	--	--	--	ND	ND	2.6	ND	ND	ND	ND
2,4,6-Trinitrotolune	--	--	--	ND	ND	0.23	ND	ND	ND	ND

Notes:
b = Reported analyte concentration cannot be distinguished from field blank concentrations.
B = Reported analyte concentration may be due to analytical background (or noise) from the laboratory.
J = Estimated concentration, analyte measured below the detection limit.
NA = Not applicable.
ND = Not detected. No instrument response for analyte or result less then zero.
< DL = Analyte measured below the dectection limit and below the background UTL.
EPA = U.S. Environmental Protection Agency
MCL = Maximum Contaminatn Level
NMGWQ = New Mexico Groundwater Quality
NMAC = New Mexico Administrative Code
-- = not applicable, not detected

(1) Source: Radian (1993b).
(2) NMAC 20.6.2.3103
(3) Upgradient monitoring wells

Results in **BOLD** and *italics* exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in BOLD and italics exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values
Results in italics exceed USEPA or NMGWQ standards but are below background and/or upgradient levels

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.3
LF-29 Groundwater Compliance Long Term Monitoring Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[2]	US EPA MCL	NMGWQ Standard[3]	Well MW-29-01 (upgradient)					Well MW-29-05 (upgradient)				
				Sep-97	Sep-99	Sep-01	Apr-03	Dec-05	Sep-97	Sep-99	Sep-01	Apr-03	Dec-05
VOCs[1] (µg/L)													
Benzene	--	5	10	0.54 J	< 3	< 5	NA	ND	NS	NS	NS	NS	3.6
Bromoform	--	--	--	0.64 J	< 3	< 5	NA	ND	NS	NS	NS	NS	ND
sec-Butylbenzene	--			NA	NA	NA	NA	ND	NS	NS	NS	NS	2.4
tert-Butylbenzene	--			NA	NA	NA	NA	ND	NS	NS	NS	NS	1.5
Chloroform	--	--	100	ND	< 3	< 5	< 1	ND	NS	NS	NS	NS	ND
1,2-Dichloroethane	--	5	10	ND	< 3	< 5	< 1	ND	NS	NS	NS	NS	***90.6***
o-Dichlorobenzene	--			NA	NA	NA	NA	ND	NS	NS	NS	NS	0.85 J
Isopropylbenzene	--			NA	NA	NA	NA	ND	NS	NS	NS	NS	4.6
Methylene chloride	--	--	100	2.5 UB	< 3	< 5	NA	ND	NS	NS	NS	NS	ND
Naphthalene	--	--	--	ND	< 5	< 5	NA	ND	NS	NS	NS	NS	ND
Trichloroethylene	--	5	100	NA	NA	NA	NA	ND	NS	NS	NS	NS	***5.5***
SVOCs (µg/L)													
Butylbenzyl phthalate	--	--	--	ND	< 5	NA	NA	ND	NS	NS	NS	NS	ND
Di-n-butyl phthalate	--	--	--	ND	< 5	NA	NA	ND	NS	NS	NS	NS	ND
bis(2-Ethylhexyl) phthalate	--	6	--	ND	1 J	NA	NA	ND	NS	NS	NS	NS	ND
Phenol	--	--	5	ND	2 J	NA	NA	ND	NS	NS	NS	NS	ND
TDS (mg/L)	--	--	1,000	ND	2 J	NA	NA	32,200	NS	NS	NS	NS	*17,700*

Notes:
(1) Unless otherwise reported, no VOCs were detected prior to 2001 using EPA Method 8260B.
(EPA Method 8260A was used to analyze for VOCs in the 1995 and 1997 programs.)
Unless otherwise reported, no metals were detected using EPA Methods 6010B Trace & 7470A.
Unless otherwise reported, no organochlorine pesticides were detected prior to '99 using EPA Method 8081A.
(EPA Method 8080A was used to analyze for organochlorine pesticides in the 1995 and 1997 programs.)
(2) No bckground values were available
(3) NMAC 20.6.2.3103

Laboratory qualifiers--assigned as a result of internal laboratory data assessment procedures
J - estimated value; less than CRDL but greater than or equal to IDL
UB - Qualifies as non-detct due to presence of analyte in associated laboratory blank
J - estimated value; less than CRDL but greater than or equal to IDL
UB - Qualifies as non-detct due to presence of analyte in associated laboratory blank

CRDL - Contract-required Detection Limit
IDL - Instrument Detection Limit
NA - not analyzed
ND - not detected at or above method reporting limit
VOCs - colatile organic compounds
µg/L - micrograms per liter
mg/L - milligrams per liter
TDS - total dissolved solids
-- = not applicable; not detected
NS = not sampled
US EPA = U.S. Environmental Protection Agency
MCL = Maximum contaminant level
NMGWQ = New Mexico Groundwater Quality
NMAC = New Mexico Administrative Code

Results in italics exceed USEPA or NMGWQ standards but are below upgradient or background levels
Results in Bold and italics exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in Bold and italics exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.3 (continued)
LF-29 Groundwater Compliance Long Term Monitoring Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[2]	EPA MCL	NMGWQ Standard [3]	Well MW-29-03					Well MW-29-04				
	(µg/L)	(µg/L)	(µg/L)	Sep-97	Sep-99	Sep-01	Apr-03	Dec-05	Sep-97	Sep-99	Sep-01	Apr-03	Dec-05
VOCs[1] (µg/L)													
Benzene	--	5	10	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Bromoform	--	--	--	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
sec-Butylbenzene				NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
tert-Butylbenzene				NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Chloroform	--	--	100	NS	NS	NS	NS	6	NS	NS	NS	NS	1.8
1,2-Dichloroethane	--	5	10	NS	NS	NS	NS	***7.3***	NS	NS	NS	NS	***8.4***
o-Dichlorobenzene				NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Isopropylbenzene				NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Methylene chloride	--	--	100	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Naphthalene	--	--	--	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Trichloroethylene	--	5	100	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
SVOCs (µg/L)													
Butylbenzyl phthalate	--	--	--	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Di-n-butyl phthalate	--	--	--	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
bis(2-Ethylhexyl) phthalate	--	6	--	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
Phenol	--	--	5	NS	NS	NS	NS	ND	NS	NS	NS	NS	ND
TDS (mg/L)	--	--	1,000	NS	NS	NS	NS	*7,660*	NS	NS	NS	NS	*11,000*

Notes:
(1) Unless otherwise reported, no VOCs were detected prior to 2001 using EPA Method 8260B.
(EPA Method 8260A was used to analyze for VOCs in the 1995 and 1997 programs.)
Unless otherwise reported, no metals were detected using EPA Methods 6010B Trace & 7470A.
Unless otherwise reported, no organochlorine pesticides were detected prior to '99 using EPA Method 8081A.
(EPA Method 8080A was used to analyze for organochlorine pesticides in the 1995 and 1997 programs.)
(2) No bckground values were available
(3) NMAC 20.6.2.3103

Laboratory qualifiers--assigned as a result of internal laboratory data assessment procedures
J - estimated value; less than CRDL but greater than or equal to IDL
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CRDL - Contract-required Detection Limit
IDL - Instrument Detection Limit
NA - not analyzed
ND - not detected at or above method reporting limit
VOCs - colatile organic compounds
µg/L - micrograms per liter
mg/L - milligrams per liter
TDS - total dissolved solids
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Results in italics exceed USEPA or NMGWQ standards but are below upgradient or background levels
Results in Bold and italics exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in Bold and italics exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.3 (continued)
LF-29 Groundwater Compliance Long Term Monitoring Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[2]	EPA MCL	NMGWQ Standard [3]	Well MW-29-06					Well MW-29-07				
	(µg/L)	(µg/L)	(µg/L)	Sep-97	Sep-99	Sep-01	Apr-03	Dec-05	Sep-97	Sep-99	Sep-01	Apr-03	Dec-05
VOCs[1] (µg/L)													
Benzene	--	5	10	ND	< 3	< 5	NA	ND	ND	< 3	< 5	NA	ND
Bromoform	--	--	--	ND	< 3	< 5	NA	ND	ND	< 3	< 5	NA	ND
sec-Butylbenzene				NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
tert-Butylbenzene				NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
Chloroform	--	--	100	ND	< 3	< 5	< 1	ND	3.6	4	2.7 J	1.9	1.8
1,2-Dichloroethane	--	5	10	ND	***6***	3.4 J	3	2.3	ND	***11***	***18***	***15***	***26.6***
o-Dichlorobenzene				NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
Isopropylbenzene				NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
Methylene chloride	--	--	100	ND	< 3	< 5	NA	ND	ND	< 3	< 5	NA	ND
Naphthalene	--	--	--	ND	< 5	< 5	NA	ND	ND	< 5	< 5	NA	ND
Trichloroethylene	--	5	100	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
SVOCs (µg/L)													
Butylbenzyl phthalate	--	--	--	ND	< 5	NA	NA	ND	ND	1 J	NA	NA	ND
Di-n-butyl phthalate	--	--	--	1.6 UB	< 5	NA	NA	ND	ND	< 5	NA	NA	ND
bis(2-Ethylhexyl) phthalate	--	6	--	ND	1 J	NA	NA	ND	ND	1 J	NA	NA	ND
Phenol	--	--	5	ND	< 5	NA	NA	ND	ND	< 5	NA	NA	ND
TDS (mg/L)	--	--	1,000	ND	< 5	NA	NA	*17,800*	ND	< 5	NA	NA	*17,300*

Notes:
(1) Unless otherwise reported, no VOCs were detected prior to 2001 using EPA Method 8260B.
(EPA Method 8260A was used to analyze for VOCs in the 1995 and 1997 programs.)
Unless otherwise reported, no metals were detected using EPA Methods 6010B Trace & 7470A.
Unless otherwise reported, no organochlorine pesticides were detected prior to '99 using EPA Method 8081A.
(EPA Method 8080A was used to analyze for organochlorine pesticides in the 1995 and 1997 programs.)
(2) No bckground values were available
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IDL - Instrument Detection Limit
NA - not analyzed
ND - not detected at or above method reporting limit
VOCs - colatile organic compounds
µg/L - micrograms per liter
mg/L - milligrams per liter
TDS - total dissolved solids
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US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.3 (continued)
LF-29 Groundwater Compliance Long Term Monitoring Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	Background[2]	EPA MCL	NMGWQ Standard [3]	Well MW-29-08				
		(μg/L)	(μg/L)	Sep-97	Sep-99	Sep-01	Apr-03	Dec-05
VOCs[1] (μg/L)								
Benzene	--	5	10	ND	< 3	< 5	NA	ND
Bromoform	--	--	--	ND	< 3	< 5	NA	ND
sec-Butylbenzene				NA	NA	NA	NA	ND
tert-Butylbenzene				NA	NA	NA	NA	ND
Chloroform	--	--	100	ND	< 3	< 5	0.25 (J)	ND
1,2-Dichloroethane	--	5	10	ND	***15***	***18***	***16***	***23.3***
o-Dichlorobenzene				NA	NA	NA	NA	ND
Isopropylbenzene				NA	NA	NA	NA	ND
Methylene chloride	--	--	100	ND	< 3	< 5	NA	ND
Naphthalene	--	--	--	ND	< 5	< 5	NA	ND
Trichloroethylene	--	5	100	NA	NA	NA	NA	ND
SVOCs (μg/L)								
Butylbenzyl phthalate	--	--	--	ND	< 5	NA	NA	ND
Di-n-butyl phthalate	--	--	--	ND	< 5	NA	NA	ND
bis(2-Ethylhexyl) phthalate	--	6	--	ND	1 J	NA	NA	ND
Phenol	--	--	5	ND	< 5	NA	NA	ND
TDS (mg/L)	--	--	1,000	ND	< 5	NA	NA	*15,800*

Notes:
(1) Unless otherwise reported, no VOCs were detected prior to 2001 using EPA Method 8260B.
(EPA Method 8260A was used to analyze for VOCs in the 1995 and 1997 programs.)
Unless otherwise reported, no metals were detected using EPA Methods 6010B Trace & 7470A.
Unless otherwise reported, no organochlorine pesticides were detected prior to '99 using EPA Method 8081A.
(EPA Method 8080A was used to analyze for organochlorine pesticides in the 1995 and 1997 programs.)
(2) No bckground values were available
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NA - not analyzed
ND - not detected at or above method reporting limit
VOCs - colatile organic compounds
μg/L - micrograms per liter
mg/L - milligrams per liter
TDS - total dissolved solids
-- = not applicable; not detected
NS = not sampled
US EPA = U.S. Environmental Protection Agency
MCL = Maximum contaminant level
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Results in italics exceed USEPA or NMGWQ standards but are below upgradient or background levels
Results in Bold and italics exceed USEPA Primary Drinking Water MCLs and are greater than the background and upgradient values
Results underlined in Bold and italics exceed NMGWQ Ground Water Standards for Human Health and are greater than the background and upgradient values

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.4
LF-29 Supplemental RFI Field Activity Summary
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Field Activitiy	Soil Borings	Samples Collected	Field Screening	Laboratory Analyses	Objective
Geophysical Survey	--	--	--	--	Delineate the extent of the disposal site; identify potential contamination hotspots
MEC/MD Surface and Subsurface Assessment	--	--	Schonstedt wand, down-hole magnetic sensor	--	Identify potential MEC/MD for access and completion of soil gas samples and soil borings
Soil Gas Survey	73	73	PID	VOCs	Identify potential contamination hotspots
Subsurface Soil Assessment Landfill Waste and underlying Soil Quality Assessment	11	7	lithologic logging, visual inspection, PID	VOCs, SVOCs, G-TPH, D-TPH, RCRA metals, perchlorate, and explosives	Assess the soil quality at potential hotspots and proximal to significant geophysical anomalies
Supplemental Groundwater Sampling(1)	--	8	lithologic logging, visual inspection, PID	Perchlorate	Determine perchlorate concentrations in the groundwater

VOC = volatile organic compound
SVOC = semi-volatile organic compound
G-TPH = gasoline-range total petroleum hydrocarbons
D-TPH = diesel-range total petroleum hydrocarbons
RCRA = Resource Conservation and Recovery Act
TDS = total dissolve solids
-- = not applicable
MEC = munitions and explosives of concern
MD = munitions debris
PID = photoionization detector

(1) TDS samples collected as part of the December 2005 LTM compliance monitoring event

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.5
LF-29 Sample Delivery Groups
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Sample Identification by Media:		Sample Delivery Group			
		6061925	D6F210285	D6F270298	D6G180345
Soil	HGLSB29-D6-2426	X	X		
	HGLSB29-F4-1820	X	X		
	HGLSB29-F7-2022	X	X		
	HGLSB29-I5-1417	X	X		
	HGLSB29-K3-1416	X		X	
	HGLSB29-L4-0204	X	X		
	HGLSB29-L6-0103	X	X		
	HGLSBDUP08	X	X		
Groundwater	HGLMW29-01				X
	HGLMW29-02				X
	HGLMW29-03				X
	HGLMW29-04				X
	HGLMW29-05				X
	HGLMW29-06				X
	HGLMW29-07				X
	HGLMW29-08				X
	HGLGWDUP-09				X

Table 5.6
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	METH. BL.	TRIP-1	A1	A3	A5	A7	A9	C1	C3	C5	C6	C7
Project Number:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lab File ID:	06053103.D	06053104.D	06053105.D	06053106.D	06053107.D	06053108.D	06053109.D	06053110.D	06053111.D	06053112.D	06053113.D	06053114.D
Received Date:		5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Analysis Date:	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006
Analysis Time:	10:41	11:12	11:43	12:14	12:45	13:16	13:47	14:18	14:49	15:19	15:50	16:21
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS												
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	<25	**27**	**75**	**81**	**173**	**147**	**120**	**90**	**109**	**131**	**103**	**114**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	**45**	**44**	**27**	<25	**28**	**25**	<25	<25
p & m-Xylene	<25	<25	<25	<25	**45**	**39**	**28**	<25	**45**	**35**	**31**	**31**
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	**33**	**27**	<25	<25	**35**	**27**	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	**31**	**96**	**57**	**58**	**42**	**70**	**53**	**53**	**56**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.6 (continued)
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	C9	D3	D4	D5	D6	D7	E1	E2	E3	E4	TRIP-2	E5
Project Number:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lab File ID:	06053115.D	06053116.D	06053117.D	06053118.D	06053119.D	06053120.D	06053121.D	06053122.D	06053123.D	06053124.D	06053125.D	06053126.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Analysis Date:	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006	5/31/2006
Analysis Time:	16:52	17:23	17:54	18:25	18:55	19:27	19:57	20:29	21:00	21:31	22:02	22:33
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS												
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	**147**	**143**	**127**	**98**	**105**	**62**	**155**	**96**	**71**	**129**	**35**	**97**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	**40**	<25	<25	<25	<25	<25	**27**	<25	<25	<25	<25	<25
p & m-Xylene	**43**	**32**	**32**	<25	**25**	<25	**31**	**34**	<25	<25	<25	<25
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	**33**	**25**	**26**	<25	<25	<25	<25	**30**	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	**32**	<25	<25	<25	<25	<25	<25	**27**	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**94**	**35**	**71**	**53**	**37**	<25	**48**	**86**	**52**	**26**	**33**	**32**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.6 (continued)
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	E6	E7	E8	E9	F2	F3	F4	F5	F6	F7	F8	G1
Project Number:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lab File ID:	06053127.D	06053128.D	06053129.D	06053130.D	06053131.D	06053132.D	06053133.D	06053134.D	06053135.D	06053136.D	06053137.D	06053138.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Analysis Date:	5/31/2006	5/31/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006
Analysis Time:	23:04	23:35	0:06	0:37	1:08	1:39	2:10	2:41	3:12	3:43	4:14	4:45
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS												
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	**75**	**119**	**139**	**155**	**109**	**82**	**131**	**123**	**43**	**81**	**72**	**59**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	**25**	**30**	**31**	<25	<25	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	**28**	**37**	**34**	<25	<25	**27**	**27**	<25	<25	<25	<25
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	**29**	**26**	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	**27**	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**42**	**54**	**78**	**73**	**44**	**38**	**46**	**60**	<25	**41**	**26**	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.6 (continued)
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	G3	G4	G5	G7	G9	H3	H4	H5	H6	METH. BL.	TRIP-3	I1
Project Number:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lab File ID:	06053139.D	06053140.D	06053141.D	06053142.D	06053143.D	06053144.D	06053145.D	06053146.D	06053147.D	06060103.D	06060108.D	06060109.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006		5/30/2006	5/30/2006
Analysis Date:	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006
Analysis Time:	5:16	5:47	6:18	6:49	7:20	7:51	8:22	8:53	9:25	11:34	14:10	14:41
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS												
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	**82**	**107**	**114**	**113**	**140**	**96**	**67**	**119**	**134**	<25	<25	**140**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	**27**	<25	<25	<25	<25	<25	<25	**32**
p & m-Xylene	<25	**30**	**26**	**26**	**25**	<25	<25	**28**	**27**	<25	<25	**28**
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**36**	**76**	**60**	**49**	**40**	**35**	**32**	**67**	**57**	<25	<25	**51**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.6 (continued)
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	I3	I4	I5	I6	I7	I9	J4	J5	J6	J7	J8	K1
Project Number:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lab File ID:	06060110.D	06060111.D	06060112.D	06060113.D	06060114.D	06060115.D	06060116.D	06060117.D	06060118.D	06060119.D	06060120.D	06060121.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Analysis Date:	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006
Analysis Time:	15:12	15:43	16:14	16:45	17:15	17:46	18:17	18:48	19:19	19:51	20:22	20:53
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS												
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	**76**	**46**	**55**	**72**	**113**	**60**	**121**	**80**	**125**	**134**	**97**	**170**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**36**
p & m-Xylene	<25	<25	<25	<25	**25**	<25	**29**	<25	**25**	**27**	<25	**39**
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**29**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	**28**
1,2,4-Trimethylbenzene	**34**	**27**	**32**	**30**	**47**	**30**	**52**	**35**	**48**	**40**	**44**	**85**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.6 (continued)
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	K3	K4	K5	K6	K7	K9	L3	L4	L5	L6	L7	M1
Project Number:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lab File ID:	06060122.D	06060123.D	06060124.D	06060125.D	06060126.D	06060127.D	06060128.D	06060129.D	06060130.D	06060131.D	06060132.D	06060133.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Analysis Date:	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/1/2006	6/2/2006	6/2/2006	6/2/2006	6/2/2006	6/2/2006	6/2/2006	6/2/2006
Analysis Time:	21:24	21:56	22:27	22:58	23:29	0:00	0:31	1:03	1:34	2:05	2:36	3:07
Units:	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng	ng
COMPOUNDS												
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Toluene	**193**	**137**	**126**	**173**	**122**	**143**	**154**	**90**	**100**	**143**	**117**	**116**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Ethylbenzene	**50**	**25**	**24**	**35**	<25	**29**	**30**	<25	<25	**28**	<25	<25
p & m-Xylene	**55**	**30**	**28**	**42**	<25	**29**	**31**	<25	<25	**31**	**25**	<25
Bromoform	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
o-Xylene	**43**	<25	<25	**32**	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	**25**	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**129**	**41**	**38**	**71**	**33**	**46**	**59**	**59**	**43**	**54**	**37**	**38**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.6 (continued)
LF-29 Soil Gas Survey VOC Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman, AFB, New Mexico

Client Sample ID:	M3	M4	M5	M6	M7	M9
Project Number:	1900	1900	1900	1900	1900	1900
Lab File ID:	06060134.D	06060135.D	06060136.D	06060137.D	06060138.D	06060139.D
Received Date:	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006	5/30/2006
Analysis Date:	6/2/2006	6/2/2006	6/2/2006	6/2/2006	6/2/2006	6/2/2006
Analysis Time:	3:38	4:10	4:41	5:13	5:44	6:15
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	**105**	**117**	**177**	**119**	**124**	**155**
1,3-Dichloropropane	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	**35**	<25	<25	**31**
p & m-Xylene	<25	<25	**36**	**26**	**26**	**33**
Bromoform	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	**29**	<25	<25	**25**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	**25**
1,2,4-Trimethylbenzene	**35**	**47**	**59**	**57**	**49**	**77**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25

ng = Nanograms
J = Estimated value below reported quantitation level
B = Detected in method blank
< = Reported value less than method detection limit

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.7
LF-29 Supplemental RFI Soil Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

	NMED Soil Screening Levels[1]			SB29-D6 20-Jun-2006 24 - 26 ft.		SB29-F4 20-Jun-2006 18 - 20 ft.		SB29-F7 20-Jun-2006 20 - 22 ft.		SB29-I5 20-Jun-2006 14 - 17 ft.		SB29-K3 20-Jun-2006 14 -16 ft.		SB29-L4 20-Jun-2006 2 - 4 ft.		SB29-L6 16-Jun-2006 1 - 3 ft.			
	Residential	Industrial	Construction	Val	Q	Val	Q	Val	Q	Val	Q	Val	Q	Val	Q	Val	Q	Val[4]	Q[4]
Volatile Organic Compounds (µg/kg)																			
1,4-Dichlorobenzene	39,500	103,000	1,960,000	0.64	J	0.55	J	0.387	U	0.387	U	0.387	U	0.387	U	0.387	U	0.387	U
Carbon disulfide	460,000	460,000	460,000	0.37	J	0.346	U	0.346	U	0.44	J	0.346	U	0.346	U	0.52	J	0.346	U
Naphthalene	79,500	300,000	262,000	37.7	U	37.7	U	37.7	U	37.7	U	37.7	U	37.7	U	11.4	J	37.7	U
Semi-Volatile Organic Compounds (µg/kg)																			
Diethyl phthalate	48,900,000	100,000,000	100,000,000	64.3	U	64.3	U	64.3	U	64.3	U	64.3	U	64.3	U	256		236	J
Other Compounds (mg/kg)																			
D-TPH	520[2]	1,120[2]	NA	10.7	U	10.7	U	10.7	U	10.7	U	10.7	U	10.7	U	21.9	J	11.7	J
Perchlorate (µg/kg)																			
Perchlorate	55,000[3]	1,400,000[3]	790,000[3]	1	U	0.99	J	0.31	J	1.8		0.5	J	1.6		0.98	J	1.3	
Metals (mg/kg)																			
Barium	15,600	100,000	60,200	66		42		45.2		18.5		26		50.2		24.1		19	
Cadmium	39	564	154	0.692		0.238	J	0.757		0.704		0.0795	U	0.384	J	0.0795	U	0.0795	U
Chromium, total	210[3]	450[3]	500[3]	5.68		1.74		7.33		7.19		7.11		2.57		1.18		0.683	J
Lead	400	800	800	3.05		0.65	U	3.8		4.71		0.65	U	0.65	U	0.65	U	0.65	U
Mercury	6.11[5]	68.4[5]	23.8[5]	0.0075	J	0.0029	U	0.0029	U	0.0063	J	0.0029	U	0.0056	J	0.0407		0.0029	U
Silver	391	5,680	1,550	0.476		0.86		0.653		0.359		0.0444	U	0.911		1.38		1.33	

Notes:
NMED = New Mexico Environment Department
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
ft = feet
Val = validated result
Q = qualifier
NA = not applicable
D-TPH = diesel-range total petroleum hydrocarbons
U = non-detect result, value presented indicates reporting limit
J = positive detection with reported concentration between the method dection limit and the reporting limit

(1) Obtained from Table A-1 (NMED, 2006c)
(2) Obtained from Table 2a (NMED, 2006a)
(3) EPA Region VI HHMSSLs (EPA Reg VI, 2007)
(4) Screening criteria for chromium VI used as a surrogate for chromium
(5) Screening criteria for methyl mercury used as a surrogate for mercury

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

Table 5.8
LF-29 Supplemental RFI Groundwater Perchlorate Analytical Results
LF-29 (SWMU 104) - Former Army Landfill
Supplemental RFI
Holloman AFB, New Mexico

Analyte	EPA Reg VI Perchlorate Tap Water[1]	MW-29-01 11-Jul-2006 Val	Q	MW-29-02 11-Jul-2006 Val	Q	MW-29-03 11-Jul-2006 Val	Q	MW-29-04 11-Jul-2006 Val	Q	MW-29-05 11-Jul-2006 Val	Q	MW-29-06 11-Jul-2006 Val	Q	MW-29-07 11-Jul-2006 Val	Q	MW-29-08 11-Jul-2006 Val	Q	Val[2]	Q[2]
Perchlorate (ug/L)	< 24.5	4.9		1.9	J	2	U	2	U	0.29	J	1.1	J	2.1		1.3	J	1.1	J

Notes:
NMED = New Mexico Environment Department
μg/L = micrograms per liter
mg/kg = milligrams per kilogram
Val = validated result
Q = qualifier
U = non-detect result, value presented indicates reporting limit
J = positive detection with reported concentration between the method dection limit and the reporting limit

(1) Human Health Medium Specific Screening Levels 2007 (EPA Reg VI, 2007)
(2) Duplicate

US EPA MCLs and NMGWQ standards are provided for reference only in cases where total dissolved solids are > 10,000 mg/L.

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APPENDIX A

SOIL GAS AND GEOPHYSICAL SURVEY REPORT

SUPPLEMENTAL RCRA FACILITY INVESTIGATION ADDENDUM – PASSIVE SOIL GAS AND GEOPHYSICAL SURVEY RESULTS

TECHNICAL MEMORANDUM

Prepared for
Air Force Center for Environmental Excellence
Brooks City-Base, Texas

February 2006

SUPPLEMENTAL RCRA FACILITY INVESTIGATION ADDENDUM - PASSIVE SOIL GAS AND GEOPHYSICAL SURVEY RESULTS

TECHNICAL MEMORANDUM

Prepared for

Air Force Center for Environmental Excellence
3300 Sidney Brooks
Brooks City-Base, Texas 78235-5344

Prepared by

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Herndon, Virginia 20170-5545

Contract No. F41624-03-D-8602
Task Order No. 0037

February 2006

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LIST OF ACRONYMS, SYMBOLS AND ABBREVIATIONS

AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
bgs	below ground surface
DP	Disposal Pit
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
GPS	Global Positioning System
HGL	HydroGeoLogic, Inc.
MOBSS	Mobile Bare Base Squadron
ng	nanograms
NMED	New Mexico Environment Department
PCE	tetrachloroethene
PID	photoionization detector
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SWMU	Solid Waste Management Unit
SOPs	Standard Operating Procedures
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound

SUPPLEMENTAL RCRA FACILITY INVESTIGATION ADDENDUM - PASSIVE SOIL GAS AND GEOPHYSICAL SURVEY RESULTS TECHNICAL MEMORANDUM

1.0 INTRODUCTION

This technical memorandum presents the results of a soil gas survey and several geophysical surveys conducted at Holloman Air Force Base (AFB), New Mexico, as part of a supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). The surveys were performed on behalf of Holloman AFB to satisfy New Mexico Environment Department (NMED) requirements under contract to Air Force Center for Environmental Excellence (AFCEE), Contract No. F41624-03-D-8602, Task Order 0037. Specifically, the surveys were conducted to provide additional data on the landfills to optimize supplemental RFI sampling activities proposed in the July 2005 Supplemental RCRA Facility Investigation Work Plan. The following Environmental Restoration Program (ERP) / Solid Waste Management Units (SWMUs) sites were investigated:

- DP-30/SD-33 (SWMU 113B) – Grease Trap/Cooking Grease Disposal Pits;
- LF-10 (SWMUs 101 and 109) – Old Main Base Landfill;
- LF-19 (SWMU 105) – Golf Course Landfill;
- LF-21 (SWMU 116) – West Area Landfill No. 2;
- LF-22 (SWMU 115) – West Area Landfill No. 1;
- LF-23 (SWMU 108) – MOBSS Landfill; and
- LF-29 (SWMU 104) – Former Army Landfill.

Field activities are summarized on Table 1.1 and discussed in the Sections 3 and 4. Background information on the Base and investigated sites is included as Section 2. Soil gas sampling methodology and sampling results are included in Section 3. Geophysical survey results are presented in Section 4. Additional field activities, based on soil gas sampling results, geophysical survey results and NMED comments on the July 2005 Supplemental RCRA Facility Investigation Work Plan are included in Section 5. Photographs of the survey activities and ERP/SWMU sites are included in Attachment A. Supplemental data and analytical results have been included as Attachments B through E provided on the attached CD-ROM.

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Table 1.1
Field Activity Summary
Supplemental RCRA Facility Investigation
Holloman AFB, New Mexico

ERP/SWMU	Soil Gas	Geophysical Survey	
Site	Survey	Electromagnetic	Magnetic
DP-30/SD-33 (SWMU 113B) - Grease Trap/Cooking Grease Disposal Pits		X	
LF-10 (SWMUs 101 and 109) - Old Main Base Landfill	X	X	X
LF-19 (SWMU 105) - Golf Course Landfill		X	X
LF-21 (SWMU 116) - West Area Landfill No.2		X	X
LF-22 (SWMU 115) - West Area Landfill No.1		X	X
LF-23 (SWMU 108) - MOBSS Landfill		X	X
LF-29 (SWMU 104) - Former Army Landfill			X

ERP = Environmental Restoration Program
SWMU = Solid Waste Management Unit

2.0 BACKGROUND

2.1 INSTALLATION LOCATION

Holloman AFB is situated in south central New Mexico, in Otero County. A facility location map is provided as Figure 2.1. Holloman AFB has a population of 6,000 and occupies approximately 50,000 acres of the northeast quarter of Section 1 Township 17 South, Range 8 East. A facility layout map of Holloman AFB showing the location of the seven ERP/SWMU sites is provided as Figure 2.2.

2.2 INSTALLATION HISTORY

Holloman AFB, formerly Alamogordo Army Airfield, began as a temporary facility during World War II. Construction of the temporary airfield was initiated on 6 February 1942. Prior to 1942 the property occupied by Holloman AFB was undeveloped rangeland. Over time, Holloman AFB's status, mission, and Command have periodically changed. In 1992, Holloman AFB was realigned under the Air Combat Command.

2.3 ERP/SWMU SPECIFIC WASTE HISTORY

2.3.1 DP-30/SD-33 (SWMU 113B) – Grease Trap/Cooking Grease Disposal Pits

DP-30, grease trap disposal pits, was active from 1972 to 1979 and consisted of shallow trenches that were reportedly dug and received wastes from base grease traps, oil/water separators, and grit from the wastewater treatment system. One interviewee indicated that quantities of various pesticides (diazinon, malathion, pyrethrum) were also disposed at the location. The disposal of pesticides at DP-30 was not verified. Six trenches were identified at DP-30 during a 1991 RI visual inspection of the site.

Cooking grease disposal trenches (SD-33) are located immediately south of DP-30. Bioenvironmental engineering personnel later identified these trenches as the disposal site for cooking greases from base kitchens. Three trenches were identified at SD-33 during a 1991 RI visual inspection of the site.

2.3.2 LF-10 (SWMUs 101 and 109) – Old Main Base Landfill

LF-10 was a former base sanitary landfill that operated between 1942 and 1958. Based on a 1982 records search, the landfill encompassed approximately 20 acres just north of the existing residential housing area and east of the civil engineering complex. The landfill reportedly received base domestic solid waste and one interviewee indicated that some drums containing waste oils and solvents may have been historically disposed at the landfill. A base incinerator had also been located in this area in the past and ash from this operation was reportedly buried in the landfill.

2.3.3 LF-19 (SWMU 105) – Golf Course Landfill

Based on the 1982 records search, the Golf Course landfill is located due south of the golf course and approximately 800 feet north of the southern base boundary. The landfill reportedly operated for approximately 10 years, from 1968 to 1978. The landfill was used primarily to dispose of golf course grass clippings; however, some unused rodenticides were reportedly disposed at the site as well.

2.3.4 LF-21 (SWMU 116) – West Area Landfill No.2

The 1983 Records Search indicated that LF-21 covered an area of 1 to 2 acres and was active from the early 1970's (assumed) until 1977. Bioenvironmental Engineering records indicated that waste materials contained at the site included paper bags, food, cans, boxes, boards, and tree limbs. One interviewee also indicated that some 55 gallon drums were observed during the active period of the landfill. Disposal operations were stopped after the site was identified as an unapproved landfill site.

2.3.5 LF-22 (SWMU 115) – West Area Landfill No.1

The 1982 Records Search stated that LF-22 is located in an arroyo near the Solar Observatory, Building 910. The landfill reportedly covered a 2 to 3 acre area and was active as a landfill between 1974 and 1978. A December 28, 1978 memo in the bioenvironmental engineer's pollution file described the landfill site and indicated that items such as plastic sheeting, boxes and empty cans were disposed at the site. Disposal operations were stopped after the location was identified as an unapproved landfill site. During the records search, one interviewee indicated that some 55 gallon drums were observed at the site during the active period of the landfill.

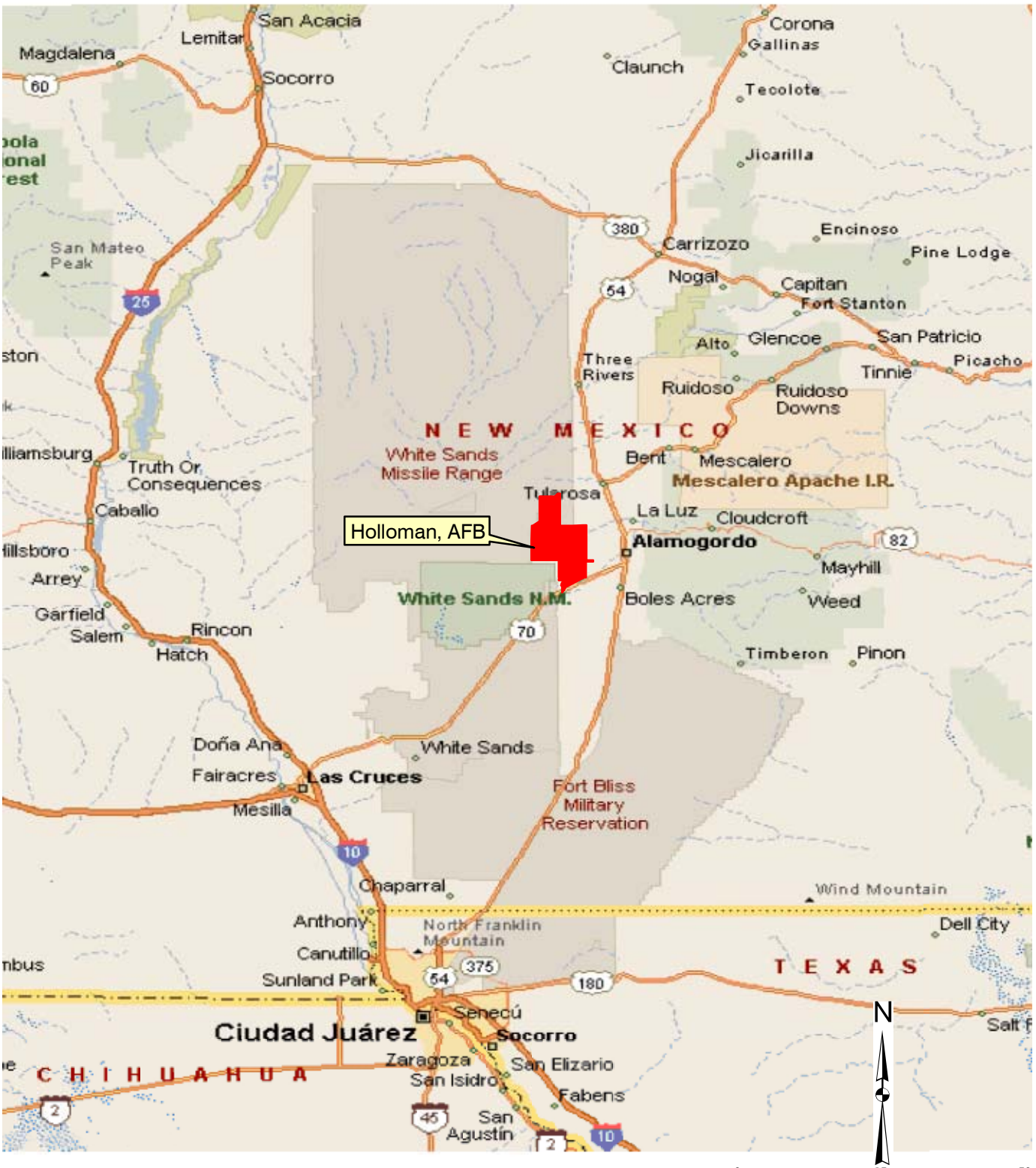
2.3.6 LF-23 (SWMU 108) – MOBSS Landfill

The 4449th MOBSS Landfill is located west of the Solar Observatory (Building 910) and received waste disposal items from 1976 to 1979. Cans of diazinon, dibromochloromethane, and 55-gallon drums of unknown contents were observed at the site during the records search. According to facility records, LF-23 is relatively small, encompassing an area less than 0.5 acres. However, visual inspection of LF-23 prior to geophysical surveying activities identified the presence of similar debris extending from LF-23 northward for several hundred feet. Consequently, the geophysical survey described herein was extended to encompass approximately 2.5 acres.

2.3.7 LF-29 (SWMU 104) – Former Army Landfill

LF-29 was active from the early 1950's to 1975, reportedly receiving spent munitions and missiles. No known hazardous waste materials are known to have been disposed at the site. Based on a Visual Site Inspection, the landfill was identified as being north of Test Group Headquarters Area. Based on an RI conducted at the sites, a small berm extending 400 feet in a north-south direction and 350 feet in an east-west direction bounds the landfill on all four sides.

FIGURES



Coordinate System: NAD 1983 StatePlane NM Central Feet

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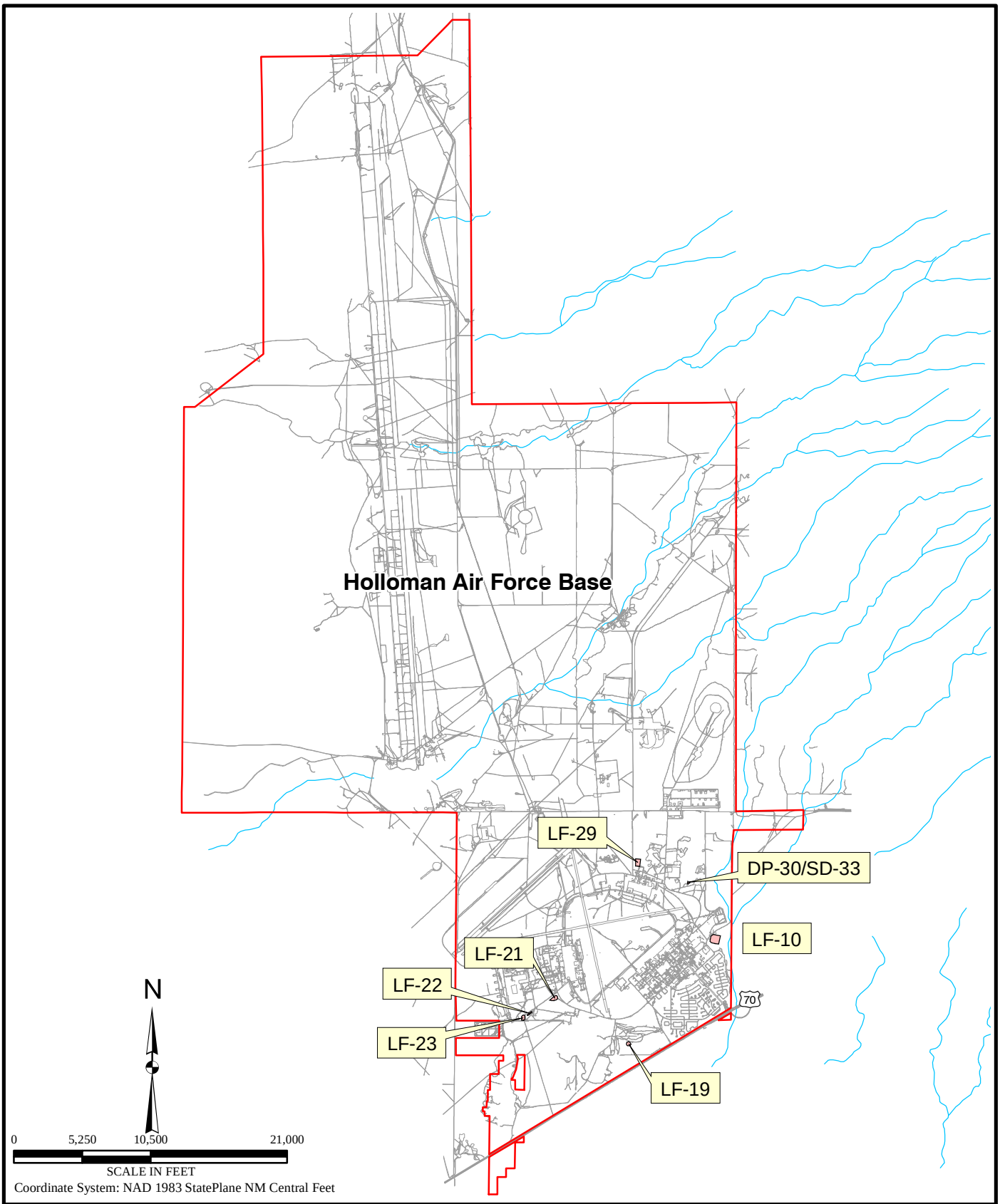
Revised: 02/02/06 TB
Map Source: Holloman AFB

Figure 2.1
Facility Location Map
Holloman AFB



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Map Source: Holloman AFB

Legend

- Holloman AFB Boundary
- Drainage Feature
- Facility Road
- Operable Unit Boundary (Approx.)

Figure 2.2
Facility Layout Map
Holloman AFB

3.0 SOIL GAS SURVEY

The soil gas survey was conducted on LF-10 (SWMUs 101 and 109), the Old Main Base Landfill, between September 28 and October 5, 2005 as proposed in the July 2005 work plan (HGL, 2005). The soil gas survey was performed using the EMFLUX® passive Soil Gas Method, a verified Environmental Protection Agency (EPA) technology method under the EPA Technology Verification Program. The method is described fully in EPA Publication EPA/600/R-98/096. A copy of the publication and EPA verification statement is included in Attachment B (CD-ROM).

A total of 107 soil gas samples were collected during the survey, equating to 1 sample per 0.2 acres. Sample locations were located on a 100 foot by 100 foot grid covering the entire landfill, encompassing approximately 22 acres, as inferred from historic subsurface soil sampling results (HGL, 2005b). A 100 foot sample spacing was considered reasonable given the method's high performance during an pilot study of an EPA soil gas test site using a 200 foot sample spacing in order to evaluate a volatile organic compound (VOC) groundwater plume approximately 30 to 50 feet below ground surface (bgs). A copy of the pilot study's formal evaluation's executive summary is included in Attachment B. In addition, soil gas surveys conducted at Kirkland AFB landfills LF-1 and LF-2 (e.g., large sanitary landfills similar to Holloman AFB LF-10) were completed with a sampling density of 1 soil gas sample per 0.8 acres (NMED, 2004).

Several sample locations were relocated or removed from the survey due to presence of surface obstructions (e.g., buildings, vehicles, and an electrical substation) and subsurface utilities. The southern boundary of the survey was defined by the northern extent of several recyclable debris (e.g., concrete, asphalt, soil, gravel) stockpiles and an electrical substation. In addition, several sample locations were repositioned away from features that might dilute soil gas sample concentrations such as groundwater monitoring wells; subsurface utility vaults; and pavement fractures, joints, and underlying pavement cavities. Soil gas sample locations are depicted on Figure 3.1.

3.1 FIELD SAMPLING ACTIVITIES

Passive EMFLUX® soil gas samplers were installed at LF-10 on September 28, 29, and 30, 2005. At each sample location, a stainless steel slide hammer or gas-powered one-man auger was used to complete a soil boring to a maximum depth of 4 feet or until refusal was encountered. An electric hand-held drill fitted with a 1¼-inch drill bit was used to core a hole through concrete or asphalt pavement when present. Soil borings are not a general requirement of the EMFLUX® passive Soil Gas Method; however, the likely presence of caliche beneath portions of LF-10 was considered to be a potential barrier for the vertical migration of generated soil gas. Consequently, soil borings were drilled at all soil gas sample locations to allow vertical migration of subsurface soil vapors to occur more freely (O'Neil, 2005).

Once a soil boring was completed to the maximum depth of 4 feet below ground surface (bgs) or refusal was encountered, an EMFLUX® sampler was installed at the sample location

in accordance with laboratory provided instructions. A copy of the installation instructions is included in Attachment B (CD-ROM). After installation, the samplers were covered with soil for gravel- and soil-covered areas, or concrete at paved locations. Copies of the field sample data sheets and sampler deployment forms are included in Attachment C (CD-ROM).

The passive soil gas samplers were allowed to sit undisturbed for approximately 72 hours in accordance with laboratory recommendations and retrieved from the subsurface on October 1, 2 and 3, 2005. Once removed from the subsurface, the samplers were inspected for defects and appropriately labeled. Once a sample had been retrieved, the associated sample boring was resurfaced to grade with like material (i.e., soil or concrete). During the sample retrieval process, 9 of the 107 soil gas samplers were found to have been disturbed or entirely removed from the subsurface by Base children. New samplers were installed at the nine locations on October 2, 2005 and allowed to sit for 72 hours. The 9 samplers were retrieved from the subsurface on October 5, 2005.

The collected samples were labeled with a 12 digit identification tag, consisting of a 4 digit prefix identifying LF-10 and an 8 digit suffix identifying the sample location's grid coordinate based on northings and eastings For example, a soil gas sample obtained from grid coordinate North 100, East 100 was labeled "LF10-N100E100". Associated chain-of-custody forms have been included in Attachment C.

3.2 SOIL GAS SURVEY RESULTS

The 107 soil gas samples were submitted for 40 target volatile organic compounds (VOCs) using gas chromatography/mass spectrometry instrumentation following modified EPA Method 8260B procedures. . In addition, four trip blanks, provided by the laboratory, were also submitted for VOC analysis in accordance with the supplemental RFI work plan (HGL, 2005b).

Table 3.1 summarizes positive soil gas analytical results obtained from the survey. Twelve VOCs (chloroform, benzene, ethylbenzene, n-butylbenzene, naphthalene, tetrachloroethene [PCE], toluene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, trichloroethene [TCE], and xylenes) were detected in the soil gas samples. 1,2,4-Trimethylbenzene was detected in every soil gas sample collected including trip blanks during the survey. Toluene and M&P xylenes were detected in many of the samples including one or more of the trip blanks. Because the three VOCs were positively detected in the trip blanks, all three VOCs were considered indicative of blank contamination.

The nine remaining VOCs were detected sporadically across LF-10. Concentration maps for chloroform, TCE, PCE, 1,3,5-trimethylbenzene, n-butylbenzene, and naphthalene are included as Figures 3.2 through 3.7, respectively. With the exception of a few sample locations VOC detections of these six compounds were low and at unique locations (i.e., detected concentrations of one VOC were not co-located with another VOC).. Several of the VOCs (i.e., chloroform [Figure 3.2], n-butylbenzene [Figure 3.6] and naphthalene [Figure 3.7]), when detected, were generally detected in several adjacent sample locations across LF-

10, suggesting localized areas of potential contamination. The remaining VOCs were detected at discrete sample locations, suggesting a distinct area of contamination.

The majority of the VOCs detected in the soil gas samples were detected in the central, western, and southern portions of LF-10. Chloroform was detected primarily in the central to south-central portion of the landfill, ranging from 14 nanograms (ng) to 56 ng. TCE, at 14 ng and 606 ng, was detected in two samples located along the survey's southern boundary while PCE, ranging from 14 ng to 103 ngs, was detected sporadically across LF-10. Sample LF10-N100E200 contained PCE (62 ng) and TCE (14 ng). 1,3,5-Trimethylbenzene (25 ng to 79 ng) and n-butylbenzene (27 ng to 49 ng) were detected at relatively similar concentrations throughout the central portion of the landfill. Naphthalene was detected primarily in the western north-central portion of the landfill (ranging from 26 ng to 143 ng) and along the survey's south-central boundary (34 ng to 65 ng).

No VOCs were positively detected along the survey's eastern and northern borders. The lack of VOC detections along the northern and eastern survey boundaries suggests the soil gas survey has extended beyond the influence of the landfill, if the landfill contents are a source of soil gas VOC detections.

A copy of the soil gas survey laboratory report is included in Attachment C (CD-ROM). A complete copy of the soil gas analytical results is included within the laboratory report.

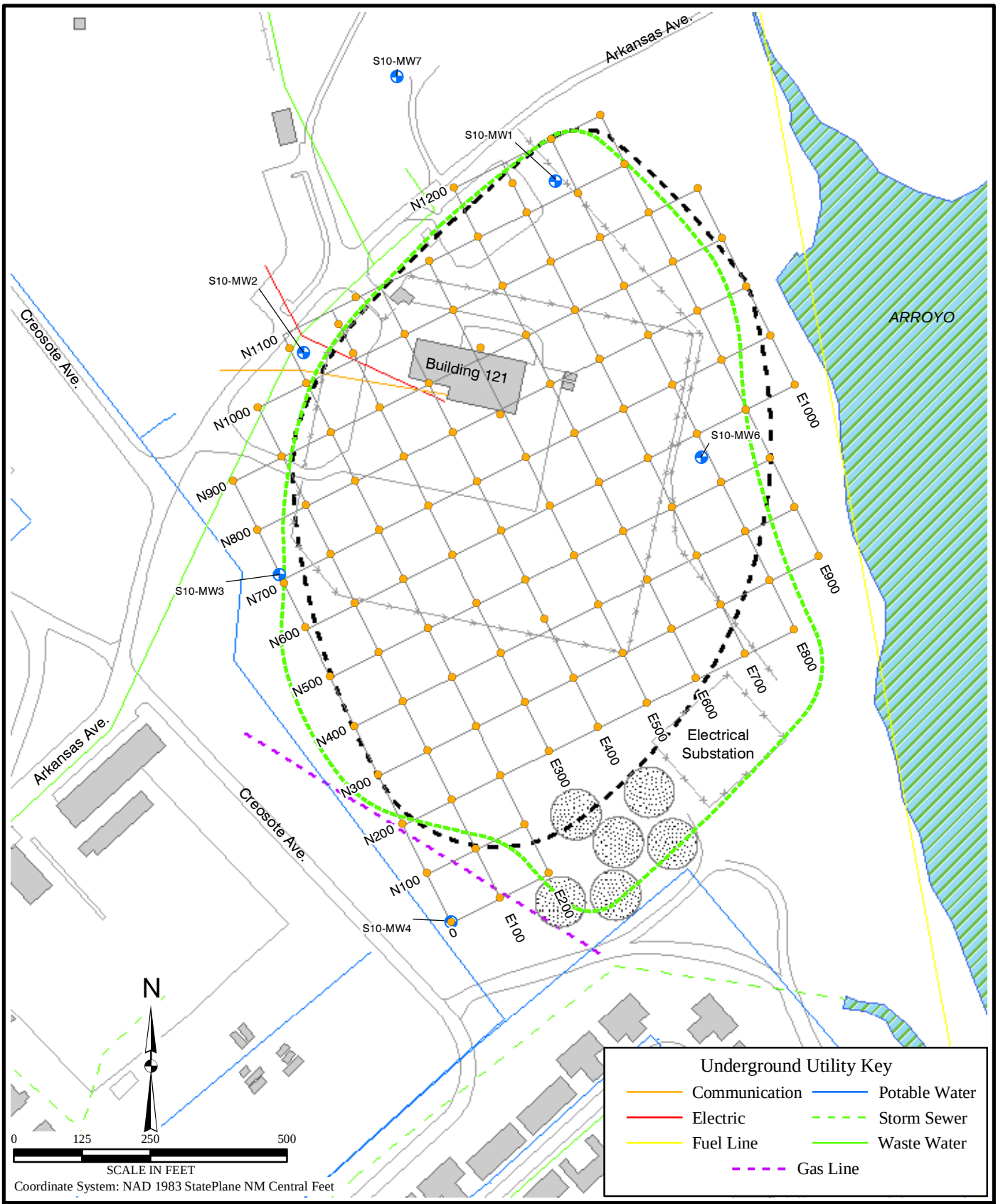
3.3 SOIL GAS SURVEY CONCLUSIONS

Based on soil gas survey results, both halogenated and fuel-related VOCs are present in the soil gas of LF-10. Nine VOCs were detected in the soil gas samples; however, three of the VOCs, 1,2,4-trimethylbenzene, toluene, and xylenes, were detected in the trip blanks, suggesting that their detections were the result of blank contamination.

The six remaining VOCs were detected sporadically across LF-10, and with the exception of a few sample locations, were not detected in the same samples. Halogenated VOCs were detected primarily in the central, southern, and western portions of the landfill. Fuel-related VOCs were detected across LF-10 but primarily within the central portion of the landfill.

For the most part, no VOCs were detected within 200 feet of the northern and eastern survey boundaries. Several VOCs were detected along the western and southern survey boundaries and are currently unbounded.

FIGURES



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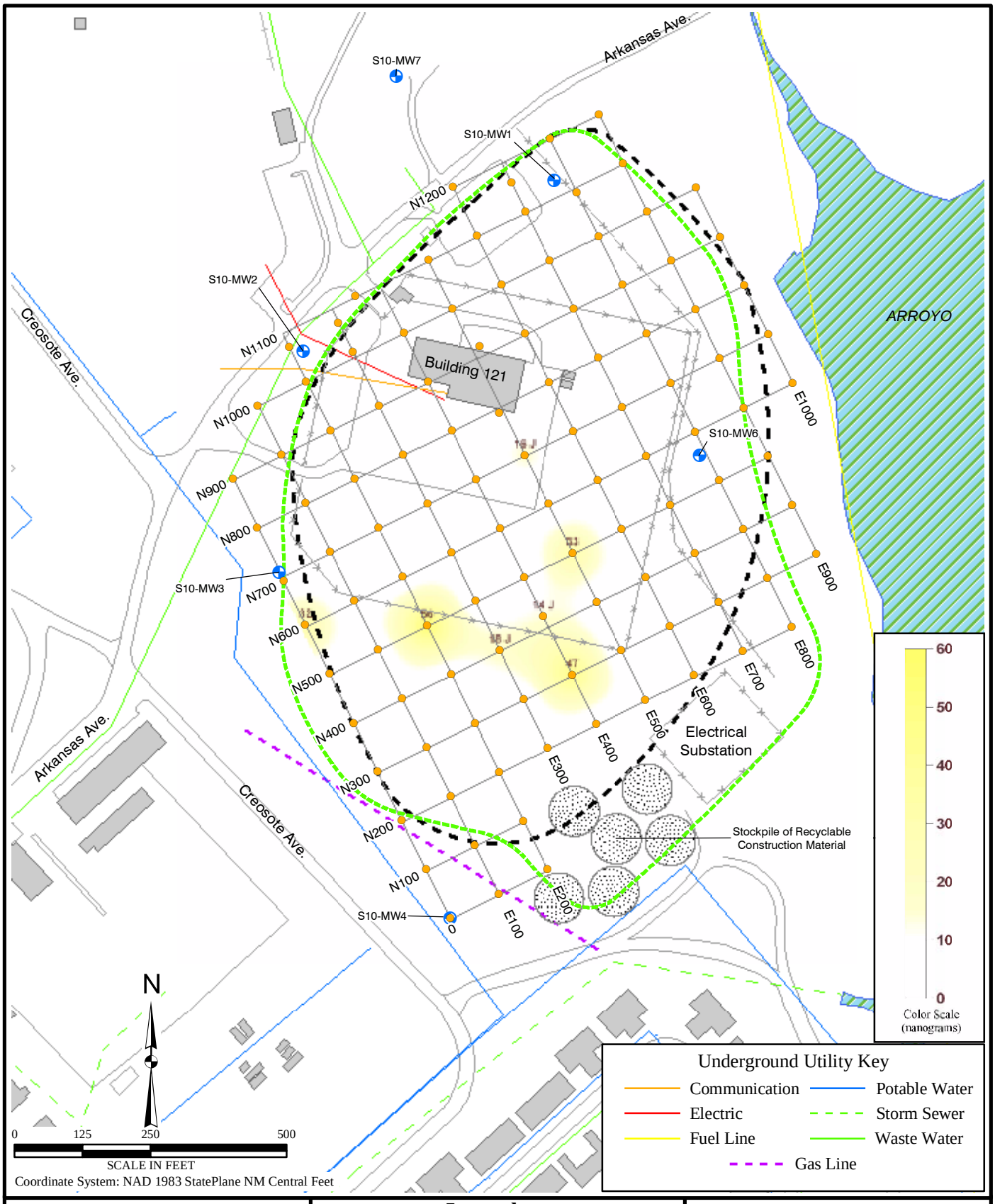
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample

Figure 3.1
Soil Gas Survey
Sample Location Map
LF-10



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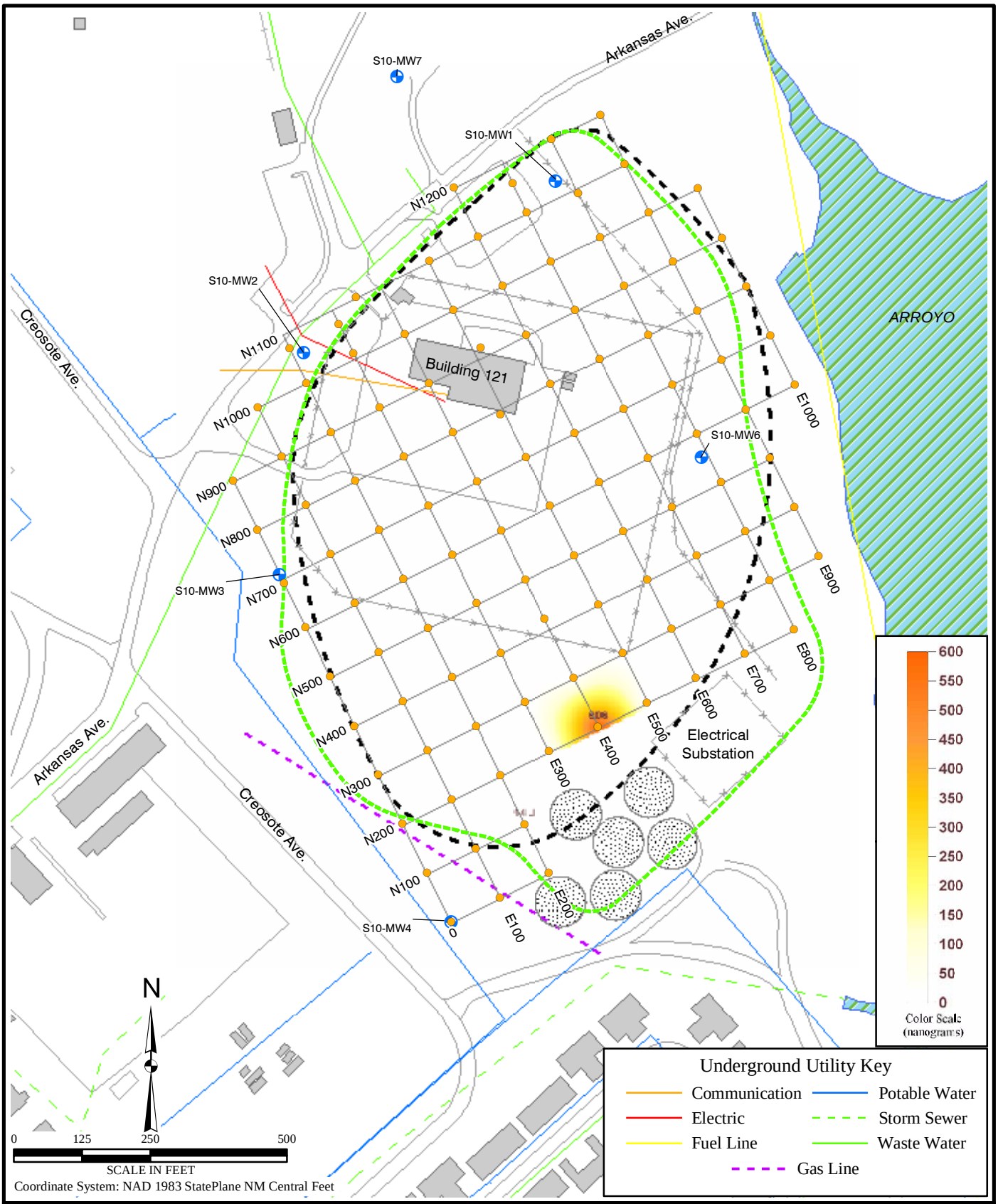
Revised: 02/13/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Monitoring Well
- Soil Gas Sample
- 33 — Positive Soil Gas Concentration (Nanograms)
- J — Estimated Positive Detection (ng/trap)

Figure 3.2
Soil Gas Survey Results
Chloroform Concentrations
LF-10



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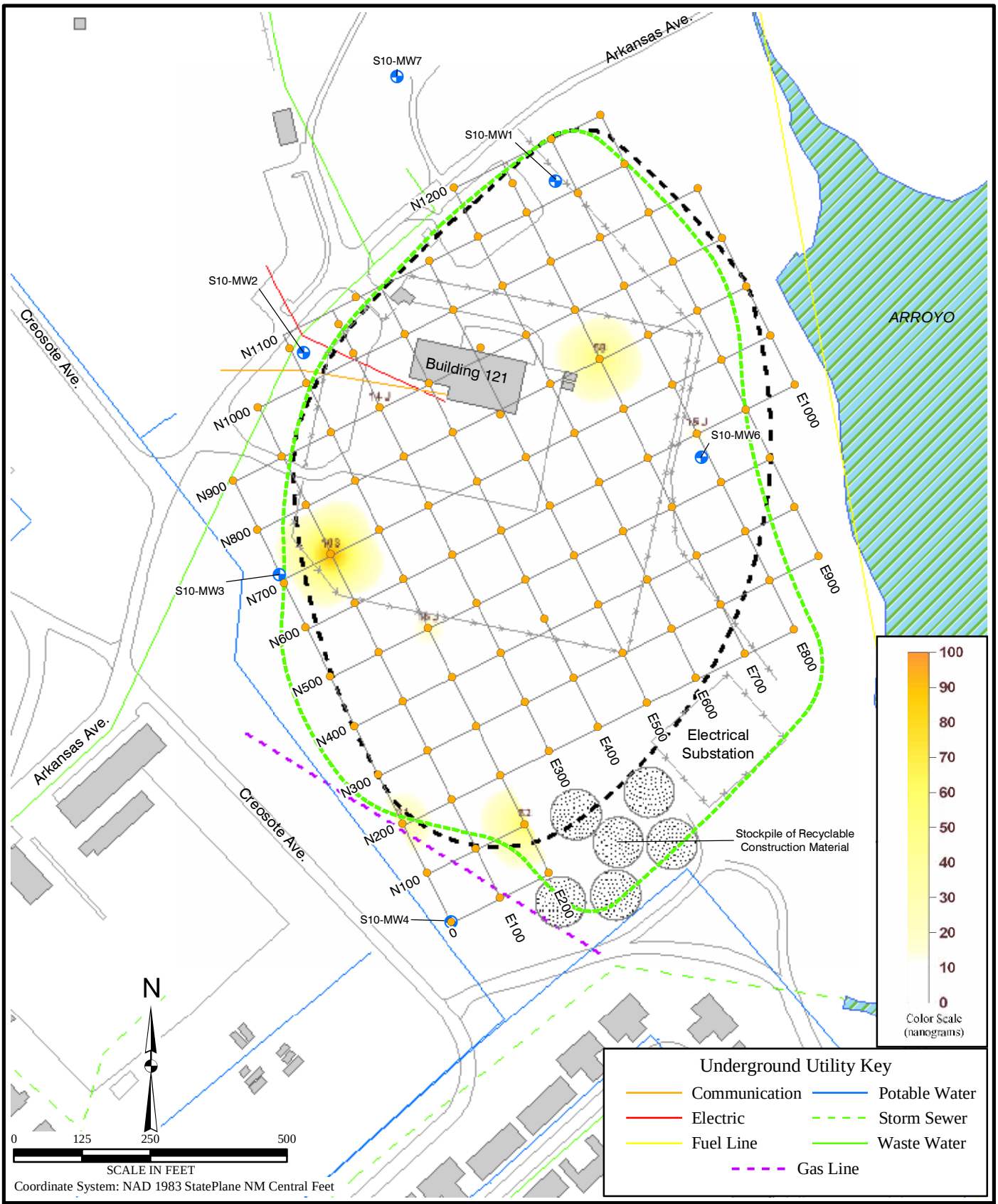
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample
- 606 Positive Soil Gas Concentration (Nanograms)

Figure 3.3
Soil Gas Survey Results
Trichloroethene Concentrations
LF-10



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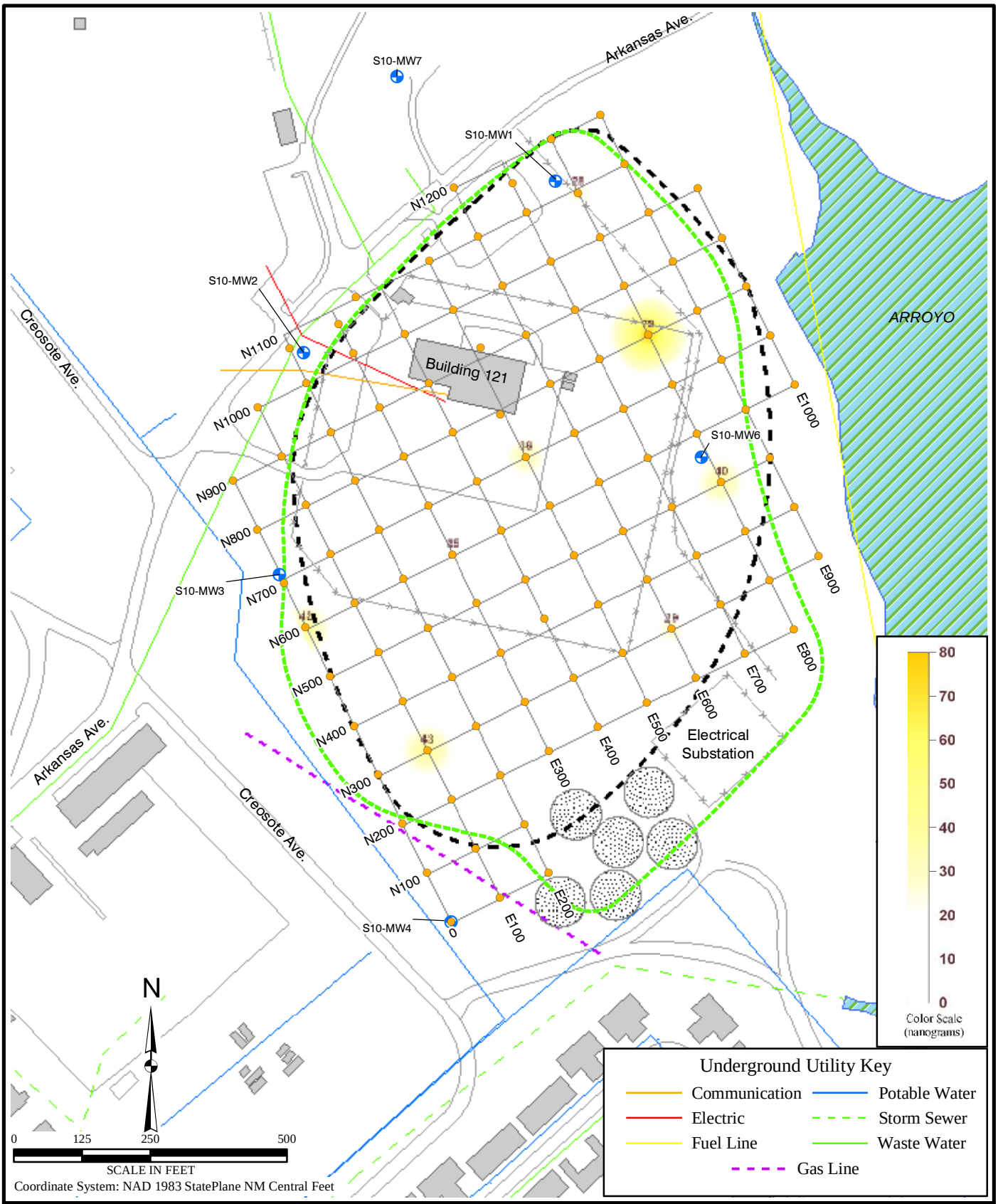
Revised: 02/13/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Monitoring Well
- Soil Gas Sample
- 62 — Positive Soil Gas Concentration (Nanograms)
- J — Estimated Positive Detection (ng/trap)

Figure 3.4
Soil Gas Survey Results
Tetrachloroethene Concentrations
LF-10



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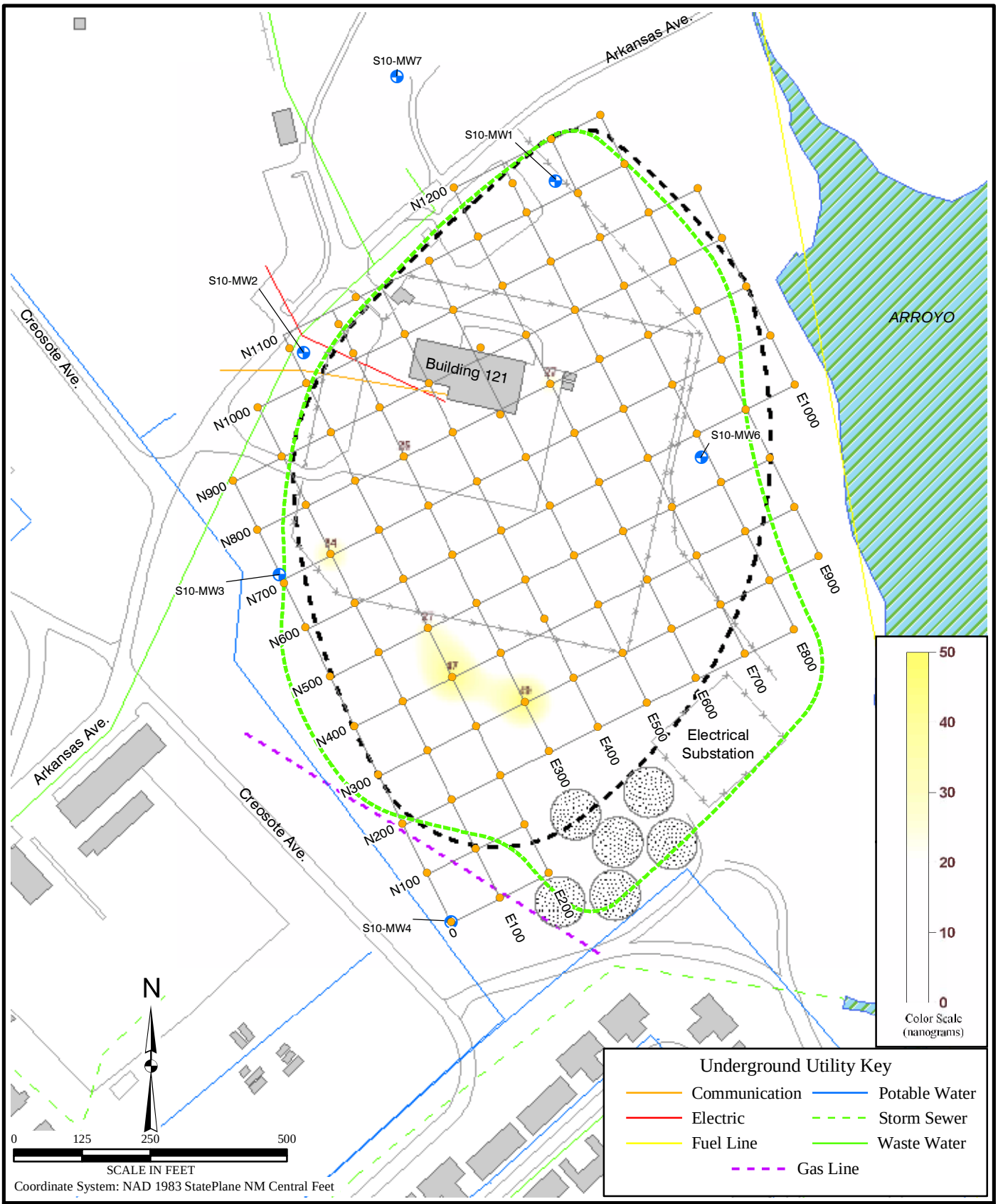
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample
- 40 Positive Soil Gas Concentration (Nanograms)

Figure 3.5
Soil Gas Survey Results
1,3,5-Trimethylbenzene Concentrations
LF-10



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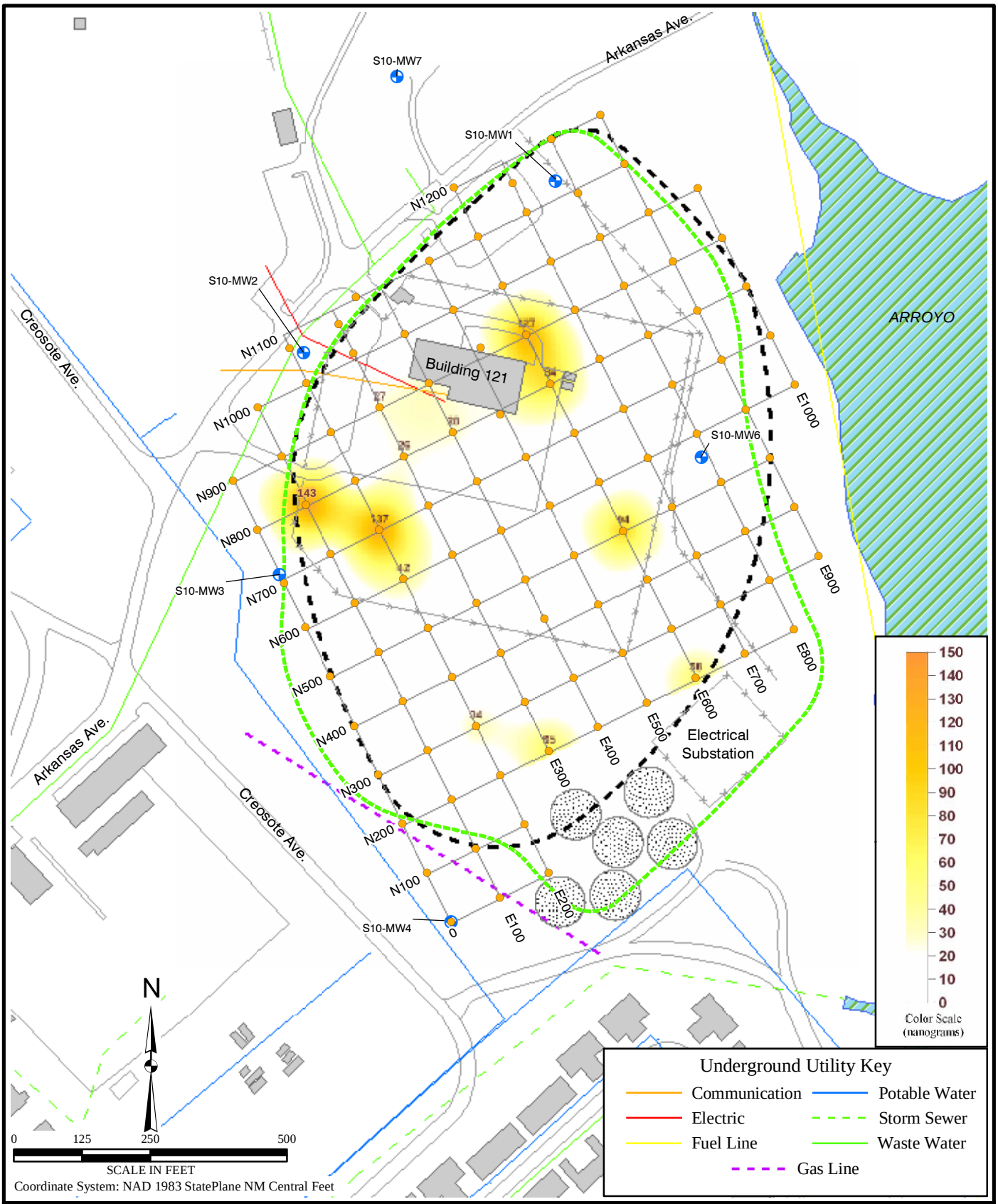
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample
- 47 Positive Soil Gas Concentration (Nanograms)

Figure 3.6
Soil Gas Survey Results
n-Butylbenzene Concentrations
LF-10



File X:\AFC002\Holloman_AFB\TO37\Maps\Supp_RFI_Soilgas_GeoPhy\LF10_Soil_Gas_Napth.mxd
Project: AFC002-037-04-02-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample
- 34 Positive Soil Gas Concentration (Nanograms)

Figure 3.7
Soil Gas Survey Results Naphthane Concentrations LF-10

TABLES

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	Trip-1	LF10-N800E100	LF10-N500E300	LF10-N600E700	LF10-N1000E600	LF10-N700E400
Date Sampler Retrieved:		10/1/2005	10/1/2005	10/2/2005	10/2/2005	10/1/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	**33**	**30**	**34**	**31**	--	**29**
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	--	--	--	**31**	--	**30**
o-Xylene	--	--	--	**27**	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**94**	**88**	**113**	**191**	**69**	**138**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	**143**	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N900E200	LF10-N600E200	LF10-N600E600	LF10-N900E700	LF10-N900E400	LF10-N800E200
Date Sampler Retrieved:	10/1/2005	10/1/2005	10/2/2005	10/2/2005	10/1/2005	10/1/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	--	--	66	--	28	65
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	42	--	--	--
p & m-Xylene	--	--	41	--	29	43
o-Xylene	--	--	35	--	26	38
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	75	96	152	68	140	209
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	42	--	--	31	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

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Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N600E300	LF10-N900E600	LF10-N800E800	LF10-N800E400	LF10-N800E300	LF10-N700E100
Date Sampler Retrieved:	10/1/2005	10/1/2005	10/2/2005	10/1/2005	10/1/2005	10/1/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	28	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	30	101	120	161	59	100
Tetrachloroethene	--	--	--	--	--	103
Ethylbenzene	--	41	39	61	37	59
p & m-Xylene	--	62	70	100	41	65
o-Xylene	--	51	59	81	36	59
1,3,5-Trimethylbenzene	25	--	79	--	--	--
1,2,4-Trimethylbenzene	98	268	295	377	137	184
n-Butylbenzene	--	--	--	--	25	34
Naphthalene	--	127	--	28	26	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N900E500	LF10-N800E700	LF10-N800E500	LF10-N900E300	LF10-N700E300	LF10-N1100E350
Date Sampler Retrieved:	10/1/2005	10/2/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	59	83	--	--	--	75
Tetrachloroethene	--	58	--	14 J	--	--
Ethylbenzene	--	30	--	--	--	34
p & m-Xylene	31	51	--	--	--	52
o-Xylene	27	44	--	--	--	46
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	121	231	98	123	91	241
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	26	27	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N700E700	LF10-N800E600	LF10-N700E500	LF10-N700E200	LF10-N1000E400	LF10-N700E600
Date Sampler Retrieved:	10/2/2005	10/1/2005	10/1/2005	10/1/2005	10/1/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	16 J	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	64	106	44	44	66	51
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	67	--	--	38	--
p & m-Xylene	39	83	29	25	47	33
o-Xylene	31	72	27	--	40	29
1,3,5-Trimethylbenzene	--	--	36	--	--	--
1,2,4-Trimethylbenzene	161	294	132	101	164	123
n-Butylbenzene	--	27	--	--	--	--
Naphthalene	--	84	--	137	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	Trip-2	LF10-N1100E700	LF10-N600E0	LF10-N900E100	LF10-N900E800	LF10-N1000E300
Date Sampler Retrieved:	10/5/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	32	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	55	51	33	--	62	54
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	26	36	29	--	41	30
o-Xylene	--	32	27	--	36	26
1,3,5-Trimethylbenzene	--	--	42	--	--	--
1,2,4-Trimethylbenzene	110	185	145	50	185	129
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N500E500	LF10-N500E100	LF10-N1000E100	LF10-N1000E800	LF10-N1100E500	LF10-N400E500
Date Sampler Retrieved:	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	**33**	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	**48**	**27**	**56**	**39**	**66**	**42**
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	**28**	--	**31**	**31**	**42**	**26**
o-Xylene	--	--	**27**	**26**	**33**	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**131**	**112**	**129**	**150**	**193**	**117**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N700E0	LF10-N1070E300	LF10-N1100E600	LF10-N400E400	LF10-N600E500	LF10-N600E100
Date Sampler Retrieved:	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	--	14 J	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	42	--	38	89	75	36
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	32	--
p & m-Xylene	26	--	26	41	50	26
o-Xylene	--	--	--	36	44	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	98	63	138	218	208	113
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N1000E200	LF10-N1100E790	LF10-N600E400	LF10-N500E600	LF10-N500E0	LF10-N900E0
Date Sampler Retrieved:	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	35	27	38	48	44	73
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	30	--	27	28	33	37
o-Xylene	27	--	--	--	26	31
1,3,5-Trimethylbenzene	--	28	--	--	--	--
1,2,4-Trimethylbenzene	156	95	110	140	128	161
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	94	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N1160E700	LF10-N1200E600	LF10-N500E400	LF10-N400E100	LF10-N800E0	LF10-N1070E200
Date Sampler Retrieved:	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	79	32	--	53	26	--
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	37	--	--	--	--	--
p & m-Xylene	53	25	--	32	--	--
o-Xylene	46	--	--	26	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	200	112	58	136	86	83
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	Trip-3	LF10-N200E200	LF10-N400E600	LF10-N400E700	LF10-N600E800	LF10-N190E0
Date Sampler Retrieved:	10/5/2005	10/2/2005	10/3/2005	10/3/2005	10/3/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	**41**	**52**	**43**	**79**	**47**	**29**
Tetrachloroethene	--	--	--	--	**15 J**	**31**
Ethylbenzene	--	--	--	**27**	--	--
p & m-Xylene	--	**35**	**26**	**43**	**31**	--
o-Xylene	--	**32**	--	**38**	**25**	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**87**	**178**	**113**	**177**	**125**	**93**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N100E200	LF10-N300E600	LF10-N400E900	LF10-N500E800	LF10-N200E100	LF10-N100E0
Date Sampler Retrieved:	10/2/2005	10/3/2005	10/3/2005	10/3/2005	10/2/2005	10/2/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	**14 J**	--	--	--	--	--
Toluene	**51**	**30**	**36**	**55**	**43**	**33**
Tetrachloroethene	**62**	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	**41**	--	**29**	**33**	**41**	--
o-Xylene	**35**	--	**29**	**29**	**35**	--
1,3,5-Trimethylbenzene	--	**29**	--	**40**	--	--
1,2,4-Trimethylbenzene	**233**	**108**	--	**147**	**194**	**112**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
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Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N300E500	LF10-N300E800	LF10-N600E900	LF10-N300E0	LF10-N010E0	LF10-N300E400
Date Sampler Retrieved:	**10/3/2005**	**10/3/2005**	**10/3/2005**	**10/2/2005**	**10/2/2005**	**10/2/2005**
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	**47**
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	**40**	**45**	**119**	**51**	**58**	**65**
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	**51**	--	--	--
p & m-Xylene	**28**	**29**	**87**	**25**	**31**	**46**
o-Xylene	--	**26**	**73**	--	**26**	**38**
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**108**	**126**	**376**	**97**	**114**	**192**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N200E700	LF10-N500E700	LF10-N300E100	LF10-N0E100	LF10-N500E200	LF10-N300E700
Date Sampler Retrieved:	10/3/2005	10/3/2005	10/2/2005	10/2/2005	10/2/2005	10/3/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	**56**	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	--	--	**74**	**44**	**43**	**44**
Tetrachloroethene	--	--	--	--	**18 J**	--
Ethylbenzene	--	--	**34**	--	--	--
p & m-Xylene	--	--	**45**	--	--	--
o-Xylene	--	--	**36**	--	--	--
1,3,5-Trimethylbenzene	--	--	**43**	--	--	--
1,2,4-Trimethylbenzene	**83**	**68**	**145**	**78**	**114**	**92**
n-Butylbenzene	--	--	--	--	**27**	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N500E900	LF10-N400E0	LF10-N100E100	LF10-N300E200	LF10-N700E800	LF10-N400E800
Date Sampler Retrieved:	10/3/2005	10/2/2005	10/2/2005	10/2/2005	10/3/2005	10/3/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	53	58	81	53	100	55
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	27	--	29	44
p & m-Xylene	32	40	49	28	52	42
o-Xylene	27	35	42	--	42	40
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	133	177	214	116	198	188
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	34	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	Trip-4	LF10-N200E400	LF10-N0E200	LF10-N900E900	LF10-N900E1000	LF10-N700E1000
Date Sampler Retrieved:	10/5/2005	10/5/2005	10/5/2005	10/3/2005	10/3/2005	10/3/2005
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	**606**	--	--	--	--
Toluene	**35**	--	**33**	**27**	--	**33**
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	--	--	--	--	--	--
o-Xylene	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**107**	**59**	**102**	**83**	**63**	**100**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N1100E900	LF10-N400E300	LF10-N300E300	LF10-N200E300	LF10-N400E200	LF10-N800E900
Date Sampler Retrieved:	10/3/2005	10/5/2005	10/5/2005	10/5/2005	10/5/2005	10/3/2005
VOCs (ng/trap)						
Chloroform	--	18 J	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	--	54	33	--	37	31
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	--	27	--	--	25	--
o-Xylene	--	--	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	69	119	77	95	120	92
n-Butylbenzene	--	--	49	--	47	--
Naphthalene	--	--	--	65	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N1000E1000	LF10-N700E900	LF10-N1000E900	LF10-N1000E700	LF10-N200E600	LF10-N200E500
Date Sampler Retrieved:	**10/3/2005**	**10/3/2005**	**10/3/2005**	**10/5/2005**	**10/5/2005**	**10/5/2005**
VOCs (ng/trap)						
Chloroform	--	--	--	--	--	--
Benzene	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Toluene	**43**	**43**	**32**	--	**66**	--
Tetrachloroethene	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--
p & m-Xylene	--	**34**	--	--	--	--
o-Xylene	--	**31**	--	--	--	--
1,3,5-Trimethylbenzene	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**117**	**108**	**116**	**68**	**89**	**82**
n-Butylbenzene	--	--	--	--	--	--
Naphthalene	--	--	--	--	**58**	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

Table 3.1

LF-10 (SWMUs 101 and 109) Soil Gas Positive Detections
Supplemental RFI Soil Gas Survey
Holloman AFB, New Mexico

Sample ID:	LF10-N1000E500	LF10-N800E1000	LF10-N600E1000
Date Sampler Retrieved:	10/3/2005	10/3/2005	10/3/2005
VOCs (ng/trap)			
Chloroform	--	--	--
Benzene	--	--	--
Trichloroethene	--	--	--
Toluene	**50**	**33**	--
Tetrachloroethene	--	--	--
Ethylbenzene	--	--	--
p & m-Xylene	**33**	--	--
o-Xylene	**27**	--	--
1,3,5-Trimethylbenzene	--	--	--
1,2,4-Trimethylbenzene	**164**	**94**	**64**
n-Butylbenzene	--	--	--
Naphthalene	--	--	--

VOC analysis by EPA Method 8260B

VOC = volatile organic compound

ng/trap = nanograms per trap

-- = Not Detected

EPA = Environmental Protection Agency
J = Data qualifier indicating an estimated positive detection below the method reporting limit and above the method detection limit

4.0 GEOPHYSICAL SURVEYING

Geophysical surveying activities were conducted at the Holloman AFB in September and October 2005. An electromagnetic and magnetic geophysical survey was conducted on ERP/SWMU sites LF-10, LF-19, LF-21, LF-22, and LF-23, an electromagnetic survey was conducted on site DP-30/SD-33, and a magnetic survey was conducted on LF-29 (Table 1.1). The geophysical surveys were conducted to delineate landfill and disposal pit boundaries and determine the presence of any geophysical anomalies that will be targeted for further investigation during the FY2006 supplemental RFI.

4.1 GEOPHYSICAL SURVEYING ACTIVITIES

4.1.1 Terrain Conductivity Surveying

A Geonics Limited Model EM-31 Mark2 terrain conductivity instrument was utilized to measure lateral soil conductivity changes at all seven ERP/SWMU sites. Due to the high naturally conductive soils encountered at Holloman AFB, the metal-detection (in-phase) component of the electromagnetic survey was adversely and significantly compromised and could not be used as proposed in the RFI work plan. Consequently, the electromagnetic survey strategy was modified to utilize only the quadrature (conductivity) component of the electromagnetic method. A magnetometer was used to detect buried metallic debris as described in the next section.

The EM-31 Mark2 system operates on magnetic induction and Maxwell's Law, whereby an electromagnetic field is transmitted through the soil and the associated electrical field current is ultimately picked up by the receiver and correlated directly to soil conductivity. The Mark2's fixed intercoil spacing of 3.66 meters (12 feet) produces an ellipsoidal electromagnetic field that is approximately 20 feet wide and 40 feet high and typically penetrates subsurface soils to a depth of 20 feet and laterally 10 feet. However, the highly conductive soils present beneath Holloman AFB most likely lessened the effective signal penetration depth to approximately 10 feet.

At DP-30/SD-33, LF-23, and LF-29, the electromagnetic survey was conducted on a 10-foot line spacing. At LF-19, LF-21, and LF-22, the electromagnetic surveys were conducted utilizing a 20-foot line spacing while at LF-10, a 50-foot line spacing was utilized. A 2 reading per second sampling rate was employed for all seven electromagnetic surveys, which translates to a station spacing of every 1.5 feet along each line.

4.1.2 Magnetometer Surveying

Geometrics, Inc. Model G-858 and Model G-856 total-field magnetometers were utilized for magnetic surveying at the six landfill sites. Magnetic surveying of DP-30/SD-33 was not conducted because the unit reportedly only received grease. The G-858 magnetometer was utilized for surveying activities. The G-856 unit was employed strictly as a site-specific fixed based station, recording changes in the Earth's daily (diurnal) magnetic field when magnetic

surveys were being conducted. Readings from the fixed base station surveys were subsequently removed from each day's total-field magnetic survey, yielding true residual data.

Calibration testing of the G-858 magnetometer at LF-10 and LF-19 sites indicated that a 2-meter line spacing provided 100 percent survey coverage. Therefore, a 2-meter line spacing was employed at all six sites. A 10 reading per second sampling rate, translating to a station spacing of 0.3 feet, was selected for the magnetic surveys.

The G-858 unit was configured as a vertical dual-sensor gradiometer at LF-10 in order to minimize the effects of cultural "noise" associated with the myriad surface metallic observed at the site (e.g., rebar, buildings, vehicles, surficial debris). A single-sensor total-field configuration was utilized at the other sites. Because LF-29 contained numerous occurrences of scattered surface metal debris, a horizontal dual-sensor non-gradiometer configuration was utilized to achieve a 1-meter line spacing so that all causative bodies would be surveyed at the landfill.

4.1.3 Global Positioning

A Trimble ApGPS 132, a high-performance Global Positioning System (GPS) receiver, was utilized to provide precision guidance of the survey lines during the magnetometer and terrain conductivity surveys. GPS surveys typically have an accuracy of ± ½ meter.

4.2 GEOPHYSICAL SURVEY DATA PROCESSING

No post-survey data processing was performed on the EM-31 data. Post-survey processing of the magnetic data included: global dropout removal, global duplicate time removal, global spike removal, custom range despiking, GPS offset, removal of diurnal magnetic field, and heading error removal. A detailed description of the post-survey processing activities is included in the geophysical survey report included as Attachment D (CD-ROM).

4.3 GEOPHYSICAL SURVEY RESULTS

The geophysical survey results are provided as color contours as Figures 4.1 through 4.12. A copy of the geophysical survey report is attached as Attachment D (CD-ROM).

4.3.1 DP-30/SD-33 (SWMU 113B) – Grease Trap/Cooking Grease Disposal Pits

Prior to conducting field activities, a visual site inspection of DP-30 and SD-33 was conducted. The area encompassing the two sites was relatively flat and sparsely to moderately vegetated with shrubs. Minor amounts of scrap metal were observed sporadically across the site.

Access to the DP-30 and SD-33 were provided by unpaved service roads. No other site improvements were noted at the two sites. Photographs of the DP-30/SD-33 area are included in Attachment A.

4.3.1.1 Terrain Conductivity Survey Results

A terrain conductivity survey was conducted at DP-30, SD-33, and the surrounding area, encompassing approximately 4 acres (Figure 4.1). Based on the waste reportedly disposed at the two units, metallic and magnetic susceptible debris were not anticipated at the sites. Consequently, a magnetic survey of the DP-30/SD-33 area was not performed.

Low conductivity anomalies (blue areas), consistent of oil and grease contamination, were identified within the surveyed area. The locations of the anomalies correspond to the approximate locations of DP-30 and SD-33; however, the sizes of the anomalies suggest the two sites may be larger than previously determined. The inferred boundaries, based on the conductivity results, of the waste units are depicted on Figure 4.1.

The SD-33 anomaly is an inverted "L" shaped anomaly approximately 100 feet long and ranges in width from 40 to 80 feet. The anomaly appears to be comprised of multiple linear and several oblong shape anomalies, possibly reflecting former disposal trenches and pits. The DP-30 anomaly is more amorphous in shape with less differentiation within the anomaly, and extends approximately 240 feet long and ranges in width from approximately 100 to 160 feet.

4.3.1.2 Geophysical Survey Conclusions

Terrain conductivity surveying of the DP-30/SD-33 area has positively identified the former waste disposal units. The conductivity survey identified both sites as low conductivity anomalies, which is consistent of oil and grease contamination when compared to the naturally high conductive soils at Holloman AFB. Based on the survey results, the units may be larger than historically documented. Linear trending and oblong features comprising the SD-33 conductivity anomaly suggest former disposal trench and pit locations. The conductivity survey was unable to differential individual waste disposal pits within DP-30.

4.3.2 LF-10 (SWMUs 101 and 109) – Old Main Base Landfill

An electromagnetic and magnetic survey, encompassing approximately 24 acres, was conducted at LF-10 (SWMUs 101 and 109) to delineate the extent of the landfill and identify areas within the landfill containing significant metallic anomalies. The geophysical surveys were extended beyond the inferred limits of the landfill established during previous studies in an effort to confirm the landfill boundaries.

LF-10 is bounded to the north by Arkansas Avenue, to the south by an electrical substation and undeveloped lands used for the stockpiling of recyclable construction debris, to the east by an arroyo, and to the west by Creosote Avenue and Arkansas Avenue. Since the closure of the landfill, the northern and central portion of LF-10 has been improved with the construction of a one-story building (Building 121), a concrete paved parking lot, and a chain-link fence. Several other structures including a guard house and an open air pavilion are present as well. The area between the chain-link fence and the paved parking lot is covered in gravel and used for vehicle, equipment, material, and minor debris storage. Several shallow northwest to

southeast trending depressions were observed within the Building 121 compound, deforming the concrete-paved vehicle parking lot. The remaining portion of the landfill is undeveloped and unpaved. Miscellaneous debris (i.e., metal, ceramics, silverware, glass, clothing, wood pallets, tires, cut timber, and concrete rubble) were observed scattered across the surface or immediately below the surface of the landfill's undeveloped sections.

4.3.2.1 Terrain Conductivity Survey Results

The terrain conductivity survey was performed in an effort to identify the boundaries of the landfill (Figure 4.2). Based on the survey results, a high conductive anomaly is present along the eastern edge of the terrain conductivity survey. The anomaly corresponds to the adjacent arroyo and is most likely attributable to water-saturated gypsum soils located within the arroyo drainage channel. This conclusion is supported by the fact that higher conductivity readings were recorded as the topography dropped into the arroyo. In addition, water saturated soils were encountered approximately 0.5 to 2 feet below ground surface (bgs) in many of the soil borings completed in this area during the soil gas survey.

Several additional high conductive anomalies were also identified around the Building 121 complex. These anomalies corresponded to identified onsite surface structures including fence lines, lightning poles, and subsurface utility access ports. A moderately conductive anomaly is present in the southwestern portion of the survey boundary. This anomaly corresponds to an overall topographic low spot at the site and most likely attributable to the presence of highly conductive soils, as observed within the arroyo.

Several negative conductive anomalies were identified within the concrete-paved vehicle parking lot. The low conductive anomalies most likely represent rebar within the concrete pavement or possible voids spaces between the pavement and the underlying soils as observed during the visual site inspection.

4.3.2.2 Magnetic Survey Results

Excluding onsite metallic or magnetically susceptible structures, large discrete magnetic anomalies were not identified beneath LF-10 (Figure 4.3). Rather, LF-10 is underlain by numerous northwest-southeast trending linear magnetic anomalies which likely represent former disposal trenches, consistent with common historic Department of Defense trench/fill landfill practices. The magnetic highs and lows within the linear anomalies were not robust; however, a sufficient amount of metal must be present for the linear anomalies to be detected during the gradiometer magnetic survey. These anomalies cross the entire LF-10 area, extending from a buried gas line near Creosote Avenue to the arroyo's western and from Building 121 to the area covered with the stockpiled recyclable construction debris and electrical substation. The linear anomalies generally disappear beneath the developed sections of the landfill. The disappearance of the magnetic anomalies is most likely the result of soils and waste being reworked during the construction of the Building 121 complex or due to signal interferences from metallic or magnetically susceptible objects present around the Building 121 complex. The shallow depressions pockmarking the Building 121 parking lot

trend in the same direction as the magnetic anomalies indicating the former disposal trenches are still present beneath the Building 121 complex.

In addition to the linear magnetic anomalies, scattered magnetic anomalies were observed along the western and northern survey boundaries and within the arroyo. Within the arroyo, the magnetic anomalies were indicative of surficial metal debris. Along the northern and western survey boundaries, the magnetic anomalies were also indicative of surficial debris and metallic and magnetically susceptible objects.

4.3.2.3 LF-10 Geophysical Survey Conclusions

Geophysical surveying at LF-10 appears to have delineated the extent of the former landfill. Magnetic surveying, due to the metallic and magnetically susceptible materials within the landfill, allowed the identification of the former disposal trenches. Based on the aerial distribution of the former disposal trenches, the maximum extent of the landfill was inferred. The revised landfill boundaries are depicted by the green dashed line on Figures 4.2 and 4.3.

4.3.3 LF-19 (SWMU 105) – Golf Course Landfill

Visual inspection of the survey area was conducted at the time of the geophysical survey. Based on facility records, LF-19 encompasses two landfills. The larger landfill is located on the moderately to heavily vegetated southern facing slope of the Holloman AFB golf course. The upper portion of the slope is covered with large trees surrounding a barbwire enclosed cactus garden. Stockpiles of sand and soil used for golf course maintenance, and a pile of slashed vegetation were observed covering the northern landfill. Sections of drainage culvert piping, stored on the ground, were located in the southeastern portion of the northern landfill.

The southern landfill was separated from the northern portion by a shallow, dry drainage swale flanked on both sides by moderately sized shrubs. The topography of the southern landfill was relatively flat. The entire area south of the drainage swale was occupied by several unpaved service roads situated between northeast to southwest trending shallow mounds of soil. A few scattered pieces of metallic debris were observed on the surface of the shallow soil mounds. Site photographs are included in Appendix A.

4.3.3.1 Terrain Conductivity Survey Results

The results of the terrain conductivity survey are shown on Figure 4.4. Three very, localized high conductivity anomalies and one low conductivity anomaly were identified in the northern portion of the survey. These anomalies correspond to the barbwire fence present around the cactus garden.

Three large high conductivity anomalies where identified in the southwestern and southern portions of the survey area. Two of these anomalies overlap the previously defined northern and southern landfill boundaries of LF-19. The third anomaly was located between the northern and southern landfills. The conductivity anomalies are relatively amorphous in shape, and were not consistent with soil mound trends. In addition, the boundaries of the high

conductivity anomalies exhibited diffuse borders, indicating that the anomalies reflected either highly conductive saturated soils or buried non-magnetic waste. Based on site records, LF-19 reportedly received exclusively grass clippings.

4.3.3.2 Magnetic Survey Results

The LF-19 magnetic survey identified several magnetic anomalies. Excluding the anomalies associated with onsite monitoring wells and the barbwire fence, discrete magnetic anomalies were observed primarily in the southeast corner of the northern landfill and in the eastern portion of the southern landfill. Two of the anomalies corresponded to the corrugated drain pipe located on the surface. The other anomalies were identified in areas containing metallic or magnetically susceptible surficial debris.

4.3.3.3 LF-19 Geophysical Survey Conclusions

Geophysical surveying of LF-19 confirmed the absence of subsurface metallic anomalies. Magnetic surveying identified a few discrete magnetic anomalies associated with areas containing metallic or magnetically susceptible surficial debris. The lack of magnetic anomalies within the two landfills supports Base records indicating that LF-19 received almost exclusively non-metallic waste. Terrain conductivity results do not imply the presence of a landfill.

4.3.4 LF-21 (SWMU 116) – West Area Landfill No.2

Based on available facility documents, Forty-Niner Avenue, formerly bounding the landfill on the east, was relocated westward in 2005. The remaining portion of LF-21 (SWMU 116) was visually inspected immediately prior to geophysical surveying activities.

The topography of the site is relatively flat with minor variations present across the unit. The landfill is moderately vegetated with trees and shrubs growing primarily in small groupings. Debris consisting of asphalt, concrete, metal piping, wiring, sheet metal, and a wood door was observed scattered in small piles throughout the entire unit. One large green, metallic storage box and several former military foxholes were also observed, indicating the site has been used for training activities in the past. Based on the presence of surficial debris, the geophysical survey was extended to the west and south beyond the previously defined limits of LF-21, encompassing a total of 5 acres.

4.3.4.1 Terrain Conductivity Survey Results

LF-21 soils were identified as being moderately to highly conductive during the terrain conductivity survey (Figure 4.6). Conductivities were generally higher along the southeastern, southern, western, and northwestern portions of the survey area. No distinct conductivity patterns suggestive of landfill boundaries were discerned from the survey data.

Several high conductive anomalies were identified, two within the southeastern portion, near Forty-Niner Avenue; two in the north-central portion of the survey area, adjacent to Observatory Road; and one associated with a green metal shed. With the exception of the

green metal shed anomaly, the remaining high conductivity anomalies exhibited diffuse borders suggesting either saturated soil conditions or buried non-metallic debris. Several small, localized low conductivity anomalies were detected onsite. These anomalies typically occurred in the northeastern corner of the survey area.

4.3.4.2 Magnetic Survey Results

Magnetic surveying of LF-21 identified multiple magnetic anomalies that generally occurred within four distinct groupings across the survey area (Figure 4.7). The largest magnetic anomaly grouping occurred in the southeast portion of the landfill in an area littered with surficial metal debris. However, based on the visual inspection of the site, surficial metal debris was observed scattered in piles across the entire survey area.

Two of the magnetic groupings occurred in areas correspond to two of the high conductivity anomalies, one in the southeast corner of the survey area and one in the north-central portion of the survey. A third metal grouping was identified in the immediate vicinity of the low conductivity anomaly.

4.3.4.3 LF-21 (SWMU 116) Geophysical Survey Conclusions

Forty-Niner Avenue was relocated in 2005 and currently dissects the landfill into two. Consequently, the small portion of the previously defined unit boundary now beneath and east of Forty-Niner Avenue was not included in the geophysical survey. Neither the terrain conductivity nor the magnetic surveys indicate the presence of one large distinct landfill; however, based on historical documents, LF-21 reportedly received waste consisting of paper bags, food, cans, boxes, boards, and tree limbs, therefore, landfill material may be present with or without the presence of magnetic anomalies. Several conductivity anomalies were identified but exhibited diffuse boundaries suggesting either the presence of highly conductive soils or buried non-metallic waste. Terrain conductivity results do not imply the presence of a landfill.

4.3.5 LF-22 (SWMU 115) – West Area Landfill No.1

A visual inspection of LF-22 (SWMU 115) was conducted immediately prior to geophysical surveying activities. The unit was observed to be a construction debris rubble pile within a former drainage swale. Several trees bordered the debris laden drainage swale. The area surrounding the debris pipe was flat, sparsely vegetated with small shrubs, and contained minor amounts of surficial metallic debris.

4.3.5.1 Terrain Conductivity Survey Results

One large low conductivity anomaly was identified at LF-22 (Figure 4.8). The anomaly is roughly oblong in shape and is approximately 400 feet long and averages roughly 80 feet in width. The anomaly corresponds to the concrete debris laden drainage swale observed on site. No other anomalies were identified from the survey data.

4.3.5.2 Magnetic Survey Results

Numerous magnetic anomalies were identified at LF-22 (Figure 4.9). The majority of the magnetic anomalies correspond with the low conductivity anomaly (i.e., the concrete debris laden drainage channel). Few metallic objects were observed within and around the concrete rubble. This suggests metallic or magnetically susceptible items may be buried beneath the concrete rubble.

The remaining anomalies outside of the concrete rubble pile appear to be associated with onsite structures (i.e., fencing and monitoring wells) and surficial metal debris scattered across the survey area.

4.3.5.3 LF-22 (SWMU 115) – Geophysical Survey Conclusions

According to base records, LF-22 received waste in the form of plastic sheeting, boxes, and empty cans. Geophysical surveying identified one conductivity anomaly and multiple magnetic anomalies. The conductivity anomaly and most of the magnetic anomalies were associated with a concrete rubble pile located within a drainage swale. Based on the geophysical survey results, the previously established LF-22 landfill boundaries were modified to reflect the shape of the rubble pile as shown on Figures 4.8 and 4.9. Very little metallic or magnetically susceptible items were observed within the concrete rubble, indicating metallic and/or magnetically susceptible debris may be present beneath the concrete rubble pile.

4.3.6 LF-23 (SWMU 108) – MOBSS Landfill

The geophysical survey of LF-23 (SWMU 108) consisted of a terrain conductivity survey and magnetic survey. LF-23 was observed to be comprised primarily of concrete rubble placed on the northwestern slope of a former borrow pit. In addition, pipes, cables, a former utility vault, several rusted cans, asphalt, and gravel were observed at LF-23 intermixed with the concrete rubble. According to facility records, the unit was approximately 0.5 acres in size; however, during the visual inspection of the landfill, concrete debris was observed north of the landfill's defined boundary. Consequently, the geophysical survey was extended northward to encompass approximately 2.5 acres. Photographs of LF-23 are included in Attachment A.

4.3.6.1 Terrain Conductivity Survey Results

Two conductivity anomalies were identified at LF-23 (Figure 4.10). One was associated with the chain-link fence located along the survey's northern boundary. The second was located along the western edge of the survey within the former barrow pit. Given the diffused condition of the anomaly's borders and water observed ponded on the borrow pit soils during the geophysical survey, the anomaly is most likely attributable to highly conductive saturated soils. No conductive anomalies were observed within the concrete disposal areas of LF-23.

4.3.6.2 Magnetic Survey Results

Magnetic anomalies were observed at LF-23 (Figure 4.11). The anomalies were associated with onsite surface structures and the concrete debris observed along the northwestern slope of the former barrow pit.

4.3.6.3 LF-23 Geophysical Survey Conclusions

Based on the geophysical survey results and visual observations, LF-23 appears to be little more than a concrete debris pile located along the northeastern slope of a former borrow pit. Terrain conductivity anomalies are likely related to saturated soils. Magnetic anomalies were observed throughout the concrete rubble pile but generally clustered in small groupings. Debris observed included concrete rubble, piping, cables, asphalt, gravel, a concrete utility vault, several rusted cans of a black viscous material, and several open, approximately 30-gallon drums. Based on the association between the magnetic anomalies and the presence of the concrete rubble, the boundaries of LF-23 were modified to reflect the rubble pile. The modified landfill boundaries are depicted on Figures 4.10 and 4.11.

4.3.7 LF-29 (SWMU 104) – Former Army Landfill

A magnetic survey was conducted at LF-29 (SWMU 104), an area encompassing approximately 5 acres (Figure 4.12). LF-29 is a rectangular-shaped unit surrounded by a soil berm on all four sides. The floor of LF-29 is relatively flat and moderately vegetated. Metallic and non-metallic aircraft debris is present across the entire area.

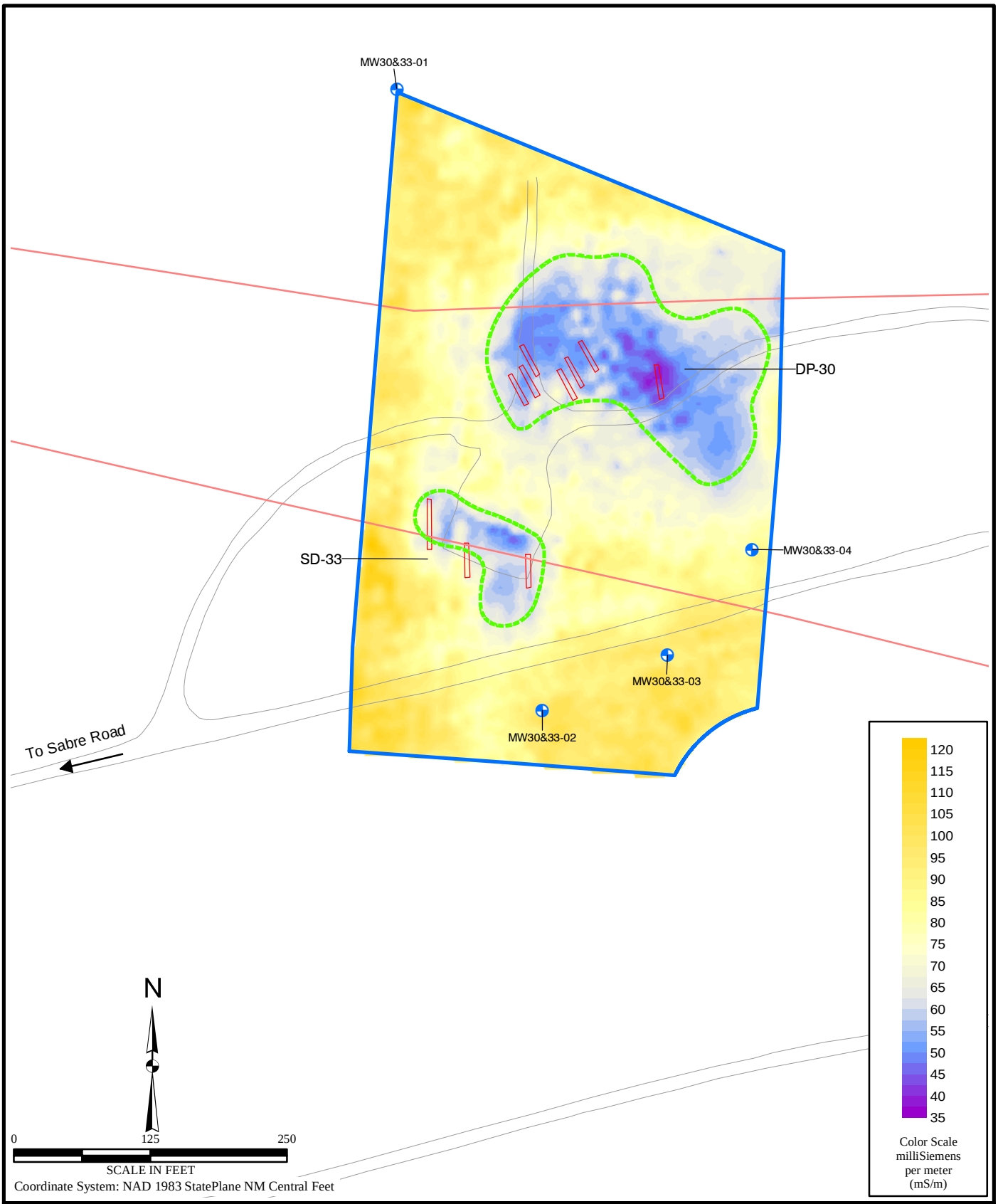
4.3.7.1 Magnetic Survey Results

Several magnetic anomalies were identified at LF-29, primarily within the central and central-northern portion of the landfill. LF-29 is littered with both metallic and nonmetallic debris, Six distinct magnetic anomalies were identified at the site; however, the surface of LF-29 is littered with metallic and non-metallic debris. The identified metallic anomalies may be attributable to the surficial debris.

4.3.7.2 Conclusions

The landfill is bounded on all four sides by a soil berm. Magnetic surveying within the bermed area identified six large magnetic anomalies. It is unknown whether the anomalies represent debris buried beneath the surficial debris.

FIGURES



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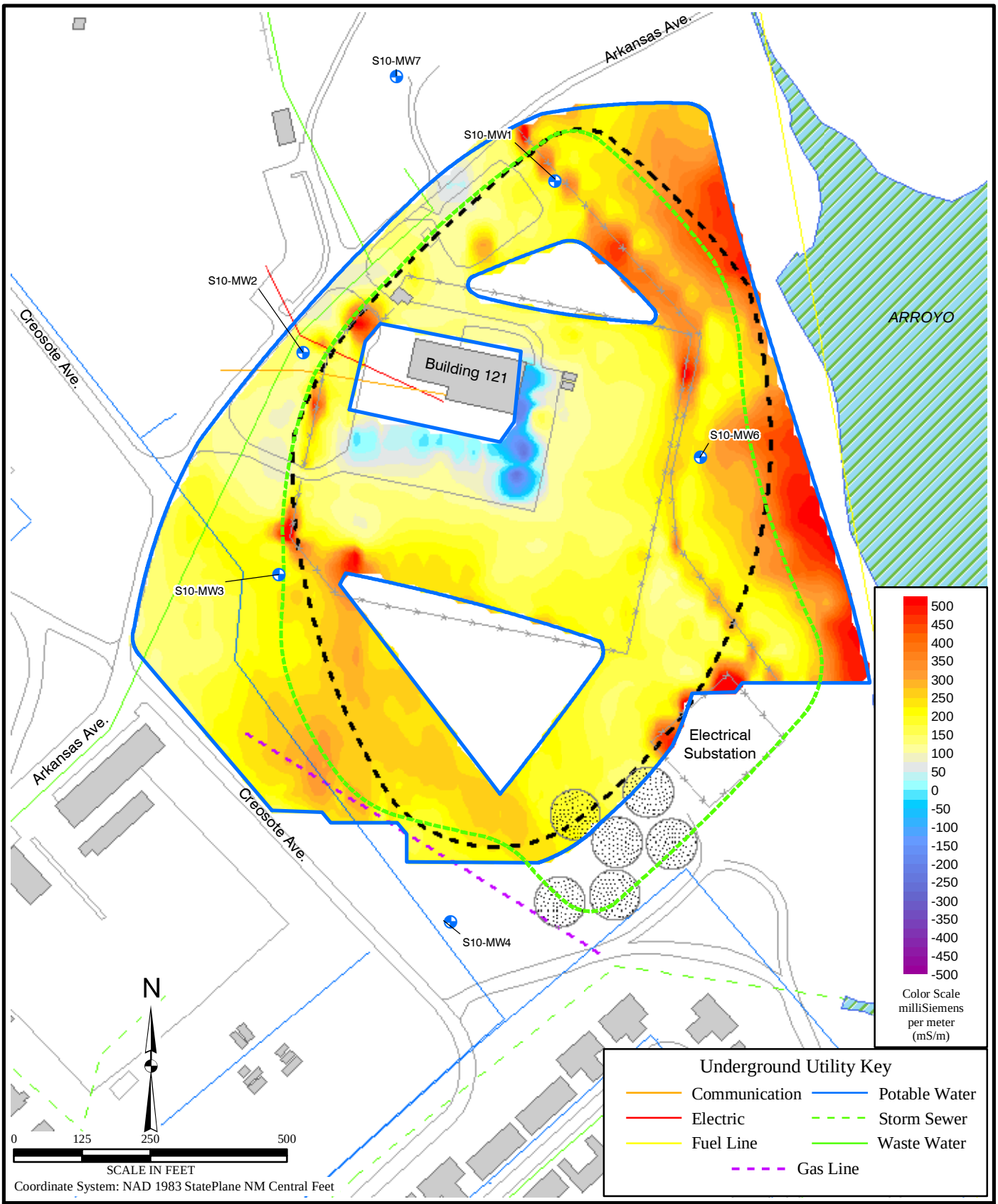
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Electric Line (Above Ground)
- Approximate Trench Location (RI, 1991)
- Terrain Conductivity Boundary
- Unit Boundary Implied by Geophysics

Figure 4.1
Terrain Conductivity Survey
DP-30/SD-33



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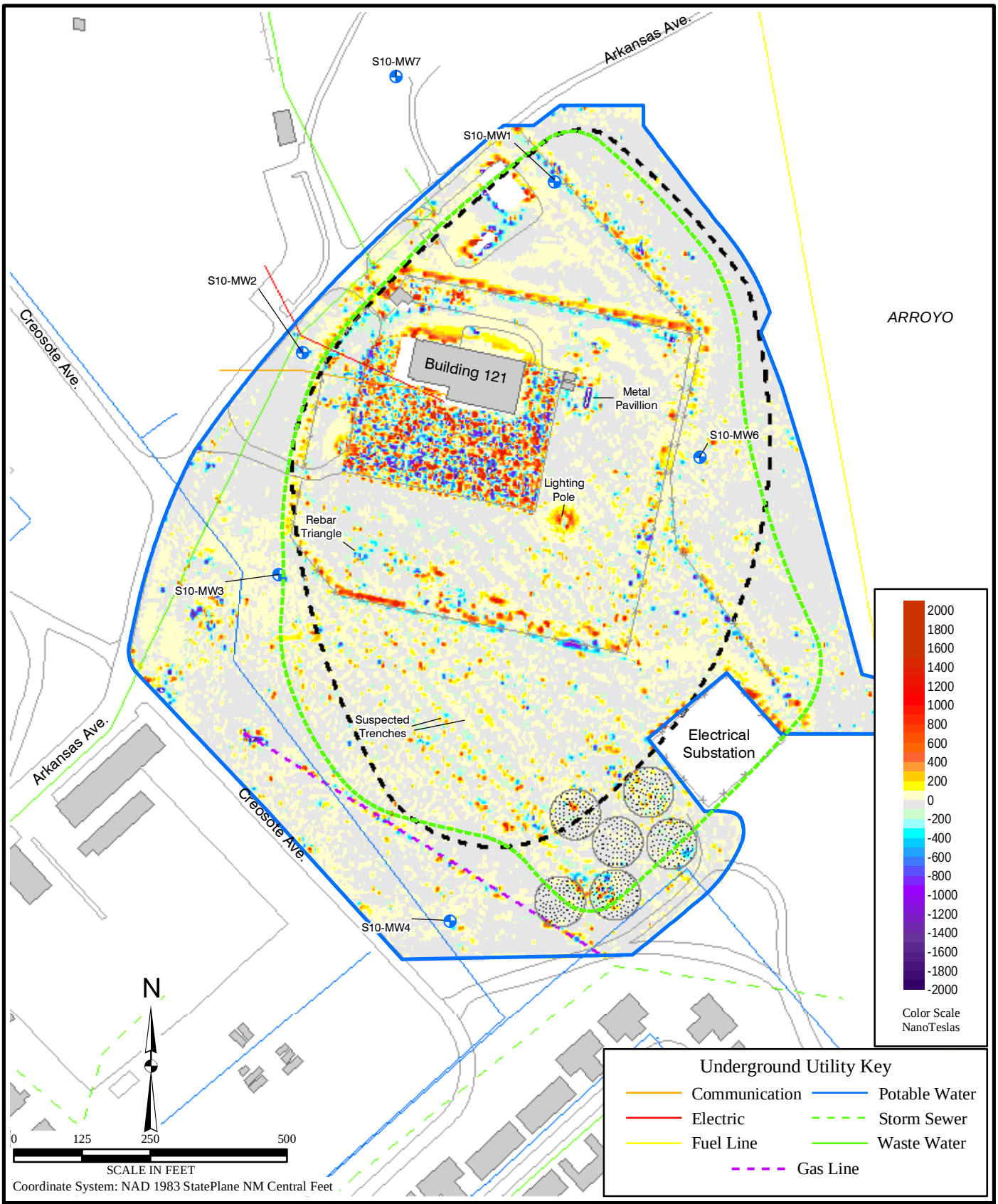
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Terrain Conductivity Survey Boundary
- Unit Boundary Implied by Geophysics
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well

Figure 4.2
Terrain Conductivity Survey
LF-10



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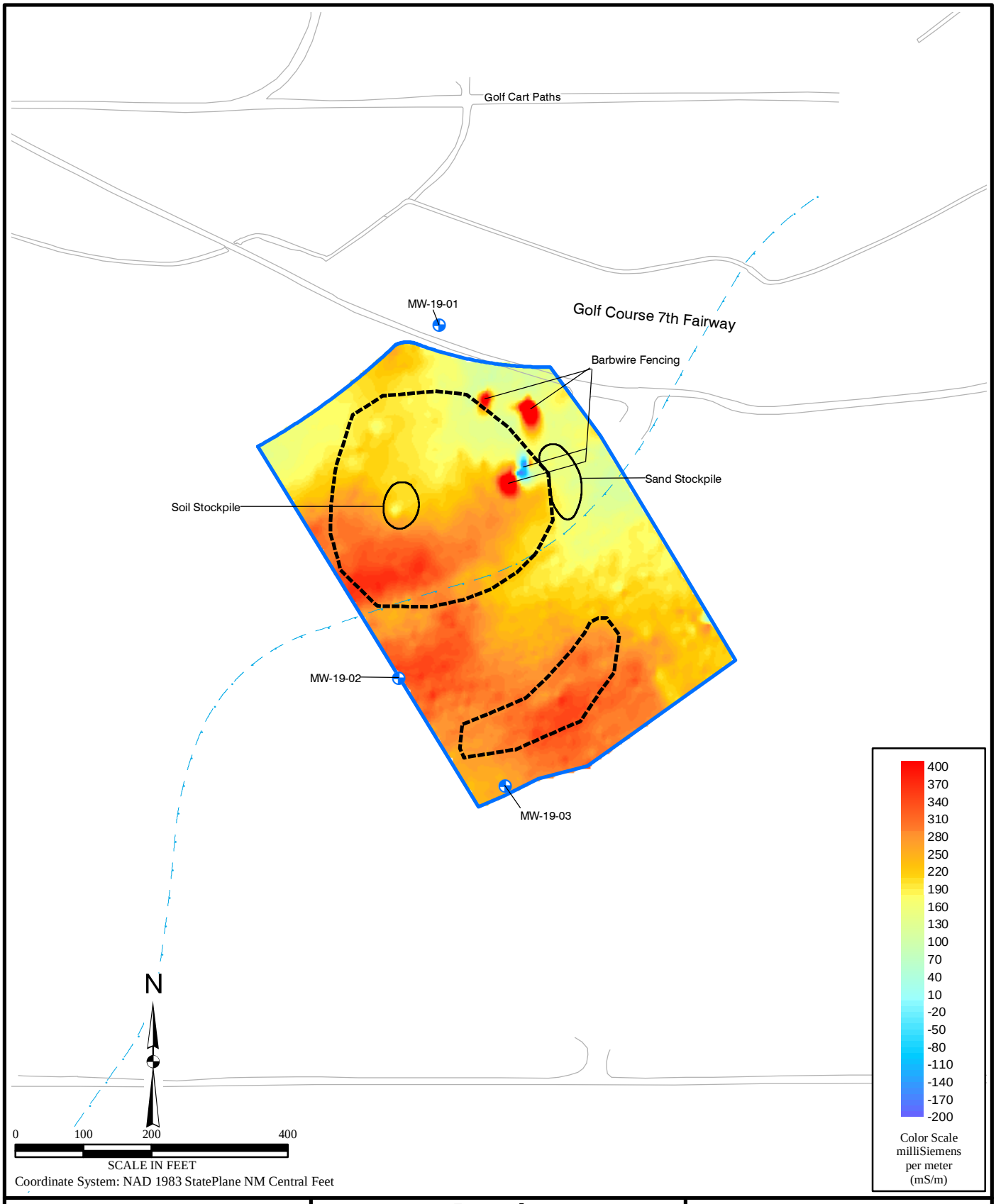
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Magnetic Survey Boundary
- Unit Boundary Implied by Geophysics
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well

Figure 4.3
Magnetic Survey
LF-10



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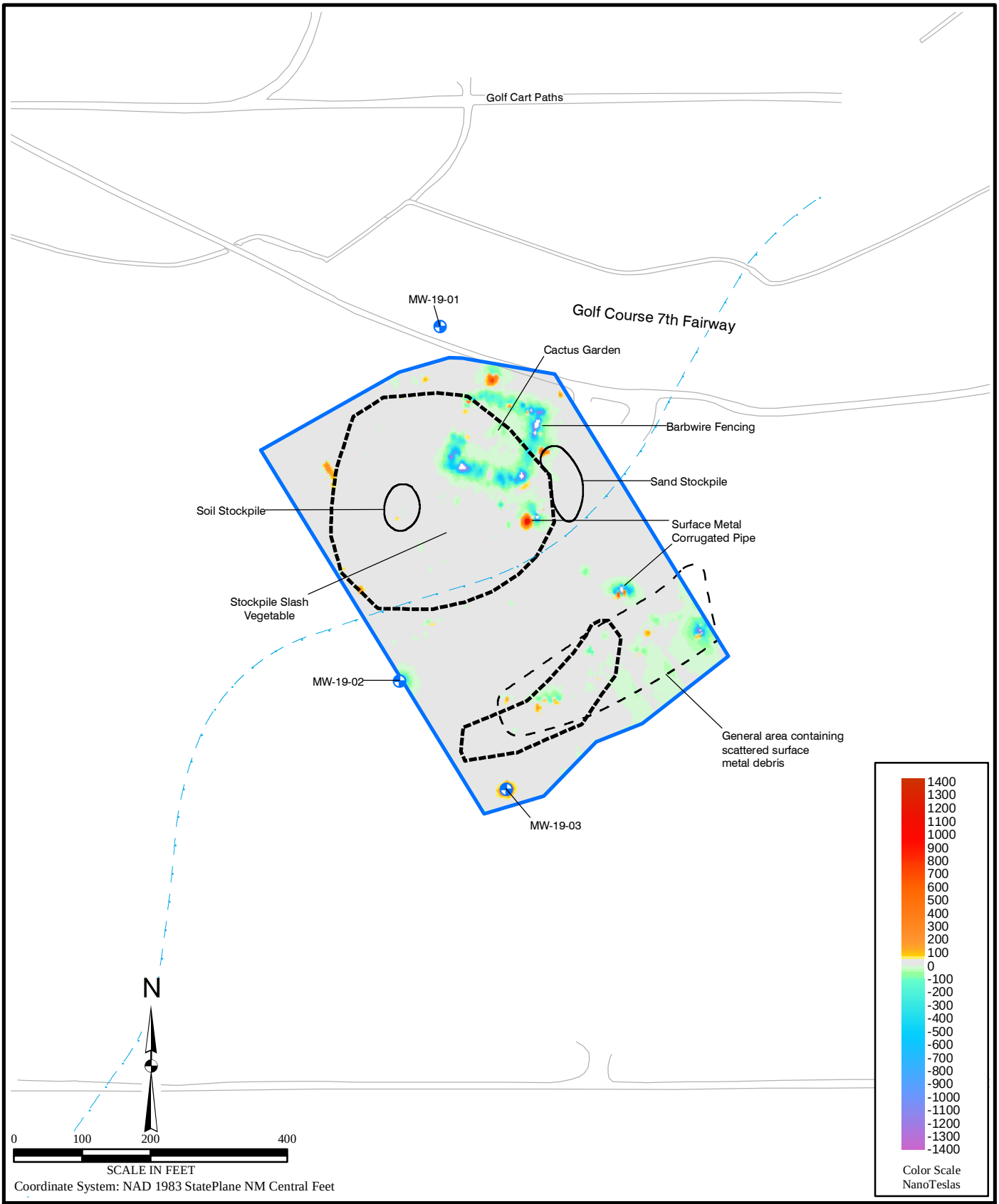
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Terrain Conductivity Survey Boundary
- Drainage Swale

Figure 4.4
Terrain Conductivity Survey
LF-19



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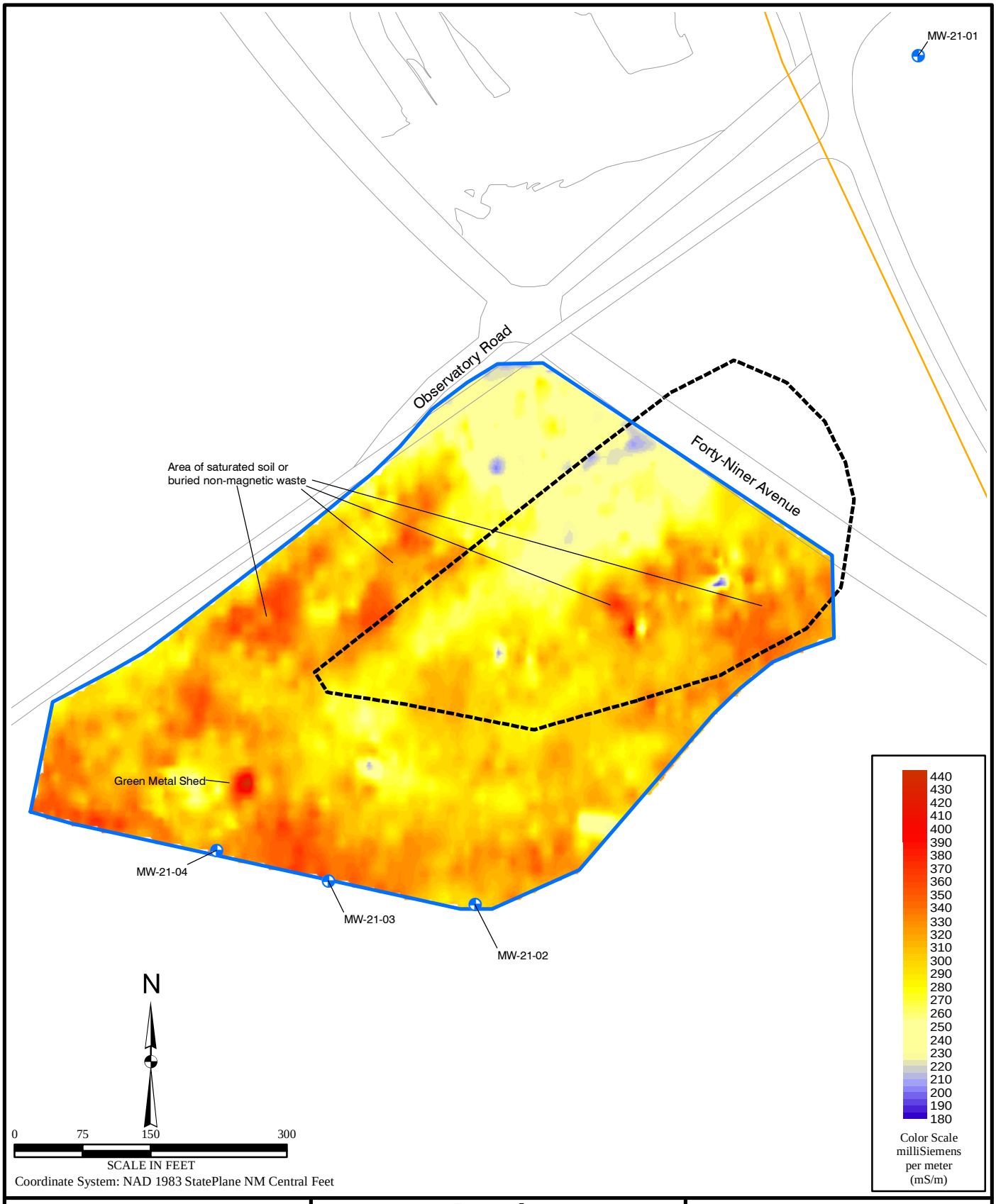
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary
- Drainage Swale

Figure 4.5
Magnetic Survey
LF-19



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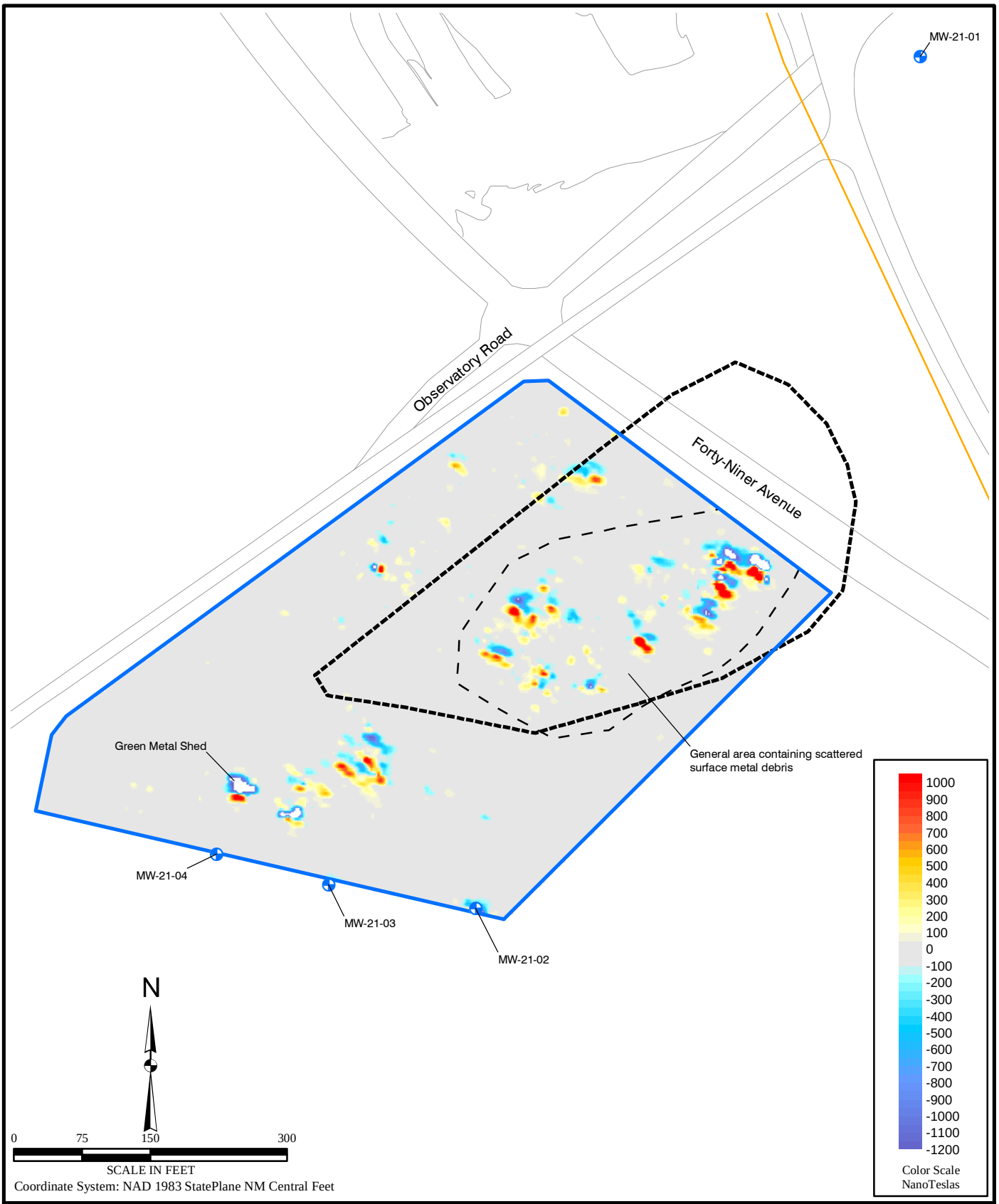
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Communication Line
- Operable Unit Boundary (Base GIS)
- Terrain Conductivity Survey Boundary

Figure 4.6
Terrain Conductivity Survey
LF-21



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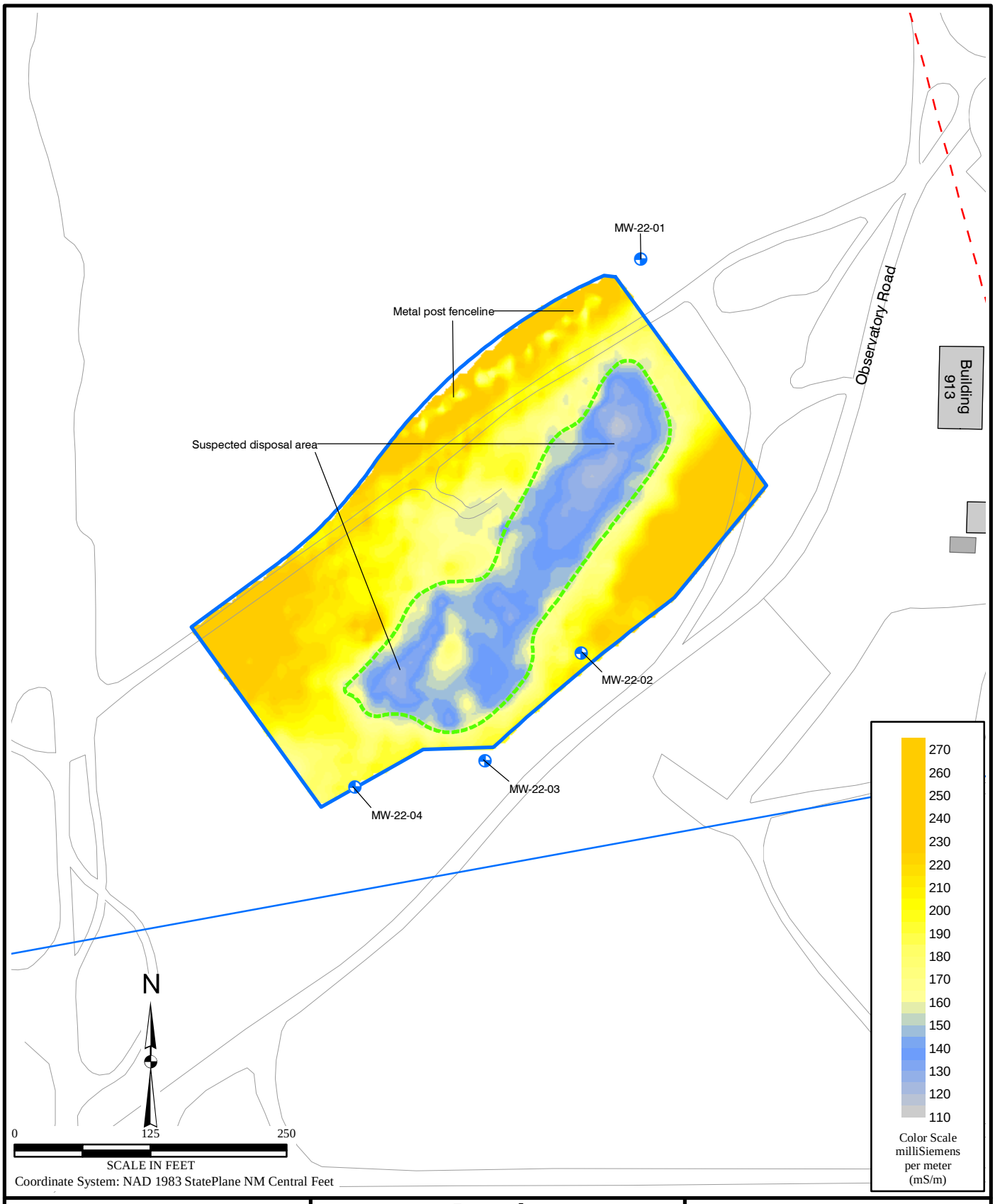
Project: AFC002-037-04-04-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Communication Line
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

Figure 4.7
Magnetic Survey
LF-21



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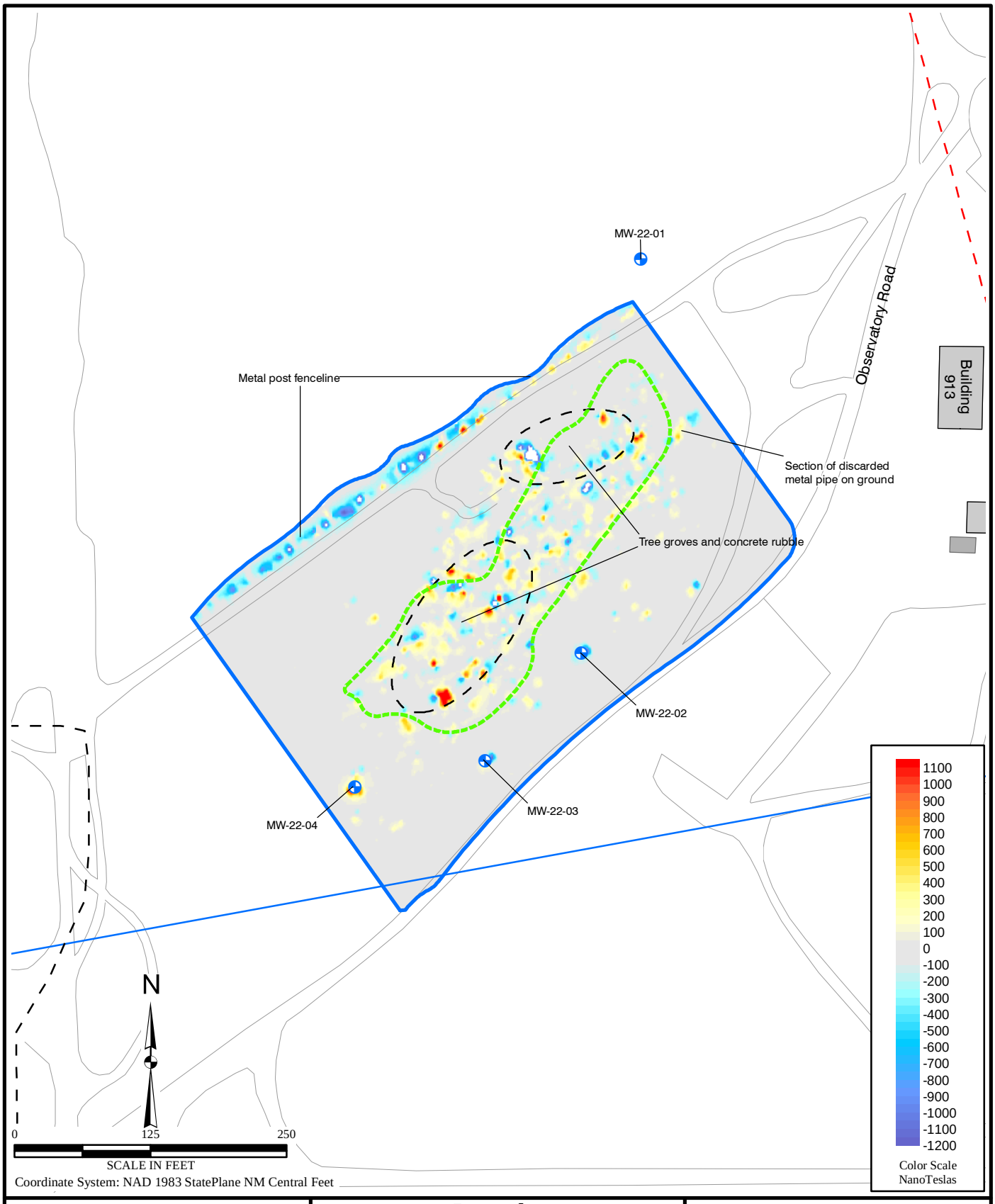
Project: AFC002-037-04-05-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Water Line
- Electric Line (Below Ground)
- Unit Boundary Implied by Geophysics
- Terrain Conductivity Survey Boundary

Figure 4.8
Terrain Conductivity Survey
LF-22



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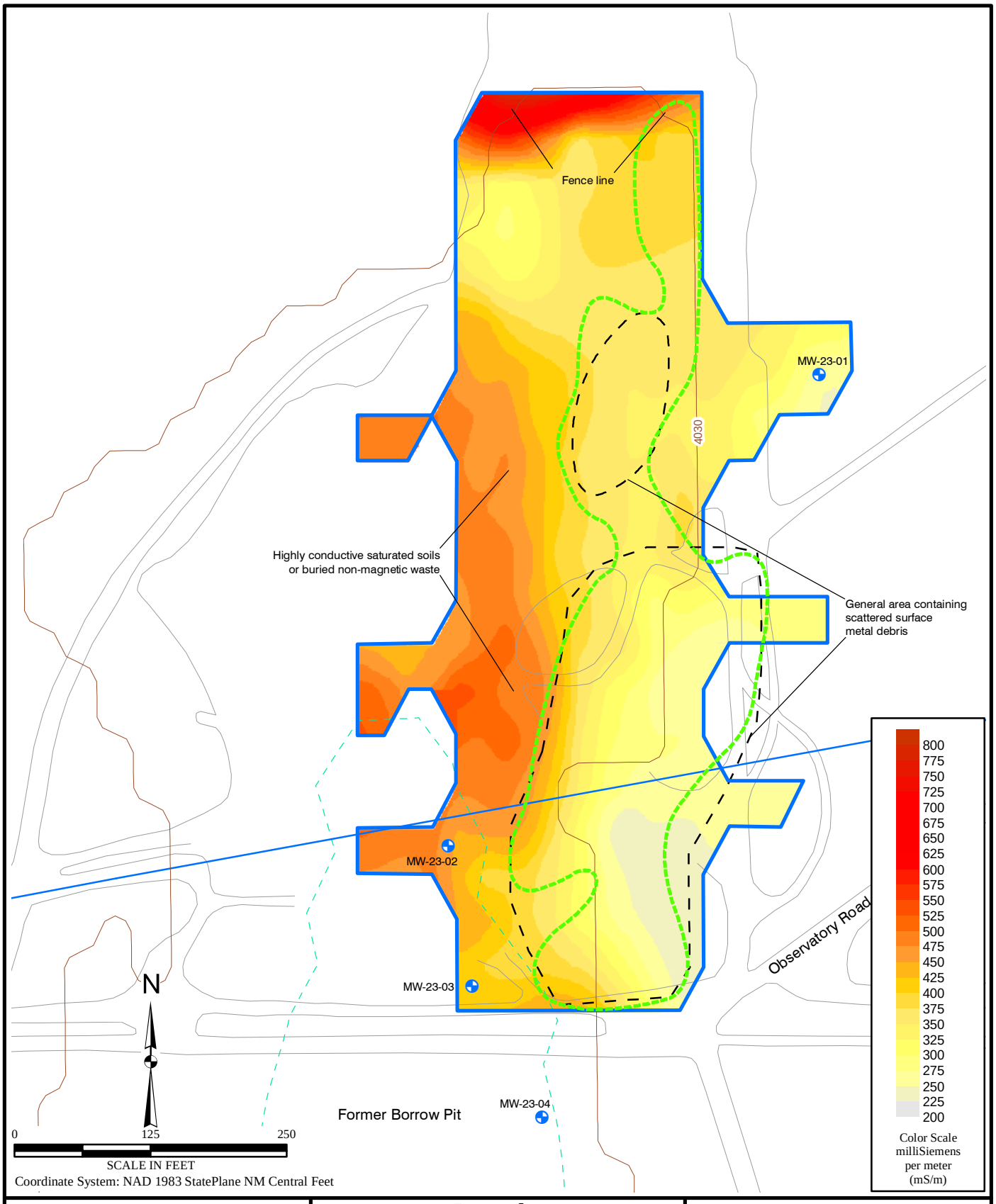
Project: AFC002-037-04-05-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Water Line
- Electric Line (Below Ground)
- Unit Boundary Implied by Geophysics
- Magnetic Survey Boundary

Figure 4.9
Magnetic Survey
LF-22



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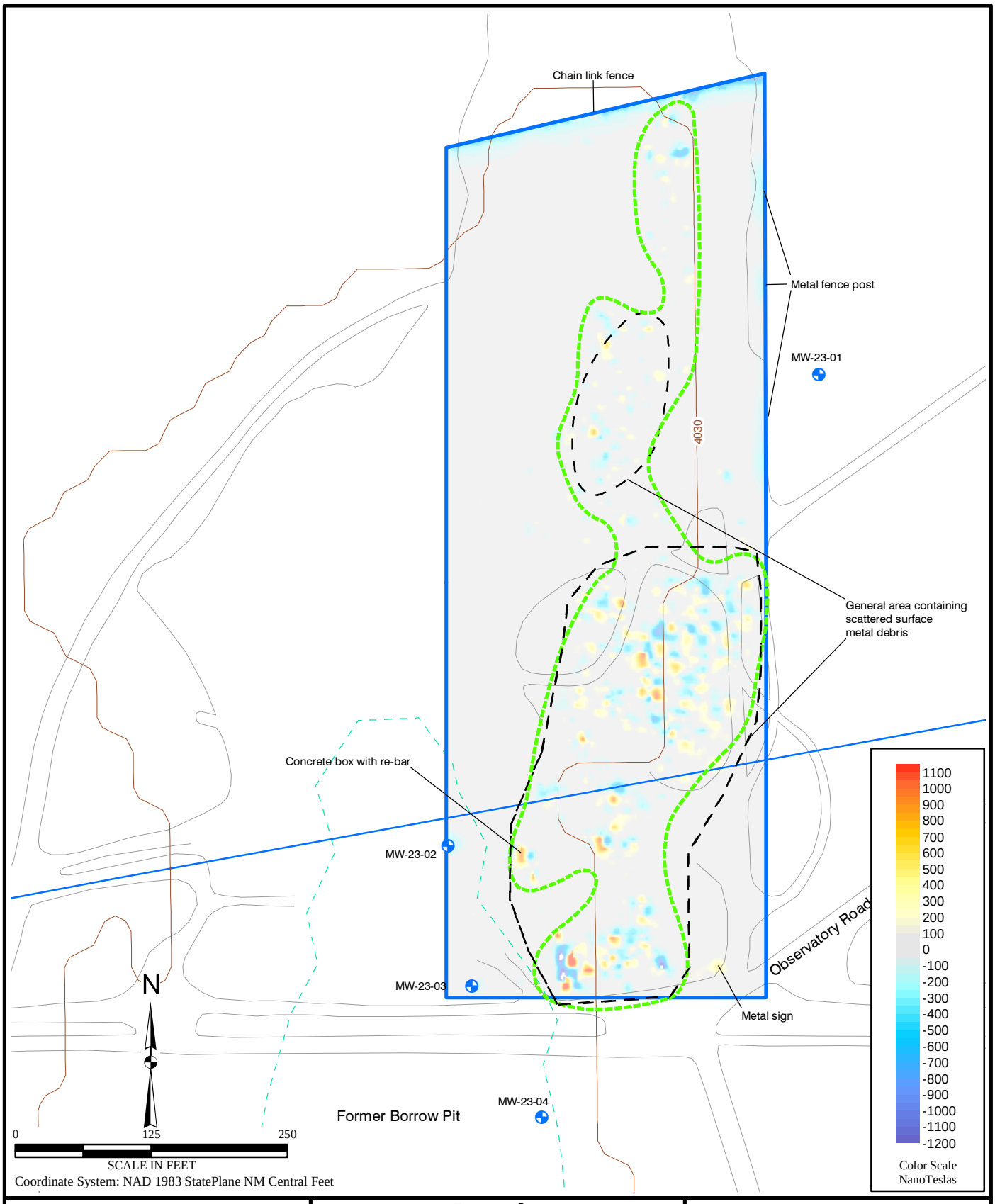
Project: AFC002-037-04-06-03
Revised: 02/13/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Water Line (Underground)
- Unit Boundary Implied by Geophysics
- Terrain Conductivity Survey Boundary
- Elevation Contour
- Borrow Pit

Figure 4.10
Terrain Conductivity Survey
LF-23



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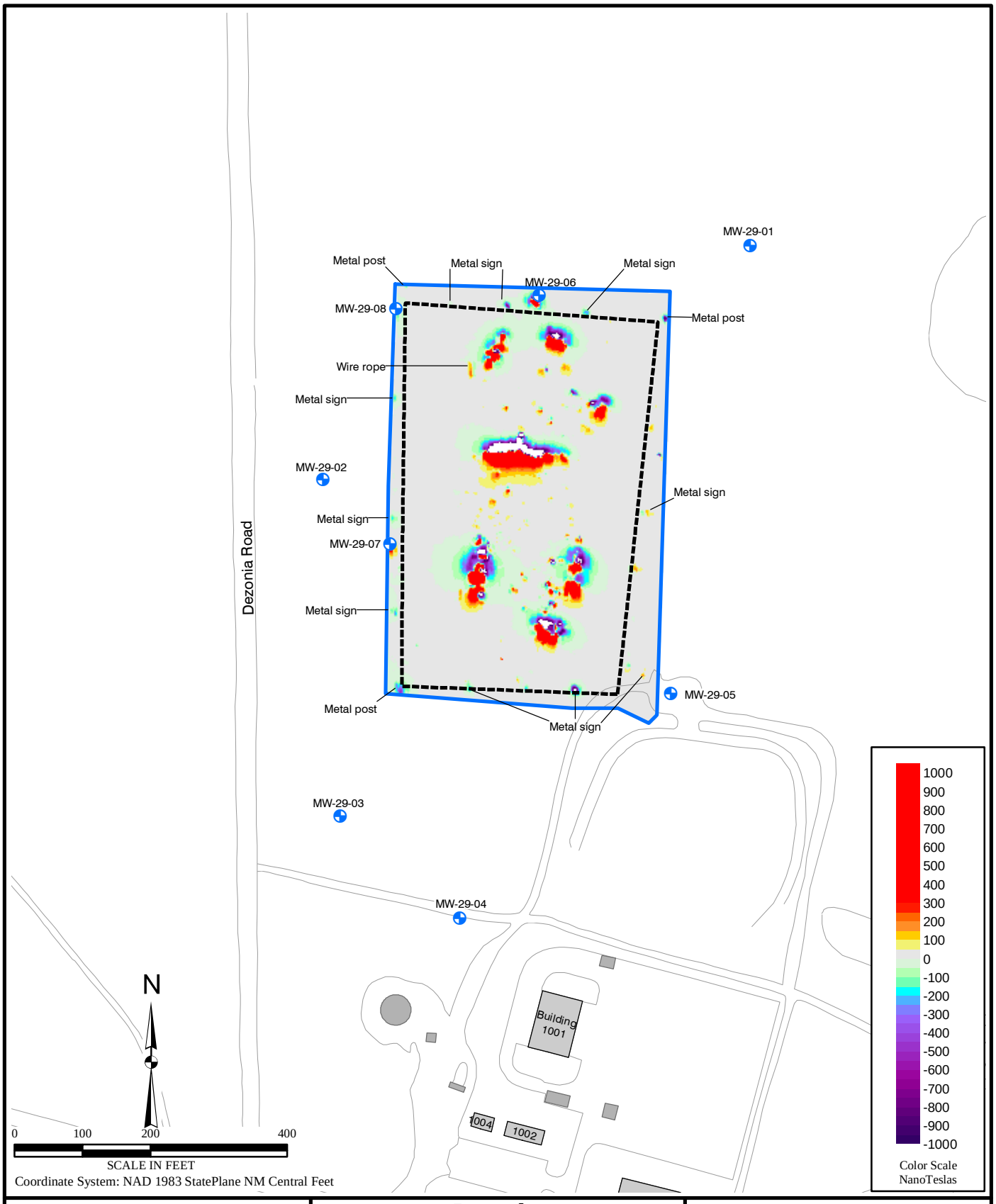
Project: AFC002-037-04-06-03
Revised: 02/13/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Water Line (Underground)
- Unit Boundary Implied by Geophysics
- Magnetic Survey Boundary
- Elevation Contour
- Borrow Pit

Figure 4.11
Magnetic Survey
LF-23



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Project: AFC002-037-04-07-03
Revised: 02/02/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

Figure 4.12
Magnetic Survey
LF-29

5.0 PROPOSED ADDITIONAL ACTIVITIES

Based on a review of the July 2005 Supplemental RCRA Facility Investigation Work Plan, NMED requires trenching to be conducted at LF-10, and the submission of site-specific trenching plans for LF-10, LF-19, LF-21, LF-22, and LF-23 prior to initiating supplemental RFI activities (NMED, 2006). NMED also requires a soil gas survey be conducted at LF-29 and additional soil gas sampling at LF-10 beyond what was proposed in the workplan.

Site-specific trenching plans are presented in the following subsections. Additional soil gas sampling activities are also discussed for LF-10 and LF-29.

5.1 INVESTIGATION APPROACH

5.1.1 Soil Gas Sampling

Based on a NMED Notice of Deficiency (NOD) letter (NMED, 2006); NMED requires a soil gas survey of LF-29 based on a 50 foot grid spacing. In addition, NMED requires the soil gas survey proposed at LF-10 be conducted on a 50 foot grid spacing rather than the proposed 100 foot grid spacing.

Although NMED specified a 50 foot grid spacing for the LF-10 soil gas survey in a January 17, 2006 NOD letter, a soil gas survey of LF-10, utilizing a 100 foot grid spacing was completed in October 2005 (Section 3). The LF-10 soil gas survey identified low VOC concentrations sporadically across the entire landfill. If the VOCs detected in the soil gas samples are indicative of the landfill material, then the soil gas sampling results generally indicate minor VOC impacts. The completed survey was consistent with previous, and NMED approved, soil gas surveys conducted at two large sanitary landfills (LF-1 and LF-2) located within Kirkland AFB (NMED, 2004). The two Kirkland AFB landfills are very similar to LF-10. The LF-1 and LF-2 soil gas surveys were completed utilizing a sampling density of 1 soil gas sample per 0.8 acres (NMED, 2004). The LF-10 soil gas survey, completed in October 2005, was completed utilizing a sampling density of 1 sample per 0.2 acres. In addition to the soil gas survey, NMED requires trenching to be conducted at LF-10 to characterize the landfill waste material (NMED, 2006). Because trenching will be employed at LF-10, with many of the trenches proposed in areas where VOCs were detected in the soil gas samples, additional soil gas sampling at LF-10, utilizing a 50 foot grid spacing is not proposed. Because trenching is not proposed at LF-29, and no soil gas data have been collected at his site, the soil gas survey will be completed utilizing a 50 foot grid spacing.

Additional soil gas samples at LF-10 are proposed, however, to extend the previous soil gas survey boundaries southward and westward. The boundaries of the September-October 2005 soil gas survey were based on the inferred limits of the landfill material as defined by previous investigations. Magnetic data collected in during the geophysical survey of LF-10 indicate landfill material extends beyond the inferred landfill limits to the south and west. The additional soil gas samples are proposed to complete the landfill's soil gas survey.

The soil gas survey at LF-29 and the additional soil gas samples at LF-10 will be collected utilizing the passive EMFLUX® sampling method. Sampling activities will be conducted in the same manner as discussed in Section 3 of this technical memorandum. Detailed discussions of the proposed activities are presented below in Sections 5.2 (LF-10) and 5.7 (LF-29).

5.1.2 Trenching

Prior to initiating trenching activities, the surface conditions of proposed trench locations will be documented in the field logbook. Observations including, but not limited to, the type of surficial waste (if any) including the presence of metallic and magnetically susceptible debris, the presence of vegetation, soil staining, and recent anthropogenic features will be recorded.

After documenting the surficial conditions of the proposed trench locations, trenching activities will be initiated. Trenching activities will be conducted in accordance with the July 2005 Supplemental RCRA Facility Investigation Work Plan (HGL, 2005b) unless otherwise noted in Sections 5.2 through 5.6 of this technical memorandum. Holloman AFB SOPs are included in the July 2005 work plan as Appendix I.

Trenches will extend into the subsurface until the source of the magnetic or conductivity anomaly is uncovered. If waste material is present, the associated trench will be advanced vertically until the base of the waste material, the top of the water table, or the maximum extent of the excavating equipment is achieved, in general whichever occurs first. If waste material is observed to extend below the top of the water table, spot locations within a trench may be extended several feet below the water table to determine the base of the landfill waste if the nature of the waste is heterogeneous. If waste is not encountered in a trench, the trench will be advanced to a maximum depth of 7 feet bgs. None of the trenches will extend horizontally longer than 30 feet.

Soil, excavated during trench advancement, will be stockpiled adjacent to the respective trenches. The stockpiled soil will be used to backfill the trench upon completion of the trench and trench characterization activities. Non-hazardous debris encountered during trenching will be placed back in the trench but will not be allowed within three feet of the surface. Backfill and compaction of the backfill material will be conducted in accordance with Holloman AFB SOPs and specifications. Because the sites requiring trenching have generally unrestricted access, no trenches will be allowed to stay open over night. If potentially hazardous material is encountered within a trench, the hazardous material will be segregated from the non-hazardous material and stockpiled on plastic sheeting away from trenching activities. The stockpiled, potentially hazardous material will be covered with plastic sheeting to prevent infiltration of precipitation and the generation of dust from the stockpile. After trenching activities are complete, samples of the potentially hazardous waste will be collected to characterize the waste as non-hazardous or hazardous for disposal. The stockpile samples will be submitted for Toxicity Characteristic Leaching Potential (TCLP) VOCs, TCLP semi-volatile organic compounds (SVOCs), TCLP pesticides/polychlorinated biphenyls (PCBs) and

TCLP inorganics. Sampling analyses will be conducted in accordance with the July 2005 QAPP (HGL, 2005a).

5.1.2.1 Trench Soil Sampling

During the horizontal and vertical advancement of a trench, soil characterization will be conducted via the excavator bucket to examine and field screen the landfill soils. Soils will be characterized using the Unified Soil Classification System and physically described (e.g., color, moisture content, and particle size percentages). In addition, bedding structures, former disposal trench sidewalls, and descriptions of the waste material (if present) will also be documented.

As proposed in the July 2005 Supplemental RCRA Facility Investigation work plan (HGL, 2005), soil samples will be collected for laboratory analysis only if hazardous materials are encountered during trenching activities. Hazardous materials, for this work, will be considered to include unusual solids or fluids leaking from containers (e.g., drums, buckets, etc.), or free phase hydrocarbons. Elevated PID results, petroleum odors, and petroleum staining will not be considered indications of hazardous materials.

In the January 17, 2006 NMED NOD letter, NMED requires soil samples to be collected directly beneath the waste material and at the soil water table interface if potentially hazardous materials are encountered. In addition, NMED requires NMED notification and consultation if hazardous materials are encountered to determine appropriate soil sample analytical requirements. However, because none of the trenches will be allowed to remain open overnight, given the general unrestricted access of the sites and public health and safety concerns, soil samples collected during trenching will be submitted for target compound list (TCL) VOCs, TCL SVOCs, TCL pesticides (organochlorine and organophosphorous)/PCBs, total recoverable petroleum hydrocarbons (TRPH), herbicides, and target analyte list (TAL) metals. Sampling analyses will be conducted in accordance with the July 2005 QAPP (HGL, 2005a).

5.2 LF-10

5.2.1 Soil Gas Sampling

VOCs were positively detected in samples collected from the soil gas survey's western and southern boundaries and are unbounded by non-detect samples. Based on the LF-10 magnetic survey results, the soil gas survey's southwestern and southern boundaries lie within the former landfill boundary. Consequently, to accomplish the soil gas survey's main objective, to assess of soil gas quality across LF-10, as well as evaluate the extent of VOC impacts in the southern portion of the landfill, additional soil gas sampling is proposed.

The proposed 27 additional soil gas samples will be collected by extending the 100 foot sampling grid westward and southward to include the remaining unsampled portion of the landfill and to delineate current unbounded VOC detections. The locations of the proposed

additional soil gas samples are presented on Figure 5.1. Minor deviations of the proposed locations may occur based on site features. Soil gas samples will then be collected and analyzed in the same manner as the September and October 2005 sampling event.

5.2.2 Site-Specific Trenching Approach

Trenching activities associated with LF-10 will be discussed in a meeting with NMED.

5.3 LF-19

5.3.1 Site-Specific Trenching Approach

Geophysical survey results indicate limited to no metallic or magnetically susceptible debris is present within the LF-19 landfill. This is consistent with the LF-19 waste history. Magnetic anomalies detected during the geophysical surveys correspond primarily to known areas littered with magnetic susceptible surficial debris and observed metallic or magnetically susceptible objects (i.e., barbwire fencing, monitoring wells, and corrugated pipes). Conductivity surveying identified several high conductivity anomalies that exhibit characteristics indicative of saturated or high conductivity soils rather than buried waste. Based on the survey results, three trenches are proposed for LF-19. The proposed trench locations are shown on Figure 5.3.

Groundwater beneath LF-19 has historically been measured to range between 7 to 11 feet bgs (HGL, 2005b).

5.4 LF-21

5.4.1 Site-Specific Trenching Approach

Based on the magnetic survey of LF-21, distinct magnetic anomalies are present throughout the survey area but generally correspond to four distinct anomaly groupings. The largest grouping encompasses the entire southern portion of the landfill, an area littered with surficial debris. Three of the magnetic anomaly groupings correspond to high and low conductivity anomalies. Two of the magnetic and one corresponding conductivity anomaly lie outside the defined boundaries of the landfill indicating either the landfill is larger than previously determined or the anomalies represent surficial debris.

Within the landfill, as previously defined, five trenches are proposed due to the well-defined but scattered presence of detected magnetic anomalies. The five trenches will be considered spot trenches and completed adjacent to the magnetic anomalies and associated conductivity anomalies. Outside the previously defined landfill boundaries, two trenches are proposed in the western portion of the landfill adjacent to identified magnetic anomalies. These two trenches will be completed as spot trenches to determine the presence or absence of waste material in an effort to fully delineate LF-21. The locations of the proposed trenches and associated magnetic anomalies are presented on Figure 5.4.

Groundwater beneath LF-21 has historically been measured to range between 6.5 to 9 feet bgs (HGL, 2005b).

5.5 LF-22

5.5.1 Site-Specific Trenching Approach

All though LF-22 encompasses less than one acre, based on geophysical survey results, three trenches have been proposed due to the length of the LF-22. The three trenches will be located within the landfill and located near identified magnetic anomalies. The trenches will be completed adjacent to identified magnetic anomalies as shown on Figure 5.5.

Based on the geophysical survey and visual site inspection, LF-22 is comprised of concrete rubble located within a drainage swale. Waste material may be present beneath the concrete rubble. Therefore, trenching will consist of removing the concrete rubble on the surface and vertically advancing the trenches until the source of the magnetically susceptible anomaly is identified or the absence of buried magnetically susceptible debris is verified.

Groundwater beneath LF-22 has historically been measured to range between 11 and 12 feet bgs (HGL, 2005b).

5.6 LF-23

5.6.1 Site-Specific Trenching Approach

Based on the geophysical survey and visual site inspection, LF-23 is composed of construction and demolition rubble located along the eastern slope of the borrow pit. Geophysical survey results determined the landfill encompasses approximately 2.1 acres, extending over 850 feet in length and 50 to 190 feet in width. Based on the length of the landfill, three trenches are proposed and located in areas containing magnetic anomalies. Waste disposal at LF-23 may have advanced the landfill slope westward; therefore, the proposed trenches will trend in an east-west direction, perpendicular to the former borrow pit's slope. Trenching will consist of removing the rubble overburden and vertically advancing the trenches until the source of the magnetically susceptible anomaly is identified or the absence of buried magnetically susceptible debris is verified. In addition, a fourth trench will be completed adjacent to several metallic drums observed on site during the geophysical survey. The locations of the proposed trenches are depicted on Figure 5.6.

Groundwater beneath LF-23 has historically been measured to range between 4 and 9 feet bgs.

5.7 LF-29

5.7.1 Soil Gas Sampling

In the January 17, 2006 NMED NOD letter, NMED requires the completion of a soil gas survey at LF-29 utilizing a 50-foot grid spacing (NMED, 2006). Based on 50-foot grid

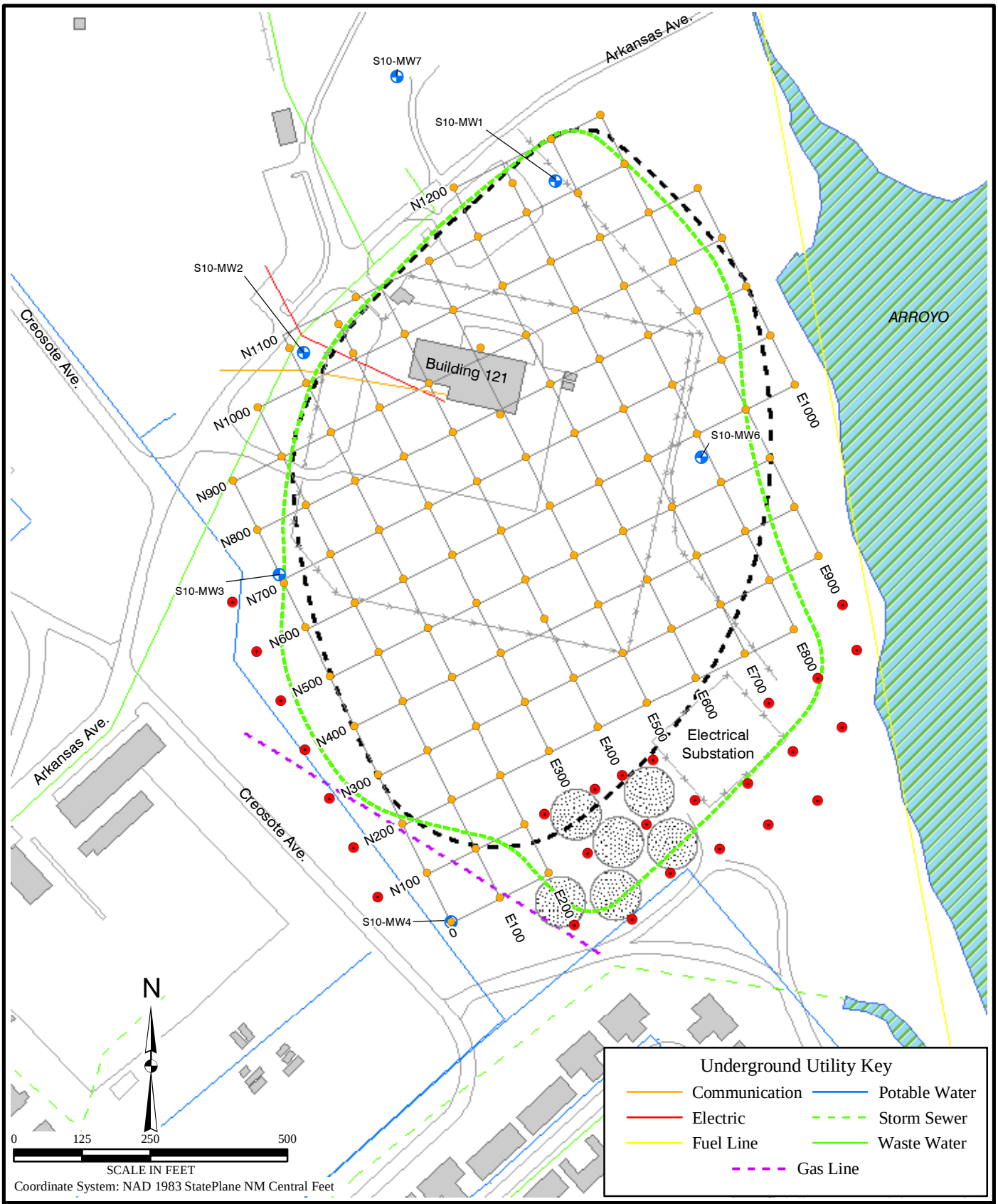
spacing, 117 soil gas samples are proposed for LF-29. The locations of the proposed soil gas samples are depicted on Figure 5.7.

5.7.2 LF-29 Soil Boring Sampling

The July 2005 Supplemental RCRA Facility Investigation Work Plan specified that soil borings will be completed adjacent to identified magnetic anomalies and sampled (HGL, 2005b). A total of seven magnetic anomalies were identified within the landfill. Therefore, to minimize soil disturbance due to potential MECs, the soil gas sample closest to each magnetic anomaly will be converted into a soil boring. In addition, soil gas sample locations where soil gas samples contain positively detected VOCs, excluding VOCs considered to be indicative of blank contamination, will also be converted into soil borings and sampled.

The soil borings will be completed to a maximum depth of 20 feet bgs, until groundwater is encountered or refusal occurs. During borehole advancement, soil samples will be collected continuously for characterization and field screening using a photoionization detector in accordance with the July 2005 work plan (HGL, 2005b). One subsurface soil sample per boring will be collected from the most likely contaminated soil interval, based on field screening and visual inspection results. If field screening and a visual inspection of the soil samples fail to indicate contamination, a soil sample collected at the top of the water table will be submitted for laboratory analysis. The collected soil samples will be submitted for VOCs, SVOCS, RCRA metals, TPH, explosives and perchlorate, in accordance with the work plan and NMED comments (NMED, 2006). Analytical requirements will be consistent with the project QAPP (HGL, 2005a).

FIGURES



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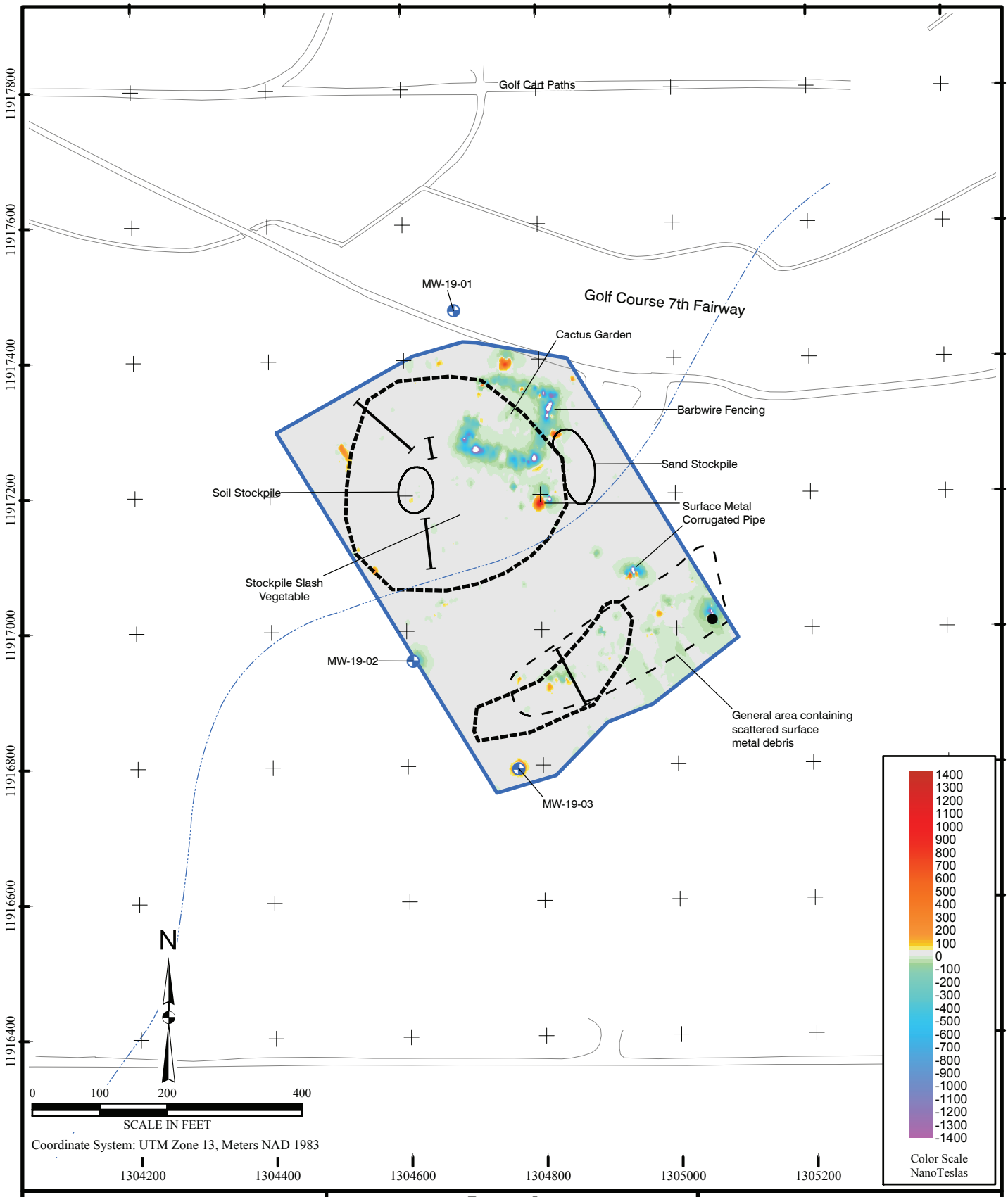
Project: AFC002-037-04-02-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Limit of Landfill Waste Implied by Previous Studies
- Unit Boundary Implied by Geophysics
- Soil Gas Grid
- Chainlink Fence
- Stockpile of Recyclable Construction Material
- Monitoring Well
- Soil Gas Sample
- Proposed Soil Gas Sample

Figure 5.1
Proposed Additional Soil Gas Samples
LF-10



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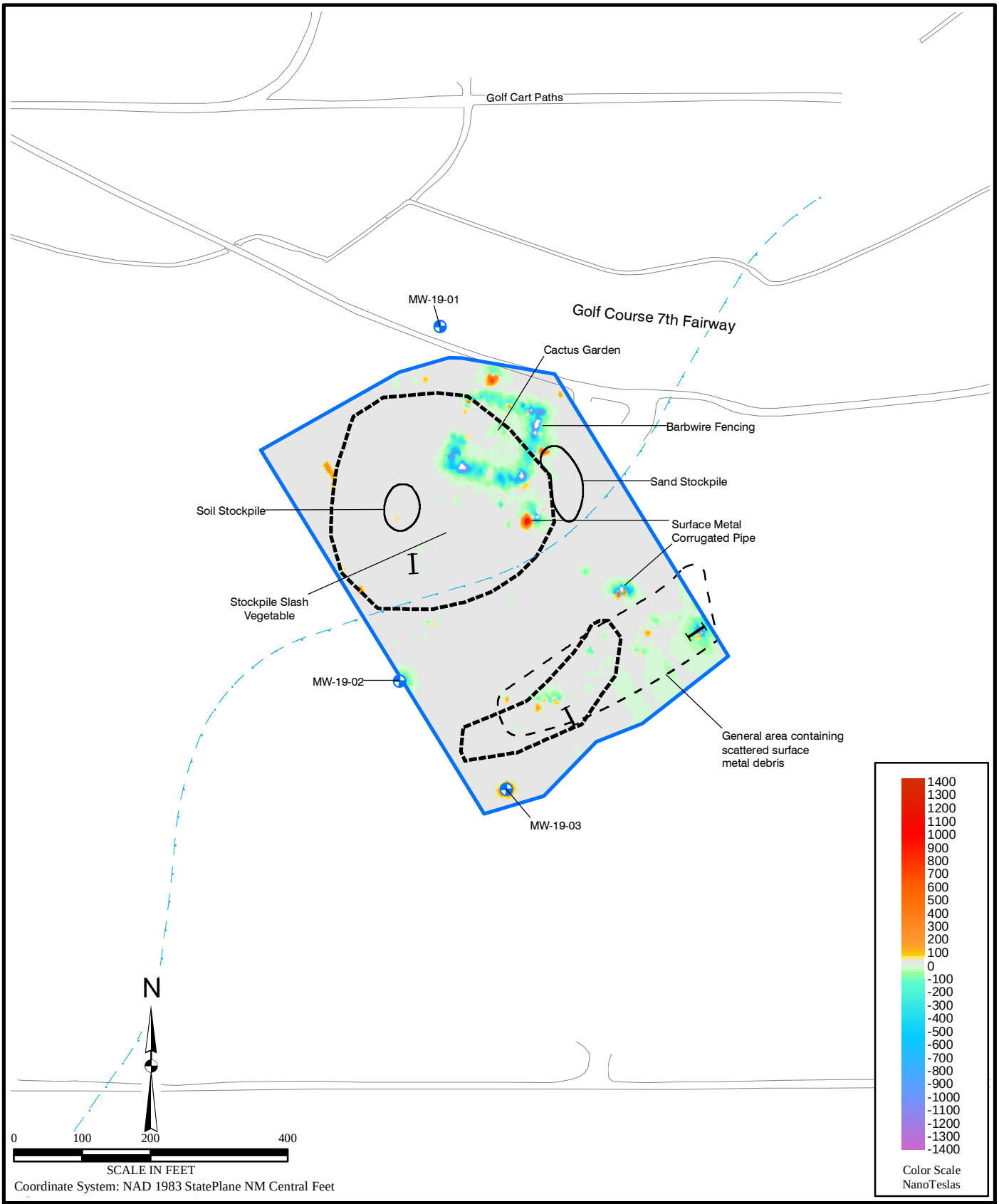
Project: AFC002-037-04-03-03
Revised: 03/06/06 TH
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary
- Drainage Swale
- Proposed Trench
- Proposed Test Pit

Figure 5.2
Proposed
Trenching Locations
LF-19



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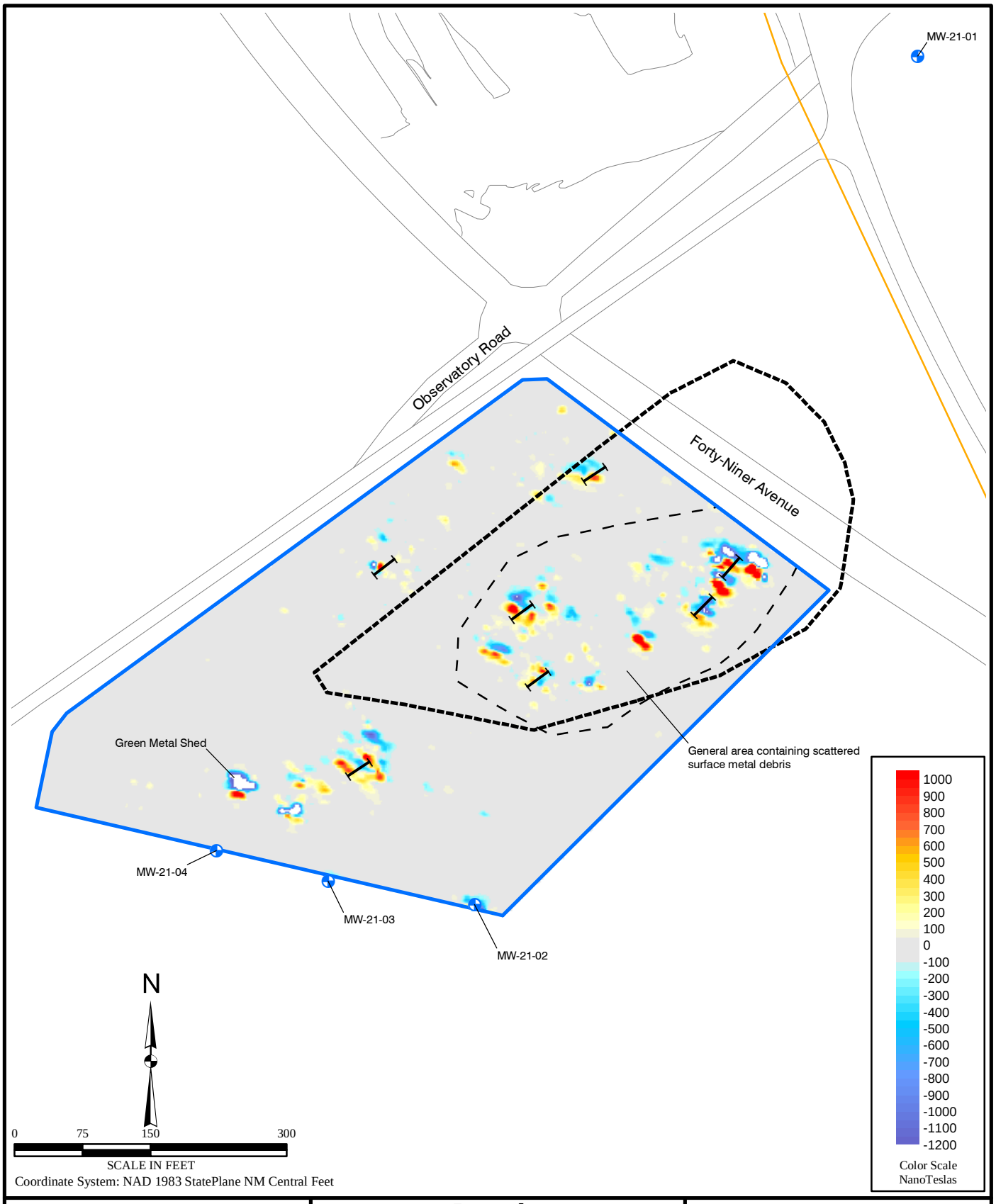
Project: AFC002-037-04-03-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary
- Drainage Swale
- Proposed Trench

Figure 5.3
Proposed Trenching Locations LF-19



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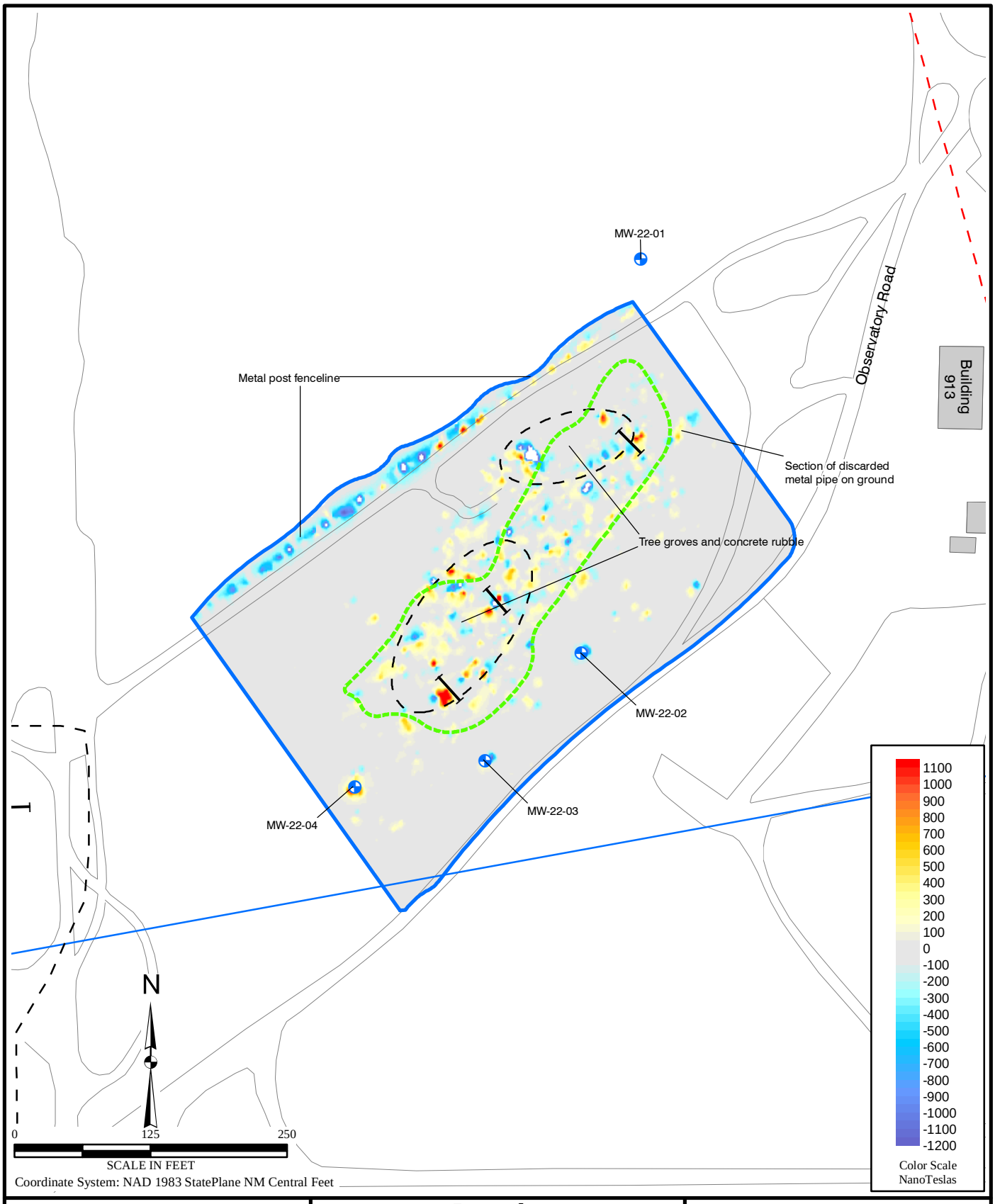
Project: AFC002-037-04-04-03
Revised: 02/13/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Communication Line
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary
- Proposed Trench

Figure 5.4
Proposed Trenching Locations
LF-21



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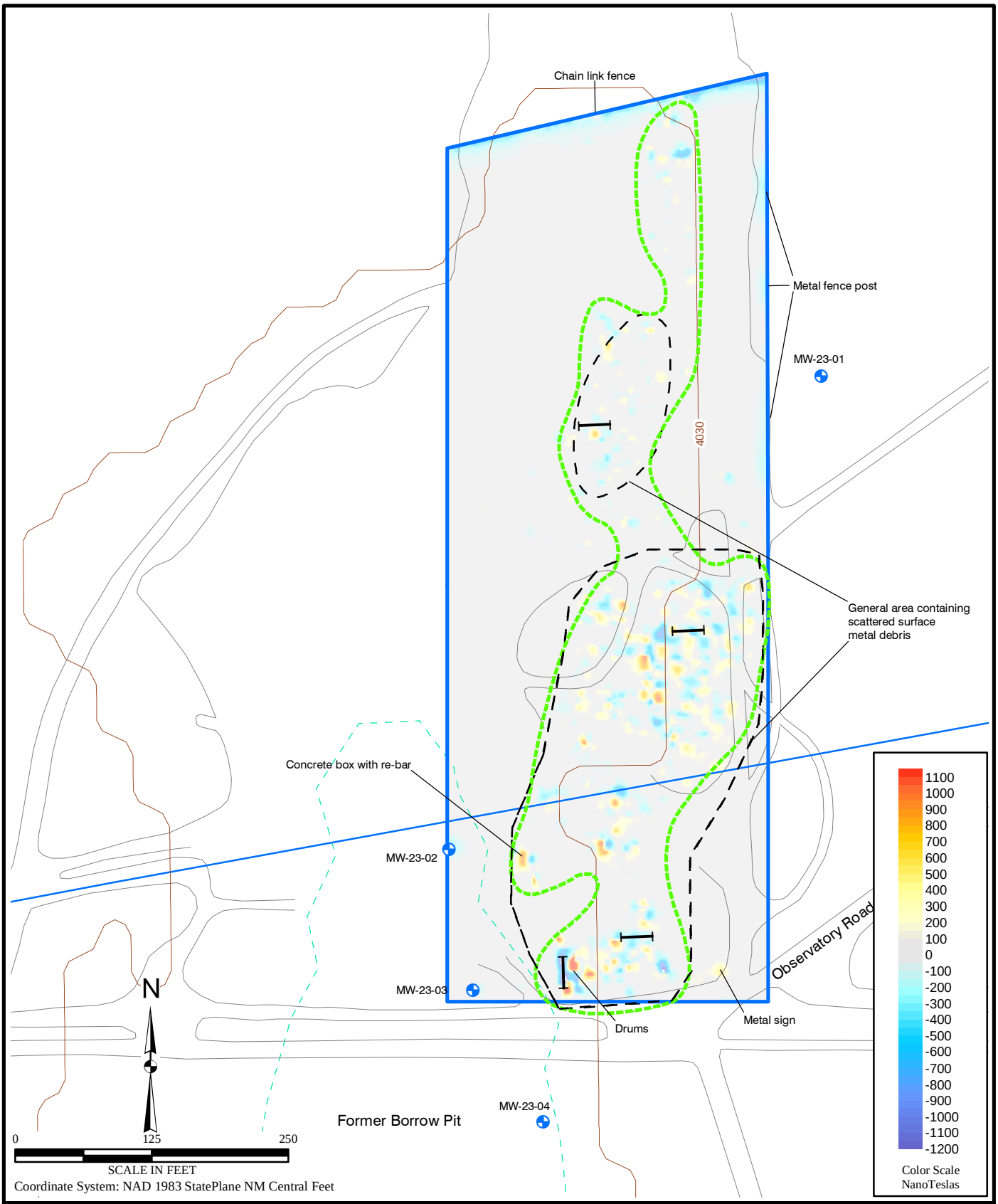
Project: AFC002-037-04-05-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Water Line
- Electric Line (Below Ground)
- Unit Boundary Implied by Geophysics
- Magnetic Survey Boundary
- Proposed Trench

Figure 5.5
Proposed Trenching Locations
LF-22



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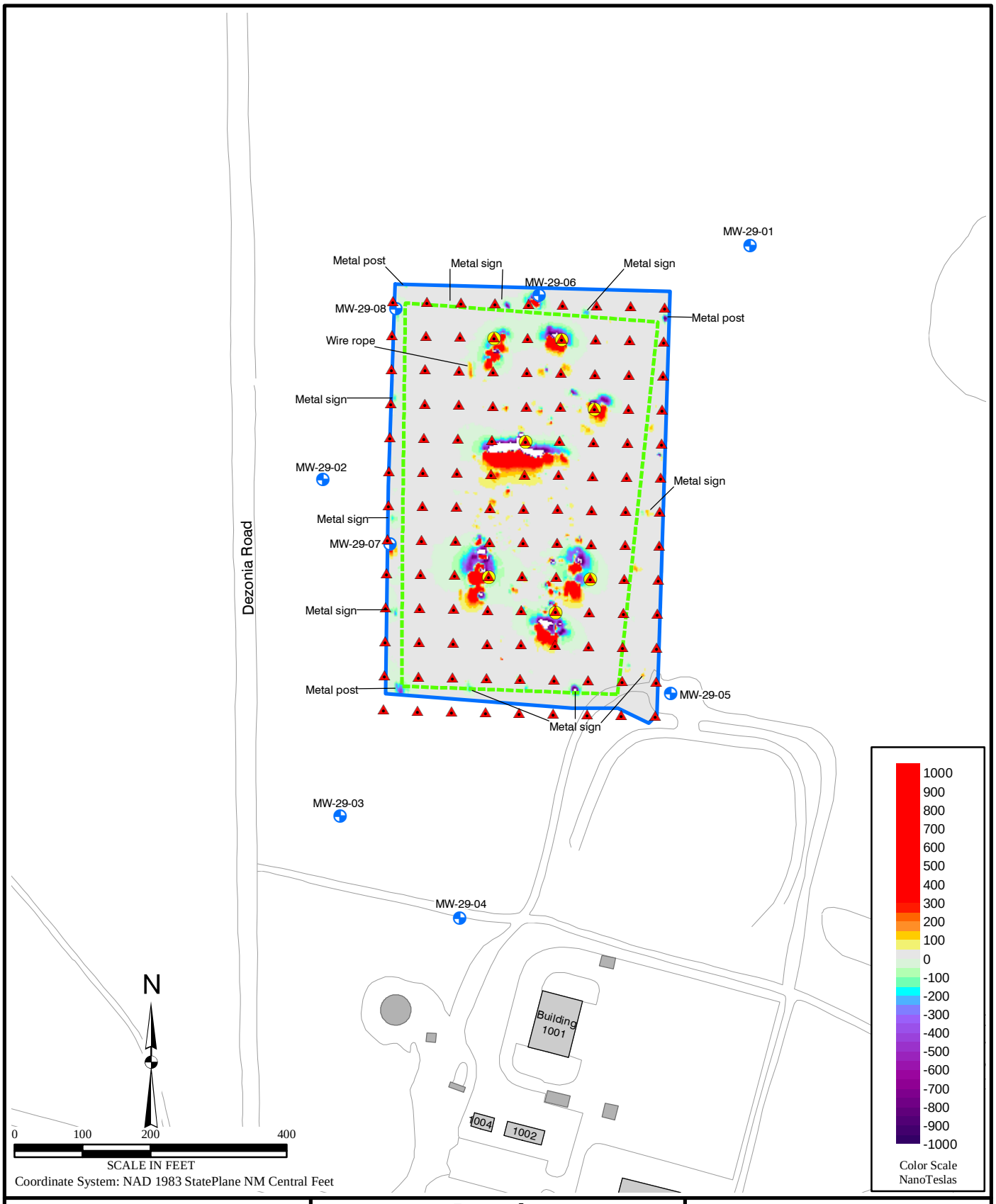
Project: AFC002-037-04-06-03
Revised: 02/13/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Water Line (Underground)
- Unit Boundary Implied by Geophysics
- Magnetic Survey Boundary
- Elevation Contour
- Borrow Pit
- Proposed Trench

Figure 5.6 Proposed Trenching Locations LF-23



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Project: AFC002-037-04-07-03
Revised: 02/10/06 TB
Map Source: Holloman AFB

Legend

- Monitoring Well
- Proposed Soil Gas Sample
- Proposed Subsurface Soil Sample
- Operable Unit Boundary (Base GIS)
- Magnetic Survey Boundary

Figure 5.7
Proposed Soil Gas and Soil Boring Sample Locations
LF-29

6.0 REFERENCES

HGL (HydroGeoLogic, Inc.), 2005a. Draft Quality Assurance Project Plan Addendum, Supplemental RCRA Facility Investigation, Holloman Air Force Base, Alamogordo, New Mexico. July.

HGL (HydroGeoLogic, Inc.), 2005b. Draft Supplemental RCRA Facility Investigation Work Plan, Holloman Air Force Base, Alamogordo, New Mexico. July.

NMED (New Mexico Environment Department), 2004. Fact Sheet, Notice of Intent to Approve an Agency-Initiated Modification to the Hazardous Waste Facility Permit for Kirkland Air Force Base, Bernalillo County, New Mexico, EPA ID No.NMD9570024423. January 16.

NMED (New Mexico Environment Department), 2006. Notice of Deficiency: Supplemental RCRA Facility Investigation Work Plan, Solid Waste Units 101, 104, 105, 108, 109, 113B, 115, 16, 165, 177, 179 and 181, July 2005. January 17.

O'Neil, H., 2005. Personal communication between Mr. Brett Brodersen and Miss. Sarah Gillette of HGL, Inc. with Mr. Harry O'Neil of Beacon Environmental Services, Inc. September 19, 2005.

ATTACHMENT A

PHOTOGRAPHIC LOG

HGL, Inc.

Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo

Passive Soil Gas

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

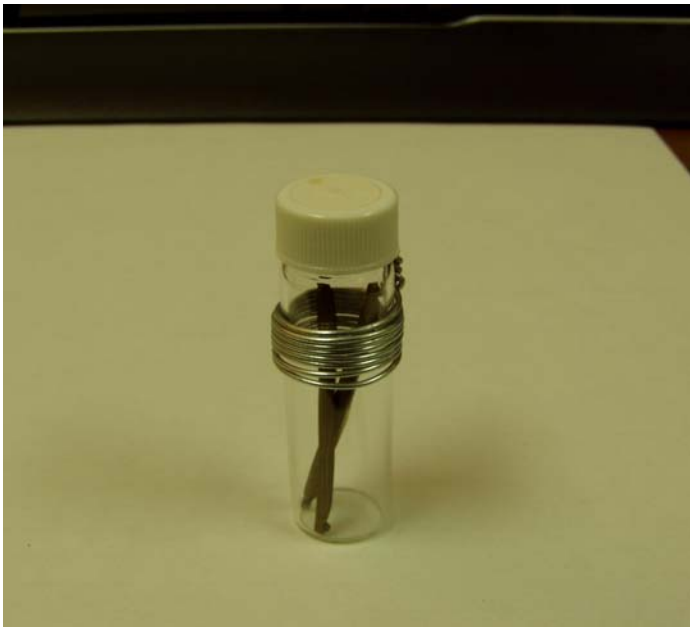
Photographer:
Sarah Gillette

Date:
1/5/2006

Direction:

Description:
EMFLUX® passive soil gas sampler with trasportation cap (white cap).

Photograph: 1



Photographer:
Sarah Gillette

Date:
9/30/2005

Direction:
Northwest

Description:
Soil gas sample location borehole, completed with one-man auger; borehole.

Photograph: 2

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
Passive Soil Gas Survey

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
9/30/2005

Direction:
Northeast

Description:
HGL employee holding gas-powered auger used to drill soil gas holes in arroyo on Eastern side of LF-10.

Photograph: 3

Photographer:
Brett Brodersen

Date:
10/2/2005

Direction:
North

Description:
LF10-N900E900 flag indicating soil gas sample location.

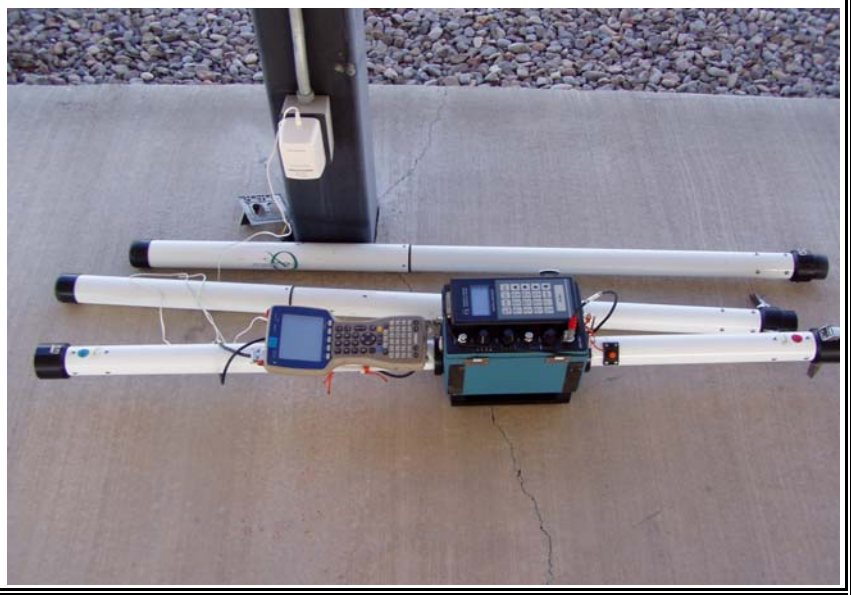
Photograph: 4

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
Geophysical Survey

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Sarah Gillette Date: 9/26/2005 Direction: East Description: EM.31 Photograph: 5	
Photographer: Brett Smith (ECA) Date: 10/2/2005 Direction: North Description: Asphalt pile used for calibration of EM.31. Photograph: 6	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
Geophysical Survey

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Sarah Gillette

Date:
10/2/2005

Direction:
Northwest

Description:
ECA employee operating Geometrics G-858 magnetometer configured as a vertical dual-sensor gradiometer at LF-10.

Photograph: 7

Photographer:
Brett Smith (ECA)

Date:
10/6/2005

Direction:

Description:
Metal objects used for metal test targets for magnetometer.

Photograph: 8

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
Geophysical Survey

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/12/2005 Direction: Northwest Description: ECA using single Geometrics G-858 magnetometer at LF-23. Photograph: 9	
Photographer: Brett Brodersen Date: 10/5/2005 Direction: North northwest Description: ECA employee operating single Geometrics G-858 magnetometer in heavy vegetation at LF-19 near landfill western boundary. Photograph: 10	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
DP-30/SD-33

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT: AFC002-037 CLIENT: AFCEE

Photographer: Sarah Gillette Date: 9/26/2005 Direction: South Description: Sign marking DP-30/SD-33 reads: "Grease trap/STP grit chamber disposal pit 92-01 closed 8 Oct 92, 49 CES/CEV Phone 479-3931. Photograph: 11	
Photographer: Sarah Gillette Date: 9/26/2005 Direction: Southeast Description: Site view of DP-30/SD-33 and associated berm. Photograph: 12	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
DP-30/SD-33

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT: AFC002-037 CLIENT: AFCEE

Photographer: Sarah Gillette Date: 9/26/2005 Direction: Northeast Description: Area view of DP-30/SD-33. Photograph: 13	
Photographer: Sarah Gillette Date: 9/26/2005 Direction: East Description: Soil berm on southern side of DP-30. Photograph: 14	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-10

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/11/2005

Direction:
East

Description:
Southern portion of LF-10 outside Building 121 compound. Monitoring well S10-MW3 in foreground. Stockpiles of soil and construction debris for recycling in background denote southern/southeastern edge of soil gas and geophysical surveys.

Photograph: 15

Photographer:
Brett Brodersen

Date:
10/11/2005

Direction:
Northeast

Description:
Central portion of LF-10 inside Building 121 compound. Safety cones in foreground are part of Air Force physical training.

Photograph: 16

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-10

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT: CLIENT: AFCEE
AFC002-037

Photographer: Brett Brodersen Date: 10/11/2005 Direction: East Description: Portion of LF-10, North of Building 121 but within Building 121 compound. Photograph: 17	
Photographer: Brett Brodersen Date: 10/1/2005 Direction: North northeast Description: Building 121 concrete vehicle parking lot warped due to subsidence. Photograph: 18	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-10

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT: AFC002-037 CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/11/2005 Direction: Northwest Description: Western edge of LF-10 looking towards Arkansas Ave. Photograph: 19	
Photographer: Sarah Gillette Date: 9/26/2005 Direction: East Description: Eastern side of LF-10. Electric utility in foreground, arroyo in background. Photograph: 20	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-19

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/5/2005 Direction: North Description: View of Upper Portion of LF-19. Photograph: 21	
Photographer: Brett Brodersen Date: 10/5/2005 Direction: Northwest Description: Southwest portion of LF-19 shown. Photograph: 22	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-19

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/6/2005 Direction: Southwest Description: Soil berm with metallic and/or magnetic-susceptible debris in foreground. Photograph: 23	
Photographer: Brett Brodersen Date: 10/6/2005 Direction: Northeast Description: View of golf course debris in upper portion of LF-19. Note, corrugated drainage pipe. Photograph: 24	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-21

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
South southeast

Description:
Northwest portion of LF-21.

Photograph: 25

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:

Description:
Surface debris at LF-21.

Photograph: 26

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-21

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
West

Description:
Surface debris at LF-21.

Photograph: 27

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
West southwest

Description:
Debris located in central area - concrete, alphalt, terra cotta piping, some metal.

Photograph: 28

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-21

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
North northwest

Description:
Southern view of LF-21.

Photograph: 29

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
South southeast

Description:
LF-21 vegetation and drainage feature.

Photograph: 30

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-22

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/8/2005

Direction:
North northwest

Description:
Surface debris - primarily concrete rubble.

Photograph: 31

Photographer:
Brett Brodersen

Date:
10/8/2005

Direction:
Northwest

Description:
Concrete debris in drainage channel.

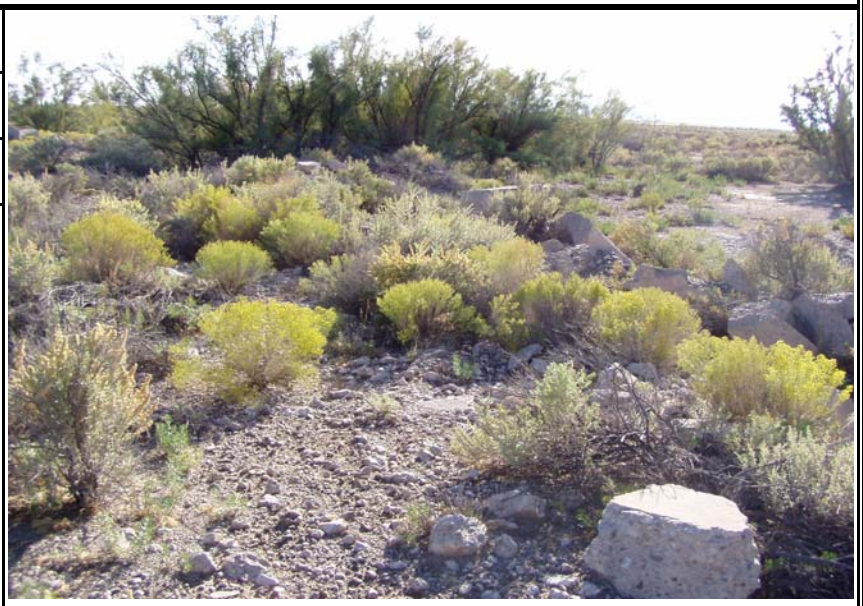
Photograph: 32

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-22

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/8/2005 Direction: South Description: Photo taken near western edge of LF-22 drainage channel filled with concrete debris. Photograph: 33	
Photographer: Brett Brodersen Date: 10/8/2005 Direction: South Description: LF-22 debris - concrete, asphalt, base rock, former sign posts, and cut timber. Photograph: 34	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-23

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/6/2005 Direction: Northeast Description: Central portion of LF-23. LF-23 landfill debris in background and to the right. Drainage feature to the left and in foreground. Photograph: 35	
Photographer: Brett Brodersen Date: 10/6/2005 Direction: South Description: Central portion of LF-23. Western edge of landfill debris pile (left side of photograph). Photograph: 36	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-23

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/6/2005 Direction: West Description: Debris pile with 2 5-gallon cans of tar-like substance. West-central portion of LF-23. Photograph: 37	
Photographer: Brett Brodersen Date: 10/6/2005 Direction: North Description: Concrete debris at LF-23. West-central portion of LF-23. Photograph: 38	

HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-23

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:

Description:
5 to 10-gallon cans present in southern portion of LF-23.

Photograph: 39

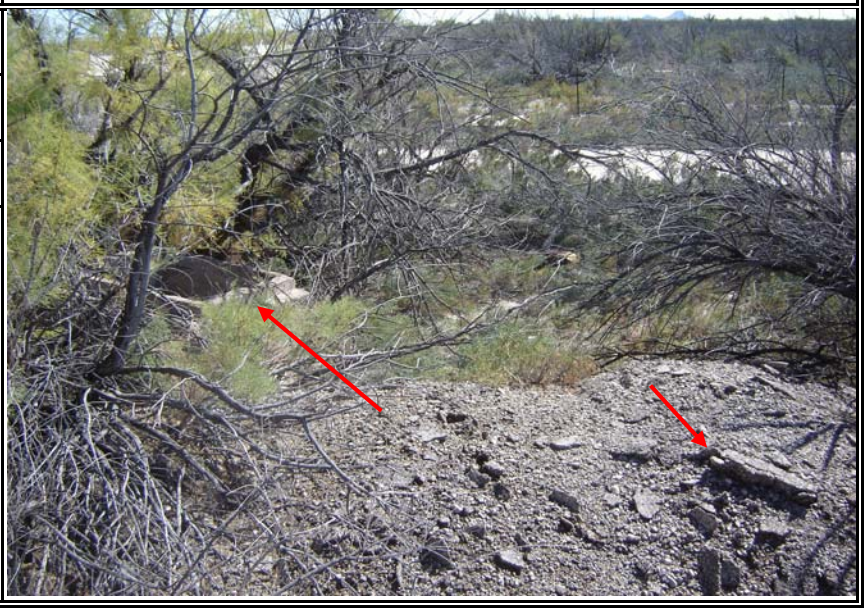
Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
South

Description:
LF-23 debris: concrete utility box and asphalt (foreground) present in Southern portion of LF-23.

Photograph: 40



HGL, Inc.
Photo Record - Passive Soil Gas and Geophysical Survey Supplemental RCRA Facility Investigation Technical Memo
LF-29

SITE LOCATION:
Holloman AFB, Alomogordo, NM

PROJECT: AFC002-037 CLIENT: AFCEE

Photographer: Brett Brodersen Date: 10/7/2005 Direction: West Description: Overview of southern portion of LF-29. Photograph: 39	
Photographer: Brett Brodersen Date: 10/7/2005 Direction: Northwest Description: ECA employee at Southern boundary of LF-29. Southern berm is shown behind the geophysicist and runs horizontally across the photo. Photograph: 40	

ATTACHMENT B

PASSIVE EMFLUX® SAMPLING METHOD SUPPORTING DATA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Washington, D.C. 20460

ETV

ENVIRONMENTAL TECHNOLOGY VERIFICATION PROGRAM VERIFICATION STATEMENT

TECHNOLOGY TYPE:	**PASSIVE SOIL GAS SAMPLER**
APPLICATION:	**SUBSURFACE SOIL GAS SAMPLING**
TECHNOLOGY NAME:	**EMFLUX® SOIL GAS INVESTIGATION SYSTEM**
COMPANY:	**QUADREL SERVICES, INC.**
ADDRESS:	**1896 URBANA PIKE, SUITE 20** **CLARKSBURG, MD 20871**
PHONE:	**(800) 878-5510**

ETV PROGRAM DESCRIPTION

The U.S. Environmental Protection Agency (EPA) created the Environmental Technology Verification (ETV) Program to facilitate the deployment of innovative technologies through performance verification and information dissemination. The goal of the ETV Program is to further environmental protection by substantially accelerating the acceptance and use of improved and cost-effective technologies. The ETV Program is intended to assist and inform those involved in the design, distribution, permitting, and purchase of environmental technologies. This document summarizes the results of a demonstration of the Quadrel Services, Inc., EMFLUX® Soil Gas Investigation System.

PROGRAM OPERATION

Under the ETV Program and with the full participation of the technology developer, the EPA evaluates the performance of innovative technologies by developing demonstration plans, conducting field tests, collecting and analyzing demonstration data, and preparing reports. The technologies are evaluated under rigorous quality assurance (QA) protocols to ensure that data of known and adequate quality are generated and that the demonstration results are defensible. The EPA's National Exposure Research Laboratory, which demonstrates field characterization and monitoring technologies, selected Tetra Tech EM Inc. as the verification organization to assist in field testing various soil and soil gas sampling technologies. This demonstration was conducted under EPA's Superfund Innovative Technology Evaluation Program.

DEMONSTRATION DESCRIPTION

In May and June 1997, the EPA conducted a field test of the EMFLUX® system along with one other soil gas and four soil sampling technologies. This verification statement focuses on the EMFLUX® system; similar statements have been prepared for each of the other technologies. The performance of the EMFLUX® system was compared to the reference sampling method, active soil gas sampling, which provides a snapshot of the soil gas environment at the time the sample is collected. The comparison addressed three parameters: (1) volatile organic compound (VOC) detection and quantitation, (2) sample retrieval time, and (3) cost. Data quality indicators for precision, accuracy, representativeness, completeness, and comparability were also assessed against project-specific QA objectives to ensure the usefulness of the data.

The EMFLUX® system was demonstrated at two sites: the Small Business Administration (SBA) site in Albert City, Iowa, and the Chemical Sales Company (CSC) site in Denver, Colorado. These sites were chosen because each site exhibited a wide range of VOC concentrations and a distinct soil type. The VOCs detected at the sites include vinyl

chloride; cis-1,2-dichloroethene (cis-1,2-DCE); 1,1-dichloroethane (1,1-DCA); 1,1,1-trichloroethane (1,1,1-TCA); trichloroethene (TCE); and tetrachloroethene (PCE). The SBA site is composed primarily of clay soil, and the CSC site is composed primarily of medium- to fine-grained sandy soil. A complete description of the demonstration, including a data summary and discussion of results, is available in the report titled Environmental Technology Verification Report: Passive Soil Gas Sampler, Quadrel Services, Inc. (Quadrel), EMFLUX®, EPA/600/R-98/096).

TECHNOLOGY DESCRIPTION

The EMFLUX® system is a passive soil gas sampling technology designed for use in shallow deployment to identify and quantify a broad range of VOCs and semivolatile organic compounds (SVOC), including halogenated compounds, petroleum hydrocarbons, polynuclear aromatic hydrocarbons, and other compounds present at depths to more than 200 feet. For this ETV demonstration, the EMFLUX® system consisted of the EMFLUX® sample cartridge, sample insertion tools, and developer-provided sample analysis. The EMFLUX® cartridge consists of 100 milligrams of sorbent sealed in a fine-mesh screen, which is placed in a glass vial; the vial and cartridge make up the EMFLUX® field collector. This assembly is inserted into the soil, but only the cartridge is thermally desorbed and analyzed in the laboratory. The EMFLUX® field collector is installed by creating a three to four-inch deep pilot hole using a manual hammer and a stake, and inserting the sampler manually. The sampler is then covered to reduce the potential for sorption of airborne contaminants. The cartridge is retrieved by hand and, for this demonstration, was analyzed by the developer. The EMFLUX® system also includes computer modeling by Quadrel using a proprietary model to predict periods of maximum soil gas emission for geographic locations and optimize sampling efficiency. However, the performance of the model was not evaluated during the demonstration.

VERIFICATION OF PERFORMANCE

The demonstration data indicate the following performance characteristics for the EMFLUX® system:

VOC Detection and Quantitation: Soil gas samples collected using the EMFLUX® system and the reference soil gas sampling method at nine grids at both the sites were analyzed for six target VOCs. Analysis of EMFLUX® samples yielded results in total nanograms per sample, which Quadrel converted to mass per unit volume of air (nanograms per liter [ng/L]). The reference method also produced results in mass per unit volume of air (ng/L). A comparison of the mean VOC concentrations calculated for each sampling method at each grid indicates that the EMFLUX® system identified the presence of all of the VOC compounds detected by the reference soil gas sampling method in 24 of 25 cases. In addition, in 7 of 31 cases, the EMFLUX® system also reported VOCs that the reference method did not detect but were identified as present during previous soil and groundwater investigations at the demonstration sites. This performance characteristic suggests that the EMFLUX® system can detect the presence of lower concentrations of VOCs in soil gas than the reference soil gas sampling method. In addition, the sample locations where the EMFLUX® system reported high VOC concentrations generally corresponded to the sample locations where the reference method also reported high VOC concentrations. However, the values in the two data sets do not appear to exhibit any direct or consistent proportional relationship, and the mean concentrations of VOCs calculated using the reference method data were typically one to four orders of magnitude higher than those calculated using the EMFLUX® system for samples from the same grid. Because the EMFLUX® system relies on diffusion of soil gas from subsurface sources such as contaminated soil or groundwater, the performance range for the EMFLUX® system may be controlled by factors such as depth to the contaminant source, contaminant concentrations and diffusion rates, soil type and organic content, the detection limits of the methods used to analyze the samples, and possibly other factors. However, during the demonstration, the system was evaluated at locations with relatively shallow subsurface contamination, and was only evaluated with regard to its ability to detect certain targeted VOCs. For these reasons, the performance range of the EMFLUX® system was not fully established by the demonstration data. It should be noted that the EMFLUX® system and reference method are field screening techniques that provide only an estimate of the actual concentration of contaminants in soil gas. Because the EMFLUX® system and reference method use different techniques to collect soil gas samples, it is not expected that the two methods will provide the same response and that the data will be directly comparable. Because the mean VOC concentrations for the data sets differ by several orders of magnitude in most instances, a statistical analysis of the data was not performed and interpretation of the chemical concentration data for this demonstration is limited to qualitative observations.

Sample Retrieval Time: Installation of the EMFLUX® system averaged 3.0 minutes per sample at the SBA site and 4.0 minutes per sample at the CSC site. For the demonstration, the samplers were left in place for approximately 4 days at each site. Collection of the samplers required an average of 2.3 minutes per sample at the SBA site and 3.2 minutes at the CSC site. Overall, installation and collection of 35 samples at the SBA site required 187 minutes, an average of 5.3 minutes per sample, and installation and collection of 28 samples at the CSC site required 201 minutes, an average of 7.2 minutes per sample. The analysis and reporting by the technology developer required an additional 12 days for the SBA site data and 16 days for the CSC site data from the time samples were collected until the laboratory report was delivered. The reference soil gas method required 458 minutes to collect 35 samples at the SBA site, an average of 13.1 minutes per sample, and 183 minutes to collect 28 samples at the CSC site, an average of 6.5 minutes per sample. One day was required per site to analyze the samples and report the results. Based on the demonstration results, the average sample retrieval times for the EMFLUX® system were quicker than those of the reference soil gas sampling method in the clay soils at the SBA site and slower than those of the reference sampling method in the sandy soils at the CSC site. During sample collection using the reference soil gas sampler, the clay soil at the SBA site caused the system to hold its vacuum at several sampling locations; therefore, soil gas was not completely drawn into the system for sampling. In these cases, the rod was withdrawn in additional 6-inch increments until the vacuum was broken and the system's pressure reached equilibrium with atmospheric pressure. The vacuum problem was not encountered in the sandy soil at the CSC site. At both sites, one person collected soil gas samples with the EMFLUX® system, and a three-person sampling crew collected and analyzed soil samples using the reference sampling method.

Cost: Based on the demonstration results, the EMFLUX® system costs $85 to $195 per sample plus equipment costs of $25 to $90 per day and mobilization/demobilization costs of $200 to $600 per day. Operating costs for the EMFLUX® system ranged from $660 to $1,390 at the clay soil site and $710 and $1,440 at the sandy soil site. For this demonstration, the active soil gas sampling method was procured at a lump sum of $4,700 for each site. The oversight costs for the active soil gas sampling method ranged from $680 to $1,260 at the clay soil site and $480 to $910 at the sandy soil site. A site-specific cost and performance analysis is recommended when selecting a subsurface soil gas sampling method.

A qualitative performance assessment of the EMFLUX® system indicated that (1) the samplers are reliable in that 100 percent of the required samples were collected without sample losses; (2) the samplers are easy to use and require minimal training (a 16-minute training video is available from the developer); (3) logistical requirements for the EMFLUX® system differ from those of the reference sampling method because the EMFLUX® field collectors are installed using a hammer-driven, 6-inch steel rod, left in place for several days, retrieved by hand, and sent to the developer for analysis; and (4) sample handling in the field was easier than the reference method because the only requirements are that the recovered cartridges be properly packed and shipped to the developer for analysis.

The demonstration results indicate that the EMFLUX® system can provide useful, cost-effective data for environmental problem-solving. The EMFLUX® system successfully collected soil gas samples in clay and sandy soils. The sampler provided positive identification of target VOCs and may be able to detect lower concentrations of VOCs in the soil gas than the reference method. The results of the demonstration did not indicate consistent proportional comparability between the EMFLUX® data and the reference method's data. As with any technology selected, the user must determine what is appropriate for the application and the project data quality objectives.

Gary J. Foley, Ph.D.
Director
National Exposure Research Laboratory
Office of Research and Development

NOTICE: EPA verifications are based on an evaluation of technology performance under specific, predetermined criteria and appropriate quality assurance procedures. EPA makes no expressed or implied warranties as to the performance of the technology and does not certify that a technology will always operate as verified. The end user is solely responsible for complying with any and all applicable federal, state, and local requirements.

United States
Environmental Protection
Agency

Office of Research and
Development
Washington DC 20460

EPA/600/R-98/096
August 1998

EPA

Environmental Technology Verification Report

Soil Gas Sampling Technology

Quadrel Services, Inc.
EMFLUX Soil Gas System

EPA/600/R-98/096
August 1998

Environmental Technology Verification Report

Soil Gas Sampler

Quadrel Services, Inc.
EMFLUX® Soil Gas Investigation System

Prepared by

Tetra Tech EM Inc.
591 Camino De La Reina, Suite 640
San Diego, California 92108

Contract No. 68-C5-0037

Dr. Stephen Billets
Characterization and Monitoring Branch
Environmental Sciences Division
Las Vegas, Nevada 89193-3478

National Exposure Research Laboratory
Office of Research and Development
U.S. Environmental Protection

Notice

This document was prepared for the U.S. Environmental Protection Agency's (EPA) Superfund Innovative Technology Evaluation Program under contract 68-C5-0037. The work detailed in this document was administered by the National Exposure Research Laboratory—Environmental Sciences Division in Las Vegas, Nevada. The document has been subjected to EPA's peer and administrative reviews, and has been approved for publication as an EPA document. Mention of corporation names, trade names, or commercial products does not constitute endorsement or recommendation for use of specific products.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
Washington, D.C. 20460

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VERIFICATION OF PERFORMANCE

The demonstration data indicate the following performance characteristics for the EMFLUX® system:

VOC Detection and Quantitation: Soil gas samples collected using the EMFLUX® system and the reference soil gas sampling method at nine grids at both the sites were analyzed for six target VOCs. Analysis of EMFLUX® samples yielded results in total nanograms per sample, which Quadrel converted to mass per unit volume of air (nanograms per liter [ng/L]). The reference method also produced results in mass per unit volume of air (ng/L). A comparison of the mean VOC concentrations calculated for each sampling method at each grid indicates that the EMFLUX® system identified the presence of all of the VOC compounds detected by the reference soil gas sampling method in 24 of 25 cases. In addition, in 7 of 31 cases, the EMFLUX® system also reported VOCs that the reference method did not detect but were identified as present during previous soil and groundwater investigations at the demonstration sites. This performance characteristic suggests that the EMFLUX® system can detect the presence of lower concentrations of VOCs in soil gas than the reference soil gas sampling method. In addition, the sample locations where the EMFLUX® system reported high VOC concentrations generally corresponded to the sample locations where the reference method also reported high VOC concentrations. However, the values in the two data sets do not appear to exhibit any direct or consistent proportional relationship, and the mean concentrations of VOCs calculated using the reference method data were typically one to four orders of magnitude higher than those calculated using the EMFLUX® system for samples from the same grid. Because the EMFLUX® system relies on diffusion of soil gas from subsurface sources such as contaminated soil or groundwater, the performance range for the EMFLUX® system may be controlled by factors such as depth to the contaminant source, contaminant concentrations and diffusion rates, soil type and organic content, the detection limits of the methods used to analyze the samples, and possibly other factors. However, during the demonstration, the system was evaluated at locations with relatively shallow subsurface contamination, and was only evaluated with regard to its ability to detect certain targeted VOCs. For these reasons, the performance range of the EMFLUX® system was not fully established by the demonstration data. It should be noted that the EMFLUX® system and reference method are field screening techniques that provide only an estimate of the actual concentration of contaminants in soil gas. Because the EMFLUX® system and reference method use different techniques to collect soil gas samples, it is not expected that the two methods will provide the same response and that the data will be directly comparable. Because the mean VOC concentrations for the data sets differ by several orders of magnitude in most instances, a statistical analysis of the data was not performed and interpretation of the chemical concentration data for this demonstration is limited to qualitative observations.

Sample Retrieval Time: Installation of the EMFLUX® system averaged 3.0 minutes per sample at the SBA site and 4.0 minutes per sample at the CSC site. For the demonstration, the samplers were left in place for approximately 4 days at each site. Collection of the samplers required an average of 2.3 minutes per sample at the SBA site and 3.2 minutes at the CSC site. Overall, installation and collection of 35 samples at the SBA site required 187 minutes, an average of 5.3 minutes per sample, and installation and collection of 28 samples at the CSC site required 201 minutes, an average of 7.2 minutes per sample. The analysis and reporting by the technology developer required an additional 12 days for the SBA site data and 16 days for the CSC site data from the time samples were collected until the laboratory report was delivered. The reference soil gas method required 458 minutes to collect 35 samples at the SBA site, an average of 13.1 minutes per sample, and 183 minutes to collect 28 samples at the CSC site, an average of 6.5 minutes per sample. One day was required per site to analyze the samples and report the results. Based on the demonstration results, the average sample retrieval times for the EMFLUX® system were quicker than those of the reference soil gas sampling method in the clay soils at the SBA site and slower than those of the reference sampling method in the sandy soils at the CSC site. During sample collection using the reference soil gas sampler, the clay soil at the SBA site caused the system to hold its vacuum at several sampling locations; therefore, soil gas was not completely drawn into the system for sampling. In these cases, the rod was withdrawn in additional 6-inch increments until the vacuum was broken and the system's pressure reached equilibrium with atmospheric pressure. The vacuum problem was not encountered in the sandy soil at the CSC site. At both sites, one person collected soil gas samples with the EMFLUX® system, and a three-person sampling crew collected and analyzed soil samples using the reference sampling method.

Cost: Based on the demonstration results, the EMFLUX® system costs $85 to $195 per sample plus equipment costs of $25 to $90 per day and mobilization/demobilization costs of $200 to $600 per day. Operating costs for the EMFLUX® system ranged from $660 to $1,390 at the clay soil site and $710 and $1,440 at the sandy soil site. For this demonstration, the active soil gas sampling method was procured at a lump sum of $4,700 for each site. The oversight costs for the active soil gas sampling method ranged from $680 to $1,260 at the clay soil site and $480 to $910 at the sandy soil site. A site-specific cost and performance analysis is recommended when selecting a subsurface soil gas sampling method.

A qualitative performance assessment of the EMFLUX® system indicated that (1) the samplers are reliable in that 100 percent of the required samples were collected without sample losses; (2) the samplers are easy to use and require minimal training (a 16-minute training video is available from the developer); (3) logistical requirements for the EMFLUX® system differ from those of the reference sampling method because the EMFLUX® field collectors are installed using a hammer-driven, 6-inch steel rod, left in place for several days, retrieved by hand, and sent to the developer for analysis; and (4) sample handling in the field was easier than the reference method because the only requirements are that the recovered cartridges be properly packed and shipped to the developer for analysis.

The demonstration results indicate that the EMFLUX® system can provide useful, cost-effective data for environmental problem-solving. The EMFLUX® system successfully collected soil gas samples in clay and sandy soils. The sampler provided positive identification of target VOCs and may be able to detect lower concentrations of VOCs in the soil gas than the reference method. The results of the demonstration did not indicate consistent proportional comparability between the EMFLUX® data and the reference method's data. As with any technology selected, the user must determine what is appropriate for the application and the project data quality objectives.

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NOTICE: EPA verifications are based on an evaluation of technology performance under specific, predetermined criteria and appropriate quality assurance procedures. EPA makes no expressed or implied warranties as to the performance of the technology and does not certify that a technology will always operate as verified. The end user is solely responsible for complying with any and all applicable federal, state, and local requirements.

Foreword

The U.S. Environmental Protection Agency (EPA) is charged by Congress with protecting the nation's natural resources. Under the mandate of national environmental laws, the Agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. To meet this mandate, the EPA's Office of Research and Development (ORD) provides data and science support that can be used to solve environmental problems and to build the scientific knowledge base needed to manage our ecological resources wisely, to understand how pollutants affect our health, and to prevent or reduce environmental risks.

The National Exposure Research Laboratory (NERL) is the Agency's center for the investigation of technical and management approaches for identifying and quantifying risks to human health and the environment. Goals of the Laboratory's research program are to (1) develop and evaluate methods and technologies for characterizing and monitoring air, soil, and water; (2) support regulatory and policy decisions; and (3) provide the science support needed to ensure effective implementation of environmental regulations and strategies.

The EPA's Superfund Innovative Technology Evaluation (SITE) Program evaluates technologies for the characterization and remediation of contaminated Superfund and Resource Conservation and Recovery Act sites. The SITE Program was created to provide reliable cost and performance data to speed the acceptance and use of innovative remediation, characterization, and monitoring technologies by the regulatory and user communities.

Effective measurement and monitoring technologies are needed to assess the degree of contamination at a site, to provide data that can be used to determine the risk to public health or the environment, to supply the necessary cost and performance data to select the most appropriate technology, and to monitor the success or failure of a remediation process. One component of the EPA SITE Program, the Monitoring and Measurement Technologies Program, demonstrates and evaluates innovative technologies to meet these needs.

Candidate technologies can originate from within the federal government or from the private sector. Through the SITE Program, developers are given the opportunity to conduct a rigorous demonstration of their technology under actual field conditions. By completing the evaluation and distributing the results, the Agency establishes a baseline for acceptance and use of these technologies. The Monitoring and Measurement Technology Program is managed by the ORD's Environmental Sciences Division in Las Vegas, Nevada.

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Acronyms and Abbreviations

bgs	below ground surface
cc	cubic centimeter
cis-1,2-DCE	cis-1,2-dichloroethene
CLP	contract laboratory program
CSC	Chemical Sales Company
CSCT	Consortium for Site Characterization Technology
1,1-DCA	1,1-dichloroethane
1,2-DCE	1,2-dichloroethene (total)
E&E	Ecology & Environment
ELCD	electrolytic conductivity detector
EMFLUX®	EMFLUX® Soil Gas Investigation System
EPA	U.S. Environmental Protection Agency
ETV	Environmental Technology Verification
ETVR	Environmental Technology Verification Report
GC	gas chromatography
GC/MS	gas chromatograph/mass spectrometer
mg	milligrams
mg/kg	milligrams per kilogram
ml	milliliters
• g/kg	micrograms per kilogram
NERL	National Exposure Research Laboratory
ng/L	nanograms per liter
OU	operable unit
PAH	polynuclear aromatic hydrocarbon
PCE	tetrachloroethene
QA	quality assurance
QC	quality control
QA/QC	quality assurance/quality control
Quadrel	Quadrel Services, Inc.
RI/FS	remedial investigation/feasibility study
SBA	Small Business Administration
SITE	Superfund Innovative Technology Evaluation
SMC	Superior Manufacturing Company
SVOC	semivolatile organic compound
1,1,1-TCA	1,1,1-trichloroethane
TCE	trichloroethene
VOC	volatile organic compound

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Executive Summary

In May and June 1997, the U.S. Environmental Protection Agency (EPA) sponsored a demonstration of the EMFLUX® passive soil gas sampling technology, one other soil gas sampling technology, and four soil sampling technologies. This Environmental Technology Verification Report (ETVR) presents the results of the EMFLUX® Soil Gas Investigation System demonstration; similar reports have been prepared for each of the other technologies.

The EMFLUX® system is a passive soil gas sampling system distinguishable by its use of a model to predict periods of maximum soil gas emission for geographic locations to select optimal sampling times. The EMFLUX® system allows simultaneous sample collection by multiple field collectors, thereby eliminating movement of equipment from point to point. The EMFLUX® system consists of the EMFLUX® sample cartridge, sample insertion tools, and developer-provided sample analysis and computer modeling. The EMFLUX® cartridge consists of 100 milligrams of sorbent sealed in a fine mesh screen, which is placed in a glass vial for sample collection and shipped for laboratory analysis.

The EMFLUX® system was demonstrated at two sites: the Small Business Administration (SBA) site in Albert City, Iowa, and the Chemical Sales Company (CSC) site in Denver, Colorado. These sites were chosen because each has a wide range of volatile organic compound (VOC) concentrations and because each has a distinct soil type. The VOCs detected at the sites include vinyl chloride; 1,2-dichloroethene; 1,1-dichloroethane; 1,1,1-trichloroethane; trichloroethene; and tetrachloroethene. The SBA site is composed primarily of clay soil and the CSC site is composed primarily of sandy soil.

The EMFLUX® system was compared to the reference sampling method, active soil gas sampling, in terms of the following parameters: (1) VOC detection and quantitation, (2) sample retrieval time, and (3) cost. The demonstration data indicated the following performance characteristics:

- The EMFLUX® system consistently detected all of the compounds identified by the reference sampling method and in several instances detected VOCs that the reference sampling method did not detect. However, VOC concentrations detected using the EMFLUX® system were typically one to four orders of magnitude lower than those reported by the reference method.

- The average sample retrieval times for the EMFLUX® system were quicker than the reference soil gas sampling method in the clay soils at the SBA site and slower than the reference method in the sandy soils at the CSC site. For this demonstration, the EMFLUX® field collectors were left in place for 4 days at each site and required 12 days at the SBA site and 16 days at the CSC site for cartridge analysis and reporting by the developer. The reference sampling method required one day per site to analyze the samples and report the analytical results.

- Based on the demonstration results, the EMFLUX® system cost $85 to $195 per sample plus equipment costs of $25 to $90 per day and mobilization/demobilization costs of $200 to $600 per site. Operating costs for the EMFLUX® system ranged from $660 to $1,390 at the clay soil site and $710 and $1,440 at the sandy soil site.

In general, results for the data quality indicators selected for this demonstration met the established quality assurance objectives and support the usefulness of the demonstration results in verifying the performance of the EMFLUX® system.

Chapter 1
Introduction

Performance verification of innovative and alternative environmental technologies is an integral part of the U.S. Environmental Protection Agency's (EPA) regulatory and research mission. Early efforts focused on evaluating technologies that supported implementation of the Clean Air and Clean Water Acts. To meet the needs of the hazardous waste program, the Superfund Innovative Technology Evaluation (SITE) Program was established by the EPA Office of Solid Waste and Emergency Response (OSWER) and Office of Research and Development (ORD) as part of the Superfund Amendments and Reauthorization Act of 1986. The primary purpose of the SITE Program is to promote the acceptance and use of innovative characterization, monitoring, and treatment technologies.

The overall goal of the SITE Program is to conduct research and performance verification studies of alternative or innovative technologies that may be used to achieve long-term protection of human health and the environment. The various components of the SITE Program are designed to encourage the development, demonstration, acceptance, and use of new or innovative treatment and monitoring technologies. The program is designed to meet four primary objectives: (1) identify and remove obstacles to the development and commercial use of alternative technologies, (2) support a development program that identifies and nurtures emerging technologies, (3) demonstrate promising innovative technologies to establish reliable performance and cost information for site characterization and cleanup decision-making, and (4) develop procedures and policies that encourage the selection of alternative technologies at Superfund sites, as well as other waste sites and commercial facilities.

The intent of a SITE demonstration is to obtain representative, high quality, performance and cost data on innovative technologies so that potential users can assess a given technology's suitability for a specific application. The SITE Program includes the following elements:

- **Monitoring and Measurement Technology (MMT) Program** — Evaluates technologies that detect, monitor, sample, and measure hazardous and toxic substances. These technologies are expected to provide better, faster, and more cost-effective methods for producing real-time data during site characterization and remediation studies

- **Remediation Technologies** — Conducts demonstrations of innovative treatment technologies to provide reliable performance, cost, and applicability data for site cleanup

- **Technology Transfer Program** — Provides and disseminates technical information in the form of updates, brochures, and other publications that promote the program and the technology. Provides technical assistance, training, and workshops to support the technology

The MMT Program provides developers of innovative hazardous waste measurement, monitoring, and sampling technologies with an opportunity to demonstrate a technology's performance under actual field conditions. These technologies may be used to detect, monitor, sample, and measure hazardous and toxic substances in soil, sediment, waste materials, and groundwater. Technologies include chemical sensors for *in situ* (in place) measurements, groundwater sampling devices, soil and core sampling devices, soil gas samplers, laboratory and field-portable analytical equipment, and other systems that support field sampling or data acquisition and analysis.

The MMT Program promotes the acceptance of technologies that can be used to accurately assess the degree of contamination at a site, provide data to evaluate potential effects on human health and the environment, apply data to assist in selecting the most appropriate cleanup action, and monitor the effectiveness of a remediation process. Acceptance into the program places high priority on innovative technologies that provide more cost-effective, faster, and safer methods than conventional technologies for producing real-time or near-real-time data. These technologies are demonstrated under field conditions and results are compiled, evaluated, published, and disseminated by ORD. The primary objectives of the MMT Program are the following:

- Test field analytical technologies that enhance monitoring and site characterization capabilities
- Identify the performance attributes of new technologies to address field characterization and monitoring problems in a more cost-effective and efficient manner
- Prepare protocols, guidelines, methods, and other technical publications that enhance the acceptance of these technologies for routine use

The SITE MMT Program is administered by ORD's National Exposure Research Laboratory (NERL-LV) at the Environmental Sciences Division in Las Vegas, Nevada.

In 1994, the EPA created the Environmental Technology Verification (ETV) Program to facilitate the deployment of innovative technologies in other areas of environmental concern through performance verification and information dissemination. As in the SITE Program, the goal of the ETV Program is to further environmental protection by substantially accelerating the acceptance and use of improved and cost-effective technologies. The ETV Program is intended to assist and inform those involved in the design, distribution, permitting, and purchase of various environmental technologies. The ETV Program capitalizes on and applies the lessons learned in implementing the SITE Program.

For each demonstration, the EPA draws on the expertise of partner "verification organizations" to design efficient procedures for conducting performance tests of environmental technologies. The EPA selects its partners from both the public and private sectors, including federal laboratories, states, universities, and private sector entities. Verification organizations oversee and report verification activities based on testing and quality assurance (QA) protocols developed with input from all major stakeholder and customer groups associated with the technology area. For this demonstration, the EPA selected Tetra Tech EM Inc. (Tetra Tech; formerly PRC Environmental Management, Inc.) as the verification organization.

In May and June 1997, the EPA conducted a demonstration, funded by the SITE Program, to verify the performance of four soil and two soil gas sampling technologies: SimulProbe® Technologies, Inc., Core Barrel Sampler; Geoprobe® Systems, Inc., Large-Bore Soil Sampler; AMS™ Dual Tube Liner

Sampler; Clements Associates, Inc., Environmentalist's Subsoil Probe; Quadrel Services, Inc. (Quadrel), EMFLUX® Soil Gas Investigation System; and W.L. Gore & Associates GORE-SORBER® Screening Survey passive soil gas sampling system. This environmental technology verification report (ETVR) presents the results of the demonstration for one soil gas sampling technology, the Quadrel EMFLUX® Soil Gas Investigation System. Separate ETVRs have been published for the remaining soil and soil gas sampling technologies.

Technology Verification Process

The technology verification process is designed to conduct demonstrations that will generate high-quality data that the EPA and others can use to verify technology performance and cost. Four key steps are inherent in the process: (1) needs identification and technology selection, (2) demonstration planning and implementation, (3) report preparation, and (4) information distribution.

Needs Identification and Technology Selection

The first aspect of the technology verification process is to identify technology needs of the EPA and the regulated community. The EPA, the U.S. Department of Energy, the U.S. Department of Defense, industry, and state agencies are asked to identify technology needs for characterization, sampling, and monitoring. Once a technology area is chosen, a search is conducted to identify suitable technologies that will address that need. The technology search and identification process consists of reviewing responses to *Commerce Business Daily* announcements, searches of industry and trade publications, attendance at related conferences, and leads from technology developers. Selection of characterization and monitoring technologies for field testing includes an evaluation of the candidate technology against the following criteria:

- Designed for use in the field or in a mobile laboratory
- Applicable to a variety of environmentally contaminated sites
- Has potential for resolving problems for which current methods are unsatisfactory
- Has costs that are competitive with current methods
- Performs better than current methods in areas such as data quality, sample preparation, or analytical turnaround time
- Uses techniques that are easier and safer than current methods
- Is commercially available

Demonstration Planning and Implementation

After a technology has been selected, the EPA, the verification organization, and the developer agree to a strategy for conducting the demonstration and evaluating the technology. The following issues are addressed at this time:

- Identifying and defining the roles of demonstration participants, observers, and reviewers

- Identifying demonstration sites that provide the appropriate physical or chemical attributes in the desired environmental media

- Determining logistical and support requirements (for example, field equipment, power and water sources, mobile laboratory, or communications network)

- Arranging analytical and sampling support

- Preparing and implementing a demonstration plan that addresses the experimental design, the sampling design, quality assurance/quality control (QA/QC), health and safety, field and laboratory operations scheduling, data analysis procedures, and reporting requirements

Report Preparation

Each of the innovative technologies is evaluated independently and, when possible, against a reference technology. The technologies are usually operated in the field by the developers in the presence of independent observers. These individuals are selected by the EPA or the verification organization and work to ensure that the technology is operated in accordance with the demonstration plan. Demonstration data are used to evaluate the capabilities, performance, limitations, and field applications of each technology. After the demonstration, all raw and reduced data used to evaluate each technology are compiled into a technology evaluation report as a record of the demonstration. A verification statement and detailed evaluation narrative of each technology are published in an ETVR. This document receives a thorough technical and editorial review prior to publication.

Information Distribution

The goal of the information distribution strategy is to ensure that ETVRs are readily available to interested parties through traditional data distribution pathways, such as printed documents. Related documents and technology updates are also available on the World Wide Web through the ETV Web site (*http://www.epa.gov/etv*) and through the Hazardous Waste Clean-Up Information Web site supported by the EPA OSWER Technology Innovation Office (*http://clu-in.org*). Additional information on the SITE Program can be found on ORD's web site (*http://www.epa.gov/ORD/SITE*).

Demonstration Purpose

The purpose of this demonstration of the EMFLUX® system was to evaluate how the sampler performed relative to the reference sampling method, active soil gas sampling. Specifically, this demonstration evaluated the EMFLUX® system in comparison to the reference soil gas sampling method in terms of the following parameters: (1) volatile organic compound (VOC) detection and quantitation, (2) sample retrieval time, and (3) cost. Data quality indicators for precision, accuracy, representativeness, completeness, and comparability were also assessed against established QA objectives to ensure the usefulness of the data for the purpose of this verification.

Chapter 2
Technology Description

This chapter describes the EMFLUX® system, including its background, components and accessories, sampling platform, and general operating procedures. The text in this chapter was provided by the developer and was edited for format and relevance.

Background

Soil gas sampling techniques can be broadly divided into two categories: active and passive. The active soil gas sampling method uses vacuum methods to collect soil gas samples at discrete depth intervals and provides a "snapshot" of the soil gas environment at a particular moment and at a specific depth. This approach requires detectable vapor-phase compound concentrations, relatively porous subsurface soil, and experienced on-site personnel. Because the soil gas samples are usually analyzed immediately, an on-site or nearby laboratory is typically required. Active soil gas sampling is generally used for rapid screening of VOCs in the subsurface in moderately permeable soils and is generally not applicable to detecting semivolatile organic compounds (SVOC).

Passive sampling techniques rely on diffusion and adsorption and can be used to sample for VOCs and SVOCs, depending on the adsorbent selected and the diffusion membrane used. The developers of passive soil gas samplers claim that the passive samplers allow for equilibrium to develop between the soil gases and the sorbent over a period of several days to weeks. Further, the developers claim that exposure of the passive samplers to the soil gas over extended periods concentrates the mass of VOCs and SVOCs absorbed to the sampler; thereby enhancing contaminant detection sensitivity.

The EMFLUX® system is a passive soil gas sampling system developed by Quadrel. According to Quadrel, the EMFLUX® system is based on technology developed over the past 35 years, and was originally used in the minerals exploration industry to detect radon gas and locate uranium deposits.

The EMFLUX® system components consist of a sample cartridge and installation tools. The "system" also incorporates computer modeling to predict optimal sampling times for a specific geographic location and sample analyses, both provided by the developer. The EMFLUX® system uses a proprietary software package to predict periods of maximum soil gas emission for any location. This software package models the relationship between the gravitational phenomenon known as "earth tides" and orders-of-magnitude changes in the vertical velocities of gases moving through the earth's crust. The modeling of this relationship allows Quadrel to theoretically predict favorable (relatively high-vertical-velocity) periods for soil gas sampling. Knowing when these favorable periods occur may decrease the period of time the samplers must be left installed at a site; however, EMFLUX® surveys may be conducted at virtually any time.

The EMFLUX® data are reported in units of mass per sample, which Quadrel can convert to mass per unit volume of air. For this demonstration, the EMFLUX® data were reported in units of mass per unit volume of air (nanograms per liter [ng/L]). The conversion from mass of contaminant detected to mass of contaminant detected per volume of air was accomplished by the developer using equation 2-1.

$$C = 10^3 \frac{KW}{TR} \qquad (2\text{-}1)$$

where:

C = the soil gas concentration (nanograms per liter)
K = the cartridge collection constant (1.0 second/cubic centimeter [cc])
W = the detected contaminant mass (nanograms)
T = the collection period (seconds)
R = the adsorbent recovery factor (unitless). Adsorbent recovery factors are unique to each combination of sorbent and contaminant. The developer provided these recovery factors and converted all the data for this demonstration.

The EMFLUX® Soil Gas Investigation System is designed to identify and quantify a broad spectrum of VOCs and SVOCs, including halogenated compounds, petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAH), and other compounds. The developer lists a broad range of target analytes the EMFLUX® system can potentially detect:

- Common VOCs and SVOCs quantifiable by standard EPA techniques such as methods 8021, 8081, 8260, and 8270.

- Explosives such as nitrobenzene, 2-nitrotoluene, 3-nitrotoluene, 4-nitrotoluene, 1,3-dinitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 1,3,5-trinitrobenzene, 2,4,6-trinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, and others.

- Chemical agents and breakdown products such as 1,4-dithiane, 1,4-oxathiane, benzothiazole, p-chlorophenylmethylsulfide, p-chlorophenylmethylsulfoxide, p-chlorophenylmethylsulfone, dimethyldisulfide, diisopropyl methylphosphonate, thiodiglycol, and others.

Other developer claims regarding system performance include the following:

- The system detects VOCs and SVOCs in soil gas at concentrations proportional to the actual soil or groundwater contaminant concentrations and can trace the distribution of VOCs and SVOCs in subsurface soil and groundwater with a comparability rate of 90 percent with reference soil and groundwater sampling methods.

- EMFLUX® can detect contaminant masses per sample ranging from 25 to 1,000,000 nanograms, and can allow a reporting limit of less than 1 ng/L of air.

- EMFLUX® can collect samples under artificial surfaces and in fine-grained soils such as clays.

- The system can detect contaminants from depths over 200 feet below ground surface (bgs).
- The system employs accurate analytical techniques and relatively low detection limits to reduce the potential for false positive or negative results.
- No special training is required to install or collect samples using the technology.

During the demonstration, only Quadrel's claims regarding sample retrieval time, cost, and the ability of the EMFLUX® system to be used to sample for VOCs were evaluated.

Components and Accessories

The EMFLUX® system consists of a sample cartridge and installation tools. The EMFLUX® cartridge consists of 100 milligrams (mg) of sorbent sealed in a fine-mesh screen, which is placed in a glass vial; the vial and cartridge make up the EMFLUX® field collector. Given the target VOCs present at the SBA and CSC sites, carboxen was selected by the developer as the absorbent material for this demonstration. Other absorbent materials are available for use with the EMFLUX® system. The sorbent is contained in a cartridge suspended in a 7-milliliter (ml) screw-top glass vial. The cartridge and tools are provided in an EMFLUX® field kit. The standard field kit is designed for sampling in areas where the EMFLUX® cartridges can be placed 3 to 4 inches bgs, and contains all supplies required to collect 30 samples. The standard field kit is 3 inches high, 9 inches long, 9 inches wide, and weighs about 5 pounds. A modified EMFLUX® field kit for surface-based (non-intrusive) sampling is 9 inches high by 9 inches wide by 19 inches long, and weighs about 25 pounds. The modified kit contains all tools and supplies needed to collect 60 samples.

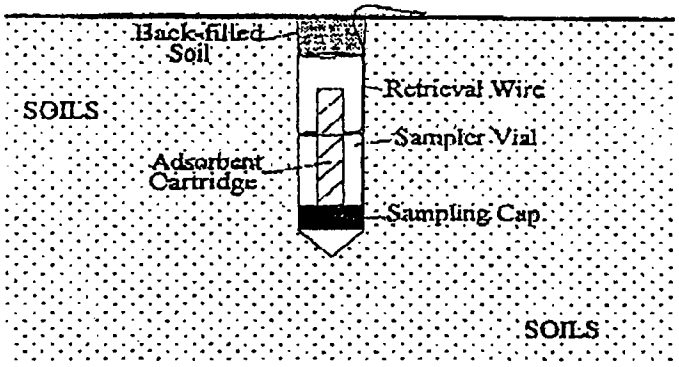
General Operating Procedures

Prior to the survey, the developer can use a proprietary computer model to predict the optimal sampling time. The field sampling program is then implemented by the technology user. The following field procedures are routinely used during EMFLUX® soil gas surveys. Modifications can be incorporated from time to time in response to individual project requirements.

1. Surface debris or vegetation, if present, are removed by the field technician, exposing the ground surface. Using a hammer and a 0.75-inch diameter metal stake, the technician creates a hole approximately 3 to 4 inches deep (Figure 2-1). For locations covered with asphalt or concrete, the technician drills a 1-inch-diameter hole through the cover to the soils beneath. If necessary, the EMFLUX® sample cartridge can be sleeved with a 0.75-inch inner diameter copper pipe. This procedure is used at locations where asphalt surfaces may be possible sources of PAH contamination.

2. The technician removes the solid plastic cap from an EMFLUX® sampling cartridge and replaces it with a sampling cap (a plastic cap with a hole covered by screen mesh). The sampling cartridge has a metal retrieval wire secured around it. The technician inserts the collector, with the sampling cap end facing down, into the hole (Figure 2-1). The collector is then covered with either local soils or with aluminum foil and concrete or asphalt patching material. The collector's location, time and date of emplacement, and other relevant information are recorded.

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP

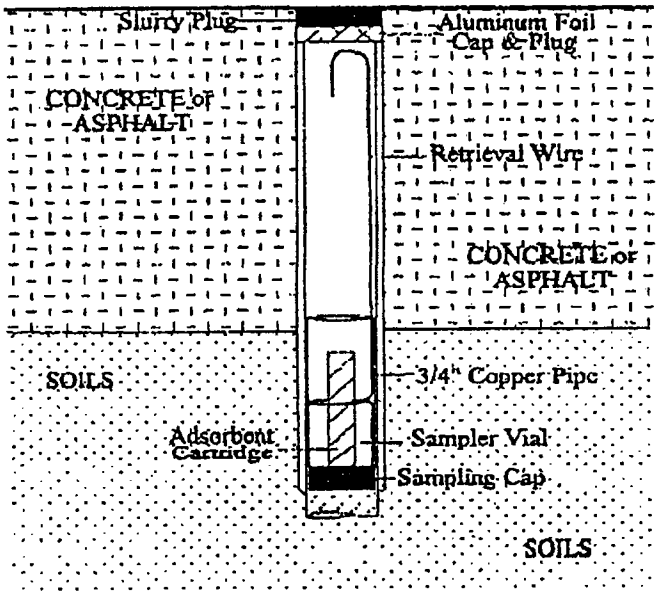


Figure 2-1. **EMFLUX® Collector Parts and Deployment Options (Modified from Quadrel Services, Inc., 1997)**

3. As a quality control (QC) check during cartridge emplacement, and also during retrieval, the technician takes periodic ambient air control samples and records the date, time, and location of each. One or more trip blanks are also included as part of the QC procedures.

4. After all EMFLUX® sampling cartridges have been deployed and appropriate control samples collected, personnel depart, leaving the cartridges in place.

5. Field personnel retrieve the collectors at the end of the exposure period, typically 72 hours or more. At each location, a technician withdraws the collector from its hole and wipes the outside of the vial clean using gauze cloth; following removal of the sampling cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sampling location number is written on the vial's label. The technician then records sampling point location, date, time, and other relevant information on the field deployment form and on a chain-of-custody form.

Sample analysis is provided by the developer, either through its internal or contracted laboratory facilities. The developer can also provide mobile laboratories equipped with field gas chromatography (GC) equipment for on-site analysis, if required.

Developer Contact

For more developer information on the EMFLUX® Soil Gas Investigation System, please refer to Chapters 8 and 9 of this ETVR or contact the developer at:

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1896 Urbana Pike, Suite 20
Clarksburg, Maryland 20871
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E-mail: quadrel@erols.com
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Chapter 3
Site Descriptions and Demonstration Design

This chapter describes the demonstration sites, predemonstration sampling and analysis, and the demonstration design. The demonstration was conducted in accordance with the "Final Demonstration Plan for the Evaluation of Soil Sampling and Soil Gas Sampling Technologies " (PRC, 1997).

Site Selection and Description

The following criteria were used to select the demonstration sites:

- Unimpeded access for the demonstration
- A range (micrograms per kilogram [• g/kg] to milligrams per kilogram [mg/kg]) of chlorinated or aromatic VOC contamination in soil
- Well-characterized contamination
- Different soil textures
- Minimal underground utilities
- Situated in different climates

Based on a review of 48 candidate sites, the Small Business Administration (SBA) site in Albert City, Iowa, and the Chemical Sales Company (CSC) site in Denver, Colorado, were selected for the demonstration of the EMFLUX® system.

SBA Site Description

The SBA site is located on Orchard Street between 1st and 2nd Avenues in east-central Albert City, Iowa (Figure 3-1). The site is the location of the former Superior Manufacturing Company (SMC) facility and is now owned by SBA and B&B Chlorination, Inc. SMC manufactured grease guns at the site from 1935 until 1967. Metal working, assembling, polishing, degreasing, painting, and other operations were carried out at the site during this period. The EPA files indicate that various solvents were used in manufacturing grease guns and that waste metal shavings coated with oil and solvents were placed in a waste storage area. The oil and solvents were allowed to drain onto the ground, and the metal waste was hauled off site by truck (Ecology & Environment [E&E], 1996).

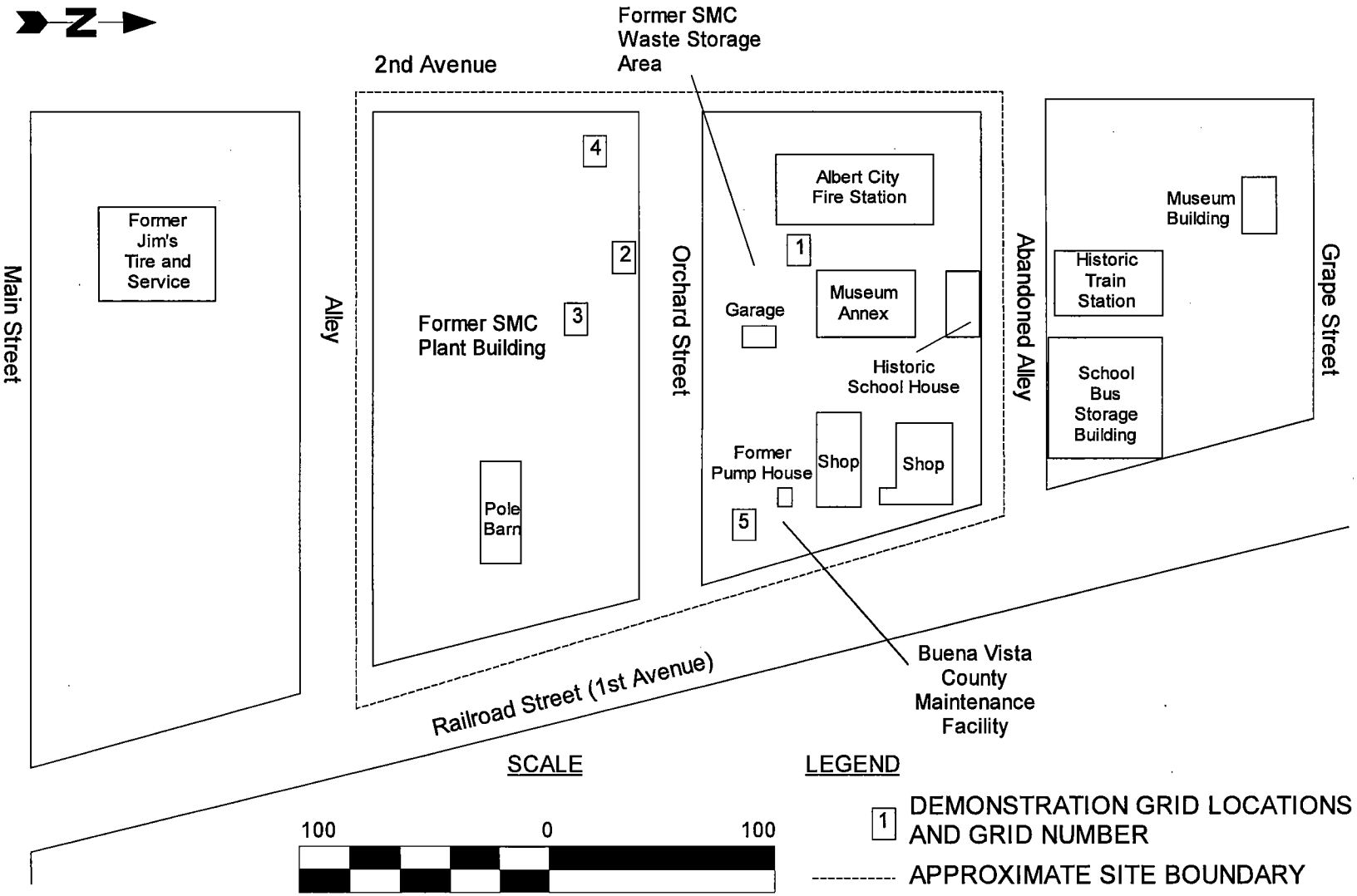


Figure 3-1. Small Business Administration Site

The site consists of the former SMC plant property and a waste storage yard. The SMC plant property is currently a grass-covered, relatively flat, unfenced open lot. The plant buildings have been razed. A pole barn is the only building currently on the SMC plant property. Several buildings are present in the waste storage yard, including three historic buildings: a garage, a museum, and a school house.

Poorly drained, loamy soils of the Nicollet series are present throughout the site area. The upper layer of these soils is a black loam grading to a dark-gray loam. Below this layer, the soils grade to a friable, light clay loam extending to a depth of 60 inches. Underlying these soils is a thick sequence (400 feet or more) of glacial drift. The lithology of this glacial drift is generally a light yellowish-gray, sandy clay with some gravel, pebbles, or boulders. The sand-to-clay ratio is probably variable throughout the drift. Groundwater is encountered at about 6 to 7 feet bgs at the SBA site (E&E, 1996).

Tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride are the primary contaminants detected in soil at the site. These chlorinated VOCs have been detected in both surface (0 to 2 feet deep) and subsurface (3 to 5 feet deep) soil samples. TCE and cis-1,2-DCE are the VOCs usually detected at the highest concentrations in both soil and groundwater. In past site investigations, TCE and cis-1,2-DCE have been detected in soils at 17 and 40 mg/kg, respectively, with vinyl chloride present at 1.4 mg/kg. The areas of highest contamination have been found near the center of the former SMC plant property and near the south end of the former SMC waste storage area (E&E, 1996).

CSC Site Description

The CSC site is located in Denver, Colorado, approximately 5 miles northeast of downtown Denver. From 1962 to 1976, a warehouse at the site was used to store chemicals. The CSC purchased and first occupied the facility in 1976. The CSC installed aboveground and underground storage tanks and pipelines at the site between October 1976 and February 1977. From 1976 to 1992, the facility received, blended, stored, and distributed various chemicals and acids. Chemicals were transported in bulk to the CSC facility by train and were unloaded along railroad spurs located north and south of the CSC facility. These operations ceased at the CSC site in 1992.

The EPA conducted several investigations of the site from 1981 through 1991. Results of these investigations indicated a release of organic chemicals into the soil and groundwater at the site. As a result of this finding, the CSC site was placed on the National Priorities List in 1990. The site is divided into three operable units (OU). This demonstration was conducted at OU1, located at 4661 Monaco Parkway in Denver (Figure 3-2). In September 1989, EPA and CSC entered into an Administrative Order on Consent requiring CSC to conduct a remedial investigation/feasibility study (RI/FS) for CSC OU1. The RI/FS was completed at OU1 in 1991 (Engineering-Science, Inc., 1991).

The current site features of OU1 consist of the warehouse, a concrete containment pad with a few remaining tanks from the aboveground tank farm, another smaller containment pad with aboveground tanks north of a railroad spur, and multiple areas in which drums are stored on the west side of the warehouse and in the northwest corner of the property. The warehouse is currently in use and is occupied by Steel Works Corporation.

The topography, distribution of surficial deposits, and materials encountered during predemonstration sampling suggest that the portion of OU1 near the CSC warehouse is a terrace deposit composed of Slocum Alluvium beneath aeolian sand, silt, and clay. The terrace was likely formed by renewed

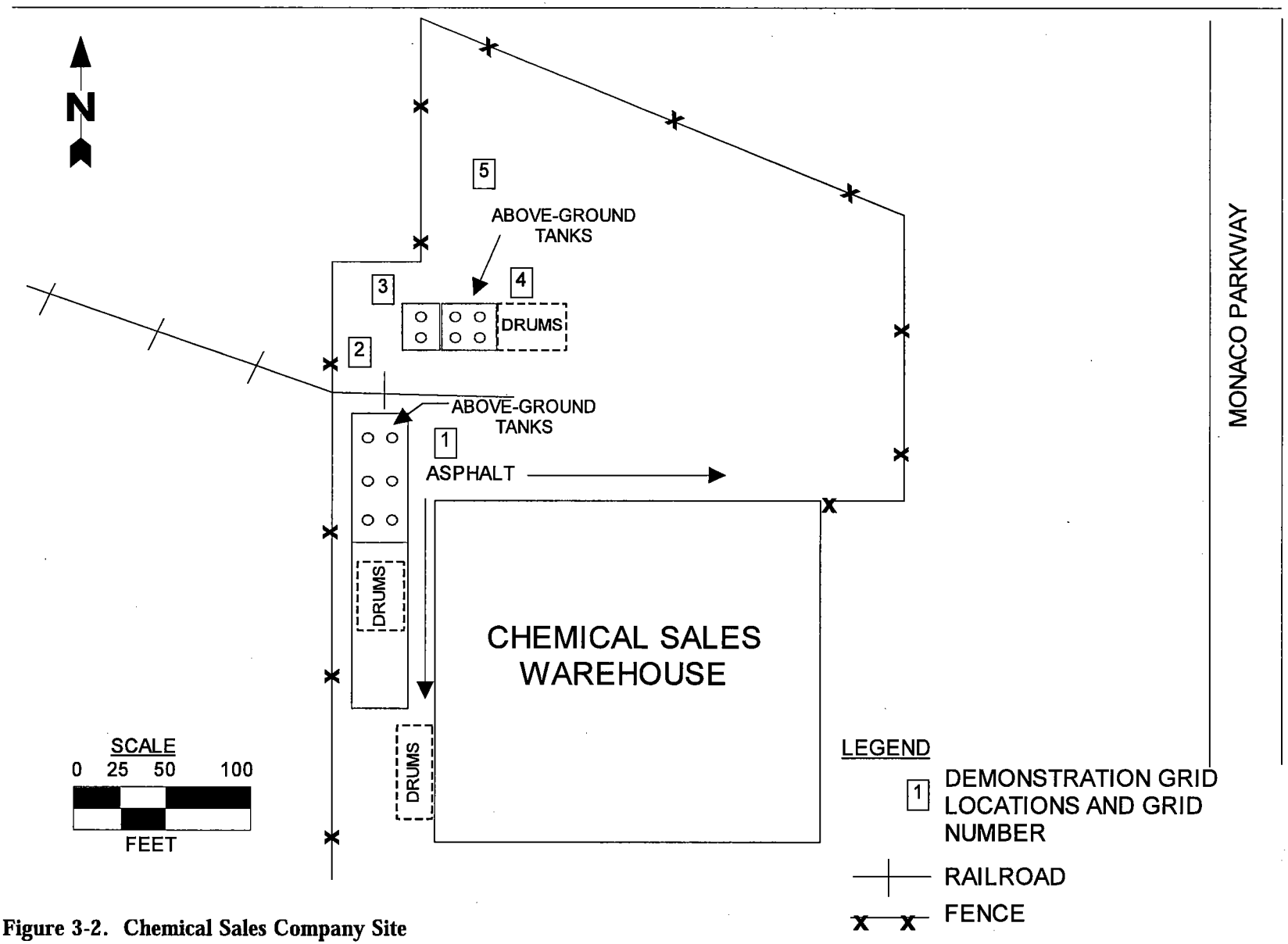


Figure 3-2. Chemical Sales Company Site

downcutting of a tributary to Sand Creek. Borings at the CSC property indicate that soils in the vadose zone and saturated zone are primarily fine- to coarse-grained, poorly sorted sands with some silts and clays. The alluvial aquifer also contains some poorly sorted gravel zones. The depth to water is about 30 to 40 feet bgs near the CSC warehouse.

During previous soil investigations at the CSC property, chlorinated VOC contamination was detected extending from near the surface (less than 5 feet bgs) to the water table depth. The predominant chlorinated VOCs detected in site soils are PCE, TCE, 1,1,1-trichloroethane (1,1,1-TCA), and 1,1-dichloroethane (1,1-DCA). The area of highest VOC contamination is north of the CSC tank farm, near the northern railroad spur. The PCE concentrations detected in this area measure as high as 80 mg/kg, with TCE and 1,1,1-TCA concentrations measuring as high as 1 mg/kg. In addition, results from field analysis of soil headspace samples using GC indicated TCE, PCE, 1,1,1-TCA, and 1,1-DCA concentrations as high as 5,000 parts per million by volume.

Predemonstration Sampling and Analysis

Predemonstration sampling and analysis were conducted to establish the geographic location of sampling grids, identify target sampling depths, and estimate the variability of contaminant concentrations exhibited at each grid location and target sampling depth. Predemonstration sampling was conducted at the SBA site between April 1 and 11, 1997, and at the CSC site between April 20 and 25, 1997. Eleven sampling grids, six at the SBA site and five at the CSC site, were investigated to confirm that each grid exhibited chemical concentrations and soil texture characteristics that met the criteria set forth in the predemonstration sampling plan (PRC, 1997) and to confirm that passive and active soil gas sampling could be used at the two sites.

At each of the grids sampled during the predemonstration, five borings were advanced from which soil samples were collected for VOC and soil texture analysis. As expected, the primary VOCs detected in the soil samples at the SBA site were vinyl chloride, cis-1,2-DCE, TCE, and PCE. The primary VOCs detected at the CSC site were 1,1,1-TCA, TCE, and PCE. TCE and cis-1,2-DCE were detected at the highest concentrations.

An active soil gas sampling method sample was collected from an area adjacent to each of the soil sampling grids at each site. Analyses of samples from these locations confirmed that (1) the active soil gas sampling method could be used at the two sites, and (2) soil gas contamination was detectable by the reference method. Of the eleven grids investigated, nine were selected for demonstration sampling, five grids at the SBA site and four grids at the CSC site.

Demonstration Design

The demonstration was designed to evaluate the EMFLUX® system in comparison to the reference sampling method, active soil gas sampling, in terms of the following parameters: (1) VOC detection and quantitation, (2) sample retrieval rate, and (3) cost. These parameters were assessed in two different soil textures (clay soil at the SBA site and sandy soil at the CSC site). The demonstration design is described in detail in the demonstration plan (PRC, 1997) and is summarized below.

Predemonstration sampling identified nine grids (Grids 1, 2, 4, 5, and 6 at the SBA site and Grids 1, 2, 4, and 5 at the CSC site) that exhibited consistent soil texture and acceptable VOC concentrations for the demonstration. Each grid was 10.5 by 10.5 feet in area and was divided into seven rows and seven

columns producing 49, 18- by 18-inch sampling cells (Figure 3-3). Each grid was sampled at a depth of approximately 3 feet in each of the seven columns (labeled A through G) using the reference soil gas sampling method; the EMFLUX® cartridges were emplaced at a depth of about 3 to 4 inches for passive sampling. For each grid, seven soil gas samples were collected using the EMFLUX® system and the reference soil gas sampling method. The seven cells that were sampled using each method were selected randomly. The procedure used to collect samples using the EMFLUX® system is described in Chapter 2 and the procedure used to collect samples using the reference soil gas sampling method is described in Chapter 4.

VOC Detection and Quantitation

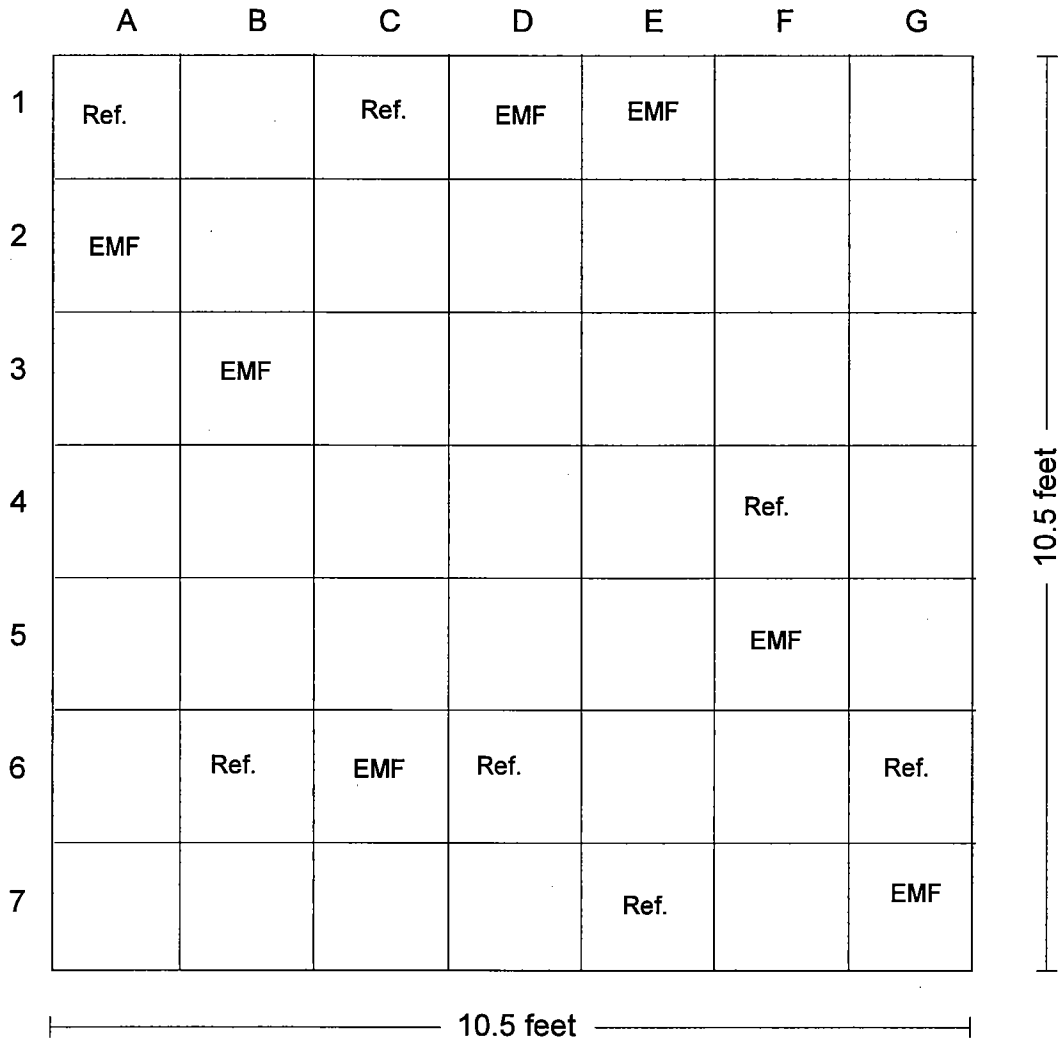
A Quadrel representative installed and collected the EMFLUX® samples and shipped them to Quadrel's team laboratory, Maryland Spectral Services, Inc., in Baltimore Maryland, where the samples were desorbed and analyzed. The samples were analyzed using gas chromatography/mass spectrometry (GC/MS) techniques according to EPA SW-846 modified Method 8260 for detection of VOCs, as described in EPA Office of Solid Waste and Emergency Response "Test Methods for Evaluating Solid Waste" (EPA, 1986).

The reference soil gas samples were analyzed using an on-site laboratory following the guidelines discussed in the quality assurance project plan (PRC, 1997). The guidelines used for on-site analysis were similar to SW-846 Method 5021 (Volatile Organic Compounds in Soils and Other Solid Matrices Using Equilibrium Headspace Analysis), modified to include high- and low-concentration procedures similar to those described in SW-846 Method 5035 (Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples) (EPA, 1986). The target compounds were vinyl chloride, 1,2-DCE, TCE, and PCE at the SBA site, and 1,2-DCE, 1,1-DCA, 1,1,1-TCA, TCE, and PCE at the CSC site. Soil gas samples collected from the CSC site were not analyzed for vinyl chloride because it was not detected in soil during site characterization activities.

The reference soil gas samples were collected in 40-milliliter (ml) glass volatile organic analysis vials. The standard injection volume used for soil gas analysis was 2 ml. A gas-tight glass syringe was used to directly inject the soil gas samples onto the GC column. An electrolytic conductivity detector was used for compound identification and quantitation. The GC was a Hewlett-Packard Series II equipped with a packed injection port and a DB-624 column.

The demonstration plan (PRC, 1997) stated that data for the EMFLUX® and reference soil gas sampling methods would undergo a statistical analysis. However, comparison of the EMFLUX® and reference method data indicated significant differences between the two data sets, with mean VOC concentrations for the data sets differing by several orders of magnitude in most instances. For this reason, a statistical analysis of the data was not performed.

In addition, there appears to be no consistent proportional relationship between contaminant concentrations detected using the EMFLUX® system and those detected using the reference sampling method. Therefore, interpretation of the chemical concentration data for this demonstration is limited to qualitative observations.



EMF EMFLUX® System Sampling Location

Ref. Reference Sampling Method Location

Figure 3-3. Typical Sampling Locations and Random Sampling Grid

Sample Retrieval Time

Sample retrieval time was measured as the time required to set up on a sampling grid, install and collect the seven EMFLUX® field collectors from each grid, decontaminate the sampler installation and collection equipment, and move to a new sampling grid. The time required to install the samplers was added to the time required to collect the samplers to obtain the sample retrieval time.

Cost

The cost estimate focused on the range of costs for using the EMFLUX® system and reference soil gas sampling method to collect 40 subsurface soil gas samples at a clay soil site (similar to the SBA site) and a sandy soil site (similar to the CSC site). The cost analysis is based on the results and experience gained from the demonstration and cost information provided by Quadrel. Factors that could affect the cost of operating the EMFLUX® system and the reference soil gas sampler include:

- Equipment costs
- Labor costs
- Sample analysis and reporting costs
- Decontamination costs
- Site restoration costs

Deviations from the Demonstration Plan

Three project-wide deviations from the approved demonstration plan were identified: (1) vinyl chloride was eliminated from the target compound list at the CSC site because vinyl chloride was not present in the soil gas at the site; (2) a statistical comparison of the EMFLUX® system data to the reference sampling method data was not performed because, in most cases, the data sets differed by several orders of magnitude; and (3) reference soil gas sampling method results were not available from Grid 6 at the SBA site because of laboratory error. Cases where the performance of an individual sampling technology caused it to deviate from the demonstration plan are discussed on a technology-specific basis in Chapters 4 (reference method) and 5 (EMFLUX® system) of this ETVR.

Chapter 4
Description and Performance of the Reference Method

This chapter describes the active soil gas sampling system used during the demonstration as the reference soil gas sampling method, and includes its associated background information, components and accessories, platform description, demonstration operating procedures, qualitative performance factors, quantitative performance factors, and data quality measures.

Background

Soil gas screening technology was used as early as 1929 as a surface geochemical technique in oil and gas exploration. In the early 1980s, active soil gas sampling became widely used as an environmental investigative tool for aiding in the delineation of subsurface organic contamination. The intent of active soil gas sampling is to reduce site characterization costs by identifying areas with suspected contamination, thereby minimizing the number of soil borings and monitoring wells required to delineate the extent of contamination.

Active soil gas sampling produces a discrete sample that provides a "snapshot" of the soil gas environment at the time the sample is collected. The sampling technique used in this demonstration requires the presence of vapor-phase compounds at detectable concentrations, relatively porous subsurface soil, experienced analytical instrument operators at the site, and portable analytical equipment for on-site analysis of samples.

Components and Accessories

Two active soil gas sampling systems were used during this demonstration: an AMS™ active sampling system at the SBA site, and a Geoprobe® sampling system at the CSC site. The systems are similar, and this description of system components and accessories applies to both technologies. The components of the reference sampling method consist of an expendable drive point, a drive-point holder, drive rods, expendable plastic tubing, a tubing connector, and a vacuum pump. The 2-inch-long, expendable drive point is a solid steel or aluminum component that has a cone-shaped drive end and a cylindrical shank on the other end that fits into the point holder. The drive-point holder is a hollow tube, 4 inches long by 1-inch outside-diameter. One end of the point holder holds the expendable point; the other has female threads for attaching the tubing connector. The 2-inch-long, hollow metal tubing connector has a nipple for the plastic tubing on one end and male threads with a rubber gasket on the other end, which attaches to the drive-point holder. The 36- to 48-inch-long by 1-inch outside-diameter drive rod is a hollow metal tube with male threads on one end and female threads on the other. The vacuum pump is capable of drawing a vacuum of 20 to 30 inches of mercury, is constructed of metal, and has pressure gauges on the sampling line and vacuum tank.

Other components of the reference soil gas sampling system include a drive cap, pull cap, ancillary tools, and expendable sampling supplies. The drive and pull caps are metal and have female threads on one end for attaching to the top drive rod. Ancillary tools required include drill bits, vise grips, pipe wrenches, crescent wrenches, knives, hemostats, and screwdrivers. Expendable sampling supplies required include the plastic tubing (tygon, Teflon™, or polyethylene), silicone tubing, 40-ml volatile organic analysis vials, syringe with needle, double-ended needles, and a container for waste.

Because the soil gas samples are usually analyzed immediately, an on-site or nearby laboratory is typically required. A GC in an on-site, mobile laboratory was used to analyze the samples during this demonstration.

Description of Platform

The AMS™ and Geoprobe® soil gas sampling systems use similar platforms to place the samplers. The platform consists of a hydraulically powered hammer mounted in the bed of a three-quarter-ton pickup truck. Additional equipment required includes an oil reservoir, a pump, a hammer support structure, hydraulic control levers, and three hydraulic cylinders: one to fold the hammer for transport, one to adjust the hammer height, and one to adjust the foot height.

The mobility and performance of the platform were adequate for the conditions at both demonstration sites. The size of the truck and the ability of the hammer to pivot in multiple directions allowed for smooth transition from one sampling location to another. The platform easily pushed or hammered the soil gas samplers to the 4.5-foot sampling depth at each demonstration site, and the platform easily extracted the soil gas samplers. The clay soil at the SBA site required less hammering to place the soil gas samplers than did the sandy soil at the CSC site.

Demonstration Operating Procedures

The reference soil gas sampling method involved assembling and installing the sampling system and collecting the soil gas sample. Initially, a 1-inch outside-diameter hollow rod was driven to the target sampling depth within the selected grid cell. The rod was fitted with an expendable drive point. Once the rod reached the target depth of 4.5 feet bgs, it was withdrawn approximately 6 inches. The expendable drive point remained in place, producing a 6-inch void space that allowed a soil gas sample to be collected. Once the rod was retracted 6 inches, a 0.25-inch inside-diameter, high-density polyethylene or Teflon™ tube was lowered into the drive rod. The end of the tubing was fitted with a reverse threaded, barbed fitting. The barb was inserted into the tubing and the reverse threaded end was screwed into the expendable drive point holder at the end of the drive rod when the tubing reached the end of the drive rod. A butyl rubber O-ring around the threaded end of the barb fitting ensured an airtight seal between the tubing and the end of the drive rod.

Once the tubing was in place, the soil gas sample was collected by attaching an evacuated 40-ml sampling vial with a double-ended needle to the top end of the system tubing as follows.

1. The sampling vial was evacuated using a 60 cc plastic syringe. The syringe pulled a vacuum on the closed sampling vial for 10 seconds. This vacuum was applied by attempting to draw 60 cc of air out of the vial.

2. A volume-calibrated vacuum system was attached to the end of the polyethylene tube connected to the end of the hollow rod. The vacuum system removed a volume of air equal to one tubing volume that was calculated to be 16.4 cc in this demonstration.

3. The vacuum system was shut off and the sampling string was allowed to equilibrate with ambient air pressure. The system was closed so that equilibration occurred only by drawing soil gas into the sample tubing. (A vacuum line integrity test was successfully completed before each sampling event to ensure that there were no leaks in the soil gas system.)

4. When no vacuum was left in the tubing, a double-end hypodermic needle was inserted into the tygon tubing that connected the polyethylene tubing with the vacuum pump. The exposed end of the needle was sealed with a soft rubber sheath. The evacuated sampling vial was pushed onto the exposed needle. The needle penetrated the vial's septum and exposed the soil gas in the tubing to the vacuum in the vial, causing the vial to fill with soil gas. The sampling vial was allowed to collect a sample for 40 seconds at the CSC site and 2 minutes at the SBA site. These times were selected after several tests on refilling evacuated vials were conducted by observing (1) septa "spring back" to their original positions, and (2) lack of an air hiss upon opening the vial.

Each sampling vial containing a soil gas sample was numbered according to the sample grid and cell where it was collected. After the samples were properly labeled, they were analyzed within 24 hours of collection. Prior to analysis, the active soil gas samples were stored at ambient temperatures.

All reusable soil gas sampling equipment was decontaminated by heating with a portable propane heater for approximately 30 seconds. The sampling vials and needles were not reused, and the sample tubing was discarded after a single use.

Qualitative Performance Factors

The following qualitative performance factors were assessed for the reference soil gas sampling method: (1) reliability and ruggedness under the test conditions, (2) training requirements and ease of operation, (3) logistical requirements, (4) sample handling, and (5) performance range.

Reliability and Ruggedness

The reliability and ruggedness of the reference soil gas sampling method was adequate for conditions at both demonstration sites. The sampler was pushed or hammered to the 4.5-foot sampling depth at each site without incident. During the demonstration, operators noted that attaching the tubing adapter to the point holder was easier when the tubing was precut to the required length (per the sampling depth); otherwise, the tubing tended to unwind when released, which would either loosen or unscrew the tubing adapter from the point holder. The clay soil at the SBA site caused the system to hold its vacuum at several sampling locations; hence, soil gas was not completely drawn into the system for sampling. In these cases, the rod was withdrawn in additional 6-inch increments until the vacuum was broken and the system's pressure reached equilibrium with atmospheric pressure. The vacuum problem was not encountered in the sandy soil at the CSC site. The reference soil gas sampling method operated without any equipment failure or mechanical breakdown during the demonstration.

Training Requirements and Ease of Operation

The active soil gas sampling technology requires minimal training due to the ease of operating the system. Special certifications, advanced degrees, or other specialized training are not required to operate the sampling platform and use the system. However, health and safety training is required by the Occupational Safety and Health Administration when operating at hazardous waste sites. A novice would require 3 to 6 hours of hands-on training to become proficient at using the sampling platform and the soil gas sampling system. A crew of two is recommended for sampling and operation of the system and platform, but one person may safely operate the system.

Logistical Requirements

Logistical requirements for the reference soil gas sampling method include obtaining utility clearances and grouting the sampling holes. Permits to operate the system were not required by the states of Iowa and Colorado, but may be required in other states. The system, platform, and ancillary equipment are mounted on or contained in the platform vehicle.

The physical disruption caused by the sampling platform was minimal during the demonstration. No soil cuttings were generated and a 1-inch diameter hole was left at each sampling location after the reference soil gas sampling system was extracted. These holes were grouted with bentonite after samples were collected.

Sample Handling

The reference soil gas samples were easily collected and handled. When no vacuum was left in the sampling tubing, one end of a double-end hypodermic needle was inserted into the polyethylene tubing and the other end was inserted through the septum of the evacuated sampling vial. Soil gas in the tubing was drawn into the sampling vial until the pressure reached equilibrium. This took about 40 to 120 seconds. The sampling vial containing the soil gas sample was numbered according to the sample grid and cell where it was collected. The samples were properly labeled and were then stored at ambient temperature until analysis. The samples were analyzed within 24 hours of collection.

Performance Range

The performance range of the reference sampling method is limited by soil texture, permeability, soil moisture content, contaminant type, and depth to groundwater. During the demonstration, reference soil gas samples were collected from a depth of 4.5 feet; however, the system is capable of collecting samples at depths of 30 to 60 feet. Soil such as glacial till with cobbles or fill with pieces of concrete can cause refusal of the reference sampling method before it reaches the desired depth. Clay soil may also impede sample collection because the vacuum is not readily released. The active soil gas sampling must be conducted above the water table to avoid drawing water into the sampling tube.

Quantitative Performance Factors

Three quantitative performance indicators were measured for the reference soil gas sampling method: (1) VOC detection and quantitation, (2) sample retrieval time, and (3) cost. The following sections discuss the first two performance factors; a cost analysis of the reference soil gas sampling method is provided in Chapter 6.

VOC Detection and Quantitation

Seven samples were collected using the reference soil gas sampling method within each grid as described in Chapter 3 and specified in the demonstration plan (PRC, 1997). Samples were analyzed for VOCs by GC analysis according to the standard operating guideline provided in the demonstration plan (PRC, 1997). Table 4-1 presents the range and mean VOC concentrations for samples collected using the reference method. The VOC results for each sample collected are presented in Appendix A. For Grid 6 at the SBA site, VOC data for the reference method were not available because of laboratory error. For one of the sampling grids, VOC data for all seven samples are not available due to laboratory error; in this case, the range and mean were calculated from the available data. Chapter 5 presents a graphical comparison of the analytical results obtained using the reference sampling method to those obtained using the EMFLUX® system.

Sample Retrieval Time

The reference soil gas method required 458 minutes to collect 35 samples at the SBA site, an average of 13.1 minutes per sample, and 183 minutes to collect 28 samples at the CSC site, an average of 6.5 minutes per sample. Sample retrieval time was measured as the amount of time per sample required to set up at a sampling grid, collect the required samples, grout the hole, decontaminate the sampling equipment, and move to a new sampling location. Analytical results were available from the on-site laboratory within one day; this time was not included in calculating the sample retrieval rate. A three-person sampling and analysis crew was used to collect and analyze soil gas samples using the reference soil gas sampling method at both sites. The difference in sample retrieval time between the SBA and CSC sites may be due in part to differences in soil type (clay versus sandy soil).

Data Quality

Data quality for the reference sampling method was assessed throughout this demonstration by implementing an approved quality assurance project plan (PRC, 1997). The QA/QC procedures included the consistent application of approved methods for sample collection, chemical analysis, and data reduction. Based on the intended use of the data, QA objectives for precision, accuracy, representativeness, comparability, and completeness were established, and QC samples were collected to assess whether the QA objectives were met. Based on the results of a field audit conducted by the EPA and a detailed validation of the demonstration data by Tetra Tech, the data have been deemed acceptable for use as described in the demonstration design (Chapter 3). The results of the QC indicators used for the reference soil gas sampling method are provided in the technology evaluation report for this demonstration (Tetra Tech, 1997) and are summarized below.

All reference method soil gas samples were analyzed within 24 hours of collection, as specified in the QAPP. Some initial calibrations of the Hewlett-Packard Series II GC had to be abbreviated to meet acceptance criteria, and either a five-point or a three-point calibration was utilized instead of the specified six-point calibration. However, all continuing calibrations met the acceptance criteria for percent difference, indicating that the calibration was reproducible.

Two method blanks were analyzed at the SBA site and one at the CSC site. In addition, one ambient air blank and one equipment blank were analyzed at each site. None of these blanks exhibited any target compounds above the quantitation limit, indicating that there were no apparent sample contamination problems at either site.

Table 4-1. Volatile Organic Compound Concentrations in Samples Collected Using the Reference Soil Gas Sampling Method

		Concentration (ng/L)											
		Vinyl Chloride		Total DCE		1,1-DCA		1,1,1-TCA		TCE		PCE	
Site	Grid	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean
SBA	1	230,000 - 5,180,000	2,390,000	279,000 - 2,220,000	958,000	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
SBA	2	< 100	< 100	< 50 - 151	65	< 50	< 50	< 50	< 50	183 - 5,380	1,250	< 50	< 50
SBA	4	< 100	< 100	< 50 - 261	101	< 50	< 50	< 50	< 50	744 - 33,600	9,390	< 50	< 50
SBA	5	< 100 - 8,270	1,980	3,180 - 21,000	9,980	< 50	< 50	< 50	< 50	132 - 6,250	2,010	< 50	< 50
SBA	6 *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CSC	1	NA	NA	2,260 - 21,300	10,800	< 500	< 500	7,530 - 670,000	314,000	7,450 - 77,400	41,800	79,000 - 770,000	330,000
CSC	2	NA	NA	< 500 - 3,780	1,850	< 500	< 500	33,900 - 439,000	288,000	11,400 - 154,000	89,500	32,000 - 427,000	223,000
CSC	4	NA	NA	< 500 - 10,500	6,190	< 500	< 500	19,600 - 217,000	142,000	1,880 - 41,800	22,200	20,800 - 389,000	192,000
CSC	5 †	NA	NA	< 500 - 1,400	738	< 500	< 500	12,600 - 132,000	69,900	2,430 - 24,700	11,500	24,800 - 220,000	98,500

ng/L Nanograms per liter
NA Not analyzed
SBA Small Business Administration site
CSC Chemical Sales Company site
† VOC data for only five samples are available
* VOC data were collected but are not available because of laboratory error

Total DCE Total Dichloroethene
1,1-DCA 1,1-Dichloroethane
1,1,1-TCA 1,1,1-Trichloroethane
TCE Trichloroethene
PCE Tetrachloroethene

Tetra Tech performed a data validation review of all data, and an EPA Region 8 QC chemist performed an audit of the laboratory during the predemonstration phase. Neither of these reviews noted any significant data quality issues. Thus, the data appear to be of sufficient quality for the intended use.

Chapter 5
Technology Performance

This chapter describes the performance of the EMFLUX® system in terms of qualitative and quantitative performance factors. A description of the EMFLUX® system is provided in Chapter 2.

Qualitative Performance Factors

The following qualitative performance factors were assessed for the EMFLUX® system: (1) reliability and ruggedness under the test conditions, (2) training requirements and ease of operation, (3) logistical requirements, (4) sample handling, and (5) performance range.

Reliability and Ruggedness

The Quadrel representative collected 100 percent (63 of 63) of the EMFLUX® field collectors without sample loss or downtime. This accomplishment verifies the developer's claim that the EMFLUX® system can collect samples in clay or poorly drained soils and under artificial surfaces. The sample vials used with this technology are protected before deployment and after collection by custom-made packaging materials, minimizing any possible breakage of the vials.

Training Requirements and Ease of Operation

Complete written instructions for sample deployment and retrieval accompany all EMFLUX® field kits. At the client's request, the developer also furnishes a 16-minute training video. During the demonstration, the EMFLUX® sample cartridges were installed and retrieved by the developer, but the developer claims that no specialized training is required to install, collect, or ship the samples.

Logistical Requirements

No special licensing requirements are necessary to use the EMFLUX® system. The system requires two mobilizations: one trip to install the samplers, and a second trip to collect the samplers. Once the samples are collected, they are sent back to the developer or to another qualified laboratory for analysis.

Installation of the EMFLUX® system only requires drilling a 3- to 4-inch deep hole for each sample. No specific logistical support is required for surveys in unpaved areas. Shallow underground utilities such as cable, telephone, and electrical lines should be located and utility clearances should be obtained before the holes are drilled. Installation of samplers through paved surfaces requires the use of a roto-

hammer or drill, and holes in the pavement are usually patched after sampling. The use of the roto-hammer requires an electrical power source.

The physical impact of demonstration sampling on the site was minimal, as no advancement platforms are required for the EMFLUX® system. The EMFLUX® samplers left 0.75-inch-diameter holes, which were grouted with granular bentonite after the samplers were collected.

Sample Handling

At each sampling location, a field technician withdraws the field collector from its hole and wipes the outside of the vial clean using gauze cloth; following removal of the sampling cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sampling location number is written on the label. The samples must be securely packaged for shipment, but do not require cooling. The technician records the sampling point location, date, time, and other relevant information on the field deployment form and on the chain-of-custody form. The samples are shipped to the developer or other qualified laboratory for analysis. Samples are usually analyzed using GC/MS techniques, although other analytical techniques are offered by Quadrel.

Performance Range

The EMFLUX® field collectors are typically inserted in to the soil to a depth of 3 to 4 inches and are capable of sampling soil gas beneath artificial surfaces, such as asphalt and concrete, as well as in soils with sandy to clay textures. The system's use of computer modeling to predict optimal sampling times and the relatively long sample collection period may enhance the sensitivity of the EMFLUX® system. During the demonstration, the system successfully detected VOCs in both the clay soil at the SBA site and the sandy soil at the CSC site, at detection limits ranging from 0.09 to 0.28 ng/L. According to the developer, the EMFLUX® system can detect VOCs and SVOCs from soil or groundwater at depths as great as 200 feet bgs or more. Because the system relies on diffusion of soil gas from subsurface sources such as contaminated soil or groundwater, the performance range for the EMFLUX® system may be controlled by factors such as depth to the source, contaminant concentrations and diffusion rates, soil type and organic content, the detection limits of the methods used to analyze the samples, and possibly other factors. However, during the demonstration, the system was evaluated at locations with relatively shallow subsurface contamination and was only evaluated with regard to its ability to detect certain targeted VOCs. For these reasons, the performance range of the EMFLUX® system was not fully established by the demonstration data.

Quantitative Performance Assessment

Quantitative measures of the performance of the EMFLUX® system consisted of (1) VOC detection and quantitation, (2) sample retrieval rate, and (3) cost. The following sections discuss the first two performance factors; a cost analysis of the EMFLUX® system is provided in Chapter 6.

VOC Detection and Quantitation

Seven samples were collected with the EMFLUX® system within each sampling grid, as described in Chapter 3. Samples were analyzed for VOCs by the technology developer's subcontract laboratory using GC/MS techniques (EPA SW-846 modified Method 8260) in accordance with the demonstration plan (PRC, 1997). Quadrel converted the raw VOC data, initially reported as mass of each VOC

detected in each cartridge, to mass per unit volume of air, using the conversion equation presented in Chapter 2. Table 5-1 presents the range and mean VOC concentrations calculated from soil gas samples collected using the EMFLUX® system. The VOC results for each sample collected are presented in Appendix A. For all of the sampling grids, VOC data for all seven samples were used to calculate range and mean concentrations for the EMFLUX® samples. Reporting limits for the target VOCs were less than 1 ng/L, typically ranging from 0.09 ng/L for 1,2-DCE to 0.28 ng/L for PCE.

Table 5-2 compares the mean VOC concentrations detected using the EMFLUX® system to those detected in the samples collected using the reference soil gas sampling method. Based on the mean VOC concentrations for each sampling method at both sites, the EMFLUX® system identified the presence of all of the VOC compounds detected by the reference soil gas sampling method in 24 of 25 cases. In addition, the EMFLUX® system reported VOCs that the reference method did not detect in seven of 31 cases. For example, the EMFLUX® system detected 1,1-DCA at all four grids sampled at the CSC site at concentrations ranging from 0.13 to 6.69 ng/L; however, the reference method did not detect 1,1-DCA in any of the samples. Previous analyses of soil samples and soil headspace samples has indicated the presence of 1,1-DCA in soils at the CSC site (ESI, 1991). This performance characteristic suggests that the EMFLUX® system can detect the presence of lower concentrations of VOCs in the soil gas than the reference soil gas sampling method.

Graphical presentations of the mean 1,2-DCE, 1,1,1-TCA, TCE, and PCE concentrations for samples collected using the EMFLUX® system and the reference sampling method are provided in Figures 5-1 through 5-4 (insufficient data are available to provide meaningful graphs of vinyl chloride and 1,1-DCA data). Based on a review of the data distribution presented in Figures 5-1 through 5-4, a significant difference between the EMFLUX® and reference method data is evident, with mean VOC concentrations for the data sets differing by several orders of magnitude in most instances. Because of this difference, a statistical analysis of the data was not performed. The sample locations where the EMFLUX® system detected high VOC concentrations generally corresponded to the sample locations where the reference method also detected high VOC concentrations; however, the values in the two data sets do not appear to exhibit any direct or consistent proportional relationship. According to the technology developer, it is possible that the differences between the VOC concentrations detected using the two technologies may be due to one or a combination of several factors. These factors include: (1) the longer sample collection period for the EMFLUX® samples, which causes the EMFLUX® data to be subject to factors such as diurnal temperature, barometric pressure, and "earth tide" variations, resulting in concentrations that may be more representative of long-term, average soil gas flux; (2) the aggressive sample collection technique used for the reference method, which may draw more soil gas from the surrounding area than the amount that passively infiltrates the EMFLUX® field collectors; and (3) the different sampling depths used for the two techniques.

It should be noted that the EMFLUX® system and reference method are field screening techniques that provide only an estimate of the actual concentration of contaminants in soil gas. Because the EMFLUX® system and reference method use different techniques to collect soil gas samples, it is not expected that the two methods will provide the same response and that the data will be directly comparable. Because the mean VOC concentrations for the data sets differ by several orders of magnitude in most instances, a statistical analysis of the data was not performed and interpretation of the chemical concentration data for this demonstration is limited to qualitative observations.

Table 5-1. Volatile Organic Compound Concentrations in Samples Collected Using the EMFLUX® System

		Concentration (ng/L)											
		Vinyl Chloride		1,2-DCE		1,1-DCA		1,1,1-TCA		TCE		PCE	
Site	Grid	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean	Range	Mean
SBA	1	0.19 - 104	38.0	16.0 - 958	520	<0.10	<0.10	<0.11	<0.11	0.69 - 16.3	7.35	<0.28	<0.28
SBA	2	<0.17	<0.17	0.12 - 5.34	3.28	<0.10	<0.10	<0.11	<0.11	13.0 - 63.6	35.6	<0.28 - 3.53	1.79
SBA	4	<0.17	<0.17	<0.09 - 0.11	0.09	<0.10	<0.10	<0.11	<0.11	0.24 - 121	20.8	<0.28 - 0.80	0.35
SBA	5	<0.17	<0.17	<0.09 - 8.40	2.92	<0.10	<0.10	<0.11	<0.11	0.34 - 33.6	11.7	<0.28	<0.28
SBA	6	<0.17	<0.17	<0.09	<0.09	<0.10	<0.10	<0.11	<0.11	<0.12	<0.12	<0.28	<0.28
CSC	1	NA	NA	19.7 - 157	58.3	<0.11 - 6.69	4.09	350 - 918	619	65.7 - 1,960	857	2,360 - 54,800	29,200
CSC	2	NA	NA	0.78 - 9.91	3.32	0.15 - 1.17	0.55	118 - 259	203	36.0 - 224	156	338 - 2,630	1,370
CSC	4	NA	NA	0.47 - 6.52	2.58	0.13 - 1.34	0.52	24.9 - 261	115	2.55 - 46.0	14.0	142 - 863	403
CSC	5	NA	NA	<0.10 - 0.27	0.17	<0.11 - 0.30	0.17	11.1 - 65.6	34.4	0.28 - 5.82	3.79	57.8 - 362	249

ng/L	Nanograms per liter	1,1-DCA	1,1-Dichloroethane
SBA	Small Business Administration site	1,2-DCE	Cis-1,2-Dichloroethene
CSC	Chemical Sales Company site	1,1,1-TCA	1,1,1-Trichloroethane
NA	Not analyzed	PCE	Tetrachloroethene
		TCE	Trichloroethene

Table 5-2. Mean Chemical Concentrations of EMFLUX® and Reference Soil Gas Sampling Method Data

		Mean Concentration (ng/L)											
		Vinyl Chloride		1,2-DCE		1,1-DCA		1,1,1-TCA		TCE		PCE	
Site	Grid	EMFLUX®	Ref.	EMFLUX®	Ref.	EMFLUX®	Ref.	EMFLUX®	Ref.	EMFLUX®	Ref.	EMFLUX®	Ref.
SBA	1	38.0	2,390,000	520	958,000	<0.10	<50	<0.11	<50	7.35	<50	<0.28	<50
SBA	2	<0.17	<100	3.28	65	<0.10	<50	<0.11	<50	35.6	1,250	1.79	<50
SBA	4	<0.17	<100	0.09	101	<0.10	<50	<0.11	<50	20.8	9,390	0.35	<50
SBA	5	<0.17	1,980	2.92	9,980	<0.10	<50	<0.11	<50	11.7	2,010	<0.28	<50
SBA	6	<0.17	NA	<0.09	NA	<0.10	NA	<0.11	NA	<0.12	NA	<0.28	NA
CSC	1	NA	NA	58.3	10,800	4.09	<500	619	314,000	857	41,800	29,200	330,000
CSC	2	NA	NA	3.32	1,850	0.55	<500	203	288,000	156	89,500	1,370	223,000
CSC	4	NA	NA	2.58	6,190	0.52	<500	115	142,000	14.0	22,200	403	192,000
CSC	5	NA	NA	0.17	738	0.17	<500	34.4	69,900	3.79	11,500	249	98,500

ng/L	Nanograms per liter	PCE	Tetrachloroethene
1,2-DCE	1,2-Dichloroethene	Ref.	Reference soil gas sampling method
1,1-DCA	1,1-Dichloroethane	SBA	Small Business Administration site
1,1,1-TCA	1,1,1-Trichloroethane	CSC	Chemical Sales Company site
TCE	Trichloroethene	NA	Not analyzed

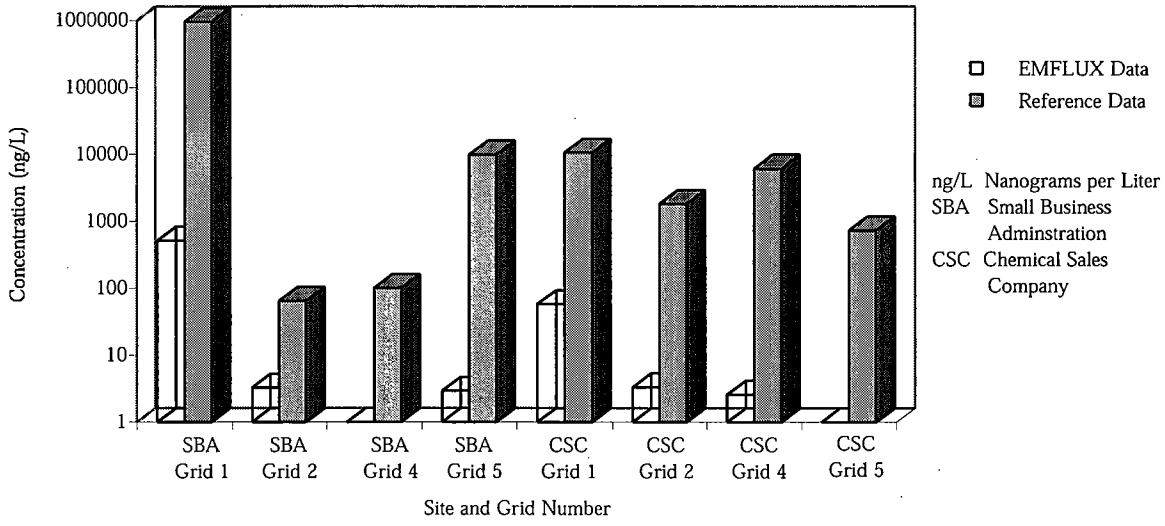


Figure 5-1. Comparison of Mean 1,2-Dichloroethene Concentration in Samples Collected Using EMFLUX® System and the Reference Soil Gas Sampling Method

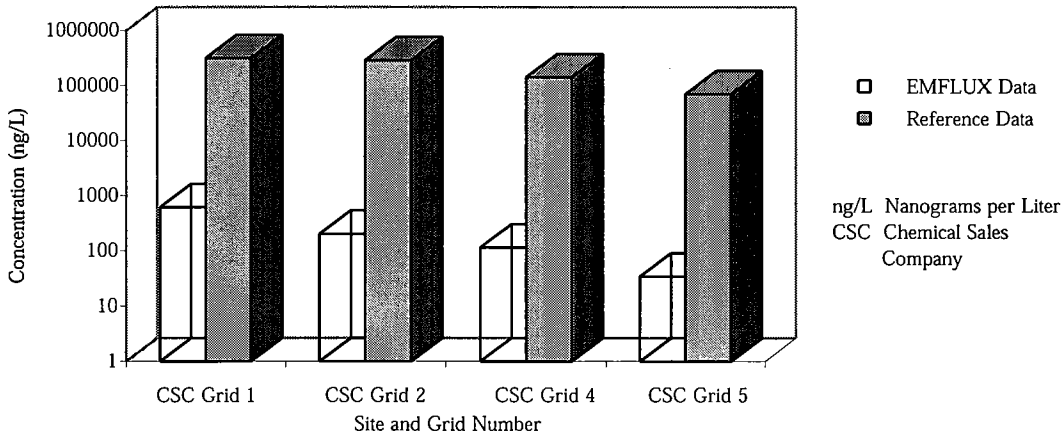


Figure 5-2. Comparison of Mean 1,1,1-Trichloroethane Concentration in Samples Collected Using EMFLUX® System and the Reference Soil Gas Sampling Method

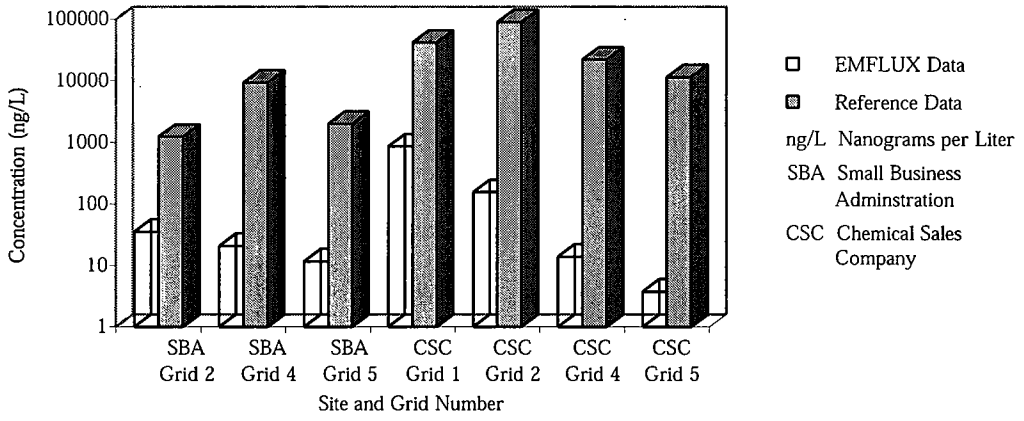


Figure 5-3. Comparison of Mean Trichloroethene Concentration in Samples Collected Using EMFLUX® System and the Reference Soil Gas Sampling Method

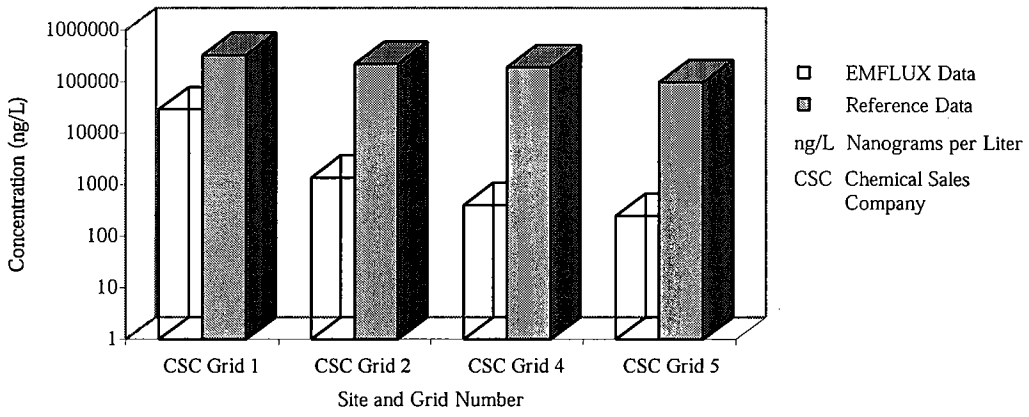


Figure 5-4. Comparison of Mean Tetrachloroethene Concentration in Samples Collected Using EMFLUX® System and the Reference Soil Gas Sampling Method

Sample Retrieval Time

During the demonstration, installation of the EMFLUX® system averaged 3.0 minutes per sample at the SBA site and 4.0 minutes per sample at the CSC site. For this demonstration, the samplers were left in place for approximately 4 days at each site. Collection of the samplers required an average of 2.3 minutes per sample at the SBA site and 3.2 minutes at the CSC site. Overall, installation and collection of 35 samples at the SBA site required 187 minutes, an average of 5.3 minutes per sample, and installation and collection of 28 samples at the CSC site required 201 minutes, an average of 7.2 minutes per sample. The analysis and reporting by the technology developer required an additional 12 days for the SBA site data and 16 days for the CSC site data from the time samples were collected until the laboratory report was delivered. The sample retrieval time for each site was determined based on the total length of time required to set up at a sampling grid, implant and collect the seven EMFLUX® field collectors, collect any necessary QA samples, grout the holes with bentonite, decontaminate any sampling equipment, and move to a new grid location. One person collected soil gas samples with the EMFLUX® system at the SBA and CSC sites.

Table 5-3 presents a comparison of the average sample collection rates for the EMFLUX® system and those for the reference soil gas sampling method. The average sample collection times for the EMFLUX® system were quicker than those of the reference sampling method in the clay soils at the SBA site and slightly slower than those of the reference sampling method in the sandy soils at the CSC site. The results also suggest that the sample collection rate for the EMFLUX® system may be less dependent on soil type than the collection rate for the reference method, possibly because the EMFLUX® samplers require only shallow placement and minimal equipment decontamination.

Table 5-3. Average Sample Retrieval Times for the EMFLUX® System and the Reference Soil Gas Sampling Method

Sampler	Average Time (minutes per sample)	
	SBA Site	**CSC Site**
EMFLUX® Soil Gas Sampler		
Average Sample Installation Time	3.0	4.0
Average Sample Collection Time	2.3	3.2
Average Sample Retrieval Time	5.3	7.2
Reference Sampling Method		
Average Sample Retrieval Time	13.1	6.5

Note: One person collected soil gas samples using the EMFLUX® system at the SBA and CSC sites, and a three-person sampling and analysis crew was used to collect and analyze the soil gas samples using the reference soil gas sampling method.

Data Quality

Data quality for the EMFLUX® system was assessed throughout this demonstration by implementing an approved quality assurance project plan (PRC, 1997). The QA/QC procedures included the consistent application of approved methods for sample collection, chemical analyses, and data reduction. Based on the intended use of the data, QA objectives for precision, accuracy, representativeness, comparability, and completeness were established and QC samples were collected to determine whether the QA objectives were met. Based on the results of a field audit conducted by EPA and a detailed validation of the demonstration data, the data have been deemed acceptable for use as described in the demonstration design (Chapter 3). The results of the QC indicators used for this demonstration for the EMFLUX® system are provided in the Technology Evaluation Report for this demonstration (Tetra Tech, 1997) and are summarized below.

As planned, adsorbent samples from the SBA site were sent to a laboratory (Maryland Spectral Services) that had been selected by the developer for analysis in accordance with the laboratory's Standard Operating Procedures. The QC samples included field blanks, trip blanks, method blanks, and surrogate spikes.

At both the SBA and the CSC site, the QC program incorporated the analysis of three field blanks, one trip blank, and at least three method blanks. One trip blank, from the CSC site, exhibited minor contamination (just above the quantitation limit) with methylene chloride, which is commonly used as a laboratory solvent. No other target VOCs were detected in any of the above-described blanks, indicating that contamination of samples in the field, in transport, or in the laboratory was not occurring to any significant degree.

Surrogate spike recovery data were not reported, but no deviations from acceptance criteria were reported by the laboratory.

In summary, although the QC program implemented by the developer laboratory was limited, the results of that QC program did not suggest that any significant data quality issues exist. Therefore, the data from the Quadrel laboratory appears to be of sufficient quality for use in this report as planned.

Chapter 6
Economic Analysis

The Quadrel EMFLUX® Soil Gas Investigation System was demonstrated at two sites that varied geologically and were contaminated with VOCs at a range of concentrations. This chapter presents an economic analysis for applying the EMFLUX® system at sites similar to those used in this demonstration. The demonstration costs for the reference soil gas sampling method are also provided.

This economic analysis estimates the range of costs for using the EMFLUX® Soil Gas Investigation System to collect 40 subsurface soil gas samples at a clay soil site (similar to the SBA site) and a sandy soil site (similar to the CSC site). The analysis is based on the results and experience gained from this demonstration and costs provided by Quadrel. To account for variability in cost data and assumptions, the economic analysis is presented as a list of cost elements and a range of costs for collecting soil gas samples using the EMFLUX® system and reference sampling method.

Assumptions

Several factors affect the cost of subsurface soil gas sampling. Wherever possible, these factors are identified so that decision makers can independently complete a site-specific economic analysis. For example, this cost estimate is based on the soil types and average sample retrieval times calculated during the demonstrations of 5.3 minutes per sample for the clay soil site and 7.2 minutes pers sample at the sandy soil site. This cost estimate assumes that a hammer-driven steel rod is used to install the EMFLUX® system 3- to 4-inches bgs, and a direct-push platform is used to advance the active soil gas sampling system to a depth of 4.5 feet bgs for sample collection. The cost estimate also assumes that a one-person sampling crew collects soil gas samples using the EMFLUX® system and that a two-person sampling and analysis crew collects and analyzes soil gas samples using the reference method.

EMFLUX® System

The costs for collecting soil gas samples using the EMFLUX® system are presented in two categories: (1) sampler, sample analysis, and equipment costs, which include mobilization/demobilization costs, equipment use costs, and sampler and sample analysis costs for the EMFLUX® system and (2) operating costs, which include labor costs for sampler installation and retrieval, and other direct costs such as supplies and site restoration.

The cost categories and associated cost elements are defined and discussed below and serve as the basis for the estimated cost ranges presented in Table 6-1.

Table 6-1. Estimated Subsurface Soil Gas Sampling Costs for the EMFLUX® System

Sampler, Sample Analysis, and Equipment Costs

Mobilization/Demobilization = $200 to $600 per site
Equipment = $25 to $90 per day
EMFLUX® System and Sample Analysis = $85 to $195 per sample

Operating Costs

Clay Soil Site Sample Retrieval Time = 4 to 6 hours (1 day) Total Samples Collected = 40 Total Sample Depth = 13 feet (4 inches/sample) Sampling Crew Size = 1 Person		**Sandy Soil Site** Sample Retrieval Time = 5 to 7 hours (1 day) Total Samples Collected = 40 Total Sample Depth = 13 feet (4 inches/sample) Sampling Crew Size = 1 Person	
Labor Costs		Labor Costs	
Mobilization/Demobilization	$400 - $600	Mobilization/Demobilization	$400 - $600
Travel	$12 - $60	Travel	$12 - $60
Per Diem	0 - $300	Per Diem	0 - $300
Sample Retrieval	$200 - $300	Sample Retrieval	$250 - $350
Other Direct Costs		Other Direct Costs	
Supplies	$25 - $75	Supplies	$25 - $75
Site Restoration	$25 - $50	Site Restoration	$25 - $50
Range of Operating Costs*	**$660 - $1,390**		**$710 - $1,440**

* The range of Operating Costs is rounded to the nearest tens of dollars and does not include Sampler, Sample Analysis, or Equipment Costs

Sampler, Sample Analysis, and Equipment Costs. These costs include the mobilization/demobilization costs, equipment costs, and sampler and sample analysis costs for the EMFLUX® system. Cost ranges were estimated as a daily equipment use fee and sampler and sample analysis charges. The costs include:

- Mobilization/Demobilization Costs — These costs include preparing, delivering, and setting up the sampling equipment, as well as packing up and returning the equipment to the vendor's yard. Equipment mobilization and demobilization costs are estimated to range from $200 to $600 for each site.

- Equipment Costs — Based on the average sample retrieval times for the demonstration and on collecting 40 samples at each site, it is assumed that 1 day will be required to install the passive soil gas detectors at a clay soil site and 1 day at a sandy soil site. Equipment costs are estimated to range from $25 to $90 per day and include the cost of equipment to install the passive soil gas sampler (hammer-driven steel rod [$25 per day]), rental of a roto-hammer ($60 per day), and purchase of copper tubing ($5 per day). A roto-hammer is only required if samplers must be installed below pavement. Copper tubing is required when installing the

sampler through pavement. No equipment is needed during collection of the passive soil gas detectors.

- Sampler and Sample Analysis Costs — Unit costs of the EMFLUX® samplers include passive soil gas detectors, laboratory analysis, data tables, maps, and a final report. The EMFLUX® field collector costs range from $85 to $195 per sample, depending on the selected target analytes. The EMFLUX® system costs include off-site laboratory analysis using a GC/MS.

Operating Costs. Operating costs are limited to mobilization/demobilization labor, travel, per diem, and sample collection labor. Operating costs for collecting samples with the EMFLUX® system are segregated into labor costs and other direct costs, as shown below.

Labor costs include mobilization/demobilization labor, travel costs, per diem, and sample retrieval.

- Labor Mobilization/Demobilization Labor Costs — This cost element includes the time for one person to prepare for and travel to each site and includes 4 to 6 hours at a rate of $50 per hour for two trips (one for sampler installation and one for sampler collection).

- Travel costs — Travel costs for each site are limited to round-trip mileage costs and are estimated to be between 20 to 100 miles at a rate of $0.30 per mile for 2 trips (one for sampler installation and one for sampler collection).

- Per Diem Costs — This cost element includes food, lodging, and incidental expenses and is estimated to range from zero (for a local site) to $150 per day per person for one person for 2 days at the clay soil site (½ day each for sampler installation and collection and 1 day for mobilization/demobilization and site restoration). Costs are estimated to be the same for the clay site and the sandy site.

- Sample Retrieval Labor Costs — On-site labor costs include labor for sampler installation and sampler collection. Because installation and collection of the EMFLUX® system is relatively simple, additional oversight labor is not required. The total number of personnel required on site is one. Based on the average demonstration sample retrieval times, sample installation and collection labor times are estimated to be 4 to 6 hours for 1 person at each site (clay or sandy soil). Labor rates are estimated at $50 per hour.

Other direct costs include supplies and site restoration costs.

- Supplies — This cost element includes decontamination supplies, such as buckets, soap, high-purity rinse water, and brushes as well as personal protective equipment (Level D, the minimum level of protection, is assumed). Supplies are estimated to cost between $25 and $75.

- Site Restoration — Site restoration costs include grouting the sample boreholes and site restoration labor. Grouting costs for each site are limited to grout and grouting tools ($25 to $50). Site restoration labor costs are included under sample collection labor costs.

Reference Sampling Method

The costs for implementing the reference method (active soil gas sampler) during the demonstration include categories for sampling and analysis and for oversight, as presented in Table 6-2 and discussed below.

Table 6-2. Estimated Subsurface Soil Gas Sampling Costs for the Reference Sampling Method

Sampling and Analysis Equipment Costs			
Lump Sum = $4,700 for each site			
Oversight Costs			
Clay Soil Site Total Sampling Time = 9 to 11 hours (2 days) Total Samples Collected = 40 Total Sample Depth = 180 feet (4 feet/sample) Sampling Crew Size = 2 People		**Sandy Soil Site** Total Sampling Time = 5 to 7 hours (1 day) Total Samples Collected = 40 Total Sample Depth = 180 feet (4 feet/sample) Sampling Crew Size = 2 People	
Labor Costs		Labor Costs	
Mobilization/Demobilization	$200 - $300	Mobilization/Demobilization	$200 - $300
Travel	$6 - $30	Travel	$6 - $30
Per Diem	0 - $300	Per Diem	0 - $150
Sampling Oversight	$450 - $550	Sampling Oversight	$250 - $350
Other Direct Costs		Other Direct Costs	
Supplies	$25 - $75	Supplies	$25 - $75
Range of Oversight Costs*	**$680 - $1,260**		**$480 - $910**

* The range of Oversight Costs is rounded to the nearest tens of dollars and does not include Sampling and Analysis Equipment Costs

Sampling and Analysis Costs. Total lump sum sampling and analysis equipment costs for the clay and sandy soil sites was $4,700 for each site, and included:

- Mobilization and demobilization
- Drilling footage
- Active soil gas sampling system
- On-site laboratory analysis using a GC and an electrolytic conductivity detector (ELCD)
- Active soil gas sampling and analysis crew labor costs (2 people)
- Per diem for the crew (2 people)
- Grouting boreholes
- Site restoration
- Decontamination supplies

- Waste collection and containerization
- Data tables

Additional mobilization/demobilization and per diem costs will apply if the site is more than 100 miles from the active soil gas service provider. The minimum active soil gas cost is $2,500 per day for the collection and analysis of 20 samples for six or fewer VOCs. Up to 20 additional samples could be collected per day at an additional cost of $90 per sample and $5 per linear sample depth foot.

Oversight Costs. Oversight costs are presented as ranges to provide an estimate of oversight costs that may be incurred at other sites. Costs for overseeing the reference sampling are segregated into labor costs and other direct costs, as shown below.

Labor costs include mobilization/demobilization, travel, per diem, and sampling oversight costs.

- Mobilization/Demobilization Labor Costs — This cost element includes the time for one person to prepare for and travel to each site, and includes 4 to 6 hours each at a rate of $50 per hour.

- Travel Costs — Travel costs for each site are limited to round-trip mileage costs for 20 to 100 miles at a rate of $0.30 per mile.

- Per Diem Costs — This cost element includes food, lodging, and incidental expenses and is estimated to range from zero (for a local site) to $150 per day for one person for 2 days at the clay soil site (1 day for sample collection and ½ day for mobilization and demobilization and site restoration) and for one person for 1 day at the sandy soil site (½ day for sample collection and ½ day for mobilization/demobilization and site restoration). No per diem costs are presented for the sampling and analysis crew because these costs are included in the sampling and analysis equipment lump sum.

- Sampling Oversight Labor Costs — On-site labor, often a registered geologist, is required to oversee sample collection. Active soil gas collection labor typically includes a platform operator and one helper to collect samples and decontaminate sampling equipment. Therefore, the total number of personnel on site would be three: one person to oversee sampling activities and two people to operate the direct-push equipment and collect samples. Based on the average sample retrieval rates determined during the demonstration, sampling oversight labor times are estimated to be 9 to 11 hours for one person at the clay soil site and 5 to 7 hours for one person at the sandy soil site. Labor rates are assumed to be $50 per hour. Labor costs for the active soil gas sampler operators are included in the equipment costs.

Other direct costs include supplies. Decontamination and site restoration costs are included under the sampling and analysis equipment costs.

- Supplies — This cost element includes personal protective equipment (Level D, the minimum level of protection, is assumed) and other miscellaneous field supplies. Supplies are estimated to cost between $25 and $75.

Chapter 7
Summary of Demonstration Results

This chapter summarizes the technology performance results. The EMFLUX® system was compared to reference sampling methods (AMS™ and Geoprobe® active soil gas sampling systems) in terms of the following parameters: (1) VOC detection and quantitation, (2) sample retrieval time, and (3) cost. The demonstration data indicate the following performance characteristics for the EMFLUX® system:

- **VOC Detection and Quantitation** Soil gas samples collected using the EMFLUX® system and the reference soil gas sampling method at nine grids at both the sites were analyzed for six target VOCs. Analysis of EMFLUX® samples yielded results in total nanograms per sample, which Quadrel converted to mass per unit volume of air (ng/L). The reference method also produced results in mass per unit volume of air. A comparison of the mean VOC concentrations calculated for each sampling method at each grid indicates that the EMFLUX ® system identified the presence of all of the VOC compounds detected by the reference soil gas sampling method in 24 of 25 cases. In addition, in 7 of 31 cases, the EMFLUX® system also reported VOCs that the reference method did not detect but were identified as present during previous soil and groundwater investigations at the demonstration sites. This performance characteristic suggests that the EMFLUX® system can detect the presence of lower concentrations of VOCs in soil gas than the reference soil gas sampling method. In addition, the sample locations where the EMFLUX® system reported high VOC concentrations generally corresponded to the sample locations where the reference method also reported high VOC concentrations. However, the values in the two data sets do not appear to exhibit any direct or consistent proportional relationship, and the mean concentrations of VOCs calculated using the reference method data were typically one to four orders of magnitude higher than those calculated using the EMFLUX® system for samples from the same grid. Because the EMFLUX® system relies on diffusion of soil gas from subsurface sources such as contaminated soil or groundwater, the performance range for the EMFLUX® system may be controlled by factors such as depth to the contaminant source, contaminant concentrations and diffusion rates, soil type and organic content, the detection limits of the methods used to analyze the samples, and possibly other factors. However, during the demonstration, the system was evaluated at locations with relatively shallow subsurface contamination, and was only evaluated with regard to its ability to detect certain targeted VOCs. For these reasons, the performance range of the EMFLUX® system was not fully established by the demonstration data. It should be noted that the EMFLUX® system and reference method are field screening techniques that provide only an estimate of the actual concentration of contaminants in soil gas. Because the EMFLUX®system and reference method use different techniques to collect soil gas samples, it is not expected that the two methods will provide the same response and that the data will be directly comparable. Because the mean VOC concentrations for the data sets differ by several orders of magnitude in most instances, a statistical analysis of the data was not

performed and interpretation of the chemical concentration data for this demonstration is limited to qualitative observations.

- **Sample Retrieval Time**: Installation of the EMFLUX® system averaged 3.0 minutes per sample at the SBA site and 4.0 minutes per sample at the CSC site. For the demonstration, the samplers were left in place for approximately 4 days at each site. Collection of the samplers required an average of 2.3 minutes per sample at the SBA site and 3.2 minutes at the CSC site. Overall, installation and collection of 35 samples at the SBA site required 187 minutes, an average of 5.3 minutes per sample and installation and collection of 28 samples at the CSC site required 201 minutes, an average of 7.2 minutes per sample. The analysis and reporting by the technology developer required an additional 12 days for the SBA site data and 16 days for the CSC site data from the time samples were collected until the laboratory report was delivered. The reference soil gas method required 458 minutes to collect 35 samples at the SBA site, an average of 13.1 minutes per sample, and 183 minutes to collect 28 samples at the CSC, an average of 6.5 minutes per sample. One day was required per site to analyze the samples and report the results. Based on the demonstration results, the average sample retrieval times for the EMFLUX® system were quicker than those of the reference soil gas sampling method in the clay soils at the SBA site and slower than those of the reference sampling method in the sandy soils at the CSC site. During sample collection using the reference soil gas sampler, the clay soil at the SBA site caused the system to hold its vacuum at several sampling locations; therefore, soil gas was not completely drawn into the system for sampling. In these cases, the rod was withdrawn in additional 6-inch increments until the vacuum was broken and the system's pressure reached equilibrium with atmospheric pressure. The vacuum problem was not encountered in the sandy soil at the CSC site. At both sites, one person collected soil gas samples with the EMFLUX® system, and a three-person sampling crew collected and analyzed soil samples using the reference sampling method.

- **Cost**: Based on the demonstration results, the EMFLUX®system costs $85 to $195 per sample plus equipment costs of $25 to $90 per day and mobilization/demobilization costs of $200 to $600 per day. Operating costs for the EMFLUX®system ranged from $660 to $1,390 at the clay soil site and $710 and $1,440 at the sandy soil site. For this demonstration, the active soil gas sampling method was procured at a lump sum of $4,700 for each site. The oversight costs for the active soil gas sampling method ranged from $680 to $1,260 at the clay soil site and $480 to $910 at the sandy soil site. A site-specific cost and performance analysis is recommended when selecting a subsurface soil gas sampling method.

In general, the data quality indicators met the established quality assurance objectives and support the usefulness of the demonstration results in verifying the performance of the EMFLUX®system.

A qualitative performance assessment of the EMFLUX®system indicated that (1) the samplers are reliable in that 100 percent of the required samples were collected with no sample losses; (2) the samplers are easy to use and require minimal training (a 16-minute training video is available from the developer); (3) logistical requirements for the EMFLUX® system differ from those of the reference sampling method because samplers are installed using a hammer-driven, 6-inch steel rod, left in place for several days, retrieved by hand, and sent to the developer for analysis; and (4) sample handling in the field was easier than the reference method because the only requirements are that the recovered cartridges be properly packed, and shipped to the developer for analysis.

The demonstration results indicate that the EMFLUX® system can provide useful, cost-effective data for environmental problem-solving. The EMFLUX® system successfully collected soil gas samples in clay and sandy soils. The sampler provided positive identification of target compounds and may be able to detect lower concentrations of VOCs in the soil gas than the reference soil gas sampling method. The results of the demonstration did not indicate consistent proportional comparability between the EMFLUX® data and that of the reference method data. As with any technology selected, the user must determine what is appropriate for the application and the project data quality objectives.

Chapter 8
Technology Update

Empirical and Theoretical Bases for EMFLUX® System

Quadrel 's EMFLUX® technology is based on the existence of cyclical periods of favorable (high) and unfavorable (low) gas-migration velocities through the earth 's crust and on the ability to predict the occurrence of those cycles consistently and reliably. The existence of order-of-magnitude cyclical changes in upward trace-gas velocity is predicated on empirical evidence; the utility of the EMFLUX® system rests on a theoretical connection between that empirical data and earth-tidal (gravitational) phenomena recorded by U.S. Geological Survey and National Aeronautics and Space Administration.

The relationship was developed in the early 1970s by Quadrel 's Chief Scientist, George H. Milly, who holds doctorates in Geochemistry and Atmospheric Physics. Identification of this relationship grew out of Dr. Milly 's search for the cause of observed cyclical variations in atmospheric concentrations of radon, which all but negated attempts to use atmospheric radon as an indicator in uranium exploration. Previously recognized factors influencing vertical trace-gas migration through soils (such as temperature, barometric pressure, and moisture changes) failed to correlate with the recorded cyclical variations, and this divergence ultimately led to the discovery of relationships between gravitational phenomena and soil-gas migration rates. Subsequent development includes computerization of the algorithms used to predict favorable soil-gas sampling periods. EMFLUX® was first used in the 1970s to support uranium exploration programs and located more than 34 million pounds of uranium reserves.

Quadrel was founded in the late 1980s to commercialize applications of this fundamental technology in the field of environmental testing. It is Quadrel 's belief now—given available data, field verifications of soil-gas-velocity predictions, and successes in governmental, industrial, and private projects—that the company 's predictive earth-tide model has established itself as a practical method for identifying favorable emission flux periods at any point on the earth 's surface. This capability has, in turn, spurred development of an environmental field sampling system which can take advantage of the phenomenon: the passive, noninvasive EMFLUX® Soil-Gas Investigation System.

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In 1989, the EMFLUX® system was first formally evaluated on a (now closed) U.S. EPA test bed under the auspices of the National Environmental Technology Applications Center (NETAC). The objective of the test was to determine EMFLUX's® ability to detect and quantify the relative source strength of various contaminants in ground water. NETAC reported a 0.91 correlation coefficient between EMFLUX® soil-gas data and groundwater contaminant concentrations and that EMFLUX® correctly identified the dominant contaminant, chloroform. The most recent evaluation of the technology is the subject of the present ETVR.

The ETV Demonstrations

The demonstrations described herein compared the passive EMFLUX® system with an active (reference method) soil gas system, rather than with data from soil or water samples. This procedure unfortunately leaves unresolved questions concerning the relative merits of the two systems, as no third source of reference data is available to serve as an independent standard for comparison. When discrepancies appear, it is impossible to determine which method is at fault. Nevertheless, the demonstration points out a number of EMFLUX® system advantages.

- EMFLUX® field samplers are small, lightweight, and easy to install (requiring a depth of no more than 3 inches).

- EMFLUX® field samplers can be rapidly deployed (demonstration results support a rate in excess of 100 per field person per day), making it possible to sample even large sites during favorable soil-gas emission periods with minimal personnel and consequent savings in time and cost.

- The technology's low detection thresholds permit EMFLUX® users to identify subsurface contamination at concentrations previously considered impossible, thus minimizing the risk of false negatives.

- Although the active (reference) soil-gas method collected higher mean concentrations of vapor-phase VOCs than EMFLUX®, the reference system failed, paradoxically, to pick up very low VOC concentrations that EMFLUX® did detect. Such paradoxes may stem from the fact that the vacuum system used in an active technique forcible extracts gases from a larger area than that sampled by a passive device, but this characteristic does not denote superior sensitivity; on the contrary, it can actually distort survey data.

- Because *simultaneous* EMFLUX® samples were taken continuously over several days, while the reference system collected *sequential* samples, each during only a brief fraction of the total survey period, Quadrel contends that the EMFLUX® data much more consistently—and much more accurately—represent the degree and extent of subsurface contamination. Therefore,

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the demonstration's failure to show consistent proportional comparability between the EMFLUX® data and that collected by the reference method would not only be predictable, but also highly probable.

It is to be emphasized that, while the EMFLUX® demonstrations conducted under the ETV program involved sample analyses by an off-site laboratory affiliated with Quadrel, this is not an analytical requirement. Although most users have historically employed Quadrel laboratories for sample analysis, clients are free to contract with the qualified laboratory of their choice, provided that the facility has high-temperature thermal-desorption capabilities as well as GC and flame ionization detector, photoionization detector, ELCD, electron capture detector, or FPD detectors or GC/MS equipment. Specific analytical protocols (identical or very similar to standard EPA methods) are available from Quadrel for user organizations to determine whether in-house laboratories can successfully perform EMFLUX® sample analysis. Approximately one-third of the sampler and sample analysis cost component in Table 6-1 of the report is related to laboratory services.

Expanding Applications

In its ongoing efforts to find useful new applications for the EMFLUX® Soil Gas detection system, Quadrel has recently completed successful projects involving:

- Detection of elemental mercury in the subsurface soils of industrial sites
- Identification of methane-producing landfill cells, and subsequent calculation of annual methane production levels
- Detection of non-methane landfill gases (adsorptive and nonadsorptive)
- Collection of target-gas emissions from soil to atmosphere as data for risk assessment studies
- Extension of all-weather, all-terrain procedures.

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Chapter 9
Previous Deployment

The EMFLUX® Soil-Gas Investigation System has been employed successfully on nearly 450 projects by more than 190 user organizations on sites located in 47 U.S. states or territories and in several foreign countries. The following illustrates the range of typical projects. Specific references are available from the developer.

Western U.S. Air Force Base. More than 630 EMFLUX® collectors have been deployed at over 34 known or suspected release areas to date to determine hot spots and migration pathways of a full range of VOC and lighter SVOC contaminants. EMFLUX® results were later confirmed with follow-on intrusive sampling. Periodic reports under this ongoing program are issued within 3 weeks of each sampling event.

Mid-Atlantic U.S. Landfill Site. More than 150 EMFLUX® VOC samplers and 15 methane samplers were deployed across a 15-acre landfill reportedly used in the past for unpermitted dumping of liquid chemical solvents. The VOC samples were analyzed for a range of halogenated hydrocarbons, and methane locations were sampled periodically with hand-held infrared instrumentation to determine the methane generation rate from the landfill. EMFLUX® results were used to assist in landfill closure design and planning activities. The final report was received by the client 4 weeks after the start of field work.

North Central U.S. Manufacturing Site. Nearly 450 EMFLUX® samplers were deployed in a two-phase project at this site to determine potential emission rates of seven targeted halogenated compounds for the purpose of finding "hot spots" of contamination and determining the lateral extent of contaminant migration. Approximately half of the samplers were deployed through artificial caps. Data indicated several areas of potential concern consistent with previous, limited, invasive sampling values. The final reports, including extensive color isopleth mapping, were issued within 30 days of completion of each phase of field work.

Southeastern U.S. Army Depot. More than 300 EMFLUX® collectors were used in a series of investigations by the client of 16 subareas, including several chemical waste pits, equipment

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cleaning facilities, lagoons, and landfill areas, for the presence of various VOC and lighter SVOC contaminants. Subsequent invasive sampling results to date have closely correlated with the EMFLUX® data. Analytical data began flowing to the client within 48 hours of completion of field sampling, with the final reports delivered three weeks after the beginning of field work.

Southeastern U.S. Air Force Base. Approximately 2,000 EMFLUX® samplers were deployed to investigate nine different sites at this base for VOC contamination involving analysis of the entire EPA contract laboratory program (CLP) Target Compound List. The survey encompassed a series of sampling events over a 2-month period, with working draft reports delivered immediately following analysis of samples from each site. The final report was delivered within 10 working days of completion of the final sampling event.

Western U.S. DOE National Laboratory. More than 280 EMFLUX® samplers were deployed across 10 sites on three operable units as an initial screening survey to assist in planning a follow-on drilling program. Areas of study included landfills, burial pits, leach fields, drainage ditches, and trenches. Target compounds included halogenated and petroleum-related compounds. The client's QA program required full CLP data packages to be provided with 15 randomly chosen field samples to illustrate the quality of analytical data. The final report was received by the client within 5 weeks of the beginning of field work.

Northeastern U.S. Air Force Base. More than 180 EMFLUX® samplers were deployed on five survey areas, including landfills, drainage ditches, and suspected disposal areas. Survey data were used to assist in (1) the planning of a confirmatory drilling program, and (2) air contamination assessments. All samples were analyzed for CLP Target Compound List contaminants. The final report was received by the client 4 weeks after the beginning of field work.

Northeastern Airport Annex Site. Some 180 EMFLUX® samplers were deployed over 13 areas of concern to assess the nature and extent of VOC contamination at several disposal areas, two leach fields, several underground storage tank areas, and drainage ditches. All samples were analyzed for the presence of CLP Target Compound List contaminants. The final report was received by the client within 4 weeks of the beginning of field work.

Eastern U.S. DOE National Laboratory. More than 70 EMFLUX® samplers were deployed on and in the vicinity of a mixed waste landfill in an effort to determine the presence of halogenated and petroleum-related compounds through caliche soils. The final report was received by the client 4 weeks after the beginning of field work.

North Central Abandoned Missile Site. More than 125 EMFLUX® collectors were used to determine the presence and extent of soil and groundwater contamination at a former NIKE missile installation. EMFLUX® results identified the suspected contaminant locations. The final report was received by the client 3 weeks from the beginning of field work.

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Southern U.S. Dry Cleaner Site. Six EMFLUX® samplers were installed in and around a dry-cleaning establishment located in a strip mall to determine the presence and extent of subsurface PCE and TCE contamination. Because of the shallow groundwater depth and because the entire site was in the middle of a large asphalt cap (parking lot), valid results were obtained with only a 5-hour passive exposure. Analytical results were provided to the client within 48 hours of sample retrieval, with the formal report following 2 days later. Subsequent intrusive sampling confirmed the EMFLUX® findings.

Southwestern U.S. Air Force Base. More than 150 EMFLUX® collectors were used in two associated surveys to track soil and groundwater contamination comprising selected VOCs and lighter SVOCs from a suspected source facility at this base. The final report, including extensive color isopleth maps, was issued 4 weeks after the start of field work.

North Central Manufacturing Site. More than 100 EMFLUX® collectors were deployed at five discrete areas on this site, over 75 percent through asphalt and concrete, to determine the presence, identity, and relative strength of a suite of targeted solvent and fuel-related contaminants in soil and groundwater as part of the initial site characterization program. EMFLUX® data indicated the presence of a number of the targeted contaminants at several areas of concern on the site. The final report was issued 2 weeks following the completion of field work.

Midwestern Abandoned Industrial Site. Nearly 150 EMFLUX® collectors were used to survey this site for soil-gas emissions of a host of fuel and solvent-related contaminants. Survey results indicated the presence of soil gas emission of several of the targeted compounds, confirming suspicions based on a review of past practices at various subareas on the site. The report was issued to the client 14 days following completion of the field work.

Mid-Atlantic U.S. Army Facility. More than 300 EMFLUX® collectors were deployed at various areas of concern across a former disposal area, seeking to determine the presence of any of the full range of VOC contamination. Sampling was conducted in a series of events over an extensive range of terrain and weather conditions, including snow, ice, dry land, and marsh beds below several feet of water. Several key halogenated and petroleum-based compounds were identified and tracked, and their presence and locations were later confirmed with follow-on intrusive sampling. Reports were issued within 3 weeks of the start of each sampling event.

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APPENDIX A

DATA SUMMARY TABLES

FOR THE

QUADREL SERVICES, INC.
EMFLUX® SOIL GAS INVESTIGATORY SYSTEM

TABLE A1. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA SBA SITE - GRID 1

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)					
			Vinyl Chloride	1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA								
1A2-QUADREL	A2	Fine	97.3	720	0.10	0.11	9.56	0.28
1B3-QUADREL	B3	Fine	104	958	0.10	0.11	16.2	0.28
1C6-QUADREL	C6	Fine	0.54	21.8	0.10	0.11	2.00	0.28
1D1-QUADREL	D1	Fine	1.72	533	0.10	0.11	5.19	0.28
1E1-QUADREL	E1	Fine	1.39	411	0.10	0.11	3.06	0.28
1F5-QUADREL	F5	Fine	23.7	475	0.10	0.11	8.09	0.28
1G7-QUADREL	G7	Fine	0.19	16.0	0.10	0.11	0.69	0.28
Quantitation Limit	-	-	0.17	0.09	0.10	0.11	0.12	0.28
		Range:	0.19 - 104	16.0 - 958	0.10	0.11	0.69 - 16.3	0.28
		Mean:	38.0	520	0.10	0.11	7.35	0.28
REFERENCE SAMPLING METHOD DATA								
ACTAG1A105.0	A1	Fine	230,224	343,072	50	50	50	50
ACTAG1B605.0	B6	Fine	3,830,535	2,223,217	50	50	50	50
ACTAG1C105.0	C1	Fine	2,808,445	1,705,212	50	50	50	50
ACTAG1D605.0	D6	Fine	1,059,056	640,633	50	50	50	50
ACTAG1E705.0	E7	Fine	3,102,754	1,218,334	50	50	50	50
ACTAG1F405.0	F4	Fine	517,255	297,770	50	50	50	50
ACTAG1G605.0	G6	Fine	5,178,313	279,336	50	50	50	50
		Range:	230,000 - 5,180,000	279,000 - 2,220,000	50	50	50	50
		Mean:	2,390,000	958,000	50	50	50	50

Notes:
Quadrel Data: Quantitation limits are listed in the last row of the table.
Reference Data: Values reported as "50" are actually non-detects with a detection limit of 50 ng/L.

TABLE A2. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA SBA SITE - GRID 2

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)					
			Vinyl Chloride	1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA								
2A3-QUADREL	A3	Fine	0.17	4.15	0.10	0.11	19.1	0.75
2B7-QUADREL	B7	Fine	0.17	2.33	0.10	0.11	29.7	0.75
2C6-QUADREL	C6	Fine	0.17	5.34	0.10	0.11	50.0	2.44
2D1-QUADREL	D1	Fine	0.17	2.80	0.10	0.11	36.9	1.88
2E3-QUADREL	E3	Fine	0.17	0.12	0.10	0.11	36.6	3.53
2F7-QUADREL	F7	Fine	0.17	2.91	0.10	0.11	13.0	0.28
2G5-QUADREL	G5	Fine	0.17	5.31	0.10	0.11	63.6	2.89
Quantitation Limit	-	-	0.17	0.09	0.10	0.11	0.12	0.28
		Range:	0.17	0.12 - 5.34	0.10	0.11	13.0 - 63.6	0.28 - 3.53
		Mean:	0.17	3.28	0.10	0.11	35.6	1.79
REFERENCE SAMPLING METHOD DATA								
ACTAG2A405.0	A4	Fine	100	50	50	50	491	50
ACTAG2B605.0	B6	Fine	100	50	50	50	560	50
ACTAG2C305.0	C3	Fine	100	50	50	50	508	50
ACTAG2D205.0	D2	Fine	100	151	50	50	5,378	50
ACTAG2E605.0	E6	Fine	100	50	50	50	323	50
ACTAG2F505.0	F5	Fine	100	58	50	50	1,283	50
ACTAG2G705.0	G7	Fine	100	50	50	50	183	50
		Range:	100	50 - 151	50	50	183 - 5,380	50
		Mean:	100	65	50	50	1,250	50

Notes:

Quadrel Data: Quantitation limits are listed in the last row of the table.

Reference Data: Values reported as "50" (or 100 for vinyl chloride) are actually non-detects with a detection limit of 50 ng/L (or 100 ng/L for vinyl chloride).

TABLE A3. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA SBA SITE - GRID 4

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)					
			Vinyl Chloride	1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA								
4A7-QUADREL	A7	Fine	0.17	0.11	0.10	0.11	121	0.80
4B6-QUADREL	B6	Fine	0.17	0.09	0.10	0.11	1.62	0.28
4C4-QUADREL	C4	Fine	0.17	0.09	0.10	0.11	9.11	0.28
4D3-QUADREL	D3	Fine	0.17	0.09	0.10	0.11	3.04	0.28
4E6-QUADREL	E6	Fine	0.17	0.09	0.10	0.11	0.24	0.28
4F4-QUADREL	F4	Fine	0.17	0.09	0.10	0.11	9.9	0.28
4G1-QUADREL	G1	Fine	0.17	0.09	0.10	0.11	0.85	0.28
Quantitation Limit	-	-	0.17	0.09	0.10	0.11	0.12	0.28
		Range:	0.17	0.09 - 0.11	0.10	0.11	0.24 - 121	0.28 - 0.80
		Mean:	0.17	0.09	0.10	0.11	20.8	0.35
REFERENCE SAMPLING METHOD DATA								
ACTAG4A305.0	A3	Fine	100	50	50	50	3,429	50
ACTAG4B505.0	B5	Fine	100	195	50	50	14,259	50
ACTAG4C105.0	C1	Fine	100	261	50	50	33,558	50
ACTAG4D205.0	D2	Fine	100	50	50	50	744	50
ACTAG4E405.0	E4	Fine	100	50	50	50	1,088	50
ACTAG4F305.0	F3	Fine	100	50	50	50	3,330	50
ACTAG4G105.0	G1	Fine	100	50	50	50	9,295	50
		Range:	100	50 - 261	50	50	744 - 33,600	50
		Mean:	100	101	50	50	9,390	50

Notes:

Quadrel Data: Quantitation limits are listed in the last row of the table.

Reference Data: Values reported as "50" (or 100 for vinyl chloride) are actually non-detects with a detection limit of 50 ng/L (or 100 ng/L for vinyl chloride).

TABLE A4. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA SBA SITE - GRID 5

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)					
			Vinyl Chloride	1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA								
5A7-QUADREL	A7	Fine	0.17	0.09	0.10	0.11	0.34	0.28
5B4-QUADREL	B4	Fine	0.17	4.11	0.10	0.11	8.89	0.28
5C4-QUADREL	C4	Fine	0.17	3.05	0.10	0.11	10.9	0.28
5D7-QUADREL	D7	Fine	0.17	0.09	0.10	0.11	8.69	0.28
5E3-QUADREL	E3	Fine	0.17	0.45	0.10	0.11	1.80	0.28
5F5-QUADREL	F5	Fine	0.17	4.23	0.10	0.11	33.6	0.28
5G1-QUADREL	G1	Fine	0.17	8.40	0.10	0.11	17.7	0.28
Quantitation Limit	-	-	0.17	0.09	0.10	0.11	0.12	0.28
		Range:	0.17	0.09 - 8.40	0.10	0.11	0.34 - 33.6	0.28
		Mean:	0.17	2.92	0.10	0.11	11.7	0.28
REFERENCE SAMPLING METHOD DATA								
ACTAG5A405.0	A4	Fine	100	5,544	50	50	355	50
ACTAG5B605.0	B6	Fine	275	4,773	50	50	1,222	50
ACTAG5C405.0	C4	Fine	100	8,745	50	50	545	50
ACTAG5D705.0	D7	Fine	8,265	17,865	50	50	6,253	50
ACTAG5E205.0	E2	Fine	100	3,175	50	50	132	50
ACTAG5F705.0	F7	Fine	4,889	21,028	50	50	2,710	50
ACTAG5G705.0	G7	Fine	100	8,734	50	50	2,867	50
		Range:	100 - 8,270	3,180 - 21,000	50	50	132 - 6,250	50
		Mean:	1,980	9,980	50	50	2,010	50

Notes:

Quadrel Data: Quantitation limits are listed in the last row of the table.

Reference Data: Values reported as "50" (or 100 for vinyl chloride) are actually non-detects with a detection limit of 50 ng/L (or 100 ng/L for vinyl chloride).

TABLE A5. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA SBA SITE - GRID 6

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)					
			Vinyl Chloride	1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA								
6A6-QUADREL	A6	Fine	0.17	0.09	0.10	0.11	0.12	0.28
6B4-QUADREL	B4	Fine	0.17	0.09	0.10	0.11	0.12	0.28
6C5-QUADREL	C5	Fine	0.17	0.09	0.10	0.11	0.12	0.28
6D2-QUADREL	D2	Fine	0.17	0.09	0.10	0.11	0.12	0.28
6E1-QUADREL	E1	Fine	0.17	0.09	0.10	0.11	0.12	0.28
6F2-QUADREL	F2	Fine	0.17	0.09	0.10	0.11	0.12	0.28
6G4-QUADREL	G4	Fine	0.17	0.09	0.10	0.11	0.12	0.28
Quantitation Limit	-	-	0.17	0.09	0.10	0.11	0.12	0.28
		Range:	0.17	0.09	0.10	0.11	0.12	0.28
		Mean:	0.17	0.09	0.10	0.11	0.12	0.28
REFERENCE SAMPLING METHOD DATA								
REFERENCE SAMPLES NOT ANALYZED IN THIS GRID								

Note:
Quadrel Data: Quantitation limits are listed in the last row of the table.

TABLE A6. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA CSC SITE - GRID 1

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)				
			1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA							
1A7-QUADREL	A7	Coarse	19.7	0.11	550	647	47,133
1B1-QUADREL	B1	Coarse	30.5	1.69	350	162	2,357
1C5-QUADREL	C5	Coarse	30.4	6.69	615	1,294	36,356
1D1-QUADREL	D1	Coarse	79.9	6.04	629	274	6,692
1E7-QUADREL	E7	Coarse	157	4.19	918	1,955	53,291
1F4-QUADREL	F4	Coarse	49.2	5.29	592	1,602	54,831
1G1-QUADREL	G1	Coarse	41.1	4.64	680	65.7	3,589
Quantitation Limit	-	-	0.10	0.11	0.12	0.12	0.30
		Range:	19.7 - 157	0.11 - 6.69	350 - 918	65.7 - 1,960	2,360 - 54,800
		Mean:	58.3	4.09	619	857	29,200
REFERENCE SAMPLING METHOD DATA							
ACTCG1A505.0	A5	Coarse	7,242	500	7,526	26,349	249,342
ACTCG1B605.0	B6	Coarse	2,255	500	170,724	7,450	79,017
ACTCG1C405.0	C4	Coarse	21,311	500	670,474	77,382	769,940
ACTCG1D405.0	D4	Coarse	12,637	500	411,390	44,031	438,473
ACTCG1E205.0	E2	Coarse	19,039	500	478,451	54,857	480,887
ACTCG1F305.0	F3	Coarse	6,246	500	225,933	14,739	117,979
ACTCG1G605.0	G6	Coarse	6,683	500	236,256	67,632	170,967
		Range:	2,260 - 21,300	500	7,530 - 670,000	7,450 - 77,400	79,000 - 770,000
		Mean:	10,800	500	314,000	41,800	330,000

Notes:
Quadrel Data: Quantitation limits are listed in the last row of the table.
Reference Data: Values reported as "500" are actually non-detects with a detection limit of 500 ng/L.

TABLE A7. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA CSC SITE - GRID 2

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)				
			1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA							
2A2-QUADREL	A2	Coarse	2.50	0.45	259	153	752
2B1-QUADREL	B1	Coarse	2.67	0.52	256	133	776
2C6-QUADREL	C6	Coarse	2.73	0.62	118	173	1,953
2D2-QUADREL	D2	Coarse	9.91	1.17	127	224	1,113
2E5-QUADREL	E5	Coarse	2.40	0.43	232	172	2,001
2F4-QUADREL	F4	Coarse	2.25	0.50	242	200	2,629
2G3-QUADREL	G3	Coarse	0.78	0.15	186	36.0	338
Quantitation Limit	-	-	0.10	0.11	0.12	0.12	0.30
		Range:	0.78 - 9.91	0.15 - 1.17	118 - 259	36.0 - 224	338 - 2,630
		Mean:	3.32	0.55	203	156	1,370
REFERENCE SAMPLING METHOD DATA							
ACTCG2A405.0	A4	Coarse	500	500	33,875	11,353	31,950
ACTCG2B405.0	B4	Coarse	500	500	138,681	42,596	101,902
ACTCG2C505.0	C5	Coarse	942	500	219,486	76,171	201,050
ACTCG2D405.0	D4	Coarse	1,708	500	353,483	99,223	222,623
ACTCG2E105.0	E1	Coarse	2,694	500	413,456	123,487	288,770
ACTCG2F205.0	F2	Coarse	2,827	500	415,093	119,787	287,739
ACTCG2G405.0	G4	Coarse	3,780	500	439,087	153,683	427,089
		Range:	500 - 3,780	500	33,900 - 439,000	11,400 - 154,000	32,000 - 427,000
		Mean:	1,850	500	288,000	89,500	223,000

Notes:
Quadrel Data: Quantitation limits are listed in the last row of the table.
Reference Data: Values reported as "500" are actually non-detects with a detection limit of 500 ng/L.

TABLE A8. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA CSC SITE - GRID 4

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)				
			1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA							
4A3-QUADREL	A3	Coarse	1.92	0.31	65.6	8.03	344
4B2-QUADREL	B2	Coarse	3.59	0.64	167	21.1	586
4C7-QUADREL	C7	Coarse	1.86	0.53	141	5.82	378
4D2-QUADREL	D2	Coarse	1.38	0.27	32.8	4.24	166
4E1-QUADREL	E1	Coarse	0.47	0.13	24.9	2.55	142
4F4-QUADREL	F4	Coarse	6.52	1.34	261	46.0	863
4G6-QUADREL	G6	Coarse	2.34	0.43	111	10.5	345
Quantitation Limit	-	-	0.10	0.11	0.12	0.12	0.30
		Range:	0.47 - 6.52	0.13 - 1.34	24.9 - 261	2.55 - 46.0	142 - 863
		Mean:	2.58	0.52	115	14.0	403
REFERENCE SAMPLING METHOD DATA							
ACTCG4A405.0	A4	Coarse	7,008	500	168,233	20,043	143,142
ACTCG4B305.0	B3	Coarse	500	500	19,627	1,881	20,753
ACTCG4C105.0	C1	Coarse	6,882	500	162,682	21,872	152,164
ACTCG4D605.0	D6	Coarse	3,964	500	115,537	15,855	129,093
ACTCG4E405.0	E4	Coarse	10,513	500	216,980	41,798	388,861
ACTCG4F105.0	F1	Coarse	6,650	500	123,393	21,178	194,826
ACTCG4G305.0	G3	Coarse	7,823	500	184,170	32,812	313,472
		Range:	500 - 10,500	500	19,600 - 217,000	1,880 - 41,800	20,800 - 389,000
		Mean:	6,190	500	142,000	22,200	192,000

Notes:
Quadrel Data: Quantitation limits are listed in the last row of the table.
Reference Data: Values reported as "500" are actually non-detects with a detection limit of 500 ng/L.

TABLE A9. VOLATILE ORGANIC COMPOUND CONCENTRATIONS FOR QUADREL AND REFERENCE DATA CSC SITE - GRID 5

Sample Name	Sample Location	Soil Type	Contaminant Concentration (ng/L)				
			1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE
QUADREL SAMPLER DATA							
5A7-QUADREL	A7	Coarse	0.17	0.13	26.3	3.06	210
5B5-QUADREL	B5	Coarse	0.10	0.11	43.9	3.06	281
5C7-QUADREL	C7	Coarse	0.27	0.27	65.6	5.77	350
5D2-QUADREL	D2	Coarse	0.10	0.11	11.1	0.28	57.8
5E3-QUADREL	E3	Coarse	0.23	0.30	20.6	3.79	233
5F3-QUADREL	F3	Coarse	0.19	0.15	24.2	4.75	251
5G4-QUADREL	G4	Coarse	0.13	0.14	49.3	5.82	362
Quantitation Limit	-	-	0.10	0.11	0.12	0.12	0.30
		Range:	0.10 - 0.27	0.11 - 0.30	11.1 - 65.6	0.28 - 5.82	57.8 - 362
		Mean:	0.17	0.17	34.4	3.79	249
REFERENCE SAMPLING METHOD DATA							
ACTCG5A105.0	A1	Coarse	545	500	67,314	8,995	76,084
ACTCG5D505.0	D5	Coarse	744	500	78,631	12,097	99,169
ACTCG5E405.0	E4	Coarse	500	500	58,536	9,166	71,940
ACTCG5F105.0	F1	Coarse	500	500	12,571	2,429	24,812
ACTCG5G705.0	G7	Coarse	1,401	500	132,480	24,684	220,317
		Range:	500 - 1,400	500	12,600 - 132,000	2,430 - 24,700	24,800 - 220,000
		Mean:	738	500	69,900	11,500	98,500

Notes:
Quadrel Data: Quantitation limits are listed in the last row of the table.
Reference Data: Values reported as "500" are actually non-detects with a detection limit of 500 ng/L.

BEACON'S

FIELD KIT GUIDE
FOR
EMFLUX® SOIL-GAS INVESTIGATIONS
[PLEASE READ ENTIRE GUIDE BEFORE STARTING SURVEY]

www.emflux.co

I. General Information

A. BEACON is furnishing this Kit to **HydroGeoLogic, Inc.** (HGL) specifically for use on the **Landfill at Holloman AFB, NM.** To obtain optimum results it is important that the Samplers be deployed **as soon as possible,** and retrieved **72 hours following installation**. If deployment of the devices is delayed, please contact us as soon as possible. BEACON's phone number is (800) 878-5510.

B. It is also essential that, prior to returning the Kit to BEACON, HGL verify that the caps are tight on the EMFLUX® Sampler Vials. Return the Vials and holders sealed in the inner and outer Ziploc® bags with the adsorbent paks.

C. ***Before going to the field*** please inventory the contents of the Kit, checking them against the enclosed list to verify item counts and to become familiar with all components. (Because the components are thoroughly cleaned prior to shipment, the inventory should be conducted without opening the plastic bags.) Note that Trip Blanks are to remain sealed throughout the Survey.

D. Upon receipt of the Field Kit, BEACON requests that HGL sign and date the enclosed Chain-of-Custody Form to document receipt of the Kit. The Field Deployment Report is to be completed during the course of the survey.

E. Following completion of the survey, fill out the Chain-of-Custody Form with the following information: (i) Field Sample IDs, (ii) the name and contact phone number of the person submitting the samples, (iii) the unique number of the custody seal that will be used, and (iv) signature and date of person relinquishing samples. The Chain-of-Custody Form and Field Deployment Report are to be returned with the Field Kit to BEACON. If possible, retain photocopies for your record. Next, pack the Samplers, tools, containers, sampling caps, and requisite documentation in the Field Kit, making sure the tools are secured and will not damage the samplers. Affix the tug-tight custody seal to the latch on the Field Kit, pack it in its original cardboard shipping container, and call FedEx (1-800-238-5355) for overnight shipment to:

Beacon Environmental Services, Inc.
Attn: Sample Receiving
323 Williams Street, Suite D
Bel Air, MD 21014
410-838-8780

NOTE: DO NOT PACK IN THE KIT OR SHIPPING BOX STYRENE PEANUTS, NEWSPAPER, OR OTHER MATERIALS THAT COULD CONTAMINATE THE SAMPLES. PLEASE AVOID SMOKING WHILE HANDLING SAMPLERS.

II. Contents

A. This EMFLUX® Field Kit contains the components needed for a **180**-point soil-gas survey, plus sufficient additional cartridges for **7** trip blanks (vials labeled **Trip-1 through Trip-7**, not to be opened), and **7** extra Samplers for use in the event of breakage or accidental contamination. In addition, **6** extra transport vials are provided in case a Sampler Vial breaks during retrieval. Assuming that instructions are followed, due care is exercised in QA/QC procedures, and timing schedules are observed, the Kit provides users with an extremely accurate and reliable soil-gas system. **Do not open bags until deployment.**

Code/Item		Quantity
(1)	EMFLUX® SAMPLERS	**194**
(2)	EXTRA TRANSPORT VIALS	**6**
(3)	SAMPLING CAPS (in container)	**194**
(4)	CAP STORAGE CONTAINERS	**5**
(5)	TAPPING DOWELS	**2**
(6)	STAKES	**2**
(7)	12" LENGTHS OF COPPER PIPE (in separate box)	**90**
(8)	WIRE CUTTERS	**2**
(9)	GAUZE CLOTHS	**180**
(10)	COPPER PIPE CUTTER	**2**
(11)	SCRATCH AWL	**2**

B. In addition to the materials found in the kit, field teams will need:

- NITRILE GLOVES
- CLEAN TOWEL
- HAMMER
- ELECTRIC ROTARY HAMMER DRILL WITH ½"-DIAMETER BIT or SLIDE HAMMER WITH ½"-DIAMETER BY 3-FOOT LONG TILE PROBE
- BALL-POINT PEN and CLIPBOARD
- PIN FLAGS, WOODEN STAKES, or OTHER LOCATION MARKERS
- FLAGGING TAPE

C. Additional materials necessary only for deployment through asphalt, concrete, or, when necessary, gravel.

- ELECTRIC ROTARY HAMMER DRILL WITH 1¼"or 1½" DIAMETER BIT WITH AT LEAST 12 INCHES OF CUTTING LENGTH
- ROLL OF ALUMINUM FOIL
- DRY CONCRETE MORTAR MIX and ASSOCIATED EQUIPMENT (for temporary patching of the sample holes) including:
  SMALL PAIL, WATER, SMALL PLASTIC PUTTY KNIFE
- CHISEL or SCREWDRIVER (to remove the temporary patch)
- ASPHALT COLD PATCH or CEMENT (for final repair of the sample holes)

III. Instructions

A. GENERAL:

Deployment and retrieval of EMFLUX® Samplers requires only one person. Separate step-by-step procedures are detailed below for sampling through vegetation or bare soils and for sampling in areas covered by asphalt, concrete, or gravel. **Keep exposure of sample cartridges to ambient air to a minimum.**

Note: Do not deploy Samplers within 10 feet of a monitoring well, penetrometer, hydropunch shaft, or other intrusive sampling apparatus that potentially creates a preferential pathway for gases.

REMEMBER:

- **TRIP BLANKS ARE NOT TO BE OPENED.**

B. SAMPLER DEPLOYMENT:

Note: Each Sampler contains two adsorbent cartridges. BEACON will analyze one cartridge per Sampler; however, the second cartridge in each Sampler can be analyzed as a field sample duplicate. HGL will note at which locations, if any, duplicates are to be analyzed by writing separate entries corresponding to the sample location followed by the letter "D" (*i.e,* 3, 3-D, 4, 4-D) on the Chain-of-Custody Form. It is not necessary to alter the deployment pattern to have the duplicate samples analyzed. There is an additional per sample charge for analysis of any duplicates.

Vegetation or Bare Soils:

1. At each survey point, clear vegetation as necessary and, using a ½"-diameter by 3-foot long probe, create a hole three feet deep. Remove the probe and use a hammer and the metal stake provided with the kit to widen the top four inches of the hole, if necessary.

2. Remove one of the Samplers (a glass vial containing two ***hydrophobic*** adsorbent cartridges) and unwind the retrieval wire wrapped around it. Holding the capped end of the vial in one hand, pull the wire tight (to straighten it) with the other hand. Remove the solid cap on the Sampler Vial and replace it with a Sampling Cap (a one-hole cap with a screen meshing insert). Place the solid cap in the Field Kit.

Note: At each sampling location, verify that the (black) sampling cap is on the vial before installing the Sampler.

3. Remove the metal stake from the hole in the ground and insert the Sampler with the capped-end pointing down. Push the Sampler completely into the hole (twisting clockwise to prevent the Sampling Cap from coming off) until it is buried approximately one inch below the ground surface with the wire extending above the surface. Using the hammer, collapse the soils above the Sampler. **Coil the wire and lay it flat on the ground surface.** Place the solid cap in the Cap Storage Container.

4. Close the Field Kit, and on the Field Deployment Report record: (a) sample-point number; (b) date and time of emplacement (to nearest minute); and (c) other relevant information (*e.g.*, soil type, vegetation, proximity to potential source areas). Be sure to mark the sample location and take detailed notes (*i.e.*, compass bearings and distances from fixed reference points).

5. Move to next location.

Concrete, Asphalt, or Gravel Covered Areas:

1. At each survey point, drill a 1¼"- to 1½"-diameter hole through the asphalt/concrete/gravel to bare soil using a rotary hammer drill or comparable equipment. This hole should be approximately 12 inches deep. **Note**: When one person is performing fieldwork, it is often more efficient to drill all sample-point holes before beginning Sampler deployment.

2. When the hole through concrete/asphalt/gravel has been completed, place the shaft of the ½"-diameter by 3-foot long probe into the hole and extend the hole to a three foot depth. Remove the probe from the hole. Next, take a 12-inch length of ¾"-inside-diameter copper pipe and lower it into the sample hole, being careful not to touch the inside of the pipe. Any portion of pipe above grade is cut flush with the ground surface, using the copper pipe cutter. With the tapping dowel and a hammer, push or tap the pipe one inch into the base of the drilled hole (see **attached figure**).

3. Remove one of the Samplers (a glass vial containing two ***hydrophobic*** adsorbent cartridges) and unwind the retrieval wire wrapped around it. Holding the capped end of the vial in one hand, pull the wire tight (to straighten it) with the other hand. Remove the solid cap on the Sampler Vial and replace it with a Sampling Cap (a one-hole cap with a screen meshing insert). Place the solid cap in the Field Kit.

Note: At each sampling location, verify that the (black) sampling cap is on the vial before installing the Sampler.

4. Lower the Sampler, open-end down, into the copper pipe.

   If sampling through asphalt or concrete, bend the end of the wire over the top of the pipe so that the coil of wire hangs over the top and outside of the pipe. Next, plug the top of the hole with a wad of aluminum foil. Using the tapping dowel, push down the aluminum foil so it forms a seal on the copper pipe and rests ¼" below the surfacing. Cover the hole to grade with a **¼" thick** concrete patch. [**Note**: A ¼" thick patch is all that is required. If it is thicker it will be difficult to remove during retrieval.] Next, place the solid cap in the Cap Storage Container.

   If sampling through gravel, extend the retrieval wire out of the pipe and plug the pipe with a wad of aluminum foil. Using the tapping dowel, push down the aluminum foil so it forms a seal on the copper pipe. Bend the wire over the aluminum foil plug and while the wire is extended out of the hole, cover the aluminum foil with local soil or sand. **Coil the wire and lay it flat on the ground surface.** Next, place the solid cap in the Cap Storage Container.

If a hole deeper than 12 inches is created, it will be necessary to use more than one wad of aluminum foil. In these situations, extend the wire out of the pipe. While holding onto the wire, plug the top of the pipe and hole loosely with as many wads as needed. Before inserting the last wad of foil, bend the wire so it rests below the uppermost wad of foil. This will make it easy to retrieve the Sampler during retrieval.

5. Close the Field Kit, and on the Field Deployment Report record: (a) sample-point number; (b) date and time of emplacement (to nearest minute); (c) type of surfacing and approximate thickness; and (d) other relevant information (*e.g.*, surfacing material, proximity to potential source areas). Be sure to mark the sample location and take detailed notes (*i.e.*, compass bearings and distances from fixed reference points).

6. Move to next location.

C. SAMPLER RETRIEVAL:

Note: Each Sampler contains two adsorbent cartridges. BEACON will analyze one cartridge per Sampler; however, the second cartridge in each Sampler can be analyzed as a field sample duplicate. HGL will note at which locations, if any, duplicates are to be analyzed by writing separate entries corresponding to the sample location followed by the letter "D" (*i.e*, 3, 3-D, 4, 4-D) on the Chain-of-Custody Form. It is not necessary to alter the deployment pattern to have the duplicate samples analyzed. There is an additional per sample charge for analysis of any duplicates.

Vegetation or Bare Soils:

1. At each sample location open the Field Kit and place it and the wire cutters within easy reach. Remove a square of gauze cloth and place it and a clean towel on the open Kit. Remove a solid cap from the Cap Storage Container and place it on the Kit, also.

2. Using pliers (and the scratch awl, if necessary), retrieve the Sampler from its hole by first pulling on the retrieval wire, then by twisting the Vial clockwise (to prevent the Sampling Cap from coming off).

3. Holding the Sampler upright, clean the sides of the vial with the clean towel (especially close to the Sampling Cap). Remove the Sampling Cap, cut the wire from the vial with the wire cutters, and clean the vial threads completely with the gauze cloth.
[Note: Completely remove the wire to ensure the cap fits tight on the vial.]

4. Firmly screw the solid cap on the Sampler Vial and clean the vial completely with the gauze cloth. With a **ballpoint pen** record the sample number, corresponding to the sample location, on the cap's label. [**Note**: Do not use a Sharpie marker.]

5. On the Field Deployment Report, record: (a) date and time of retrieval (to nearest minute); and (b) any other relevant information.

6. Return the sampling cap to the Sampling Cap container. Fill the sampling hole with soil, sand, or other suitable material.

7. After all samples have been retrieved, verify that the caps on each Sampler are sealed tightly, that the adsorbent paks are present in the bags containing the Samplers, and that the bags are also completely sealed. Place the Samplers and the provided tools and materials in the Field Kit.

Note: **It is not necessary to return the gauze pads or the wire with the Field Kit, but return *all* the other materials and equipment (tools, containers, sampling caps, *etc.*).**

Asphalt, Concrete, or Gravel:

1. At each sample point covered by gravel, clear away the soil or sand to expose the aluminum- foil-capped copper pipe. For those locations covered by asphalt or concrete, use a chisel and hammer to remove the concrete patch to expose the aluminum foil.

2. Next, open the Field Kit and place it and the wire cutters within easy reach. Remove a square of gauze cloth and place it and a clean towel on the open Kit. Remove a solid cap from the Cap Storage Container and place it on the Kit, also.

3. Remove the aluminum-foil cap, using the scratch awl as necessary, and retrieve the Sampler from the pipe. Holding the Sampler upright, clean the sides of the vial with the clean towel (especially close to the Sampling Cap). Remove the Sampling Cap, cut all the wire from the vial with the wire cutters, and clean the vial threads completely with gauze cloth.
[**Note: Completely remove the wire to ensure the cap fits tight on the vial.**]

4. Firmly screw the solid cap on the Sampler Vial and clean the vial completely with the gauze cloth. With a **ballpoint pen** record the sample number, corresponding to the sample location, on the cap's label. [**Note**: Do not use a Sharpie marker.]

5. On the Field Deployment Report, record: (a) date and time of retrieval (to nearest minute); and (b) any other relevant information.

6. Return the sampling cap to the Sampling Cap container. Fill the sampling hole with soil, sand, or other suitable material.

7. After all samples have been retrieved, verify that the caps on each Sampler are sealed tightly, that the adsorbent paks are present in the bags containing the Samplers, and that the bags are also completely sealed. Place the Samplers and the provided tools and materials in the Field Kit.

Note: **It is not necessary to return the used copper pipes, wire, or the gauze pads with the Field Kit, but return *all* the other materials and equipment (tools, containers, unused copper pipes, sampling caps, *etc.*).**

8. Fill sampling holes to grade with an asphalt cold patch or cement.

IV. Forms

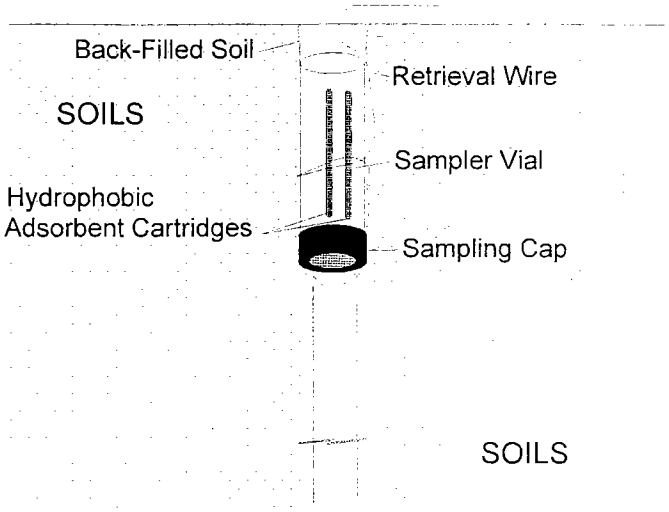
The Field Kit also contains a **Chain-of-Custody Form** and a **Field Deployment Report.**

A. The Chain-of-Custody Form is to be completed in accordance with **Section I**.

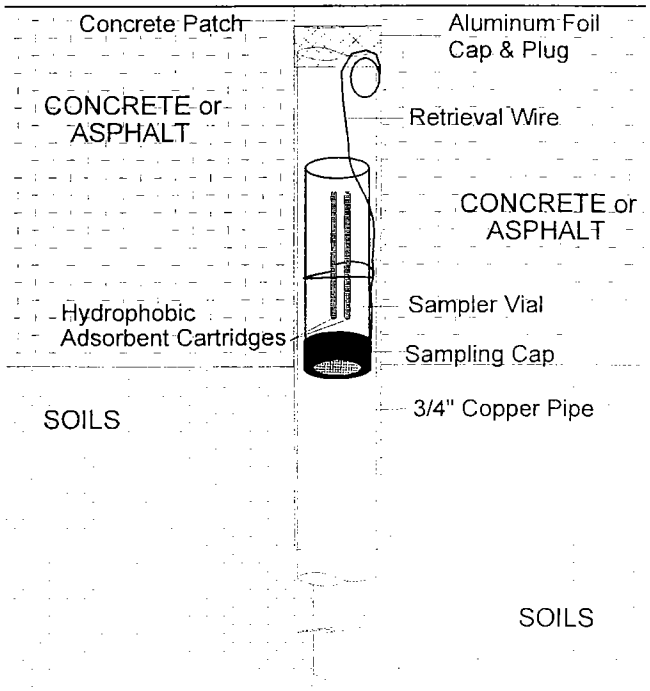
B. The Field Deployment Report is to be filled out during the Survey as indicated in **Section III**.

EMFLUX® SAMPLER

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



ATTACHMENT C

PASSIVE SOIL GAS
FIELD DATA SHEETS

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N000E300
DATE: 10/2/05 TIME: 0850
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0850 depth = 3ft, gravel surface [Boring relocated 10 ft N along E-axis due to presence of sewer line + water line. ~~Should be N+10~~ N300]

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N400 E400 DATE: 10/2/05 TIME: 0842

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0842 [Boring relocated 20 ft N. on E-axis due to compost stock supplies in storage lot.]

Depth = 3 ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N700E0 DATE: 10/2/05 TIME: 1036

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: __ __ __ __

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4 "

SAMPLE END DPETH (FT): 4 "

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1038
Depth= 3ft, gravel/soil surface

[Boring located 10 ft due S (along N axis) of 510 mw3.]

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N80cE000 DATE: 10/01/05 TIME: 1354

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS		SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	NA	COLOR:	
2nd	↓	ODOR:	
		OTHER:	

Installed @ 1359 9/28/05 concrete pad
Borehole depth 3ft bgs
Sample 4" (copper tube used)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 90's

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - NE0E500

DATE: 10/21/05 TIME: 1358

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB ( ) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed @ 1412 9/28/05 concrete pad near bldg corner - vehicle parking area.
Borehole Depth: 3 ft bgs
Sampler - 4" bgs (Geoprobe tube used)

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - NECO E400 DATE: 10/1/05 TIME: 1431

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

concrete parking area
Installed 1430 @ 9/28/05
Borehole Depth 2.76' Sample @ 4' bgs (copper tube used)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 – N900 E400

DATE: 10/1/05 TIME: 1432

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

concrete pad - neon rollup door

Installed 14:30 9/28/05

Borehole Depth - 3ft Sampler @ 4" bgs (copper tube used)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 – N 700 E 400

DATE: 10/1/05 TIME: 1546

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): N/A

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1550 9/28/05
Borehole Depth 3' Sampler @ 4' bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N700 E500

DATE: 10/1/05 TIME: 1547

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

concrete paved area - parking
Installed 1431 9/28/05

Borehole Depth 3ft Sampler @ 4' bgs (copper tube used)

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF0 - N900 E300

DATE: 10/1/05 TIME: 1555

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed @ 1601 9/28/05
Borehole depth 3ft Sample @ 4" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N800 E300

DATE: 10/1/05 TIME: 1558

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1600 9/28/05

Borehole Depth - 3ft Sample @ 4" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92'

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N600 E200

DATE: 10/1/05 TIME: 1606

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1610 9/28/05

B. Depth: 3' bgs / Sample depth - 4" bgs Gravel Cover (4")

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N900 E200

DATE: 10/1/05 TIME: 1611

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed @ 1612 9/28/05
B. Depth - 3 ft. bgs / Sampler @ 4' bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LFN - N600 E100

DATE: 10/1/05 TIME: 1616

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1616 9/28/05
B. Depth - 3' bgs / Sampler Depth - 4' bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N700 E200

DATE: 10/1/05 TIME: 1619

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1619 9/28/05

B. Depth 3ft bgs / Sample Depth ~~3ft~~ 4' bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N700 E300

DATE: 10/1/05 TIME: 1624

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1627 9/28/05
B. Depth 3 ft bgs // Sample 0' - 4" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah E. Hatten

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 – N 700 E 100 DATE: 10/1/05 TIME: 1626

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed @ 1627 9/28/05

B. Depth - 3ft bgs // Simple depth 4" bgs Gravel Cover (2"

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - Near C 300

DATE: 10/1/05 TIME: 1636

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

1 Installed @ 1637 9/28/05
B. Depth 3ft bgs // Sample depth 4" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N600 E200

DATE: 10/1/05 TIME: 1637

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 1637 9/28/05
B. Depth 3/1 bgs 11 Sample Depth - 4" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N 50c E300 DATE: 10/01/05 TIME: 1645

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT):

SAMPLE END DPETH (FT):

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): N/A

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Gravel Surface Installed @1642 9/28/05

Completed pump. 2nd attempt moved 5ft N on E-axis. H.H. refusal @ 15ft in 1st Lobe

B. Depth: 3 ft bgs Sample Depth: 4" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 – N1000 E400

DATE: 10/1/05 TIME: 1654

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4"

GRAB(X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Asphalt Surface
Installed 1654 9/28/01
B. Depth = 3ft bgs Sampler Depth

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N1100 ~~N160~~ 350 (B-TB) DATE: 10/1/05 TIME: 1656

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Asphalt Surface Installed 1655 9/28/05

B. Depth: 3ft bgs Sampler Depth 4" bgs

Note: boring located 5ft west along N-axis because Gas, Water, & Sewer utility markers asked us not to drill west of former guard house.

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N010EC

DATE: 10/2/05 TIME: 1105

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1105

Depth = 3ft, soil surface, offset from MW-4

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N190E0
DATE: 10/2/05 TIME: 1052
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1054
Depth = 3ft, soil surface, offset due to gas line (moved 10 ft S. along Navis)

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1070E300
DATE: 10/2/05 TIME: 1023
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1022. Boring relocated 30ft S. along E-axis due to presence of Road, sewer line, water line, + gas line
Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1070E200
DATE: 10/2/05 TIME: 1021
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1021 Depth = 3ft, gravel surface
Boring relocated 30ft S along E-axis due to presence of Road, Sewer line, + water line, + gas line

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1160E700
DATE: 10/2/05 TIME: 0936
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0935 [Boring relocated 40 ft S along E-axis to offset boring due to road, sewer, & gas lines]
Depth: 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1100E790
DATE: 10/2/05 TIME: 0930
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0923 [Boring located 10 ft west of location due to fence.]
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LFA-N900 E500 DATE: 10/1/05 TIME: 1704

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Gravel Surface
Installed 1703 9/28/05
B. Depth: 3' ft bgs ; Sampler Depth 4"

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10- N900 E600 DATE: 10/1/05 TIME: 1706

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Asphalt Pavement Installed 1706 9/28/05
B. Depth 3ft bgs ; Sample Depth = 4"

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 92°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N600 E600 DATE: 10/2/05 TIME: 0750

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): N/A

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Gravel
~~Inst. 2ft (Refusal)~~ 0750 9/29/05
B. Depth - 2ft (Refusal), Sampler D. 4"

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/~~RAIN~~ X (occ. Showers) WIND DIRECTION _____ AMBIENT TEMPERATURE ~85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N600E700
DATE: 10/2/05 TIME: 0759
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): _____

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

At Gravel Pavement
Inst 0759 9/29/05
B. Depth 3ft ; Sampler Depth 3ft

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/~~RAIN~~ occ. Shower X WIND DIRECTION _____ AMBIENT TEMPERATURE ~85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N700 E600

DATE: 10/2/05 TIME: 0802

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: __ __ __ __

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 1"

SAMPLE END DPETH (FT): 1"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): _____

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Gravel Paved
Inst 0802 10/2/05
B. Depth 3 ft. Sample Depth 1" (borehole cased gravel; sample @ 1" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/~~RAIN~~ occ. Shower X WIND DIRECTION _____ AMBIENT TEMPERATURE ~85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N700E700
DATE: 10/2/05 TIME: 0807
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT):
SAMPLE END DPETH (FT):
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/29/05 at 0807
Hole deptm = 35+, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN) _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N80CE700 DATE: 10/2/05 TIME: 0809

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT):

SAMPLE END DPETH (FT):

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/29/05 at 0809

Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN) _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 – N800E800 DATE: 10/2/05 TIME: 0812

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4 '

SAMPLE END DPETH (FT): 1' "

GRAB (x) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): _____

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0812

Depth = 3 ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85 °

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N900E700 DATE: 10/2/05 TIME: 0818

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0818
Depth = 3ft,

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LA10 – N1000 E1000 DATE: 10/2/05 TIME: 0821

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 1

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on ~~10/2/05~~ 9/29/05 at 0821

Depth = 3 ft, surface = gravel

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE _____

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N600E500 DATE: 10/2/05 TIME: 0827

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4 "

SAMPLE END DPETH (FT): 4 "

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): Z

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0828
Depth = 3 ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N500 E600
DATE: 10/2/05 TIME: 0830
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0830
Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N500E500 DATE: 10/2/05 TIME: 0834

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0834
Depth = 3 ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10- N400 E500 DATE: 10/2/05 TIME: 0835

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0835

Depth=3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N500E400
DATE: 10/2/05 TIME: 0840
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0840
Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 – N600 E400 DATE: 10/2/05 TIME: 0847

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	CONTAINER #	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0847

Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST) RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N1100E500
DATE: 10/2/05 TIME: 0911
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0909
Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1200E600 DATE: 10/2/05 TIME: 0912

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0910

Depth = 3ft, gravel surface, Budweiser can 2" bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN) _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1100E700 DATE: 10/2/05 TIME: 0915

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: __ __ __ __

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4 ft

SAMPLE END DPETH (FT): 4 ft

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0912

Depth = 3ft, gravel and soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1100E6000 DATE: 10/21/05 TIME: 0928

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0919.
Depth= 3ft, vegetated surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N900E800
DATE: 10/2/05 TIME: 0932
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0924
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1000E800 DATE: 10/2/05 TIME: 0933

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: __ __ __ __

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 0926
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST) RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1000E200 DATE: 10/2/05 TIME: 1024

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): N/A

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): X.2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1025

Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N900E600
DATE: 10/2/05 TIME: 1026
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): N/A
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1030
Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR ____ OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER ____ COURIER ____ OTHER ____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N1000E100
DATE: 10/2/05 TIME: 1026
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1027
Depth = 3 ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN) _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N900E0
DATE: 10/2/05 TIME: 1029

MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1031.
Depth: 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN) _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N800 EO

DATE: 10/2/05 TIME: 1030

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1036

Depth = 3ft, gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST/RAIN) _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N600E100 DATE: 10/2/05 TIME: 1041

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed ~~by~~ Sg on 9/29/05 at 1042

Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE _____

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N600E0 DATE: 10/2/05 TIME: 1042

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1043
Depth = 3 ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE _____

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N500E100 DATE: 10/2/05 TIME: 1044

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: __ __ __ __

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): X 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1044
Depth = 3 ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N500E0
DATE: 10/2/05 TIME: 1045
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1045
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST) RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N400E100 DATE: 10/2/05 TIME: 1046

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): Y 2

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1047

Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST) RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N400E0 DATE: 10/2/05 TIME: 1047

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 3'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): X3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1048

Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N300E100
DATE: 10/2/05 TIME: 1049
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1050
Depth = 3 ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N300EO DATE: 10/2/05 TIME: 1050

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): X 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1051
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N200E100
DATE: 10/2/05 TIME: 1051
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): A 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1052
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N100E100
DATE: 10/2/05 TIME: 1057
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ✓
TRIP BLANK (TB): X3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1057
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE _____
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N0E100
DATE: 10/2/05 TIME: 1056
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (x) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 13

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1102
Depth=3ft, soil surface, hole collapsed

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST) RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N100E0 DATE: 10/2/05 TIME: 1108

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 13

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1108
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N100E200 DATE: 10/2105 TIME: 1555

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4'

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): X3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1531
Depth= 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N200E200
DATE: 10/2/05 TIME: 1557
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (✓) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): x3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1535
Depth= 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: B. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N300E200
DATE: 10/2/05 TIME: 1558
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): X3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1540
Depth = 3 ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR ____ OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMPERATURE 85
SHIPMENT VIA: FEDEX X HAND DELIVER ____ COURIER ____ OTHER ____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N500 E200
DATE: 10/2/05 TIME: 1602
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 13

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1548
Depth: 8ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N300E400
DATE: 10/2/05 TIME: 1620
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 13

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed on 9/29/05 at 1603
Depth = 3ft, soil surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE 85°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N300 E500
DATE: 10/3/05 TIME: 1448
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1451
Depth = 2.5' obstruction @ depth

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1 AMBIENT TEMPERATURE 87
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N300 E600
DATE: 10/3/05 TIME: ~~1449~~ 1449
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (x) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1451
B. Depth 3 ft Sample @ 4" bgs Soil & Cover

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1 AMBIENT TEMPERATURE 87
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAB/WIPE
FISH = FISH	BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BP=BLADDER PUMP	HA=HAND AUGER
BR=BRASS RING	H=HOLLOW STEM AUGER
CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N400E600
DATE: 10/3/05 TIME: 1450
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1456
B. Depth - 2.5 ft bgs - obstruction

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1 AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10- N700 E800
DATE: 10/3/05 TIME: 1453
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1453 1458
B. Depth - 3ft bgs
Gravel surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1 AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N100 E700 DATE: 10/3/05 TIME: 1454

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4'

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): ↓

TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1458

B. Depth: 3ft Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ (OVERCAST)/RAIN _____ WIND DIRECTION NE 1' AMBIENT TEMPERATURE 87°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N200 E700
DATE: 10/3/05 TIME: 1455
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1500
B. Depth: 3 ft Soil Gravel

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION _____ AMBIENT TEMPERATURE _____
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N300E800
DATE: 10/3/05 TIME: 1502
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1509
B. Depth: 3 ft
Ground: So. 1

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N400 E900
DATE: 10/3/05 TIME: 1503
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1509
B. Depth = 3ft - wet @ 2.5 ft bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE1' AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N400 E700
DATE: 10/3/05 TIME: 1504
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

1. Installed 9/30/05 @ 1511
2. Depth: 2.75 ft Ground Sc. 1

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N4006800
DATE: 10/3/05 TIME: 1505
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1513
B. Depth: 3ft bgs Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1' AMBIENT TEMPERATURE 90'
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: S. Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N500E900
DATE: 10/3/05 TIME: 1506
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB X COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1513
B. Depth: 3ft bgs. Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N500E700
DATE: 10/3/05 TIME: 1507
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1514
B. Depth 2 ft - debris / refusal @ 2 ft bgs Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1c AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N600E900
DATE: 10/3/05 TIME: 1508
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1514
B. Depth: 3ft. Wet @ 1.5ft bgs Ground: Soil

GENERAL INFORMATION

WEATHER: SUN CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE ' AMBIENT TEMPERATURE 90 '
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Bradersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 N500 E800
DATE: 10/3/05 TIME: 1509
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1515
B. Depth: 2.5 ft - Refusal / Obstruction Grond: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N600 E800
DATE: 10/3/05 TIME: 1510
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 3

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1516
B. Depth: 1.5' - obst. / Refusal - 3rd try Ground: 3 ft

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N600 E1000
DATE: 10/3/05 TIME: 1510
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4*

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1516
B. Depth: 3ft. Wet @ 1.5ft bgs

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N700 E900
DATE: 10/3/05 TIME: 1511
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: __ __ __ __
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB X COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1518
B. Depth: 3ft
Ground: Soil

GENERAL INFORMATION

WEATHER: SUN CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N800E900
DATE: 10/3/05 TIME: 1512
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB X COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1519
B. Depth: 3ft - wet @ 1.5ft

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N700E1000
DATE: 10/3/05 TIME: 1520
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB X COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1520
B. Depth: 3ft - wet soil @ 1.5ft

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N800E1000
DATE: 10/3/05 TIME: 1514
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1522
B. Depth: 3ft - wet Soil @ 1.5ft Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 10 AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N1000 E900
DATE: 10/3/05 TIME: 1517
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1525
B. Depth: 3ft
Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N1000 E1000
DATE: 10/3/05 TIME: 1518
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1525
B. Depth: 3ft
Ground Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N1100 E900
DATE: 10/3/05 TIME: 1520
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1525
B. Depth: 3 ft
Ground: Sc. 1

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10 - N900 E1000
DATE: 10/3/05 TIME: 1523
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1525
B. Depth: 3 ft
Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N900 E900
DATE: 10/3/05 TIME: 1515
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB X COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1525
B. Depth: 3ft
Ground: Soil

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE/° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10 - N1000 E500
DATE: 10/3/05 TIME: 1531
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 9/30/05 @ 1531
B. Depth 3ft
Gravel Cover: Ground: Soil (4")

GENERAL INFORMATION

WEATHER: SUN/CLEAR OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 90°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: Sarah Gillette

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N1000E700 DATE: 10/05/06 TIME: 0933

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 0927

B. Depth: 3 ft Soil Surface

GENERAL INFORMATION

WEATHER: (SUN/CLEAR) _____ OVERCAST/RAIN _____ WIND DIRECTION NE 1° AMBIENT TEMPERATURE 87°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N400 E200
DATE: 10/03/05 TIME: 1600
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1601
B. Depth: 3ft
Soil Surface

GENERAL INFORMATION

WEATHER: (SUN/CLEAR) _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N400E300
DATE: 10/05/05 TIME: 1602
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1604
B. Depth 3 ft
Soil Surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N@E200
DATE: 10/02/05 TIME: 1618
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB(X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1622
B. Depth: 3 ft
Soil Surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX _____ HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
SITE: LF-10
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10- N200 E400
DATE: 10/02/05 TIME: 1624
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4'
SAMPLE END DPETH (FT): 4'
GRAB ☒ COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1628
B. Depth: 3ft Soil Surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID: LF10-N200E500 DATE: 10/02/05 TIME: 1625

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB ~~( )~~ COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1629

B. Depth: 3ft

Soil Surface

GENERAL INFORMATION

WEATHER: SUN/CLEAR _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N200E600
DATE: 10/02/05 TIME: 1627
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4"
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): _____
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1630
B. Depth: 3'1
Soil Surface

GENERAL INFORMATION

WEATHER: (SUN/CLEAR) OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB, NM
SITE: LF-10
PROJECT NAME: Holloman LF-10 Soil Gas Sampling
PROJECT NO: AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N200E300
DATE: 10/02/05 TIME: 1633
MATRIX TYPE: GS
SAMPLING METHOD: HA
LOT CONTROL #: ___ ___ ___ ___
(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)
CHAIN-OF-CUSTODY #: _____
SAMPLE BEG. DPETH (FT): 4"
SAMPLE END DPETH (FT): 4'
GRAB (X) COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:
MATRIX SPIKE (MS): NA
MATRIX SPIKE DUP (SD): _____
FIELD DUP (FD): _____
AMBIENT BLANK (AB): _____
EQUIPMENT BLANK (EB): ↓
TRIP BLANK (TB): 4

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

Installed 10/02/05 @ 1637
3. Depth: 3'
Soil Surface

GENERAL INFORMATION

WEATHER: (SUN/CLEAR) _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°
SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____
SHIPPED TO: Beacon
COMMENTS: _____
SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZRDOUS SOLID WASTE
SE=SEDIMENT
FISH = FISH
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE
BEN=BENTHIC INVERTEBRATE

SAMPLING METHOD CODES

B=BAILER
BP=BLADDER PUMP
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
PP=PERISTALTIC PUMP
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION:	Holloman AFB, NM	PROJECT NAME:	Holloman LF-10 Soil Gas Sampling
SITE:	LF-10	PROJECT NO:	AFC002-037-04-02-03

SAMPLE INFORMATION

SAMPLE ID LF10-N300 E300 DATE: 10/02/05 TIME: 1635

MATRIX TYPE: GS

SAMPLING METHOD: HA

LOT CONTROL #: ___ ___ ___ ___

(Ambient Blank # - Equipment Blank # - Trip Blank # - Cooler #)

CHAIN-OF-CUSTODY #: _____

SAMPLE BEG. DPETH (FT): 4"

SAMPLE END DPETH (FT): 4"

GRAB ~~(X)~~ COMPOSITE ( )

ENTER SAMPLE NUMBERS FOR QC SAMPLES/ BLANKS ASSOCIATED WITH THIS SAMPLE:

MATRIX SPIKE (MS): NA

MATRIX SPIKE DUP (SD): _____

FIELD DUP (FD): _____

AMBIENT BLANK (AB): _____

EQUIPMENT BLANK (EB): _____

TRIP BLANK (TB): 4"

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	ANALYTICAL METHOD	ANALYSIS
Vial	1		SW8260B/8270C	EMFLUX

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

~~Installed~~ 10/02/05 @ 1639

B. Depth: 3ft Soil Surface

GENERAL INFORMATION

WEATHER: ~~SUN/CLEAR~~ _____ OVERCAST/RAIN _____ WIND DIRECTION NE AMBIENT TEMPERATURE 87°

SHIPMENT VIA: FEDEX X HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: Beacon

COMMENTS: _____

SAMPLER: Brett Brodersen OBSERVER: _____

MATRIX TYPE CODES		SAMPLING METHOD CODES	
DC=DRILL CUTTINGS	SL=SLUDGE	B=BAILER	G=GRAB
WG=GROUND WATER	SO=SOIL	BP=BLADDER PUMP	HA=HAND AUGER
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS	BR=BRASS RING	H=HOLLOW STEM AUGER
SH=HAZRDOUS SOLID WASTE	WS=SURFACE WATER	CS=COMPOSITE SAMPLE	PP=PERISTALTIC PUMP
SE=SEDIMENT	SW=SWAB/WIPE	C=CONTINUOUS FLIGHT AUGER	SS=SPLIT SPOON
FISH = FISH	BEN=BENTHIC INVERTEBRATE	DT=DRIVEN TUBE	SP=SUBMERSIBLE PUMP

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Collected By:	

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, sampling hole depth, cartridge/vial condition)
LF10 - N800E600	9/28/05 / 1359	10/01/05 / 1354	Concrete Pad (6"); 3ft boring; vial good condition
LF10 - N800E500	9/28/05 / 1412	10/01/05 / 1358	Concrete Pad (6"); 3ft boring; vial-good condition
LF10 - N800E400	9/28/05 / 1431	10/01/05 / 1431	Concrete Pad (6"); 3 ft boring; vial-good condition - vehicle parking area
LF10 - N900E400	9/28/05 / 1431	10/01/05 / 1432	Concrete Pad (6"); 3 ft boring; vial-good condit.
LF10 - N700E400	9/29/05 / 1550	10/01/05 / 1546	Concrete Pad (6"); 3 ft boring; vial-good condit; vehicle-parking area
LF10 - N700E500	9/28/05 / 1431	10/01/05 / 1547	Concrete Pad (6"); 3ft boring; vial-good condit.
LF10 - N900E300	9/28/05 / 1601	10/01/05 / 1555	Concrete Pad (6"); 3ft boring; vial-good condit.
LF10 N800E300	9/28/05 / 1600	10/01/05 / 1558	Concrete Pad (6"); 3 ft boring vial-good condit
LF10 N800E200	9/28/05 / 1610	10/01/05 / 1606	~~Concrete Pad~~ Gravel Cover (4"); 3ft boring; vial-good condit.
LF10 N900E200	9/28/05 / 1612	10/01/05 / 1611	Gravel Cover (3"); 3ft boring, vial-good condit.
LF10 N800E100	9/28/05 / 1616	10/01/05 / 1616	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 N700E200	9/28/05 / 1619	10/01/05 / 1619	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 N700E~~200~~ 300	9/28/05 / 1627	10/01/05 / 1624	Gravel Cover (3"); 3ft boring; vial-good condit.
LF70 N700E100	9/28/05 / 1627	10/01/05 / 1626	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 N600E300	9/28/05 / 1637	10/01/05 / 1636	Gravel Cover (2"); 3ft boring; vial-good condit.

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 N600 E200	9/28/05 / 1637	10/01/05 / 1637	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 N500 E300	9/28/05 / 1642	10/01/05 / 1645	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N1000 E400	9/28/05 / 1654	10/01/05 / 1654	Asphalt Pavement (2"); 3ft boring; vial-good condit.
LF10 - N1100 E350	9/28/05 / 1655	10/01/05 / 1656	Asphalt Pavement (2"); 3ft boring; vial-good condit.
LF10 - N900 E500	9/28/05 / 1703	10/01/05 / 1704	Gravel Cover (4"); 3ft boring; vial-good condit.
LF10 - N900 E600	9/28/05 / 1706	10/01/05 / 1706	Asphalt Pavement (3"); 3ft boring; vial-good condit.
LF10 N600 E600	9/29/05 / 0750	10/02/05 / 0750	Gravel Cover (2"); 3ft boring (Refusal); vial-good condit.
LF10 N600 E700	9/29/05 / 0759	10/02/05 / 0759	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N700 E600	9/29/05 / 0802	10/02/05 / 0802	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N700 E700	9/29/05 / 0807	10/02/05 / 0807	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N800 E700	9/29/05 / 0809	10/02/05 / 0809	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N800 E800	9/29/05 / 0812	10/02/05 / 0812	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N900 E700	9/29/05 / 0818	10/02/05 / 0818	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N1000 E600	9/29/05 / 0821	10/02/05 / 0821	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N600 E500	9/29/05 / 0828	10/02/05 / 0827	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N500 E600	9/29/05 / 0830	10/02/05 / 0830	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N500 E500	9/29/05 / 0834	10/02/05 / 0834	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 N400 E500	9/29/05 / 0835	10/02/05 / 0835	Gravel Cover (2"); 3ft boring; vial-good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N500 E400	9/29/05 / 0840	10/02/05 / 0840	Gravel Cover (3"); 3 ft boring; vial-good condit
LF10 - N400 E400	9/29/05 / 0842	10/02/05 / 0842	Gravel Cover (2"); 3 ft boring; vial-good condt.
LF10 - N600 E400	9/29/05 / 0847	10/02/05 / 0847	Gravel Cover (2"); 3 ft boring; vial-good condt.
LF10 - N1000 E300	9/29/05 / 0850	10/02/05 / 0850	Gravel Cover (4"); 3 ft boring; vial-good condit
LF10 - N1100 E500	9/29/05 / 0909	10/02/05 / 0911	Gravel Cover (4"); 3 ft boring; vial-good condt
LF10 - N1200 E600	9/29/05 / 0910	10/02/05 / 0912	Gravel Cover (3"); 3 ft boring; vial-good condt. Bee can in boring.
LF10 - N1100 E700	9/29/05 / 0912	10/02/05 / 0915	Gravel Cover (3"); 3 ft boring; vial-good condt.
LF10 - N1100 E600	9/29/05 / 0919	10/02/05 / 0928	Grass/gravel cover (3"); 3 ft boring; vial-good condit.
LF10 - N1100 E790	9/29/05 / 0923	10/02/05 / 0930	Soil Cover; 3 ft boring; vial-good condt
LF10 - N900 E800	9/29/05 / 0924	10/02/05 / 0932	Soil Cover; 3 ft boring; vial-good condt
LF10 - N1000 E800	9/29/05 / 0926	10/02/05 / 0933	Soil Surface; 3 ft boring; vial-good condt
LF10 - N1160 E700	9/29/05 / 0935	10/02/05 / 0936	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N1070 E200	9/29/05 / 1021	10/02/05 / 1021	~~Gravel Cover (4")~~ ~~Soil Surface~~; 3 ft boring; vial-good condit.
LF10 - N1070 E300	9/29/05 / 1022	10/02/05 / 1023	Gravel Cover (4"); 3 ft boring; vial-good condt
LF10 - N1000 E200	9/29/05 / 1025	10/02/05 / 1024	Gravel Cover (4"); 3 ft boring; vial-good condt.
LF10 - N900 E100	9/29/05 / 1030	10/02/05 / 1026	Gravel Cover (4"); 3 ft boring; vial-good condt.
LF10 - N1000 E100	9/29/05 / 1027	10/02/05 / 1026	Gravel Cover (3"); 3 ft boring; vial-good condt.
LF10 - N900 E0	9/29/05 / 1031	10/02/05 / 1029	Gravel Cover (1"); 3 ft boring; vial-good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N800 E0	9/29/05 / 1036	10/02/05 / 1030	Gravel Cover (6"); 3 ft boring; vial - good condit.
LF10 - N700 E0	9/29/05 / 1038	10/02/05 / 1036	Soil/Gravel Cover; 3 ft boring; vial - good condit; Monit. Well 10 ft away
LF10 - N600 E100	9/29/05 / 1042	10/02/05 / 1041	Soil Surface; 3 ft boring; vial - good condit
LF10 - N600 E0	9/29/05 / 1043	10/02/05 / 1042	Soil Surface; 3 ft boring; vial - good condit
LF10 - N500 E100	9/29/05 / 1044	10/02/05 / 1044	Soil Surface; 3 ft boring; vial - good condit
LF10 - N500 E0	9/29/05 / 1047	10/02/05 / 1045	Soil Surface; 3 ft boring; vial - good condit
LF10 - N400 E100	9/29/05 / 1047	10/02/05 / 1046	Soil Surface; 3 ft boring; vial - good condit
LF10 - N400 E0	9/29/05 / 1048	10/02/05 / 1047	Soil Surface; 3 ft boring; vial - good condit
LF10 - N300 E100	9/29/05 / 1050	10/02/05 / 1049	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N300 E0	9/29/05 / 1051	10/02/05 / 1050	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E100	9/29/05 / 1052	10/02/05 / 1051	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N190 E0	9/29/05 / 1054	10/02/05 / 1052	Soil Surface; 3 ft boring; vial - good condit; gas line 10 ft away
LF10 - N100 E100	9/29/05 / 1057	10/02/05 / 1057	Soil Surface; 3 ft boring; vial - good condit
LF10 - N0 E100	9/29/05 / 1102	10/02/05 / 1056	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N010 E0	9/29/05 / 1105	10/02/05 / 1105	Soil Surface; 3 ft boring; vial - good condit
LF10 - N100 E0	9/29/05 / 1108	10/02/05 / 1108	Soil Surface; 3 ft boring; vial - good condit
LF10 - N100 E200	9/29/05 / 1531	10/02/05 / 1555	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E200	9/29/05 / 1535	10/02/05 / 1557	Soil Surface; 3 ft boring; vial - good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
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PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N300 E200	9/29/05 / 1540	10/02/05 / 1558	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N500 E200	9/29/05 / 1548	10/02/05 / 1602	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N300 E400	9/29/05 / 1603	10/02/05 / 1620	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N300 E500	9/30/05 / 1451	10/03/05 / 1448	Soil Surface; 2.5 ft boring (obst.); vial - good condit.
LF10 - N300 E600	9/30/05 / 1451	10/03/05 / 1449	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N400 E600	9/30/05 / 1456	10/03/05 / 1450	Soil Surface; 2.5 ft boring; vial - good condit.
LF10 - N700 E800	9/30/05 / 1458	10/03/05 / 1453	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N300 E700	9/30/05 / 1458	10/03/05 / 1454	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E700	9/30/05 / 1500	10/03/05 / 1455	Soil Surface; 3 ft boring; vial - good condit
LF10 - N300 E800	9/30/05 / 1509	10/03/05 / 1502	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N400 E900	9/30/05 / 1509	10/03/05 / 1503	Soil Surface; 3 ft boring; vial - good condit; wet soil @ 2.5 ft
LF10 - N400 E700	9/30/05 / 1511	10/03/05 / 1504	Soil Surface; 2.75 ft boring; vial - good condit.
LF10 - N400 E800	9/30/05 / 1513	10/03/05 / 1505	Soil Surface; 3 ft boring; vial - good condit
LF10 - N500 E900	9/30/05 / 1513	10/03/05 / 1506	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N500 E700	9/30/05 / 1514	10/03/05 / 1507	Soil Surface; 2 ft boring (obst.); vial - good condit; wood debris present.
LF10 - N600 E900	9/30/05 / 1514	10/03/05 / 1508	Soil Surface; 3 ft boring; vial - good condit; wet soil @ 1.5 ft
LF10 - N500 E800	9/30/05 / 1515	10/03/05 / 1509	Soil Surface; 2.5 ft boring (obst.); vial - good condit
LF10 - N600 E800	9/30/05 / 1516	10/03/05 / 1510	Soil Surface; 1.5 ft boring (obst); vial - good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
321 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N600 E1000	9/30/05 / 1516	10/03/05 / 1510	Soil Surface; 3ft boring; vial - good condit; wet soil @ 1.5 ft
LF10 - N700 E900	9/30/05 / 1518	10/03/05 / 1511	Soil Surface; 3ft boring; vial - good condit
LF10 - N800 E900	9/30/05 / 1519	10/03/05 / 1512	Soil Surface; 3ft boring; vial - good condit; wet soil @ 1.5 ft
LF10 - N700 E1000	9/30/05 / 1520	10/03/05 / 1520	Soil Surface, 3ft boring; vial - good condit; wet soil @ 1.5 ft
LF10 - N800 E1000	9/30/05 / 1522	10/03/05 / 1514	Soil Surface; 3ft boring; vial - good condit; wet soil @ 1.5 ft.
LF10 - N1000 E900	9/30/05 / 1525	10/03/05 / 1517	Soil Surface; 3ft boring; vial - good condit
LF10 - N1000 E1000	9/30/05 / 1525	10/03/05 / 1518	Soil Surface; 3 ft boing; vial - good condit
LF10 - N1100 E900	9/30/05 / 1525	10/03/05 / 1520	Soil Surface; 3ft boring; vial - good condit.
LF10 - N900 E1000	9/30/05 / 1525	10/03/05 / 1527	Soil Surface; 3ft boring; vial - good condit.
LF10 - N900 E900	9/30/05 / 1525	10/03/05 / 1515	Soil Surface; 3ft boring; vial - good condit
LF10 - N1000 E500	9/30/05 / 1531	10/03/05 / 1531	~~Gravel cover~~ (4") ~~Soil Surface~~; 3ft boring; vial - ~~good~~ condit.
LF10 - N1000 E700	10/2/05 / 0927	10/05/05 / 0933	Soil Surface; 3ft boring; vial - good condit.
LF10 - N400 E200	10/02/05 / 1601	10/05/05 / 1600	Soil Surface; 3ft boing; vial - good condit.
LF10 - N400 E300	10/02/05 / 1604	10/05/05 / 1602	Soil Surface; 3ft boing; vial - good condit.
LF10 - N0 E200	10/02/05 / 1622	10/05/05 / 1618	Soil Surface; 3ft. boing; vial - good condit
LF10 - N200 E400	10/02/05 / 1628	10/05/05 / 1624	Soil Surface; 3ft. boing; vial - good condit.
LF10 - N200 E500	10/02/05 / 1629	10/05/05 / 1625	Soil Surface; 3ft boing; vial - good condit.
LF10 - N200 E600	10/02/05 / 1630	10/05/05 / 1627	Soil Surface; 3ft boing; vial - good condit

BEACON ENVIRONMENTAL SERVICES, INC.
123 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10-N200 E300	10/02/05 / 1637	10/05/05 / 1633	Soil Surface; 3 ft boring; vial - good condit.
LF10-N300 E300	10/02/05 / 1639	10/05/05 / 1635	Soil Surface; 3 ft boring; vial: good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broadus
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
Trip-1					
Trip-2					
Trip-3					
Trip-4					
LF10-N800E600		good condition	10/01/05	1354	BTB
LF10-N800E500				1358	BTB
LF10-N800E400				1431	BTB
LF10-N900E400				1432	BTB
LF10-N700E400				1546	BTB
LF10-N700E500				1547	BTB
LF10-N900E300				1555	BTB
LF10-N800E300				1558	BTB
LF10-N900E200				1611	BTB
LF10-N800E200				1606	BTB
LF10-N800E100				1616	BTB
LF10-N700-E200				1619	BTB
LF10-N700E300				1624	BTB
LF10-N700E100				1626	BTB
LF10-N600E300				1638	BTB
LF10-N600E200				1637	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheidt	9-21-2005 / 1700	FedEx	Brett Broadus	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Broadus	10/05/05 1900	FedEX		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Scott Flood
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
LF10 - N500 E300			10/01/05	1645	BTB
LF10 - N1000 E400				1654	BTB
LF10 - N1100 ~~E400~~ E350 BTB		(Hang end) Noted change on Beacon on 10/06/05		1656	BTB
LF10 - N900 E500				1704	BTB
LF10 - N900 E600				1706	BTB
LF10 - N600 E600			10/02/05	0750	BTB
LF10 - N600 E700				0759	BTB
LF10 - N700 E600				0802	BTB
LF10 - N700 E700				0807	BTB
LF10 - N800 E700				0809	BTB
LF10 - N800 E800				0812	BTB
LF10 - N900 E700				0818	BTB
LF10 - N1000 E600				0821	BTB
LF10 - N600 E500				0827	BTB
LF10 - N500 E600				0830	BTB
LF10 - N500 E500				0834	BTB
LF10 - N400 E500				0835	BTB
LF10 - ~~N500~~ 400 ~~E500~~ 600 BTB				0840	BTB
LF10 - N400 E400				0842	BTB
LF10 - N1000 E300				0850	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Schreiber	9-21-2005 / 1700	FEDEX	Scott Flood	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Scott Flood	10/05/05 1900	FedEx		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	[signature]
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10 - N600 E400		vials - good condition	10/02/05	0847	BTB
LF10 - N1100 E500		"	"	0911	BTB
LF10 - N1200 E600		"	"	0912	BTB
LF10 - N1100 E700		"	"	0915	BTB
LF10 - N1100 E600		"	"	0928	BTB
LF10 - N1100 E790		"	"	0930	BTB
LF10 - N900 E800		"	"	0932	BTB
LF10 - N1000 E800		"	"	0933	BTB
LF10 - N1160 E700		"	"	0936	BTB
LF10 - N1070 E200		"	"	1021	BTB
LF10 - N1070 E300		"	"	1023	BTB
LF10 - N1000 E200		"	"	1024	BTB
LF10 - N1000 E100		"	"	1026	BTB
LF10 - N900 E100		"	"	1026	BTB
LF10 - N900 E0		"	"	1029	BTB
LF10 - N800 E0		"	"	1030	BTB
LF10 - N700 E0		"	"	1036	BTB
LF10 - N600 E100		"	"	1041	BTB
LF10 - N600 E0		"	"	1042	BTB
LF10 - N500 E100		"	"	1044	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FEDEX	[signature]	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
[signature]	10/05/05 1900	FedEx		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Scott Reed
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N500 E0		Vials - good condition	10/02/05	1035	BTB
LF10-N400 E100				1036	BTB
LF10-N400 E0				1047	BTB
LF10-N300 E100				1049	BTB
LF10-N300 E0				1050	BTB
LF10-N200 E100				1051	BTB
LF10-N190 E0				1052	BTB
LF10-N100 E100				1057	BTB
LF10-N0 E100				1056	BTB
LF10-N010 E0				1105	BTB
LF10-N100 E0				1108	BTB
LF10-N100 E200				1555	BTB
LF10-N200 E200				1557	BTB
LF10-N300 E200				1558	BTB
LF10-N500 E200				1602	BTB
LF10-N300 E400				1620	BTB
LF10-N300 E500			10/03/05	1448	BTB
LF10-N300 E600				1449	BTB
LF10-N400 E600				1450	BTB
LF10-N700 E800				1453	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FedEx	Scott Reed	09/25/05 1700

Shipment of Field Kit to Laboratory — Custody Seal # C0424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Scott Reed	10/05/05 1900	FedEx		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Beard
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N300 E700		vial - good condit	10/03/05	1454	BTB
LF10-N200 E700				1455	BTB
LF10-N300 E800				1502	BTB
LF10-N400 E900				1503	BTB
LF10-N400 E700				1504	BTB
LF10-N400 E800				1505	BTB
LF10-N500 E900				1506	BTB
LF10-N500 E700				1507	BTB
LF10-N600 E900				1508	BTB
LF10-N500 E800				1509	BTB
LF10-N600 E800				1510	BTB
LF10-N600 E1000				1510	BTB
LF10-N700 E900				1511	BTB
LF10-N800 E900				1512	BTB
LF10-N700 E1000				1520	BTB
LF10-N800 E1000				1514	BTB
LF10-N1000 E900				1517	BTB
LF10-N1000 E1000				1518	BTB
LF10-N1100 E900				1520	BTB
LF10-N900 E1000				1523	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheick	9-21-2005 / 1700	FEDEX	Brett Beard	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Beard	10/05/05 1900	FEDEX		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Beaver
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N900E900		vial good condition	10/03/05	1515	BTB
LF10-N1000E500		↓	↓	1531	BTB
LF10-N1000E700			10/05/05	0933	BTB
LF10-N400E200				1600	BTB
LF10-N400E300				1602	BTB
LF10-N400E200				1618	BTB
LF10-N200E400				1624	BTB
LF10-N200E500				1625	BTB
LF10-N200E600				1627	BTB
LF10-N200E300				1633	BTB
LF10-N300E300		↓	↓	1635	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheick	9-21-2005/1700	FedEx	Brett Beaver	09/25/05 /1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Beaver	10/05/05 1900	FEDEX		

BEACON Report No. EM1776

PASSIVE SOIL-GAS SURVEY
LANDFILL 10
HOLLOMAN AFB, NM

Prepared for

HydroGeoLogic, Inc.
1155 Herndon Parkway
Suite 900
Herndon, VA 20170

by

Beacon Environmental Services, Inc.
323 Williams Street
Suite D
Bel Air, MD 21014

November 14, 2005

Applying Results from Soil-Gas Surveys

The utility of soil-gas surveys is directly proportional to their accuracy in reflecting and representing changes in the subsurface concentrations of source compounds. Passive soil-gas survey results are the mass collected from the vapor-phase emanating from the source. The vapor-phase is merely a fractional trace of the source, so, as a matter of convenience, the units used in reporting detection values from passive soil-gas surveys are smaller than those employed for source-compound concentrations.

The critical fact is that, whatever the relative concentrations of source and associated soil gas, best results are realized when the ratio of soil-gas measurements to actual subsurface concentrations remains as close to constant as the real world permits. It is the reliability and consistency of this ratio, not the particular units of mass (*e.g.*, nanograms) that determine usefulness. Thus, BEACON emphasizes the necessity of conducting — at minimum — follow-on intrusive sampling at one or two points that show relatively high soil-gas measurements to obtain corresponding concentrations of soil and groundwater contaminants. These correspondent values furnish the basis for approximating the required ratio. Once that ratio is established, it can be used in conjunction with the soil-gas measurements (regardless of the units adopted) to estimate subsurface contaminant concentrations across the survey field. It is important to keep in mind, however, that specific conditions at individual sample points, including soil porosity and permeability, depth to contamination, and perched ground water, can have significant impact on soil-gas measurements at those locations.

When passive soil-gas surveys are handled in this way, the data provide information that can yield substantial savings in drilling costs and in time. They furnish, among other things, a checklist of compounds expected at each survey location and help to determine how and where drilling budgets can most effectively be spent.

BEACON Report Number: EM1776

Passive Soil-Gas Survey
Landfill 10
Holloman AFB, NM

This Passive Soil-Gas Survey Report has been prepared for HydroGeoLogic, Inc. (HGL) by Beacon Environmental Services, Inc. (BEACON) in accordance with the terms of Purchase Order No. P0000168, dated September 21, 2005. BEACON's principal technical contact at HGL for this project has been Mr. Ken Cottrell.

1. Objectives

Soil-gas samples were collected to determine the presence, identity, and relative strength of targeted contaminants in soil and/or ground water at Landfill 10. Survey results will be used to determine the distribution of contaminants and to guide further site investigation.

2. Target Compounds

This survey targeted the 40 compounds listed in **Table 1**, which supplies the resulting laboratory data in nanograms (ng) of specific compound per cartridge.

3. Survey Description

No. of Field Samples:	107
No. of Trip Blanks:	4
Total No. of Samples:	111

Field sample locations are shown on **Figure 1**.

4. Field Work

HGL was provided a Field Kit with the equipment needed to conduct a 107-point passive soil-gas survey. Samplers were deployed on September 28, 29, 30, and October 2, 2005, and were retrieved on October 1, 2, 3, and 5, 2005. **Attachment 1** describes the field procedures used. Individual deployment and retrieval times will be found in the Field Deployment Report (**Attachment 2**).

5. Analysis and Reporting Dates

BEACON's laboratory received 111 samples for analysis on October 6, 2005. Adsorbent cartridges from the passive samplers were thermally desorbed, then analyzed using gas chromatography/mass spectrometry (GC/MS) equipment, in accordance with EPA Method 8260B (Modified), as described in **Attachment 3**. BEACON's laboratory analyzed each cartridge for the targeted compounds; analyses were completed on October 11, 2005. Following a laboratory review, results were provided to HGL on October 12, 2005. On November 14, 2004, HGL authorized BEACON to issue the final report.

6. Report Notes and Quality Assurance/Quality Control Factors

Table 1 provides survey results in nanograms per cartridge by sample-point number and compound name. The quantitation levels represent values above which quantitative laboratory results can be achieved within specified limits of precision and with a high degree of confidence. The quantitation level for each compound, therefore, provides a reliable basis for comparing the relative strength of any detection of that compound.

Data Compatibility. It is important to note that when sample locations are covered with or near the edge of an artificial surface (*e.g.*, asphalt or concrete), sample measurements are often distorted (increased) significantly. Such distortion can be attributed to the fact that gas rising from sources beneath impermeable caps tends to reach equilibrium underneath the cap. Thus, a reading taken below or near an impermeable surface is much higher than it would be in the absence of such a cap.

The **Chain-of-Custody** form, which was shipped with the samples for this survey, is supplied as **Attachment 4**.

Laboratory QA/QC procedures included standards, surrogates, and blanks appropriate to EPA Method 8260 (Modified). Field work, analyses, and reporting were done in accordance with BEACON's Quality Assurance Program Plan.

QA/QC Contaminant Corrections. Following EPA guidelines, laboratory data is not corrected for method blank or trip blank sample contamination values; any contamination detected on QA/QC samples is reported in **Table 1**.

Laboratory method blanks are run each day with project samples to identify contamination present in the laboratory. If contamination is detected on a method blank, measurements of identical compounds on samples analyzed the same day are considered to be suspect and are

flagged in the laboratory report. The laboratory method blanks analyzed in connection with the present samples revealed no contamination.

The **trip blank** is a sampling cartridge prepared, transported, and analyzed with other samples but intentionally not exposed. Any target compounds identified on the trip blanks are reported in the laboratory data. The analyses of the trip blanks (labeled Trip-1 through Trip-4 in **Table 1**) reported measurements of Toluene, p&m-Xylene, and 1,2,4-Trimethylbenzene. The highest reported values were reported on Trip-2 with 55 nanograms (ng) of Toluene, 26 ng of p&m-Xylene, and 110 ng of 1,2,4-Trimethylbenzene. No other compounds were identified on the trip blanks, indicating that except for the lower level measurements of these compounds, the survey site itself is the source of detected contamination..

Survey findings are relative exclusively to this project and should not routinely be compared with results of other BEACON Surveys. *To establish a relationship between reported soil-gas measurements and actual subsurface contaminant concentrations, which will indicate those detections representing significant subsurface contamination, BEACON recommends the guidelines on the inside front cover of this report.*

At the request of HGL, the following compound distribution maps have been provided:

Figure 2 — Chloroform
Figure 3 — Trichloroethene
Figure 4 — Tetrachloroethene
Figure 5 — 1,3,5-Trimethylbenzene
Figure 6 — n-Butylbenzene
Figure 7 — Naphthalene

The following **Attachments** are included:

-1- Field Procedures
-2- Field Deployment Report
-3- Laboratory Procedures
-4- Chain-of-Custody Form

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	Meth_Blk	Trip-1	LF10-N800E100	LF10-N500E300	LF10-N600E700
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100803	05100816	05100817	05100818	05100819
Received Date:		10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/8/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	17:50	0:24	0:55	1:25	1:56
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	<25	**33**	**30**	**34**	**31**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	**31**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	**27**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	**94**	**88**	**113**	**191**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	**143**	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N1000E600	LF10-N700E400	LF10-N900E200	LF10-N600E200	LF10-N600E600
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100820	05100821	05100822	05100823	05100824
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	2:26	2:56	3:27	3:57	4:28
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	<25	**29**	<25	<25	**66**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	**42**
p & m-Xylene	<25	**30**	<25	<25	**41**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	**35**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**69**	**138**	**75**	**96**	**152**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	**42**	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N900E700	LF10-N900E400	LF10-N800E200	LF10-N600E300	LF10-N900E600
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100825	05100826	05100827	05100828	05100829
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	4:58	5:29	5:59	6:29	7:00
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	<25	**28**	**65**	**30**	**101**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	<25	**29**	**43**	<25	**62**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	**26**	**38**	<25	**51**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	**25**	<25
1,2,4-Trimethylbenzene	**68**	**140**	**209**	**98**	**268**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	**31**	<25	<25	**127**
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N800E800	LF10-N800E400	LF10-N800E300	LF10-N700E100	LF10-N900E500
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100830	05100831	05100832	05100833	05100834
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	7:30	8:01	8:31	9:01	9:32
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	**28**	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**120**	**161**	**59**	**100**	**59**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	**103**	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	**39**	**61**	**37**	**59**	<25
p & m-Xylene	**70**	**100**	**41**	**65**	**31**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**59**	**81**	**36**	**59**	**27**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	**79**	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**295**	**377**	**137**	**184**	**121**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	**25**	**34**	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	**28**	**26**	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N800E700	LF10-N800E500	LF10-N900E300	LF10-N700E300	LF10-N1100E350
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100835	05100836	05100837	05100838	05100839
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	10:02	10:33	11:03	11:33	12:04
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**83**	<25	<25	<25	**75**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	**58**	<25	**14 J**	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	**30**	<25	<25	<25	**34**
p & m-Xylene	**51**	<25	<25	<25	**52**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**44**	<25	<25	<25	**46**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**231**	**98**	**123**	**91**	**241**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	**26**	**27**	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N700E700	LF10-N800E600	LF10-N700E500	LF10-N700E200	LF10-N1000E400
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100840	05100841	05100842	05100843	05100844
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	12:34	13:05	13:35	14:05	14:36
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	**16 J**	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**64**	**106**	**44**	**44**	**66**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	**67**	<25	<25	**38**
p & m-Xylene	**39**	**83**	**29**	**25**	**47**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**31**	**72**	**27**	<25	**40**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	**36**	<25	<25
1,2,4-Trimethylbenzene	**161**	**294**	**132**	**101**	**164**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	**27**	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	**84**	<25	**137**	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N700E600	Trip-2	LF10-N1100E700	Meth_Blk	LF10-N600E0
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100845	05100846	05100847	05100903	05100904
Received Date:	10/6/2005	10/6/2005	10/6/2005		10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	15:06	15:37	16:07	19:06	19:37
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	**32**
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**51**	**55**	**51**	<25	**33**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	**33**	**26**	**36**	<25	**29**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**29**	<25	**32**	<25	**27**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	**42**
1,2,4-Trimethylbenzene	**123**	**110**	**185**	<25	**145**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N900E100	LF10-N900E800	LF10-N1000E300	LF10-N500E500	LF10-N500E100
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100905	05100906	05100907	05100908	05100909
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/9/2005	10/9/2005
Analysis Time:	20:07	20:38	21:09	21:40	22:11
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	**33**	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	<25	**62**	**54**	**48**	**27**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	<25	**41**	**30**	**28**	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	**36**	**26**	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**50**	**185**	**129**	**131**	**112**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N1000E100	LF10-N1000E800	LF10-N1100E500	LF10-N400E500	LF10-N700E0
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100910	05100911	05100912	05100913	05100914
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/9/2005	10/9/2005	10/9/2005	10/10/2005	10/10/2005
Analysis Time:	22:42	23:13	23:44	0:15	0:46
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**56**	**39**	**66**	**42**	**42**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	**31**	**31**	**42**	**26**	**26**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**27**	**26**	**33**	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**129**	**150**	**193**	**117**	**98**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N1070E300	LF10-N1100E600	LF10-N400E400	LF10-N600E500	LF10-N600E100
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100915	05100916	05100917	05100918	05100919
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	1:17	1:48	2:19	2:50	3:21
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	**14 J**	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	<25	**38**	**89**	**75**	**36**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	**32**	<25
p & m-Xylene	<25	**26**	**41**	**50**	**26**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	**36**	**44**	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**63**	**138**	**218**	**208**	**113**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N1000E200	LF10-N1100E790	LF10-N600E400	LF10-N500E600	LF10-N500E0
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100920	05100921	05100922	05100923	05100924
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	3:52	4:23	4:54	5:25	5:56
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**35**	**27**	**38**	**48**	**44**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	**30**	<25	**27**	**28**	**33**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**27**	<25	<25	<25	**26**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	**28**	<25	<25	<25
1,2,4-Trimethylbenzene	**156**	**95**	**110**	**140**	**128**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	**94**	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N900E0	LF10-N1160E700	LF10-N1200E600	LF10-N500E400	LF10-N400E100
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100925	05100926	05100927	05100928	05100929
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	6:27	6:58	7:29	8:00	8:31
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**73**	**79**	**32**	<25	**53**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	**37**	<25	<25	<25
p & m-Xylene	**37**	**53**	**25**	<25	**32**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**31**	**46**	<25	<25	**26**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**161**	**200**	**112**	**58**	**136**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N800E0	LF10-N1070E200	Trip-3	LF10-N200E200	LF10-N400E600
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100930	05100931	05100932	05100933	05100934
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	9:02	9:33	10:04	10:35	11:06
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**26**	<25	**41**	**52**	**43**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	**35**	**26**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	**32**	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**86**	**83**	**87**	**178**	**113**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N400E700	LF10-N600E800	LF10-N190E0	LF10-N100E200	LF10-N300E600
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100935	05100936	05100937	05100938	05100939
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	11:37	12:08	12:39	13:10	13:41
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	**14 J**	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**79**	**47**	**29**	**51**	**30**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	**15 J**	**31**	**62**	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	**27**	<25	<25	<25	<25
p & m-Xylene	**43**	**31**	<25	**41**	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**38**	**25**	<25	**35**	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	**29**
1,2,4-Trimethylbenzene	**177**	**125**	**93**	**233**	**108**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N400E900	LF10-N500E800	LF10-N200E100	LF10-N100E0	LF10-N300E500
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100940	05100941	05100942	05100943	05100944
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	14:12	14:43	15:14	15:45	16:16
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**36**	**55**	**43**	**33**	**40**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	**29**	**33**	**41**	<25	**28**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**29**	**29**	**35**	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	**40**	<25	<25	<25
1,2,4-Trimethylbenzene	<25	**147**	**194**	**112**	**108**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N300E800	LF10-N600E900	LF10-N300E0	Meth_Blk	LF10-N010E0
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05100945	05100946	05100947	05101003	05101004
Received Date:	10/6/2005	10/6/2005	10/6/2005		10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	16:47	17:18	17:48	19:21	19:52
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**45**	**119**	**51**	<25	**58**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	**51**	<25	<25	<25
p & m-Xylene	**29**	**87**	**25**	<25	**31**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**26**	**73**	<25	<25	**26**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**126**	**376**	**97**	<25	**114**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N300E400	LF10-N200E700	LF10-N500E700	LF10-N300E100	LF10-N0E100
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101005	05101006	05101007	05101008	05101009
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/10/2005	10/10/2005
Analysis Time:	20:23	20:53	21:24	21:55	22:26
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	**47**	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**65**	<25	<25	**74**	**44**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	**34**	<25
p & m-Xylene	**46**	<25	<25	**45**	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	**38**	<25	<25	**36**	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	**43**	<25
1,2,4-Trimethylbenzene	**192**	**83**	**68**	**145**	**78**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N500E200	LF10-N300E700	LF10-N500E900	LF10-N400E0	LF10-N100E100
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101010	05101011	05101012	05101013	05101014
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/10/2005	10/10/2005	10/10/2005	10/11/2005	10/11/2005
Analysis Time:	22:57	23:28	23:59	0:29	1:00
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	**56**	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**43**	**44**	**53**	**58**	**81**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	**18 J**	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	**27**
p & m-Xylene	<25	<25	**32**	**40**	**49**
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	**27**	**35**	**42**
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**114**	**92**	**133**	**177**	**214**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	**27**	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N300E200	LF10-N700E800	LF10-N400E800	Trip-4	LF10-N200E400
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101015	05101016	05101017	05101018	05101019
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/11/2005	10/11/2005	10/11/2005	10/11/2005	10/11/2005
Analysis Time:	1:31	2:02	2:33	3:04	3:35
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	**606**
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**53**	**100**	**55**	**35**	<25
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	**29**	**44**	<25	<25
p & m-Xylene	**28**	**52**	**42**	<25	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	**42**	**40**	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**116**	**198**	**188**	**107**	**59**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	**34**	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N0E200	LF10-N900E900	LF10-N900E1000	LF10-N700E1000	LF10-N1100E900
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101020	05101021	05101022	05101023	05101024
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/11/2005	10/11/2005	10/11/2005	10/11/2005	10/11/2005
Analysis Time:	4:05	4:36	5:07	5:38	6:09
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**33**	**27**	<25	**33**	<25
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**102**	**83**	**63**	**100**	**69**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N400E300	LF10-N300E300	LF10-N200E300	LF10-N400E200	LF10-N800E900
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101025	05101026	05101027	05101028	05101029
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/11/2005	10/11/2005	10/11/2005	10/11/2005	10/11/2005
Analysis Time:	6:40	7:11	7:42	8:13	8:43
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	**18 J**	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**54**	**33**	<25	**37**	**31**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	**27**	<25	<25	**25**	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**119**	**77**	**95**	**120**	**92**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	**49**	<25	**47**	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	**65**	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N1000E1000	LF10-N700E900	LF10-N1000E900	LF10-N1000E700	LF10-N200E600
Project Number:	EM1776	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101030	05101031	05101032	05101033	05101034
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/11/2005	10/11/2005	10/11/2005	10/11/2005	10/11/2005
Analysis Time:	9:14	9:45	10:16	10:47	11:18
Units:	ng/trap	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS					
1,1-Dichloroethene	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25
Toluene	**43**	**43**	**32**	<25	**66**
1,3-Dichloropropane	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25
p & m-Xylene	<25	**34**	<25	<25	<25
Bromoform	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25
o-Xylene	<25	**31**	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**117**	**108**	**116**	**68**	**89**
1,3-Dichlorobenzene	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	**58**
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.

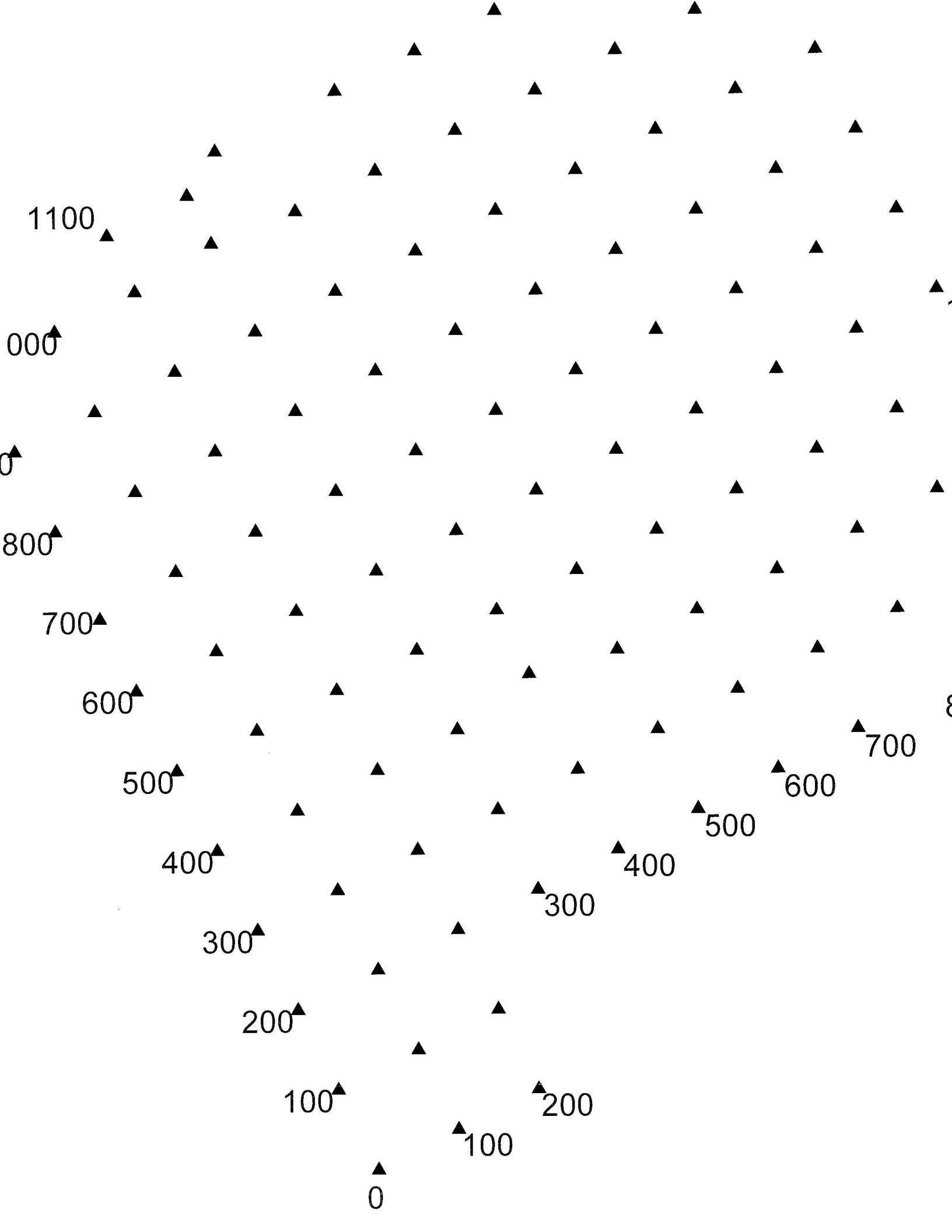
Table 1

Beacon Environmental Services, Inc.
323 Williams Street, Ste. D
Bel Air, MD 21014

Analysis by EPA Method 8260B (Modified)

Client Sample ID:	LF10-N200E500	LF10-N1000E500	LF10-N800E1000	LF10-N600E1000
Project Number:	EM1776	EM1776	EM1776	EM1776
Lab File ID:	05101035	05101036	05101037	05101038
Received Date:	10/6/2005	10/6/2005	10/6/2005	10/6/2005
Analysis Date:	10/11/2005	10/11/2005	10/11/2005	10/11/2005
Analysis Time:	11:49	12:19	12:50	13:21
Units:	ng/trap	ng/trap	ng/trap	ng/trap
COMPOUNDS				
1,1-Dichloroethene	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25
Methyl-t-butyl Ether	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25
2,2-Dichloropropane	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25
1,1-Dichloropropene	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25
Benzene	<25	<25	<25	<25
1,2-Dichloropropane	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25
cis-1,3-Dichloropropene	<25	<25	<25	<25
trans-1,3-Dichloropropene	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25
Toluene	<25	**50**	**33**	<25
1,3-Dichloropropane	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25
p & m-Xylene	<25	**33**	<25	<25
Bromoform	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25
o-Xylene	<25	**27**	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25
1,2,4-Trimethylbenzene	**82**	**164**	**94**	**64**
1,3-Dichlorobenzene	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25
n-Butylbenzene	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25

Results in nanograms (ng). J = Estimated value below reported quantitation level. B = Detected in method blank.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800
700
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400
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100
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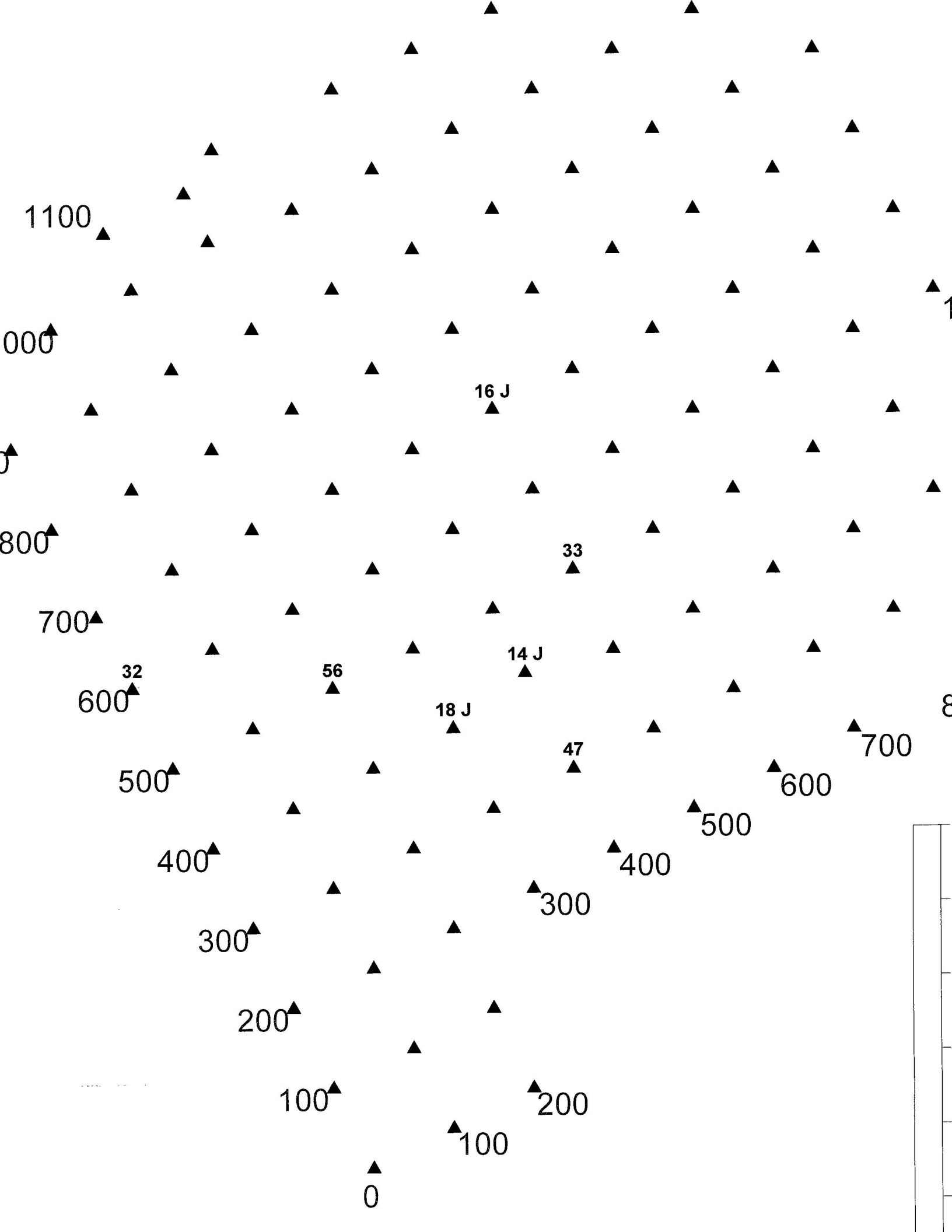
300
400
500
600
700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000
800
700
600
500
400
300
200
100
0
700
600
500
400
300
200
100
16 J
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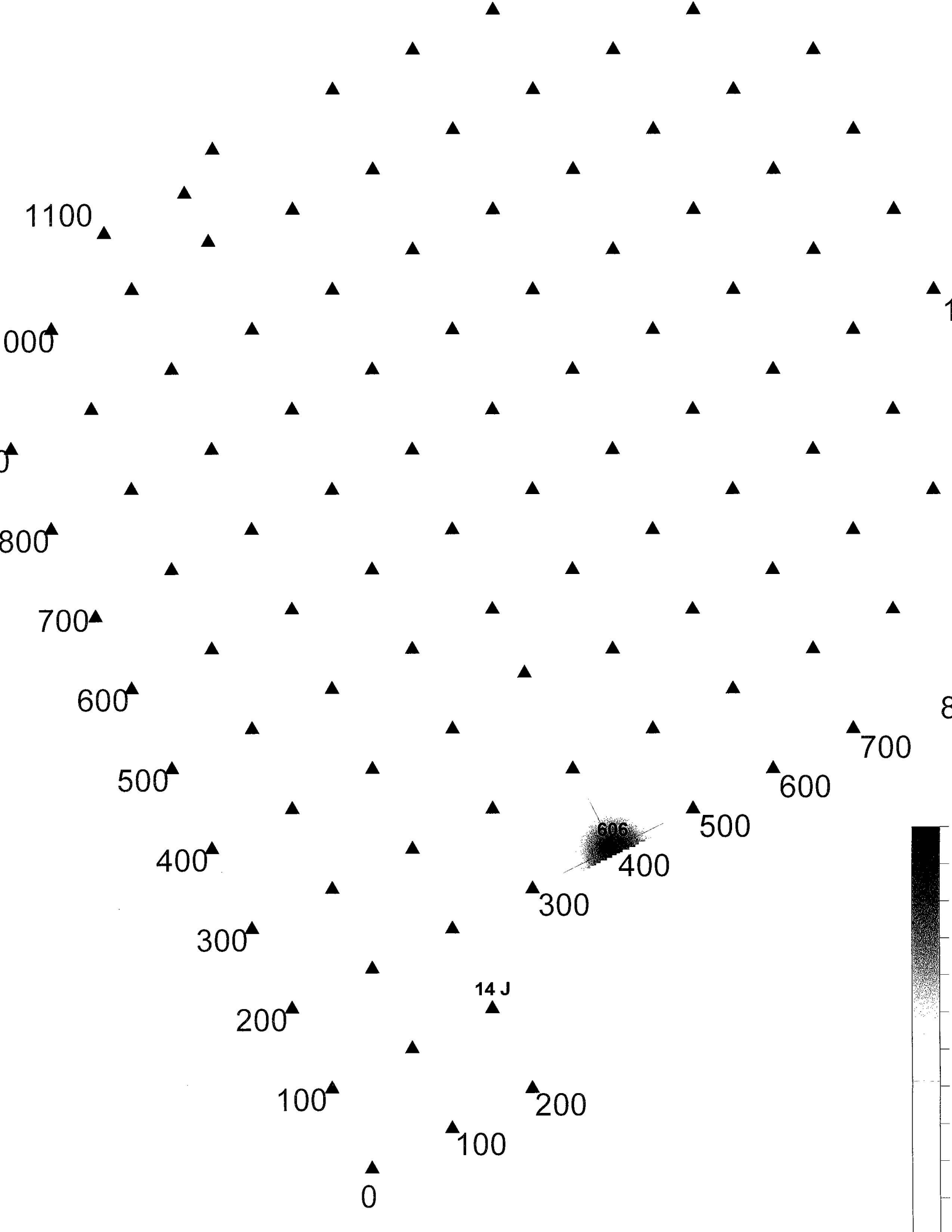
14 J
32
56
18 J
47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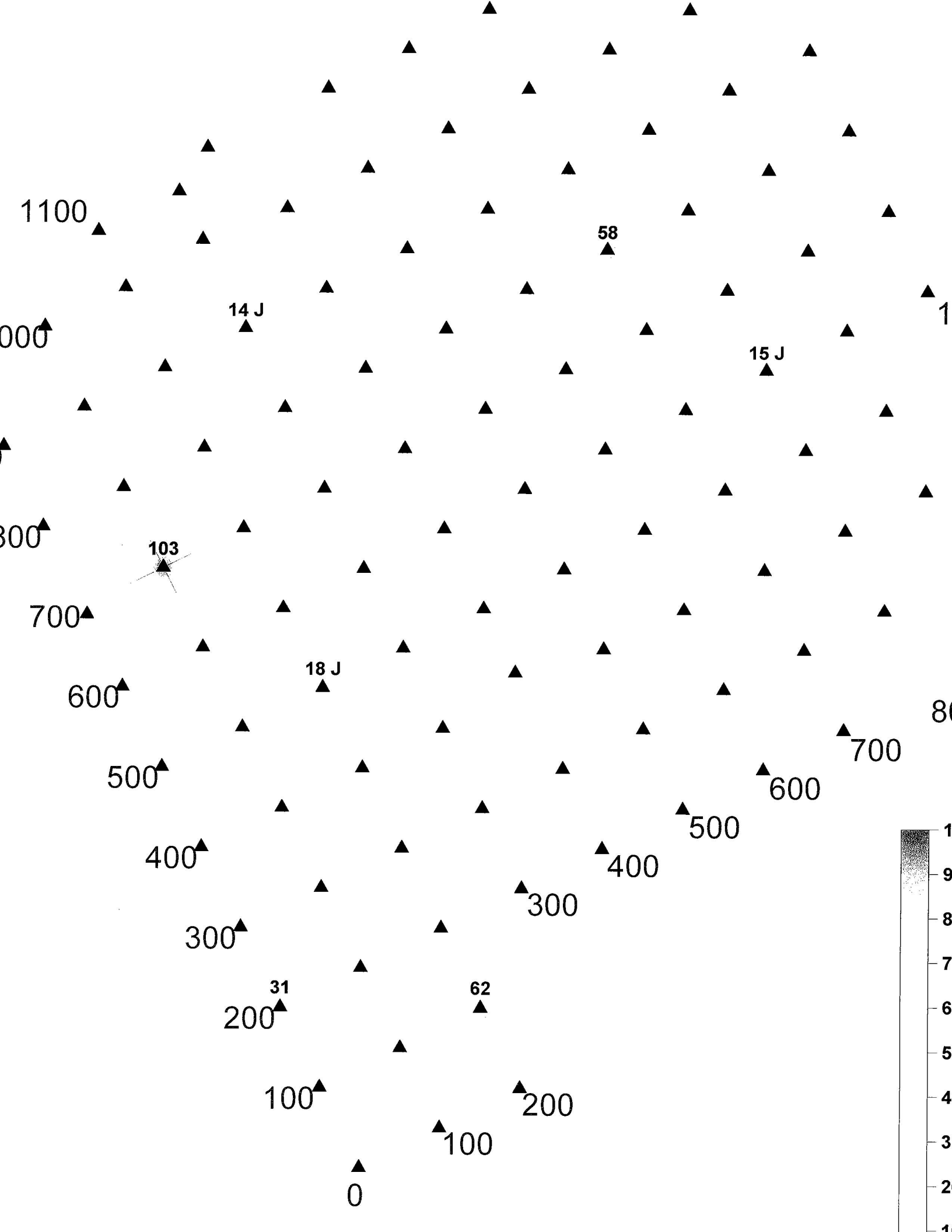
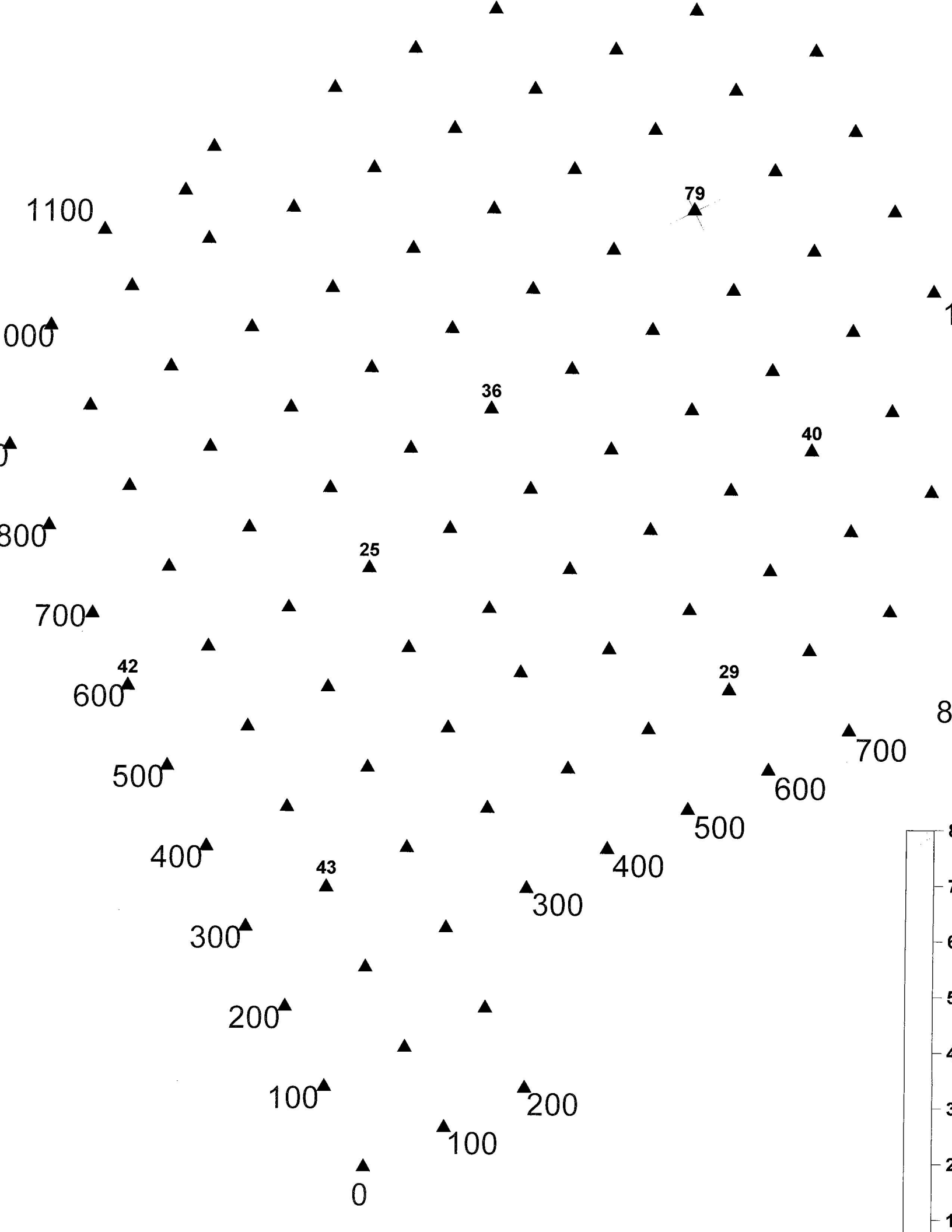
000
800
700
600
500
400
300
200
100
0
606
14 J


1100
58
14 J
15 J
103
700
18 J
600
500
400
300
31
62
200
100
0


1100
79
000
36
40
800
25
700
42
600
29
500
700
600
500
400
400
43
300
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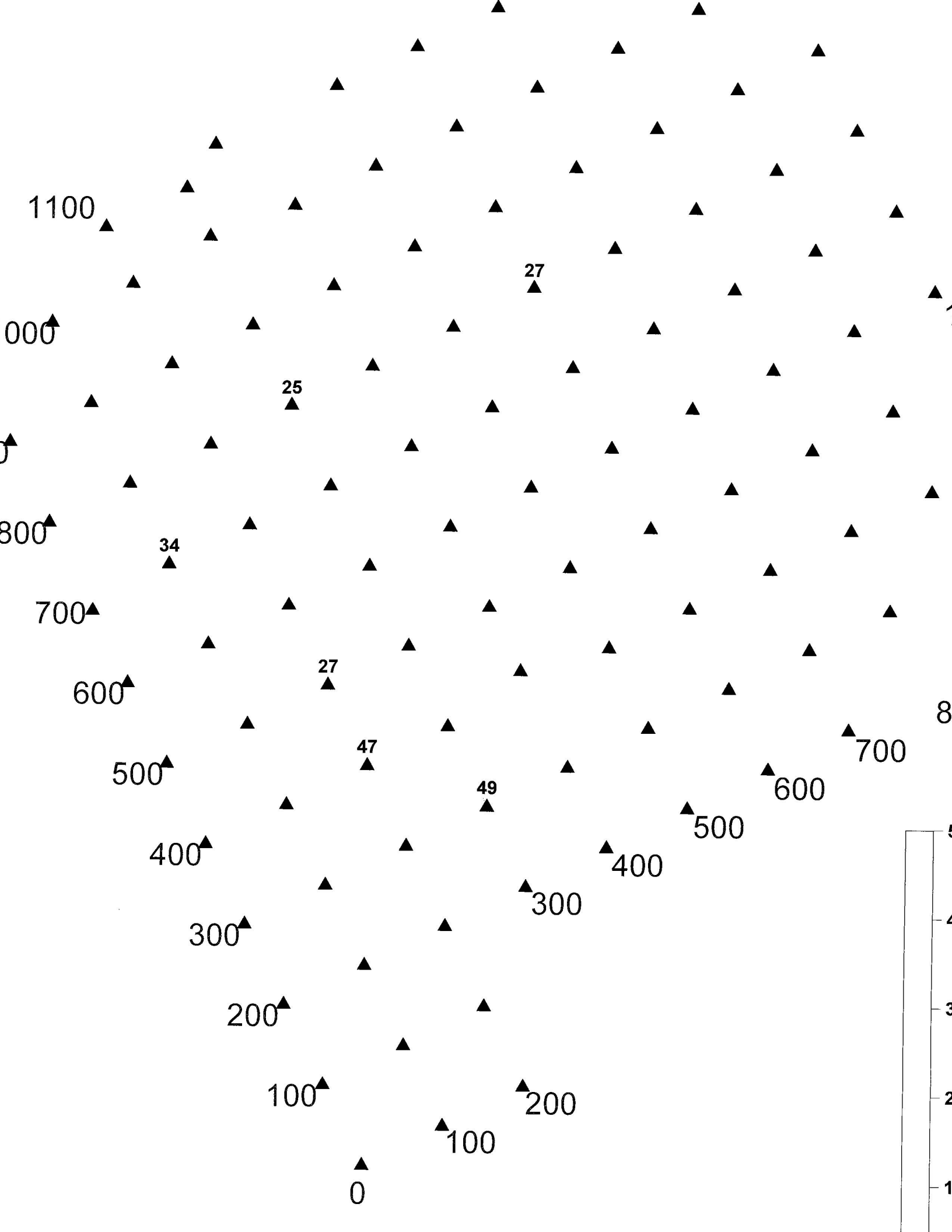
200
100
100
0


1100
000
800
700
600
500
400
300
200
100
0
27
25
34
27
47
49
700
600
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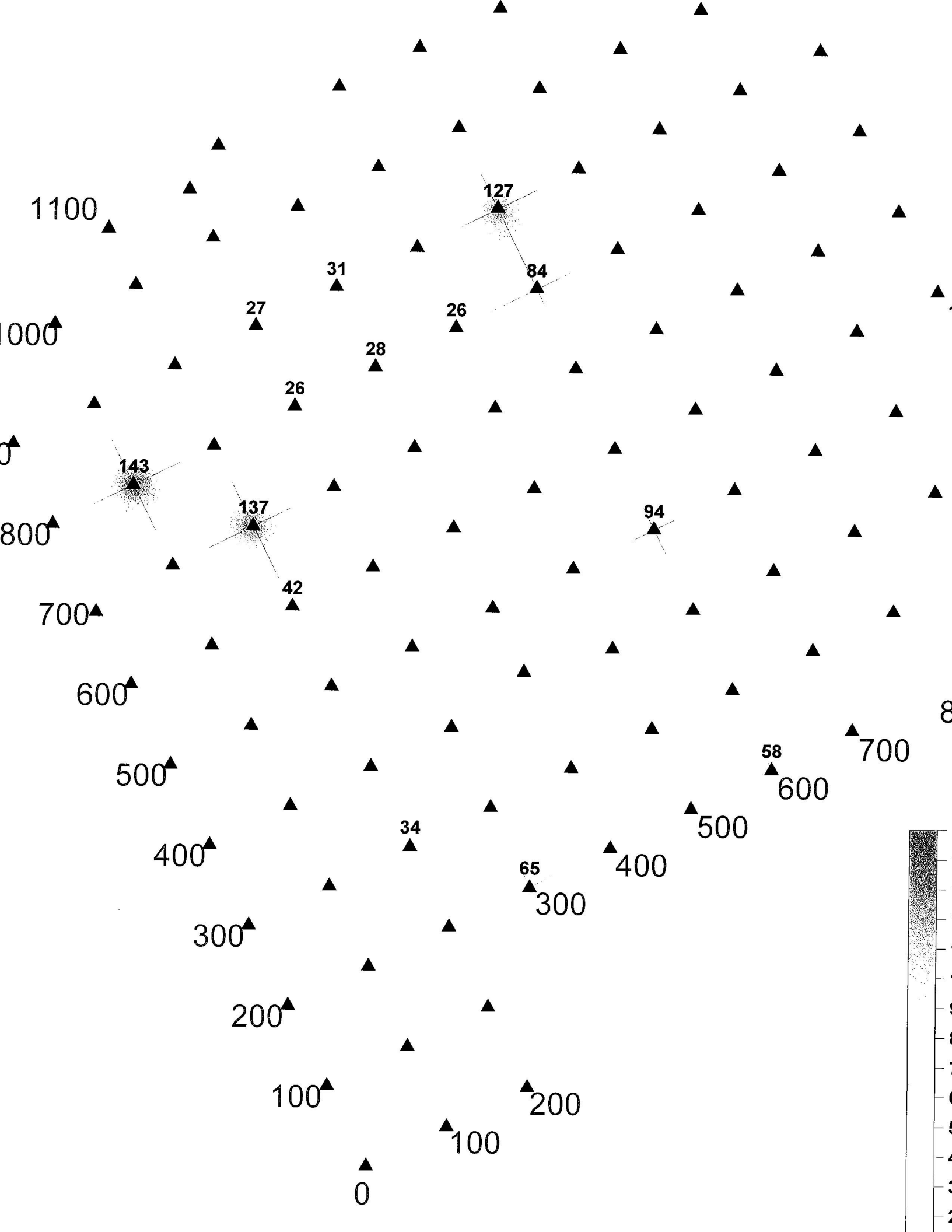
400
300
200
100


1100
1000
800
700
600
500
400
300
200
100
0
127
84
31
27
26
28
26
143
137
94
42
58
34
65

Attachments

Attachment 1

FIELD PROCEDURES FOR PASSIVE SOIL-GAS SURVEYS

The following field procedures are routinely used during a BEACON Passive Soil-Gas Survey. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

A. Field personnel carry system components and support equipment to the site and deploy the passive samplers in a prearranged survey pattern. A passive sampler consists of a glass vial containing hydrophobic adsorbent cartridges with a length of wire attached to the vial for retrieval. Although samplers require only one person for emplacement and retrieval, the specific number of field personnel required depends upon the scope and schedule of the project. Each Sampler emplacement generally takes less than two minutes.

B. At each survey point a field technician clears vegetation as needed and, using a slide hammer with a ½″ diameter probe or a hammer drill with a ½″ diameter bit, creates a hole three-feet deep. The technician then uses a hammer and a ¾″ diameter pointed metal stake to widen the top four inches of the hole. [Note: For locations covered with asphalt, concrete, or gravel surfacing, the field technician first drills a 1″- to 1½″-diameter hole through the surfacing to the soils beneath and the hole is sleeved with a ¾″ i.d. metal sleeve.]

C. The technician then removes the solid plastic cap from a sampler and replaces it with a Sampling Cap (a plastic cap with a hole covered by screen meshing). The technician inserts the sampler, with the Sampling Cap end facing down, into the hole (**see attached figure**). The sampler is then covered with either local soils for uncapped locations or, for capped locations, aluminum foil and a concrete patch. The sampler's location, time and date of emplacement, and other relevant information are recorded on the Field Deployment Form.

D. One or more trip blanks are included as part of the quality-control procedures.

E. Once all the samplers have been deployed, field personnel schedule sampler recovery and depart, taking all other equipment and materials with them.

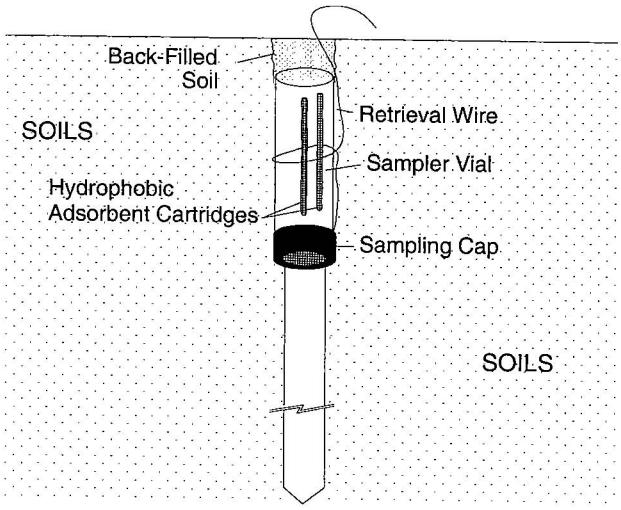
F. Field personnel retrieve the samplers at the end of the exposure period. At each location, a field technician withdraws the sampler from its hole, removes the retrieval wire, and wipes the outside of the vial clean using gauze cloth; following removal of the Sampling Cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sample location number is written on the label. The technician then records sample-point location, date, time, etc. on the Field Deployment Form.

G. Sampling holes are refilled with soil, sand, or other suitable material. If samplers have been installed through asphalt or concrete, the hole is filled to grade with a plug of cold patch or cement.

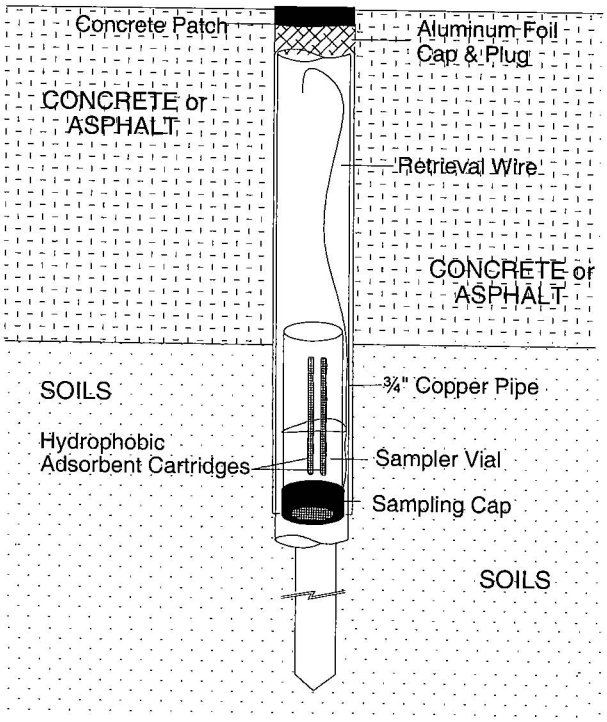
H. Following retrieval, field personnel ship or carry the passive samplers to BEACON's laboratory.

BEACON PASSIVE SAMPLER

DEPLOYMENT IN SOILS



DEPLOYMENT THROUGH CONCRETE OR ASPHALT



Attachment 2

Field Deployment Report

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Collected By:	

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, sampling hole depth, cartridge/vial condition)
LF10-N800E600	9/28/05 / 1359	10/01/05 / 1354	Concrete Pad (6"); 3ft boring; vial good condition
LF10-N800E500	9/28/05 / 1412	10/01/05 / 1358	Concrete Pad (6"); 3ft boring; vial-good condition
LF10-N800E400	9/28/05 / 1431	10/01/05 / 1431	Concrete Pad (6"); 3 ft boring; vial-good condition - vehicle parking area
LF10-N700E400	9/28/05 / 1431	10/01/05 / 1432	Concrete Pad (6"); 3 ft boring; vial-good condit.
LF10-N700E400	9/28/05 / 1550	10/01/05 / 1546	Concrete Pad (6"); 3 ft boring; vial-good condit; vehicle-parking area
LF10-N700E500	9/28/05 / 1431	10/01/05 / 1547	Concrete Pad (6"); 3ft boring; vial-good condit.
LF10-N900E300	9/28/05 / 1601	10/01/05 / 1555	Concrete Pad (6"); 3ft boring; vial-good condit.
LF10 N800E300	9/28/05 / 1600	10/01/05 / 1558	Concrete Pad (6"); 3 ft boring vial-good condit.
LF10 N800E200	9/28/05 / 1610	10/01/05 / 1606	~~Concrete Pad~~ Gravel Cover (4"); 3ft boring; vial-good condit.
LF10 N900E200	9/28/05 / 1612	10/01/05 / 1611	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 N800E100	9/28/05 / 1616	10/01/05 / 1616	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 N700E200	9/28/05 / 1619	10/01/05 / 1619	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 N700E~~200~~300	9/28/05 / 1627	10/01/05 / 1624	Gravel Cover (3"); 3ft boring; vial-good condit.
LF70 N700E100	9/28/05 / 1627	10/01/05 / 1626	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 N600E300	9/28/05 / 1637	10/01/05 / 1636	Gravel Cover (2"); 3ft boring; vial-good condit.

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 N600 E200	9/28/05 / 1637	10/01/05 / 1637	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 N500 E300	9/28/05 / 1642	10/01/05 / 1645	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N1000 E400	9/28/05 / 1654	10/01/05 / 1654	Asphalt Pavement (2"); 3ft boring; vial-good condit.
LF10 - N1100 E350	9/28/05 / 1655	10/01/05 / 1656	Asphalt Pavement (2"); 3ft boring; vial-good condit.
LF10 - N900 E500	9/28/05 / 1703	10/01/05 / 1704	Gravel Cover (4"); 3ft boring; vial-good condit
LF10 - N900 E600	9/28/05 / 1706	10/01/05 / 1706	Asphalt Pavement (3"); 3ft boring; vial-good condit.
LF10 N600 E600	9/29/05 / 0750	10/02/05 / 0750	Gravel Cover (2"); 3ft boring (Refusal); vial-good condit.
LF10 N600 E700	9/29/05 / 0759	10/02/05 / 0759	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N700 E600	9/29/05 / 0802	10/02/05 / 0802	Gravel Cover (2"); 3ft boring; vial-good condit
LF10 - N700 E700	9/29/05 / 0807	10/02/05 / 0807	Gravel Cover (2"); 3ft boring; vial-good condit
LF10 - N800 E700	9/29/05 / 0809	10/02/05 / 0809	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N800 E800	9/29/05 / 0812	10/02/05 / 0812	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N900 E700	9/29/05 / 0818	10/02/05 / 0818	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N1000 E600	9/29/05 / 0821	10/02/05 / 0821	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N600 E500	9/29/05 / 0828	10/02/05 / 0827	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N500 E600	9/29/05 / 0830	10/02/05 / 0830	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N500 E500	9/29/05 / 0834	10/02/05 / 0834	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 N400 E500	9/29/05 / 0835	10/02/05 / 0835	Gravel Cover (2"); 3ft boring; vial-good condit

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N500 E400	9/29/05 / 0840	10/02/05 / 0840	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N400 E400	9/29/05 / 0842	10/02/05 / 0842	Gravel Cover (2"); 3 ft boring; vial-good condit.
LF10 - N600 E400	9/29/05 / 0847	10/02/05 / 0847	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N1000 E300	9/29/05 / 0850	10/02/05 / 0850	Gravel Cover (4"); 3 ft boring; vial-good condit
LF10 - N1100 E500	9/29/05 / 0909	10/02/05 / 0911	Gravel Cover (4"); 3ft boring; vial-good condit
LF10 - N1200 E600	9/29/05 / 0910	10/02/05 / 0912	Gravel Cover (3"); 3ft boring; vial-good condit. Beer can in boring.
LF10 - N1100 E700	9/29/05 / 0912	10/02/05 / 0915	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N1100 E600	9/29/05 / 0919	10/02/05 / 0928	Grass/gravel cover (3"); 3ft boring; vial-good condit.
LF10 - N1100 E790	9/29/05 / 0923	10/02/05 / 0930	Soil cover; 3ft boring; vial-good condit
LF10 - N900 E800	9/29/05 / 0924	10/02/05 / 0932	Soil Cover; 3ft boring; vial-good condit
LF10 - N1000 E800	9/29/05 / 0926	10/02/05 / 0933	Soil Surface; 3ft boring; vial-good condit.
LF10 - N1160 E700	9/29/05 / 0935	10/02/05 / 0936	Soil Surface; 3ft boring; vial-good condit.
LF10 - N1070 E200	9/29/05 / 1021	10/02/05 / 1021	Gravel Cover (4") ~~Soil Surface~~; 3ft boring; vial-good condit.
LF10 - N1070 E300	9/29/05 / 1022	10/02/05 / 1023	Gravel Cover (4"); 3ft boring; vial-good condit
LF10 - N1000 E200	9/29/05 / 1025	10/02/05 / 1024	Gravel Cover (4"); 3ft boring; vial-good condit.
LF10 - N900 E100	9/29/05 / 1030	10/02/05 / 1026	Gravel Cover (4"); 3ft boring; vial-good condit.
LF10 - N1000 E100	9/29/05 / 1027	10/02/05 / 1026	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N900 E0	9/29/05 / 1031	10/02/05 / 1029	Gravel Cover (1"); 3ft boring; vial-good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N800 E0	9/29/05 / 1036	10/02/05 / 1030	Gravel Cover (8"); 3 ft boring; vial - good condit.
LF10 - N700 E0	9/29/05 / 1038	10/02/05 / 1036	Soil/Gravel Cover; 3 ft boring; vial - good condit; Monit. Well 10 ft away
LF10 - N600 E100	9/29/05 / 1042	10/02/05 / 1041	Soil Surface; 3 ft boring; vial - good condit
LF10 - N600 E0	9/29/05 / 1043	10/02/05 / 1042	Soil Surface; 3ft boring; vial - good condit
LF10 - N500 E100	9/29/05 / 1044	10/02/05 / 1044	Soil Surface; 3 ft boring; vial - good condit
LF10 - N500 E0	9/29/05 / 1045	10/02/05 / 1045	Soil Surface; 3 ft boring; vial - good condit
LF10 - N400 E100	9/29/05 / 1047	10/02/05 / 1046	Soil Surface; 3 ft boring; vial - good condit
LF10 - N400 E0	9/29/05 / 1048	10/02/05 / 1047	Soil Surface; 3 ft boring; vial - good condit
LF10 - N300 E100	9/29/05 / 1050	10/02/05 / 1049	Soil Surface; 3ft boring; vial - good condit.
LF10 - N300 E0	9/29/05 / 1051	10/02/05 / 1050	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E100	9/29/05 / 1052	10/02/05 / 1051	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N190 E0	9/29/05 / 1054	10/02/05 / 1053	Soil Surface; 3 ft boring; vial - good condit; gas-line 10 ft away
LF10 - N100 E100	9/29/05 / 1057	10/02/05 / 1057	Soil Surface; 3 ft boring; vial - good condit
LF10 - N0 E100	9/29/05 / 1102	10/02/05 / 1056	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N010 E0	9/29/05 / 1105	10/02/05 / 1105	Soil Surface; 3 ft boring; vial - good condit
LF10 - N100 E0	9/29/05 / 1108	10/02/05 / 1108	Soil Surface; 3 ft boring; vial - good condit
LF10 - N100 E200	9/29/05 / 1531	10/02/05 / 1555	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E200	9/29/05 / 1535	10/02/05 / 1557	Soil Surface; 3 ft boring; vial - good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
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PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (*e.g.*, asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N300 E200	9/29/05 / 1540	10/02/05 / 1558	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N500 E200	9/29/05 / 1548	10/02/05 / 1602	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N300 E400	9/29/05 / 1603	10/02/05 / 1620	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N300 E500	9/30/05 / 1451	10/03/05 / 1448	Soil Surface; 2.5 ft boring (obst.); vial-good condit.
LF10 - N300 E600	9/30/05 / 1451	10/03/05 / 1449	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N400 E600	9/30/05 / 1456	10/03/05 / 1450	Soil Surface; 2.5 ft boring; vial-good condit.
LF10 - N700 E800	9/30/05 / 1458	10/03/05 / 1453	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N300 E700	9/30/05 / 1458	10/03/05 / 1454	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N200 E700	9/30/05 / 1500	10/03/05 / 1455	Soil Surface; 3 ft boring; vial-good condit
LF10 - N300 E800	9/30/05 / 1509	10/03/05 / 1502	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N400 E900	9/30/05 / 1509	10/03/05 / 1503	Soil Surface; 3 ft boring; vial-good condit; wet soil @ 2.5 ft
LF10 - N400 E700	9/30/05 / 1511	10/03/05 / 1504	Soil Surface; 2.75 ft boring; vial-good condit.
LF10 - N400 E800	9/30/05 / 1513	10/03/05 / 1505	Soil Surface; 3 ft boring; vial-good condit
LF10 - N500 E900	9/30/05 / 1513	10/03/05 / 1506	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N500 E700	9/30/05 / 1514	10/03/05 / 1507	Soil Surface; 2 ft boring (obst.); vial-good condit; wood debris present.
LF10 - N600 E900	9/30/05 / 1514	10/03/05 / 1508	Soil Surface; 3 ft boring; vial-good condit; wet soil @ 1.5 ft
LF10 - N500 E800	9/30/05 / 1515	10/03/05 / 1509	Soil Surface; 2.5 ft boring (obst.); vial-good condit
LF10 - N600 E800	9/30/05 / 1516	10/03/05 / 1510	Soil Surface; 1.5 ft boring (obst); vial-good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10-N600E1000	9/30/05 1516	10/03/05 1510	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft
LF10-N700E900	9/30/05 1518	10/03/05 1511	Soil Surface; 3ft boring; vial-good condit
LF10-N800E900	9/30/05 1519	10/03/05 1512	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft
LF10-N700E1000	9/30/05 1520	10/03/05 1520	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft
LF10-N800E1000	9/30/05 1522	10/03/05 1514	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft.
LF10-N1000E900	9/30/05 1525	10/03/05 1517	Soil Surface; 3ft boring; vial-good condit
LF10-N1000E1000	9/30/05 1525	10/03/05 1518	Soil Surface; 3ft boring; vial-good condit
LF10-N1100E900	9/30/05 1525	10/03/05 1520	Soil Surface; 3ft boring; vial-good condit.
LF10-N900E1000	9/30/05 1525	10/03/05 1523	Soil Surface; 3ft boring; vial-good condit.
LF10-N900E900	9/30/05 1525	10/03/05 1515	Soil Surface; 3ft boring; vial-good condit
LF10-N1000E500	9/30/05 1531	10/03/05 1531	Gravel cover (4") ~~Soil Surface~~; 3ft boring; vial-good condit.
LF10-N1000E700	10/2/05 0927	10/05/05 0933	Soil Surface; 3ft boring; vial-good condit.
LF10-N400E200	10/02/05 1601	10/05/05 1600	Soil Surface; 3ft boring; vial-good condit.
LF10-N400E300	10/02/05 1604	10/05/05 1602	Soil Surface; 3ft boring; vial-good condit.
LF10-N0E200	10/02/05 1622	10/05/05 1618	Soil Surface; 3ft boring; vial-good condit
LF10-N200E400	10/02/05 1628	10/05/05 1624	Soil Surface; 3ft boring; vial-good condit.
LF10-N200E500	10/02/05 1629	10/05/05 1625	Soil Surface; 3ft boring; vial-good condit.
LF10-N200E600	10/02/05 1630	10/05/05 1627	Soil Surface; 3ft boring; vial-good condit

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10-N200 E300	10/02/05 / 1637	10/05/05 / 1633	Soil Surface; 3 ft boring; vial - good condit.
LF10-N300 E300	10/02/05 / 1639	10/05/05 / 1635	Soil Surface; 3 ft boring; vial - good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Attachment 3

LABORATORY PROCEDURES FOR PASSIVE SOIL-GAS SAMPLES

Following are laboratory procedures used with BEACON Passive Soil-Gas Surveys, a screening technology for expedited site investigation. After exposure, adsorbent cartridges from the passive samplers are analyzed using U.S. EPA Method 8260B as described in the Solid Waste Manual (SW-846), a capillary gas chromatographic/mass spectrometric method, modified to accommodate high temperature thermal desorption of the adsorbent cartridges. This procedure is summarized as follows:

A. The adsorbent cartridges are loaded with internal standards and surrogates prior to loading the autosampler with the cartridges. The loaded cartridges are purged in a helium flow. Then the cartridges are thermally desorbed in a helium flow onto a focusing trap. Any analytes in the helium stream are adsorbed onto a focusing trap.

B. Following trap focusing, the trap is thermally desorbed onto a DB-VRX 60m, 0.25 mm ID, 1.40 micron filament thickness capillary column.

C. The GC/MS is scanned between 35 and 270 Atomic Mass Units (AMU) at 3.12 scans per second.

D. BFB tuning criteria and the initial five-point calibration procedures are those stated in method SW846-8260B. System performance and calibration check criteria are met prior to analysis of samples. A laboratory method blank is analyzed after the daily standard to determine that the system is contaminant-free.

E. The instrumentation used for these analyses includes:

- Agilent 6890-5973 Gas Chromatograph/Mass Spectrometer;
- Markes Unity thermal desorber;
- Markes UltrA autosampler; and
- Markes Mass Flow Controller Module.

Attachment 4

Chain-of-Custody Form

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broeren
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
Trip-1	1776 Trip-1				
Trip-2	1776 Trip-2				
Trip-3	1776 Trip-3				
Trip-4	1776 Trip-4				
LF10-N800 E600	1776 LF10-N800 E600	good condition	10/01/05	1354	BTB
LF10-N800 E500	1776 LF10-N800 E500			1358	BTB
LF10-N800 E400	1776 LF10-N800 E400			1431	BTB
LF10-N900 E400	1776 LF10-N900 E400			1432	BTB
LF10-N700 E400	1776 LF10-N700 E400			1546	BTB
LF10-N700 E500	1776 LF10-N700 E500			1547	BTB
LF10-N900 E300	1776 LF10-N900 E300			1555	BTB
LF10-N800 E300	1776 LF10-N800 E300			1558	BTB
LF10-N900 E200	1776 LF10-N900 E200			1611	BTB
LF10-N800 E200	1776 LF10-N800 E200			1606	BTB
LF10-N800 E100	1776 LF10-N800 E100			1616	BTB
LF10-N700-E200	1776 LF10-N700 E200			1619	BTB
LF10-N700 E300	1776 LF10-N700 E300			1624	BTB
LF10-N700 E100	1776 LF10-N700 E100			1626	BTB
LF10-N600 E300	1776 LF10-N600 E300			1638	BTB
LF10-N600 E200	1776 LF10-N600 E200			1637	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 Intact? (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheich	9-21-2005 / 1700	FedEx	Brett Broeren	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 Intact? (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Broeren	10/05/05 / 1900	FedEx	Ryan Scheich	10-6-2005 / 0900

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Scott Brad
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
LF10 - N500 E300	1776 LF10-N500 E300		10/01/05	1645	BTB
LF10 - N1000 E400	1776 LF10-N1000 E400			1654	BTB
LF10 - N1100 E~~400~~ 350	1776 LF10-N1100-E350	Changed to E350 at BEACON - DNS		1656	BTB
LF10 - N900 E500	1776 LF10-N900 E500			1704	BTB
LF10 - N900 E600	1776 LF10-N900 E600			1706	BTB
LF10 - N600 E600	1776 LF10-N600 E600		10/02/05	0750	BTB
LF10 - N600 E700	1776 LF10-N600 E700			0759	BTB
LF10 - N700 E600	1776 LF10-N700 E600			0802	BTB
LF10 - N700 E700	1776 LF10-N700 E700			0807	BTB
LF10 - N800 E700	1776 LF10-N800 E700			0809	BTB
LF10 - N800 E800	1776 LF10-N800 E800			0812	BTB
LF10 - N900 E700	1776 LF10-N900 E700			0818	BTB
LF10 - N1000 E600	1776 LF10-N1000 E600			0821	BTB
LF10 - N600 E500	1776 LF10-N600 E500			0827	BTB
LF10 - N500 E600	1776 LF10-N500 E600			0830	BTB
LF10 - N500 E500	1776 LF10-N500 E500			0834	BTB
LF10 - N400 E500	1776 LF10-N400 E500			0835	BTB
LF10 - N~~400~~ 500 E~~500~~ 400 (BTB)	1776 LF10-N500 E400			0840	BTB
LF10 - N400 E400	1776 LF10-N400 E400			0842	BTB
LF10 - N1000 E300	1776 LF10-N1000 E300			0850	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FEDEX	Scott Brad	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Scott Brad	10/05/05 / 1900	FedEx	Ryan Scheid	10-6-2005 / 0900

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Scott Brod
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10 - N600 E400	1776 LF10-N600 E400	vials - good condition	10/02/05	0847	BTB
LF10 - N1100 E500	1776 LF10-N1100 E500			0911	BTB
LF10 - N1200 E600	1776 LF10-N1200 E600			0912	BTB
LF10 - N1100 E700	1776 LF10-N1100 E700			0915	BTB
LF10 N1100 E600	1776 LF10-N1100 E600			0928	BTB
LF10 - N1100 E790	1776 LF10-N1100 E790			0930	BTB
LF10 - N900 E800	1776 LF10-N900 E800			0932	BTB
LF10 - N1000 E800	1776 LF10-N1000 E800			0933	BTB
LF10 - N1160 E700	1776 LF10-N1160 E700			0936	BTB
LF10 - N1070 E200	1776 LF10-N1070 E200			1021	BTB
LF10 - N1070 E300	1776 LF10-N1070 E300			1023	BTB
LF10 - N1000 E200	1776 LF10-N1000 E200			1024	BTB
LF10 - N1000 E100	1776 LF10-N1000 E100			1026	BTB
LF10 - N900 E100	1776 LF10-N900 E100			1026	BTB
LF10 - N900 EØ	1776 LF10-N900 EØ			1029	BTB
LF10 - N800 EØ	1776 LF10-N800 EØ			1030	BTB
LF10 - N700 EØ	1776 LF10-N700 EØ			1036	BTB
LF10 - N600 E100	1776 LF10-N600 E100			1041	BTB
LF10 - N600 EØ	1776 LF10-N600 EØ			1042	BTB
LF10 - N500 E100	1776 LF10-N500 E100			1044	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FEDEX	Scott Brod	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Scott Brod	10/05/05 1900	Fed Ex	Ryan Scheid	10-6-2005 / 0900

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	[signature]
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N500 E0	1776 LF10-N500 E0	vials - good condition	10/02/05	1045	BTB
LF10-N400 E100	1776 LF10-N400 E100			1046	BTB
LF10-N400 E0	1776 LF10-N400 E0			1047	BTB
LF10-N300 E100	1776 LF10-N300 E100			1049	BTB
LF10-N300 E0	1776 LF10-N300 E0			1050	BTB
LF10-N200 E100	1776 LF10-N200 E100			1051	BTB
LF10-N190 E0	1776 LF10-N190 E0			1052	BTB
LF10-N100 E100	1776 LF10-N100 E100			1057	BTB
LF10-N0 E100	1776 LF10-N0 E100			1056	BTB
LF10-N010 E0	1776 LF10-N010 E0			1105	BTB
LF10-N100 E0	1776 LF10-N100 E0			1108	BTB
LF10-N100 E200	1776 LF10-N100 E200			1555	BTB
LF10-N200 E200	1776 LF10-N200 E200			1557	BTB
LF10-N300 E200	1776 LF10-N300 E200			1558	BTB
LF10-N500 E200	1776 LF10-N500 E200			1602	BTB
LF10-N300 E400	1776 LF10-N300 E400			1620	BTB
LF10-N300 E500	1776 LF10-N300 E500		10/03/05	1448	BTB
LF10-N300 E600	1776 LF10-N300 E600			1449	BTB
LF10-N400 E600	1776 LF10-N400 E600			1450	BTB
LF10-N700 E800	1776 LF10-N700 E800			1453	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FedEx	[signature]	09/25/05 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
[signature]	10/05/05 / 1900	FedEx	Ryan Scheid	10-6-2005 / 0900

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Hoover
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N300 E700	1776 LF10-N300 E700	vial - good condit	10/03/05	1454	BTB
LF10-N200 E700	1776 LF10-N200 E700			1455	BTB
LF10-N300 E800	1776 LF10-N300 E800			1502	BTB
LF10-N400 E900	1776 LF10-N400 E900			1503	BTB
LF10-N400 E700	1776 LF10-N400 E700			1504	BTB
LF10-N400 E800	1776 LF10-N400 E800			1505	BTB
LF10-N500 E900	1776 LF10-N500 E900			1506	BTB
LF10-N500 E700	1776 LF10-N500 E700			1507	BTB
LF10-N600 E900	1776 LF10-N600 E900			1508	BTB
LF10-N500 E800	1776 LF10-N500 E800			1509	BTB
LF10-N600 E800	1776 LF10-N600 E800			1510	BTB
LF10-N600 E1000	1776 LF10-N600 E1000			1510	BTB
LF10-N700 E900	1776 LF10-N700 E900			1511	BTB
LF10-N800 E900	1776 LF10-N800 E900			1512	BTB
LF10-N700 E1000	1776 LF10-N700 E1000			1520	BTB
LF10-N800 E1000	1776 LF10-N800 E1000			1514	BTB
LF10-N1000 E900	1776 LF10-N1000 E900			1517	BTB
LF10-N1000 E1000	1776 LF10-N1000 E1000			1518	BTB
LF10-N1100 E900	1776 LF10-N1100 E900			1520	BTB
LF10-N900 E1000	1776 LF10-N900 E1000			1523	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheidt	9-21-2005 / 1700	FEDEX	Brett Hoover	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Hoover	10/05/05 / 1900	FEDEX	Ryan Scheidt	10-6-2005 / 0900

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Baer
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N900E900	1776 LF10-N900E900	Vial - good condition	10/03/05	1515	BTB
LF10-N1000E500	1776 LF10-N1000E500		↓	1531	BTB
LF10-N1000E700	1776 LF10-N1000E700		10/05/05	0933	BTB
LF10-N400E200	1776 LF10-N400E200			1600	BTB
LF10-N400E300	1776 LF10-N400E300			1602	BTB
LF10-N0E200	1776 LF10-N0E200			1618	BTB
LF10-N200E400	1776 LF10-N200E400			1624	BTB
LF10-N200E500	1776 LF10-N200E500			1625	BTB
LF10-N200E600	1776 LF10-N200E600			1627	BTB
LF10-N200E300	1776 LF10-N200E300			1633	BTB
LF10-N300E300	1776 LF10-N300E300		↓	1635	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FedEx	Brett Baer	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 0042489 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Baer	10/05/05 / 1900	FEDEX	Ryan Scheid	10-6-2005 / 0900

ATTACHMENT D

GEOPHYSICAL SURVEY REPORT

December 21st, 2005

Kenneth J. Cottrell, CPG, PG
HGL
HydroGeologic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, VA 20170
(703) 478-5186

RE: TRANSMITTAL letter regarding FINAL deliverables for **ECA** Project 05ECA22

Dear Ken,

Enclosed in this mailing are the following items:

1. FINAL report (1 bound hardcopy, 1 unbound hardcopy and 1 WORD file on CD)
2. Raw and final data files (on CD)
3. All photos taken regarding project (on CD)
4. Line-contour and color-contour maps (on CD)
5. ECA's survey field notes (1 hardcopy)
6. INVOICE (next page)

As stated previously, all data files and maps require ***Surfer*** (Golden Software, Inc.) to be viewed and printed out. If you wish to take the data from raw to final form, you will also need ***MagMap2000*** and ***DAT 31w***, from Geometrics, Inc. and Geonics Ltd., respectively. Please note that each map contains a post map that reveals all line traverses made per survey. You can, as with all map elements, turn this layer on or off as you wish.

Due to inadequate printer memory, I was unable to print the LF-10 color contour Mag Map and the accompanying Trench Enhancements Mag Map. Please insert your color plots of these maps into Appendix B where indicated. I apologize for this inconvenience.

I appreciate the opportunity to have performed this most interesting project for **HGL** and look forward to assisting your firm with future projects. Please call me if you have any questions whatsoever.

Ken, may you, Brett, Sarah and everyone else in your circle have a most glorious and happy holiday season and a Merry Christmas!

Sincerely,

Brett D. Smith, PE, PG

Environmental Compliance Associates, LLC
1825 Leslie Road, #184 ♦ Richland, WA 99352 ♦ (509) 628-9959 ♦ ecabrett@charter.net

Holloman Air Force Base Geophysical Surveys

Alamogordo, New Mexico

Prepared by:

Environmental Compliance Associates, LLC
1825 Leslie Road, #184
Richland, WA 99352
(509) 628-9959

Prepared for:

HGL
HydroGeologic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, VA 20170
(703) 478-5186

Project Number: 05ECA22

Attention: Mr. Kenneth J. Cottrell, CPG, PG

December 21, 2005

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Appendix A – DP-30 / SD-33 Maps
Appendix B – LF-10 Maps
Appendix C – LF-19 Maps
Appendix D – LF-21 Maps
Appendix E – LF-22 Maps
Appendix F – LF-23 Maps
Appendix G – LF-29 Maps

1.0 Introduction

During September and October of 2005 ECA performed electromagnetic and magnetic geophysical surveys at the Holloman Air Force Base located approximately 10 miles southwest of Alamogordo, New Mexico. This work was performed at the request of **HydroGeologic, Inc. (HGL)**, to enable **HGL** to ultimately determine the lateral extent of solid waste management units or landfills located on the air force base property. Seven sites were investigated by ECA, namely DP-30 / SD-33 (4 acres), LF-10 (24 acres), LF-19 (6 acres), LF-21 (5 acres), LF-22 (3.5 acres), LF-23 (5.5 acres) and LF-29 (5 acres) comprising an approximate total area of 53 acres.

The March 2005 Bid Request specified the electromagnetic method for all sites, as well an additional survey of DP-30 / SD-33 utilizing the ground penetrating radar method. Due to the highly conductive soils encountered onsite, the metal-detection (in-phase) component of the electromagnetic method was adversely and significantly compromised. As a result, the surveying strategy was modified to utilize only the quadrature (conductivity) component of the electromagnetic method in conjunction with magnetometry, which served to detect buried metallic debris.

1.1 Purpose of Surveys

As stated above, **HGL** requested the geophysical surveys to determine landfill boundaries and to locate buried metal-bearing objects. Additionally, all data points were required to have corresponding longitude and latitude coordinates, to enable later acquisition of locations having anomalous readings.

1.2 Survey Equipment

ECA utilized the Geometrics, Inc. Model G-858 and Model G-856 total-field magnetometers for the magnetic surveying portion of the project. The G-858 magnetometer is an electron-based system that utilizes the precessing behavior of Cesium vapor electrons subjected to light energy at specified wavelengths. The G-856 magnetometer is a proton or hydrogen-based system that utilizes the precessing behavior of protons subjected to an induced magnetic field. The G-858 unit was utilized as the actual surveying instrument, whereas the G-856 was employed strictly as a fixed base station, in order to record changes in the earth's daily (diurnal) magnetic field.

The Geonics Limited Model EM-31 Mark2 terrain conductivity instrument was utilized to measure lateral soil conductivity changes at each site. The EM-31 Mark2 system operates on the simple, yet reliable, concept of magnetic induction and Maxwell's Law, whereby an electromagnetic field is transmitted through the soil and the associated electrical field current is ultimately picked up by the receiver and correlated directly to soil conductivity. This instrument is capable of measuring to a depth of 20 feet in low-conductivity terrain, but in the highly conductive soils encountered onsite, the effective depth of signal penetration, which is inversely related to soil conductivity, was probably lessened to approximately 10 feet.

The Trimble AgGPS 132 is a high-performance GPS receiver that utilizes a subscription-based differential correction service to calculate sub-meter positions in real-time. ECA utilized Trimble's AgGPS Parallel Swathing Option that incorporated a light bar guidance system that enabled precision guidance information for navigating reasonably straight and parallel lines.

2.0 Survey Parameters and Data Quality

Geophysical surveys must be designed to prevent aliasing or under-sampling the survey area with respect to the locations of causative bodies or features. The following discussion reveals how the parameters for each of the survey methods were determined.

deviation represented a repeatability accuracy of 99.167 percent, within an approximate conductivity environment of 60 mS/m.

2.3 Global Positioning System

Utilizing the Trimble AgGPS 132 global positioning system (GPS), ECA was able to perform magnetometer and EM-31 surveys along straight-line traverses spaced set distances apart. All traverses were referenced against a baseline, through the utilization of the Trimble Swathing Option – an established field surveying technique that has been accurately employed by farmers throughout the world. A light bar attached to the GPS backpack enabled ECA to maintain sufficiently straight and evenly spaced survey lines, ultimately creating well-controlled grids over all seven landfill sites.

The GPS-based surveys proved to be considerably more cost and time efficient than pre-survey gridding, in light of the fact that most sites were characterized by high brush, dense foliage, trees and/or less-than-level survey conditions. Because the GPS system acquired locational (XY) data simultaneously with the geophysical (Z) data, the resultant databases consisted of virtually continuous XYZ data that were readily plotted in Lon-Lat coordinates. GPS-based surveys typically have an accuracy of ± ½-meter.

Latency errors occur when the incoming data streams do not align perfectly. Latency corrections were not necessary during the magnetometer surveys, due to the insignificant magnitude of the maximum potential error possible with once-per-second GPS readings. No latency errors occurred during the EM-31 surveys, because the instrument is designed to only record a reading upon receipt of the GPS signal, thus ensuring perfect alignment. In the case of the magnetometer surveys, readings occurred every 0.1 seconds. The maximum latency time error would equal the entire sampling interval time of 0.1 seconds. At a maximum surveying speed of 3 feet per second, the latency distance error is 0.3 feet or 3.6 inches. Such an error can be dismissed without explanation, given the tolerances of a metal detection survey.

3.0 Surveys Performed

The following table lists the sites that were surveyed and the methods employed therein:

SITE	SURVEY DATES (EM-31)	SURVEY DATES (MAG)	EM-31	MAG
DP-30 / SD-33	9/27, 9/29, 9/30		✓	
LF-10	9/30, 10/02, 10/04, 10/05	10/02, 10/05, 10/06, 10/09-10/11	✓	✓
LF-19	10/01	10/07, 10/08	✓	✓
LF-21	10/03	10/13, 10/14	✓	✓
LF-22	9/30, 10/01	10/08, 10/12	✓	✓
LF-23	9/30, 10/01	10/12, 10/13	✓	✓
LF-29		10/14, 10/15	✓	✓

4.0 Data Processing

4.1 EM-31

No post-survey data processing was performed on the EM-31 data, other than simply disregarding the in-phase data that were "pegged" at –20.47 ppt, in response to the highly conductive soils encountered onsite. In-phase readings are often severely compromised when soil conductivities exceed 100 mS/m.

4.2 Magnetometer

Contrary to the relatively simple conductivity surveys, the G-856 base station data and especially the G-858 magnetometer data required considerable post-survey processing. Utilizing the MagMap2000 proprietary software (version 4.65b) provided by Geometrics, Inc. of San Jose, California, ECA performed the following processing steps upon all G-858 data sets, in the order presented below:

1. Global dropout removal – A dropout is a reading that drops to zero and is clearly out of context. Dropouts result from the sensor being near or within a dead-zone or within a high magnetic gradient. A dead-zone is that volume of space wherein the sensor cannot produce a reading, due to misalignment with the earth's magnetic field. The software effectively and exclusively removed all dropouts from each dataset in one step.
2. Global duplicate time removal – All readings having duplicate time stamps were effectively and exclusively removed in one step.
3. Global spike removal – A spike is a single reading or set of readings that jump to unrealistically high levels at vertical or near-vertical slopes. Textbook spikes comprise 1-3 readings that differ significantly from the adjacent readings. Spikes, like dropouts, result from the sensor being near or within a dead-zone or within a high magnetic gradient. After hours of conservative trial processing runs, ECA designed a despiking filter measuring 8 readings wide and 250 nT (and greater) in amplitude. All reading sets matching these parameters were effectively and exclusively removed in one step.
4. Custom range despiking – ECA performed a detailed inspection of each and every line within each survey dataset, whereby all suspicious reading sets, having near-vertical or vertical slopes and thus not typical of monopole and dipole signatures, were removed in non-global surgical fashion.
5. GPS offset – A careful analysis of each and every site's dataset revealed, with the exception of LF-10, that all magnetometer surveys did not appear to be compensated by the 1.22-m (4-ft) GPS antenna to sensor offset that ECA input into the Trimble AgGPS system before every surveying event. This locational error was discovered when interim maps readily revealed a "herringbone" pattern, whereby misaligned GPS and sensor readings create a locational shift in one direction and a shift of similar magnitude in the returning or opposite direction. Such a magnified error is easily revealed in the form of chevron-shaped point-source anomalies or as a herringbone pattern along edges of elongate anomalies.

   ECA performed GPS-offsets at values ranging from –2.44 meters through +2.44 meters and empirically determined +1.22 meters to most effectively minimize the herringbone effect and convert chevron-shapes into tight circular anomalies.

   The 1.22-m GPS-offset correction (which happens to equal the actual GPS-to-sensor offset) was effectively inserted into each dataset in one step.
6. Removal of diurnal magnetic field – With the exception of the LF-10 gradiometer datasets, all other datasets consisted of total-field data that required the removal of the diurnal field, in order to achieve complete anomaly separation within a variable magnetic environment. As stated earlier, the diurnal field was recorded by a dedicated stationary G-856 magnetometer that was located nearby each landfill site being surveyed. Field readings were recorded every 2 to 5 minutes, in order to adequately sample the earth field.

   As stated earlier, the LF-10 gradiometer data did not require the removal of the diurnal field, since gradiometer data already eliminate extraneous fields, including the earth's magnetic field, and thus represent the *difference* between two total-field readings that are measured 1 meter apart.
7. Heading error removal - An analysis of each and every site's dataset revealed line-by-line "striping", whereby each traverse appeared as a series of elongate anomalies, creating an overall map with obvious data "stripes". Heading errors result when the measurement of the earth's magnetic field is somewhat different when surveying one direction versus another. This is attributable to the fact

that the magnetic field is not perpendicular to the ground and is therefore at a different angle to the sensor when going north versus south or east versus west and so on.

ECA performed heading error corrections at values ranging from 5 nT to 20 nT and found the 10 nT operator to effectively destripe all datasets without compromising data integrity.

5.0 Creation of Contour Maps

All datasets were gridded and computer-contoured, utilizing proprietary software (version 7.04) provided by Golden Software, Inc. of Golden, Colorado. To preserve the integrity of the data while also displaying high-resolution contour maps, ECA utilized grid spacing approximately 1/3 actual size and applied the Minimum Curvature gridding operator to each dataset. Among the myriad gridding operators in use, Minimum Curvature is considered to be an excellent gridding operator, because it minimizes (via a biharmonic Laplacian differential equation) the tendency for data to extrapolate beyond grid nodes, as can be the case with other operators. This feature of Minimum Curvature thus creates contour maps that closely resemble actual control points (data).

The maps presented in the attached appendices, are displayed as black contour lines at low contour intervals and as color-spectral maps at higher intervals. The line-contoured maps enable a detailed analysis of anomalies, whereas the color-contoured maps enable the reviewer to gain a broader perspective of features such as metal debris fields (ie, Mag data) or landfill boundaries (ie, EM-31 data).

Embedded within each map are layers depicting 1) the GPS-directed survey traverses and 2) cross-hatched grid lines that enable the map interpreter to better locate a particular location on the map.

6.0 Discussion of Survey Results

Appendices A through G include line-contour as well as color-contour maps of the seven sites surveyed during this geophysical investigation. The following discussion represents ECA's interpretation of the color contour maps only, as the line-contour maps are being provided strictly as a non-scope convenience, in the event **HGL** chooses to perform a more detailed analysis of the survey sites.

We are not providing interpretations for *each and every* discrete anomaly or set of coalesced anomalies. However, it is our opinion that circular anomalies probably indicate shallow buried metallic trash piles or spherical bodies, whereas the dipolar anomalies probably indicate buried cylinders such as drums. The determination of the depth of each causative source requires depth-estimation calculations that are beyond the scope of this project.

6.1 DP-30 / SD-33

This site was surveyed exclusively with the EM-31 terrain conductivity meter, as metallic debris was not anticipated here, since the anticipated waste stream consists primarily of low-conductivity oil and grease. Inspection of the map reveals two areas of lower conductivity (shown in blue) that appear to be waste disposal areas.

6.2 LF-10

The EM-31 map does not show anything conclusive, in ECA's opinion. The map is labeled to identify such features as fences, the gatehouse, concrete rebar (parking lot) and the nearby power substation fence. The only readily apparent anomalous features revealed in the EM-31 color map are the two high-conductivity areas along the eastern boundary. These conductivity highs may be attributable to the water-saturated gypsum soils located in this topographically lower area, or they may be attributable to buried non-magnetic and primarily non-metallic wastes such as glass, porcelain, wood, and gravel that were observed in this area.

The full-color G-858 map is labeled to also identify such cultural noise sources as monitoring wells and fences. The eastern boundary is relatively magnetically quiet (not anomalous), whereas the EM-31 map reveals two large conductivity highs. What readily appears of significance in this map is the presence of

numerous northwest-southeast trending linear features, which ECA interprets to be burial trenches. An additional "Trench Enhancement" map is included to better define the numerous trench locations. The anomalies that define these linear trench-like features are not robust, but they nonetheless reveal sufficient buried metal to be detected by a gradiometer magnetic survey.

6.3 LF-19

The EM-31 map reveals three distinct areas, as indicated by the diffusely bordered areas of high conductivity shown in red, that may represent water-saturated gypsum soils or disposal areas of non-metallic waste. Based upon the magnetometer surveys, these areas did not contain metallic objects. The most distinct anomalies are attributable to a barbwire fence.

The full-color G-858 map is labeled to identify surface noise sources. All unlabeled anomalies are probably buried metal debris and other magnetically susceptible causative bodies.

6.4 LF-21

The EM-31 map reveals what might be water-saturated gypsum soils or disposal areas of non-metallic waste, as indicated by the diffusely bordered areas of high conductivity shown in red. Based upon the magnetometer surveys, these areas did not contain metallic objects. The more distinct anomaly is attributable to a green metal shed.

The full-color G-858 map is labeled to identify the green metal shed and the three monitoring wells along the western boundary. All unlabeled anomalies are probably buried metal debris and other magnetically susceptible causative bodies.

6.5 LF-22

The EM-31 map reveals what appears to be a well-defined disposal area of low-conductivity (shown in blue).

The full-color G-858 map is labeled to identify surface noise sources and the three monitoring wells along the southern boundary. All unlabeled anomalies are probably buried metal debris and other magnetically susceptible causative bodies. Field observations indicated that the concrete rubble lacked metal such as rebar, so the anomalies in these areas might be attributable to sources located adjacent to or beneath the rubble. A field check with a high-quality metal detector over and around isolated pieces of rubble could possibly clarify this cursory observation.

6.6 LF-23

The EM-31 map does not show anything conclusive, in ECA's opinion. The map is labeled to identify the fence along the northern boundary. The only readily apparent anomalous feature revealed in the EM-31 color map is the high-conductivity area along the western boundary. This conductivity high may be attributable to the water-saturated gypsum soils located in this topographically lower area or may be attributable to buried non-magnetic high-conductivity waste.

The full-color G-858 map is labeled to identify surface noise sources and the two monitoring wells within the southwestern corner. The western boundary is magnetically quiet, whereas the EM-31 map reveals a large conductivity high. All unlabeled anomalies are probably buried metal debris and other magnetically susceptible causative bodies. As with LF-22, field observations indicated that the concrete rubble lacked metal such as rebar, so the anomalies in these areas might also be attributable to sources located adjacent to or beneath the rubble. As with LF-22, a field check with a high-quality metal detector over and around isolated pieces of rubble could possibly clarify this cursory observation.

6.7 LF-29

This site was surveyed exclusively with the G-858 magnetometer, as it comprises a classic metal debris field. The full-color G-858 map is labeled to identify surface noise sources, as well as the two monitoring wells located along the western boundary and the monitoring well along the northern boundary. All unlabeled anomalies are probably buried metal debris and other magnetically susceptible causative bodies.

7.0 Closing Comments

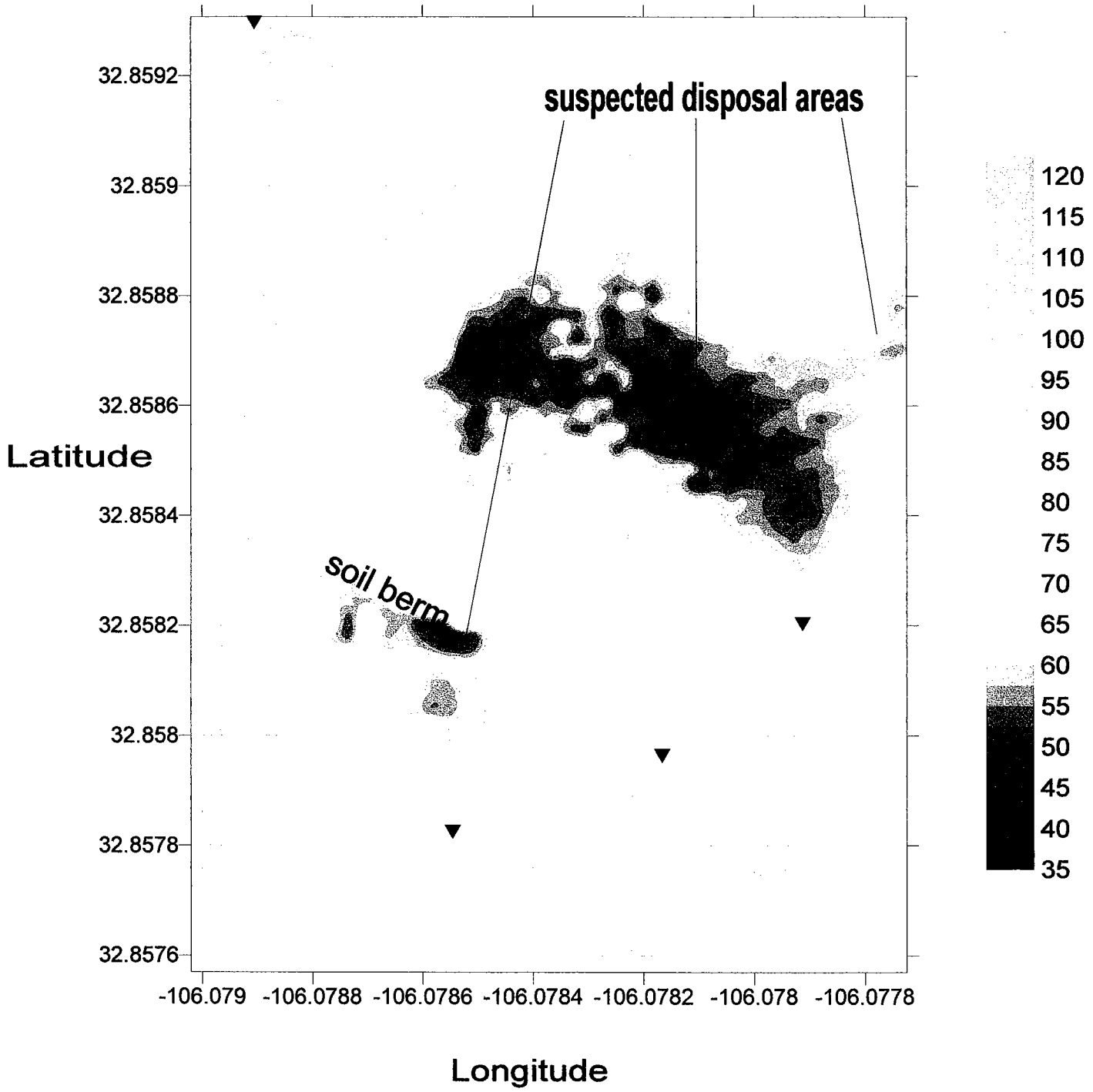
ECA performed this geophysical surveying project, utilizing best available methods and practices. However, all interpretations and opinions presented herein should in no way be considered as unequivocal facts. Geophysical data are simply displays of anomalous signatures that deviate from the normal field.

Appendix A

DP-30 / SD-33 Maps

DP-30 / SD-33

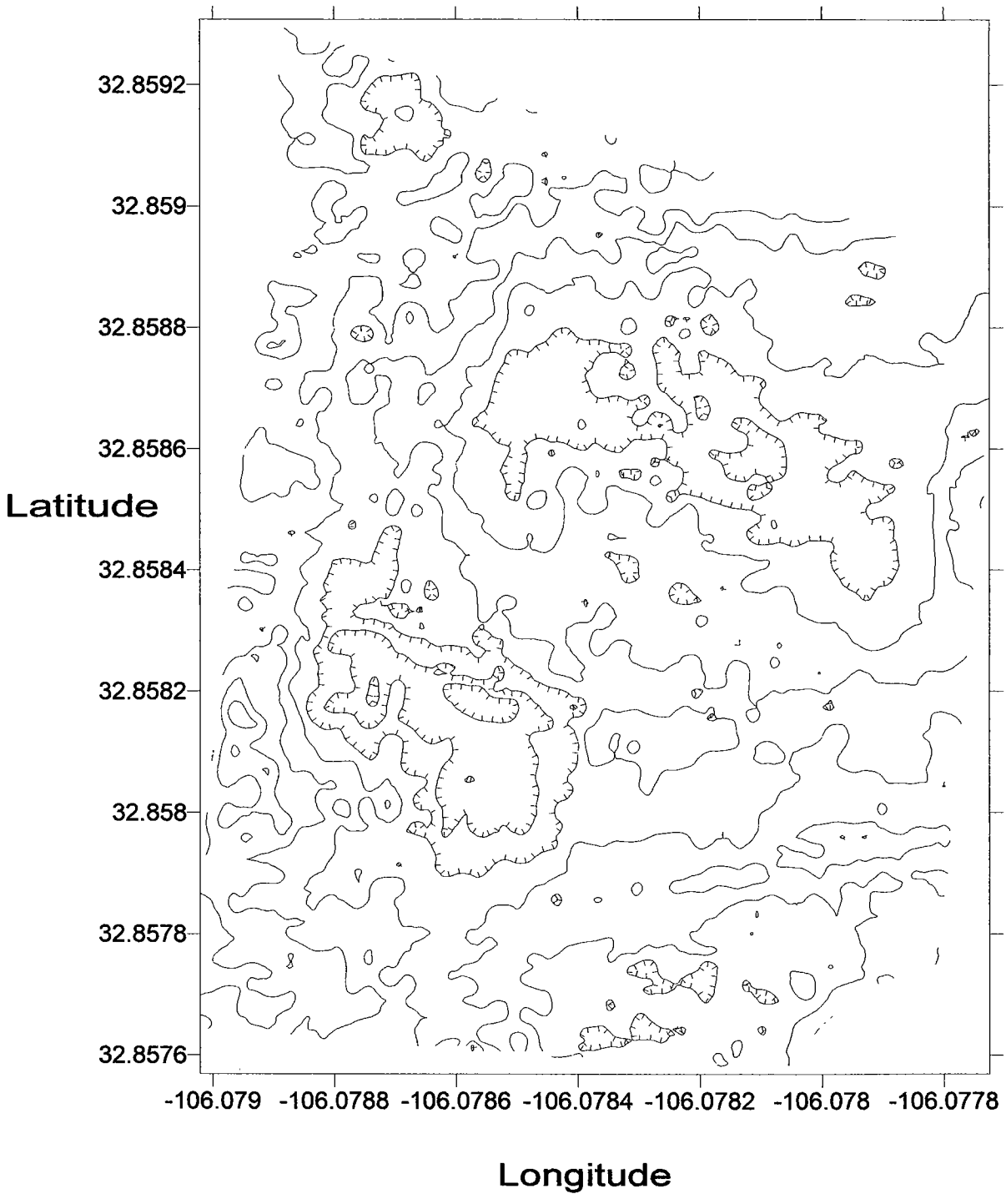
Terrain Conductivity Data



▼ - approximate location of monitoring well

DP-30 / SD-33

Terrain Conductivity Data



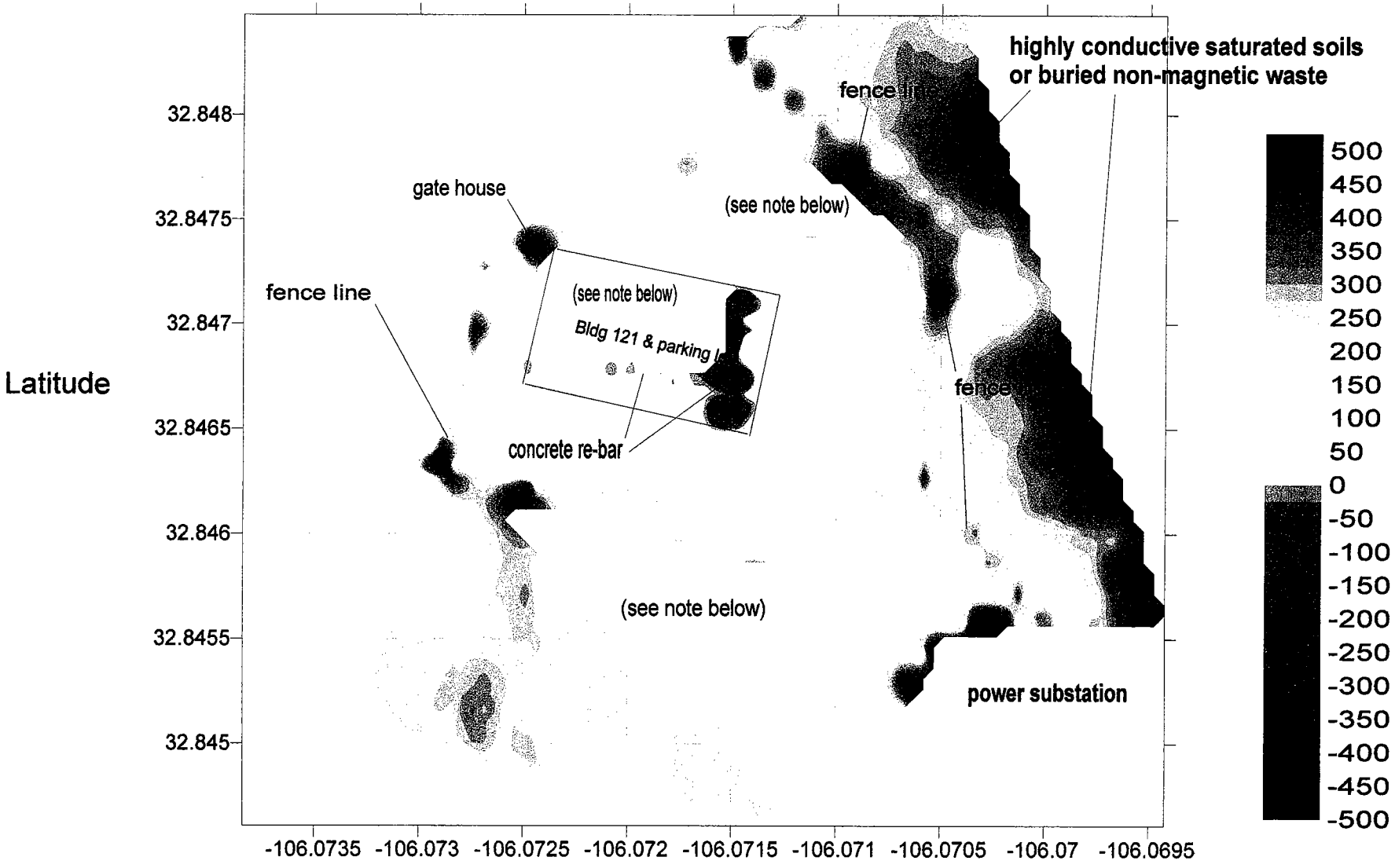
Contour Interval = 10 mS/m

Appendix B

LF-10 Maps

Landfill 10

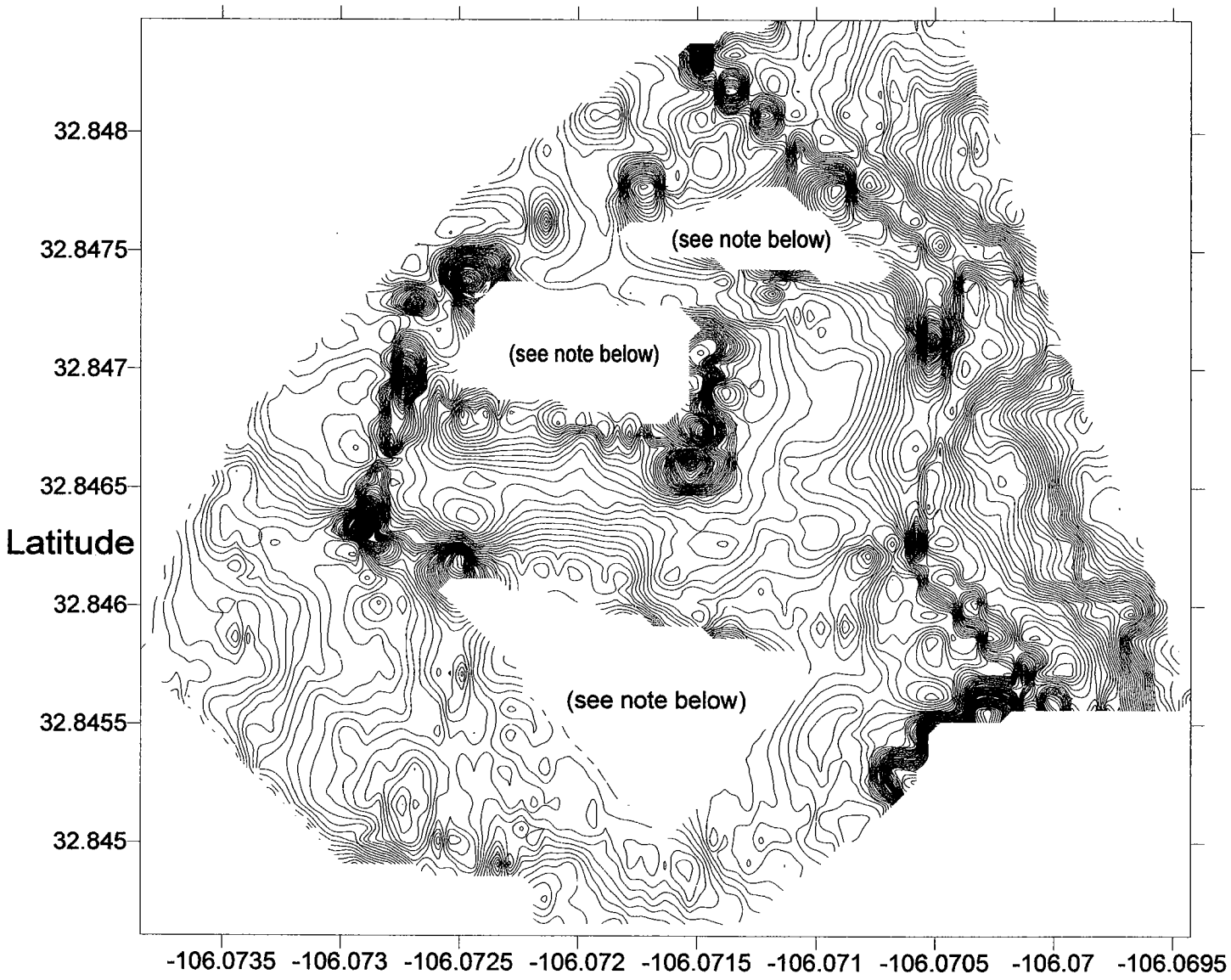
Terrain Conductivity Data



NOTE - blank areas on map are where no survey traverses were made

Landfill 10

Terrain Conductivity Data

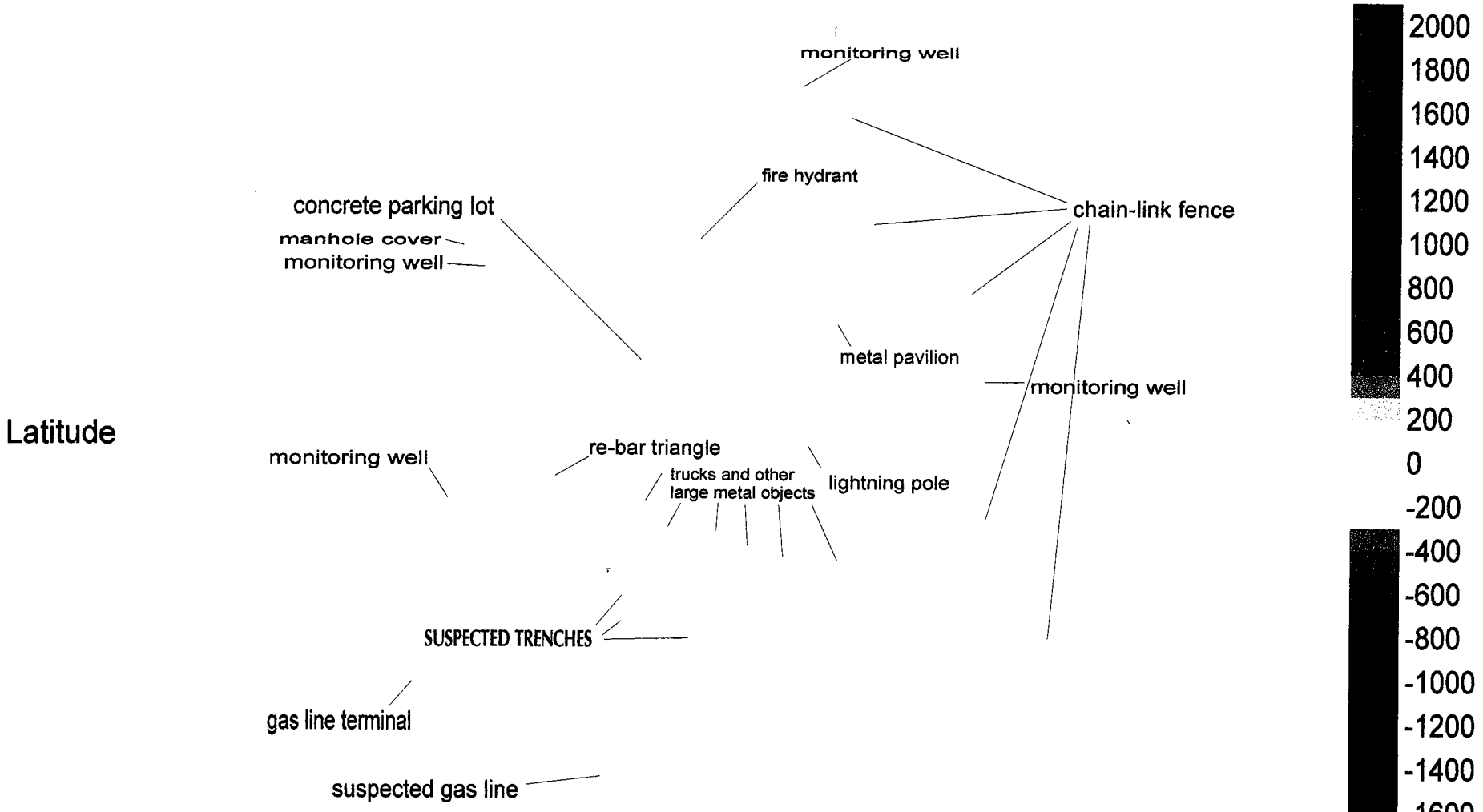


Contour Interval = 10 mS/m

NOTE - blank areas on map are where no survey traverses were made

Landfill 10

Vertical Gradient Data

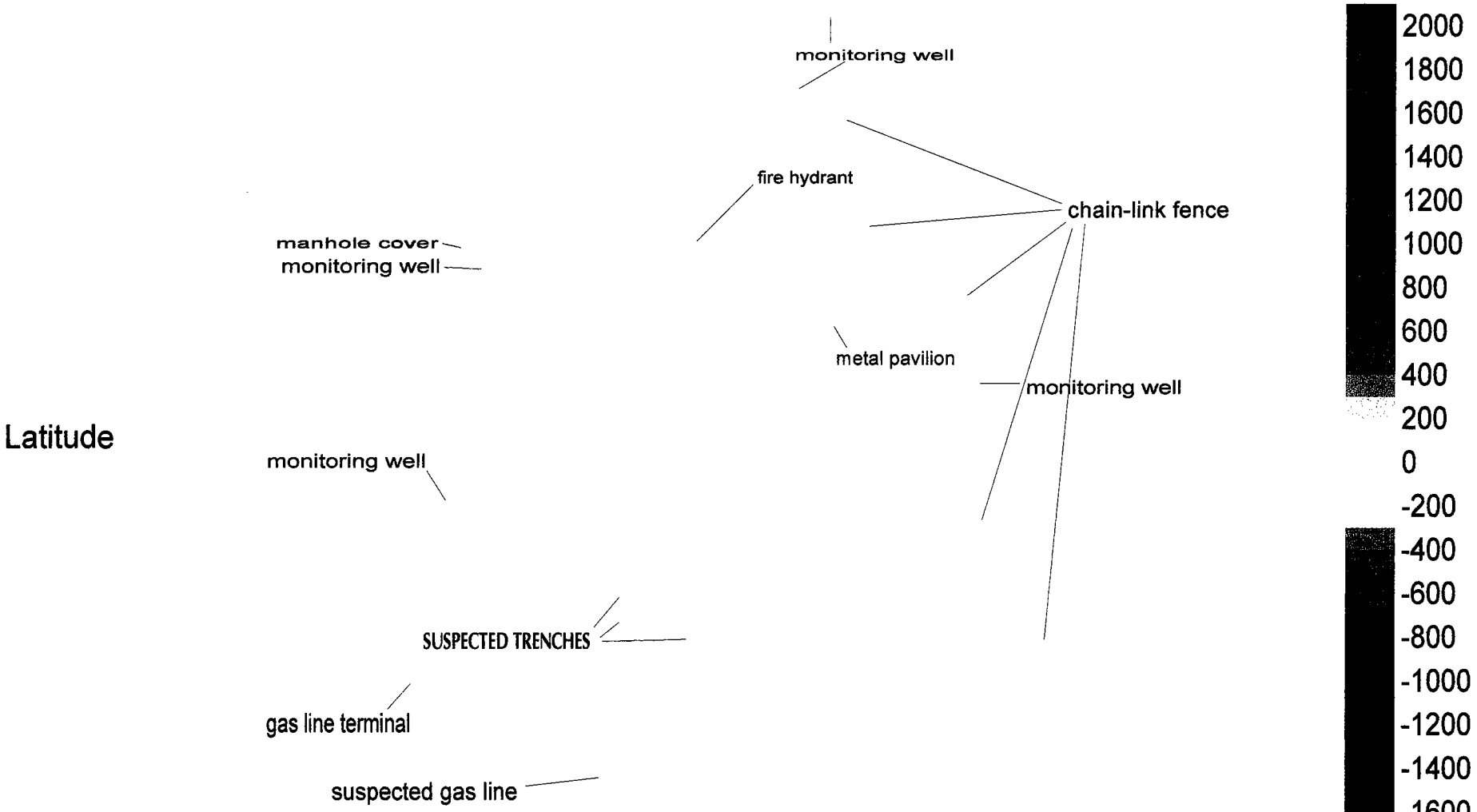


PLEASE INSERT HGL COPY HERE

(ECA's plotter memory unable to handle this large file!)

Landfill 10

Trenches Enhancement

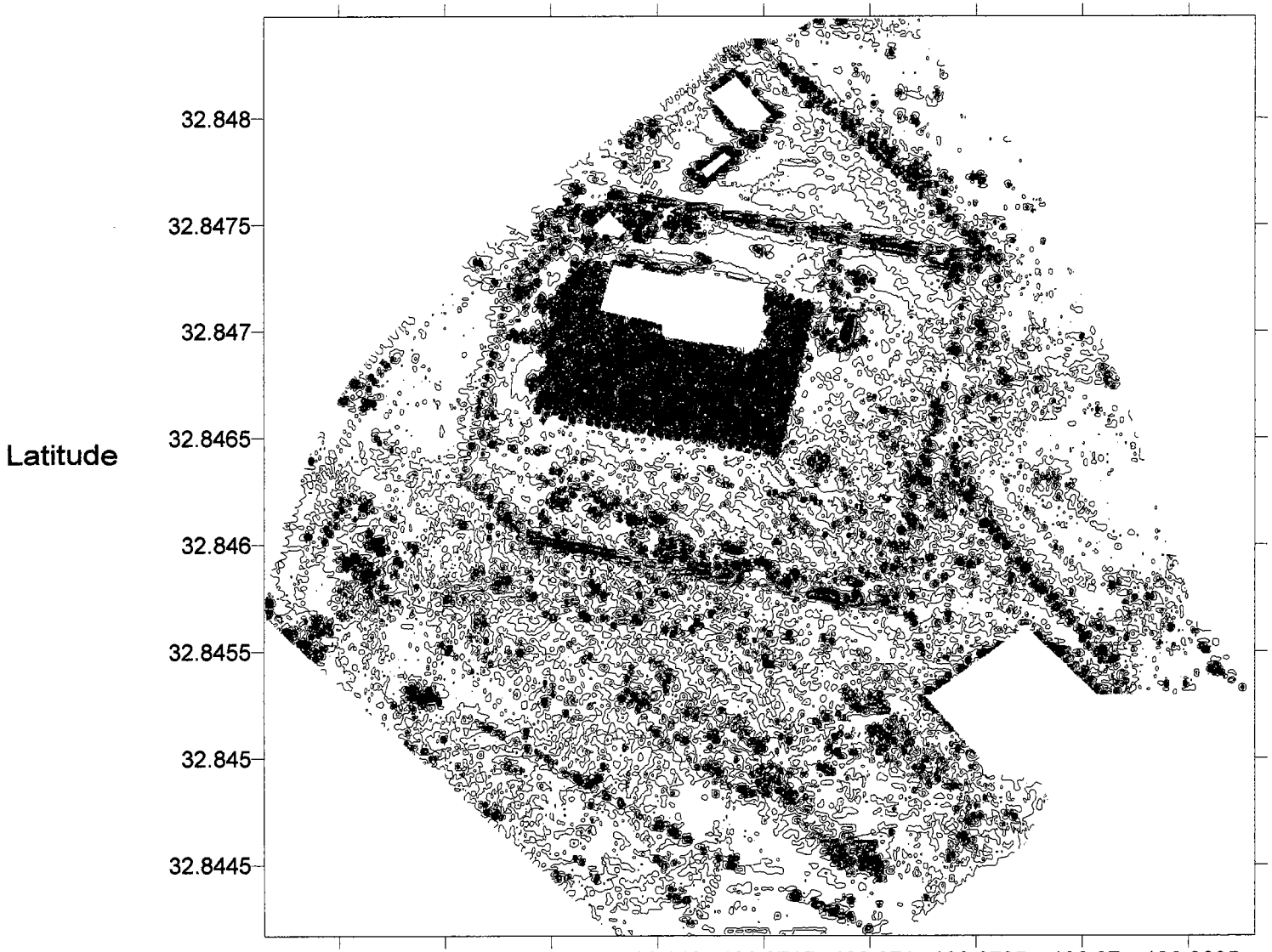


PLEASE INSERT HGL COPY HERE

(ECA's plotter memory unable to handle this large file!)

Landfill 10

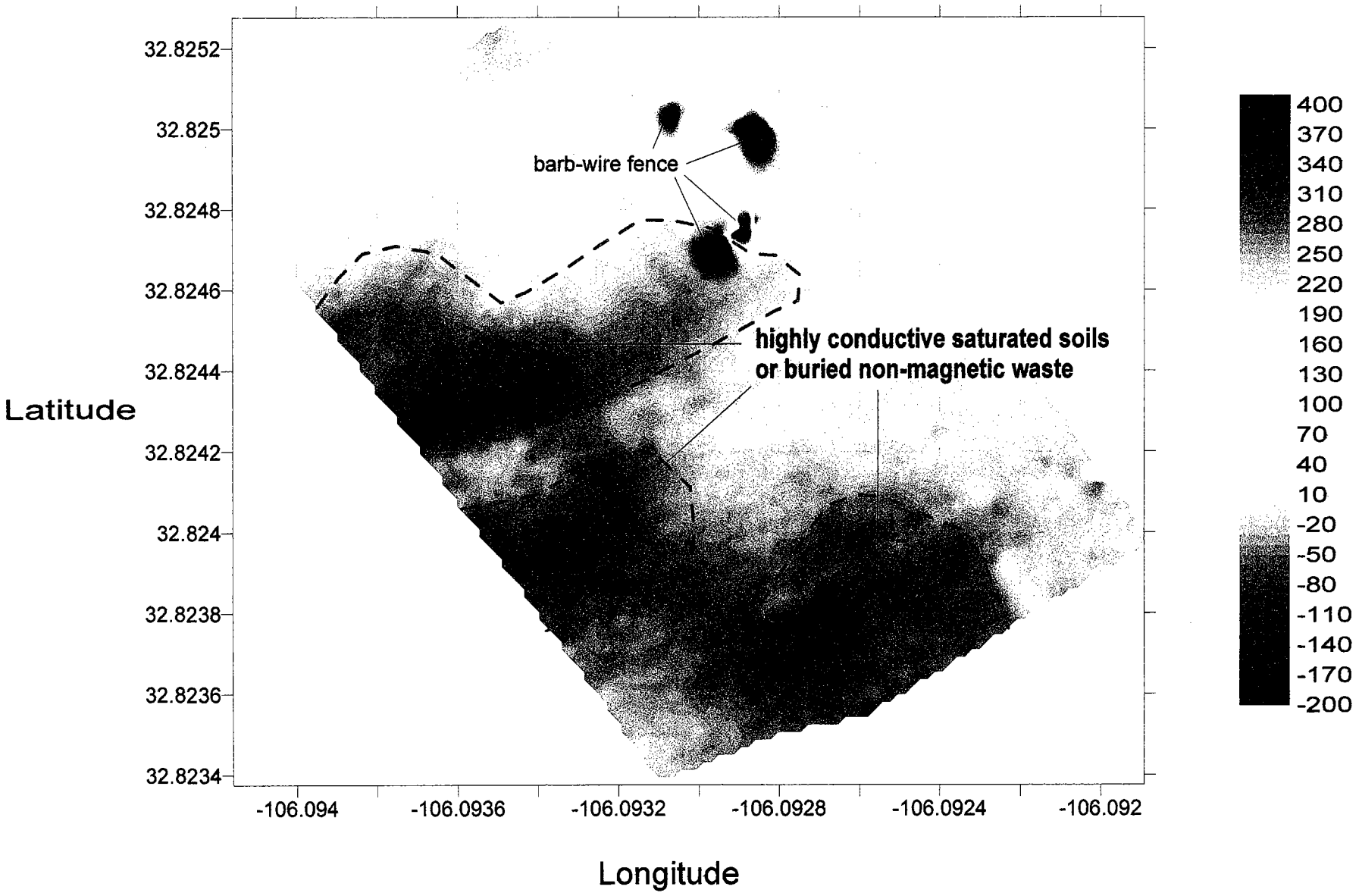
Vertical Gradient Data



Contour Interval = 100 nT

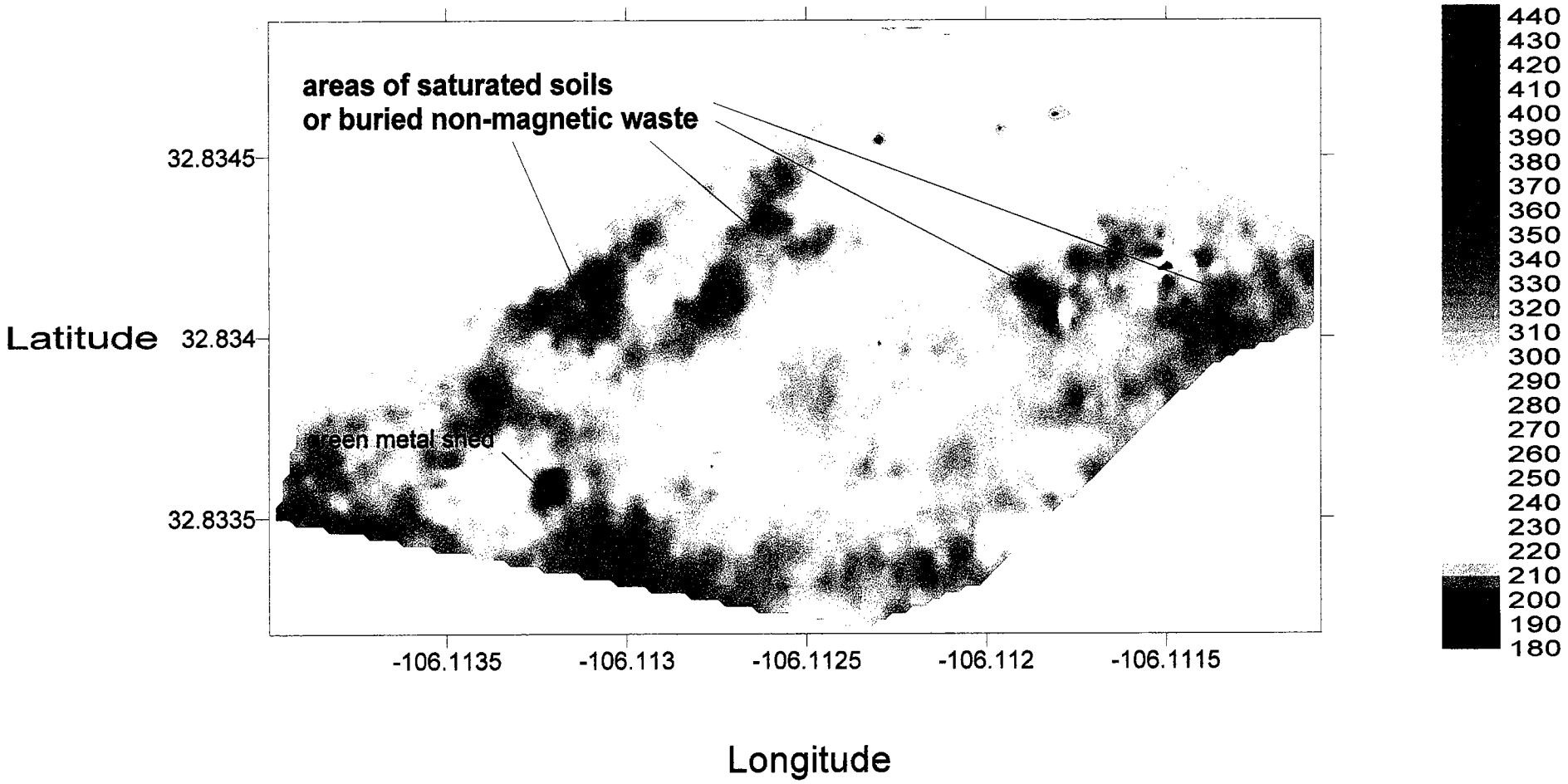
Landfill 19

Terrain Conductivity Data



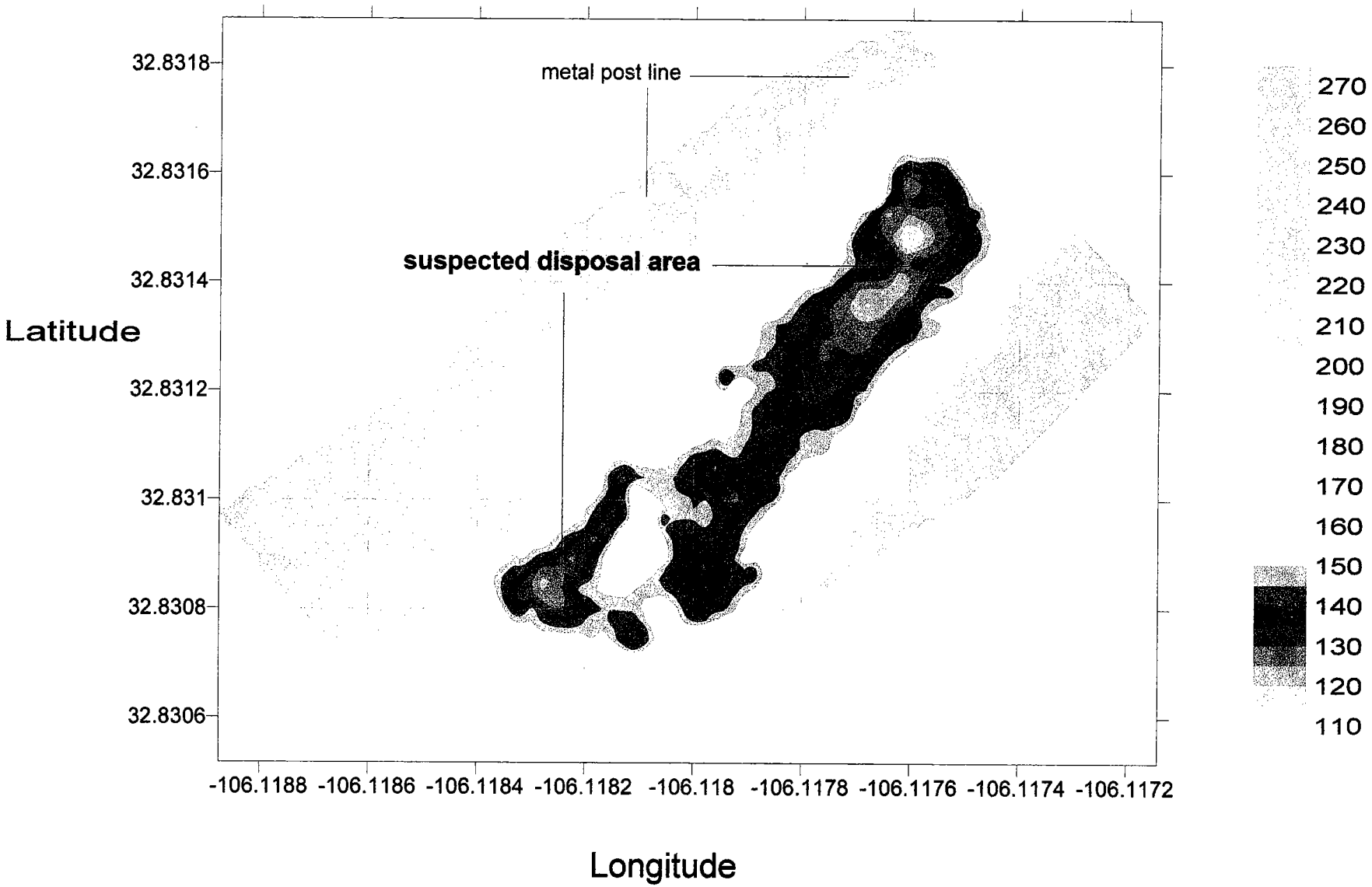
Landfill 21

Terrain Conductivity Data



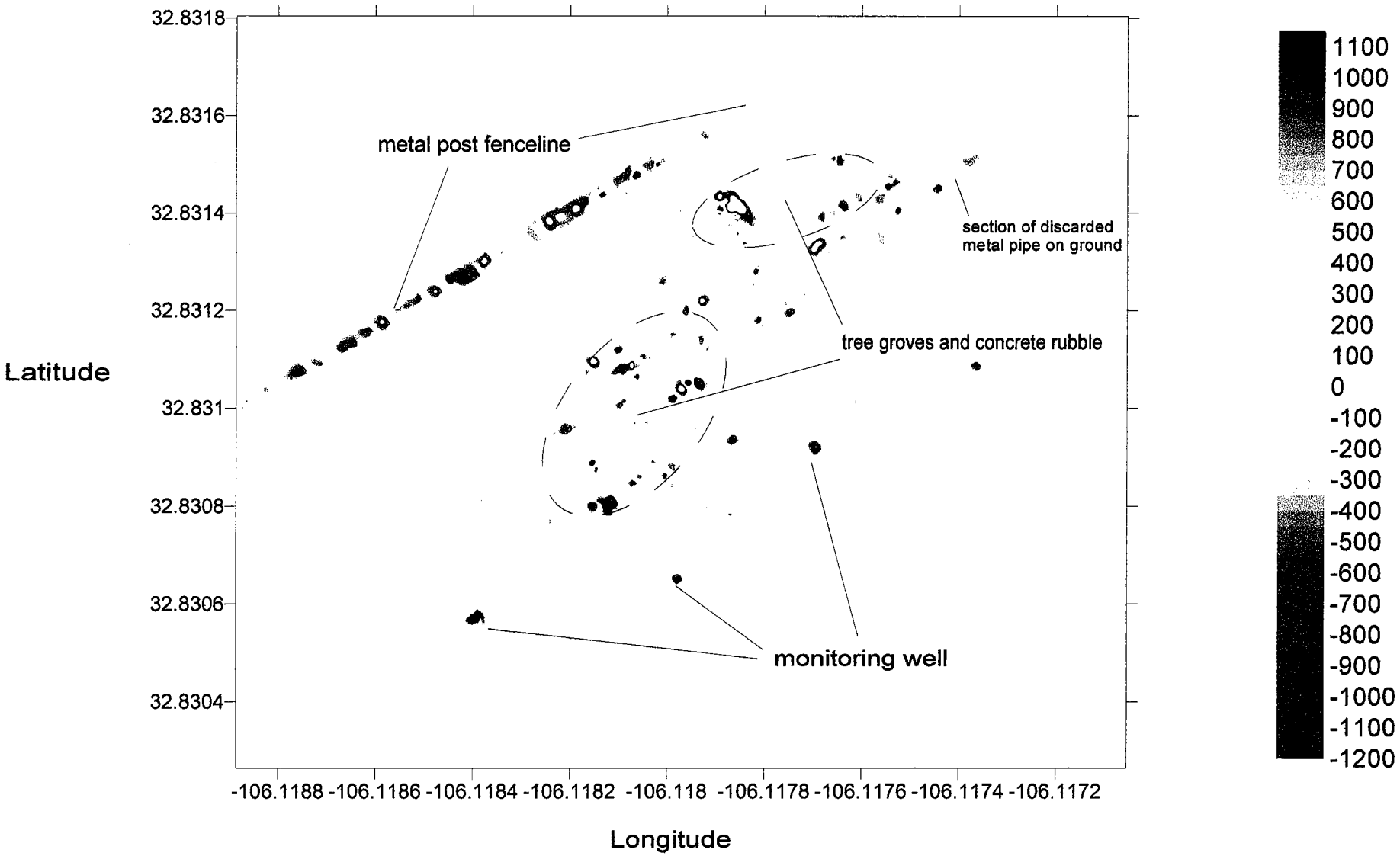
Landfill 22

Terrain Conductivity Data



Landfill 22

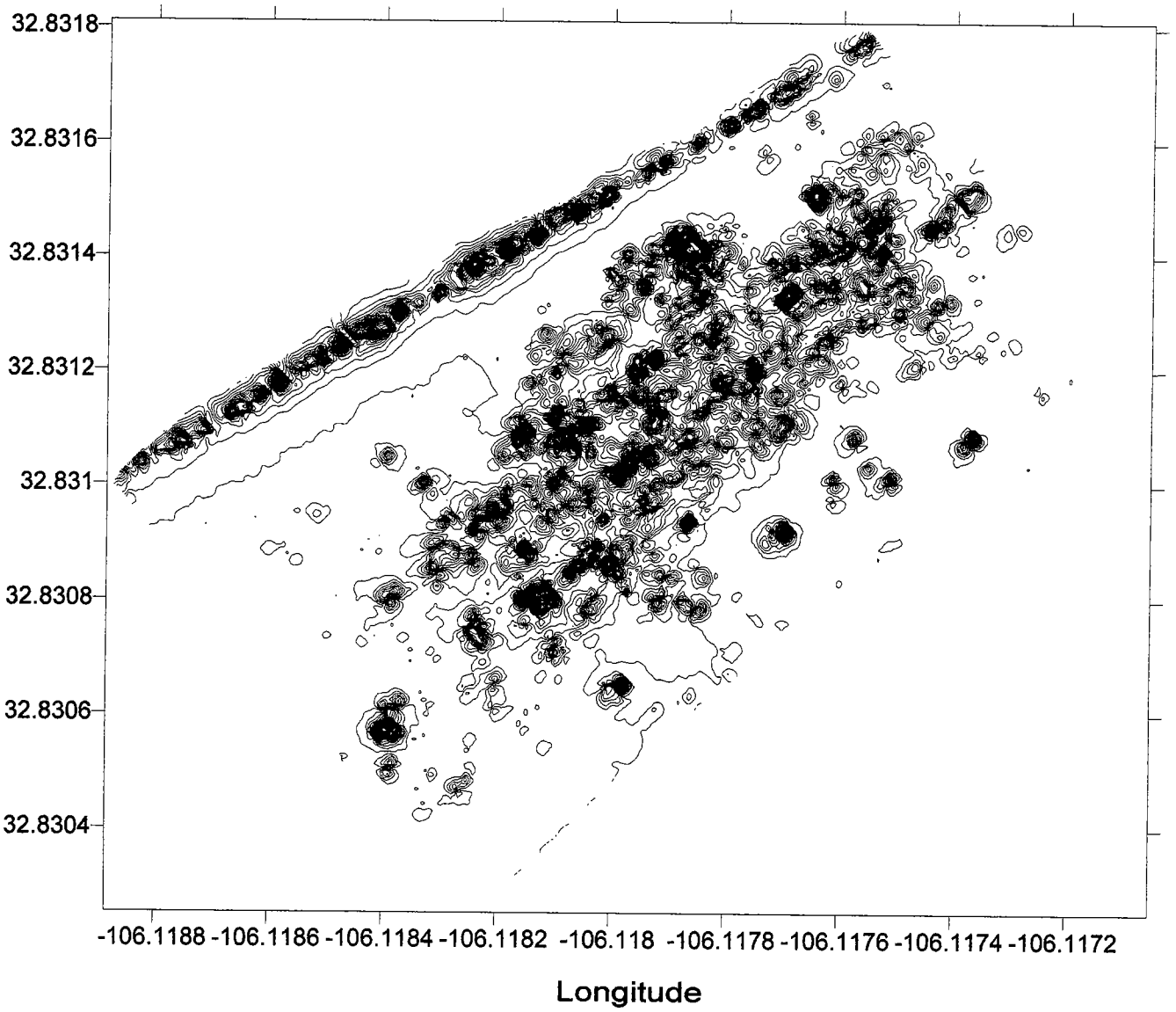
Magnetometer Residual Data



NOTE - unlabeled aomalies are probably buried metal debris

Landfill 22

Magnetometer Residual Data



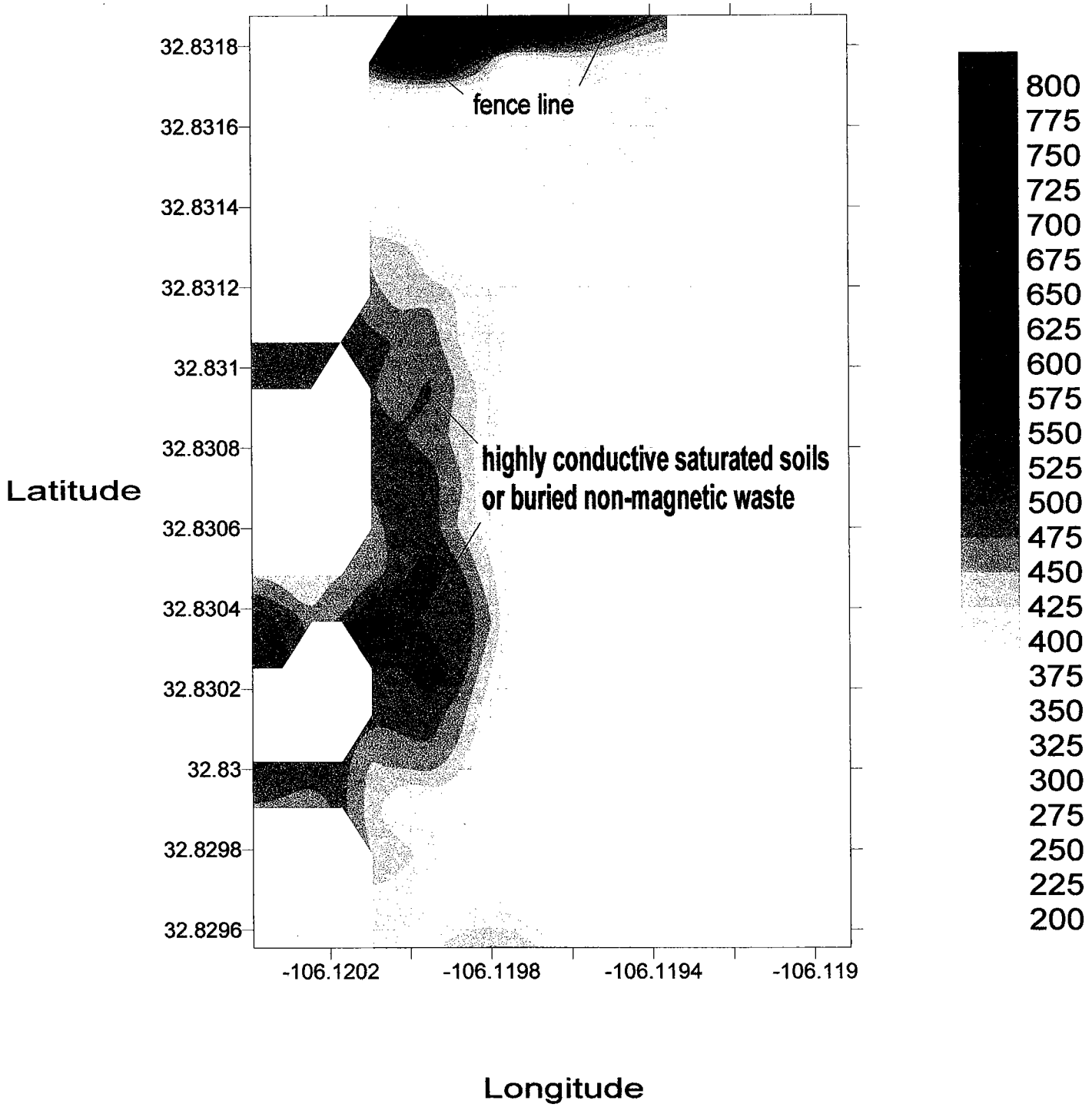
Contour Interval = 50 nT

Appendix F

LF-23 Maps

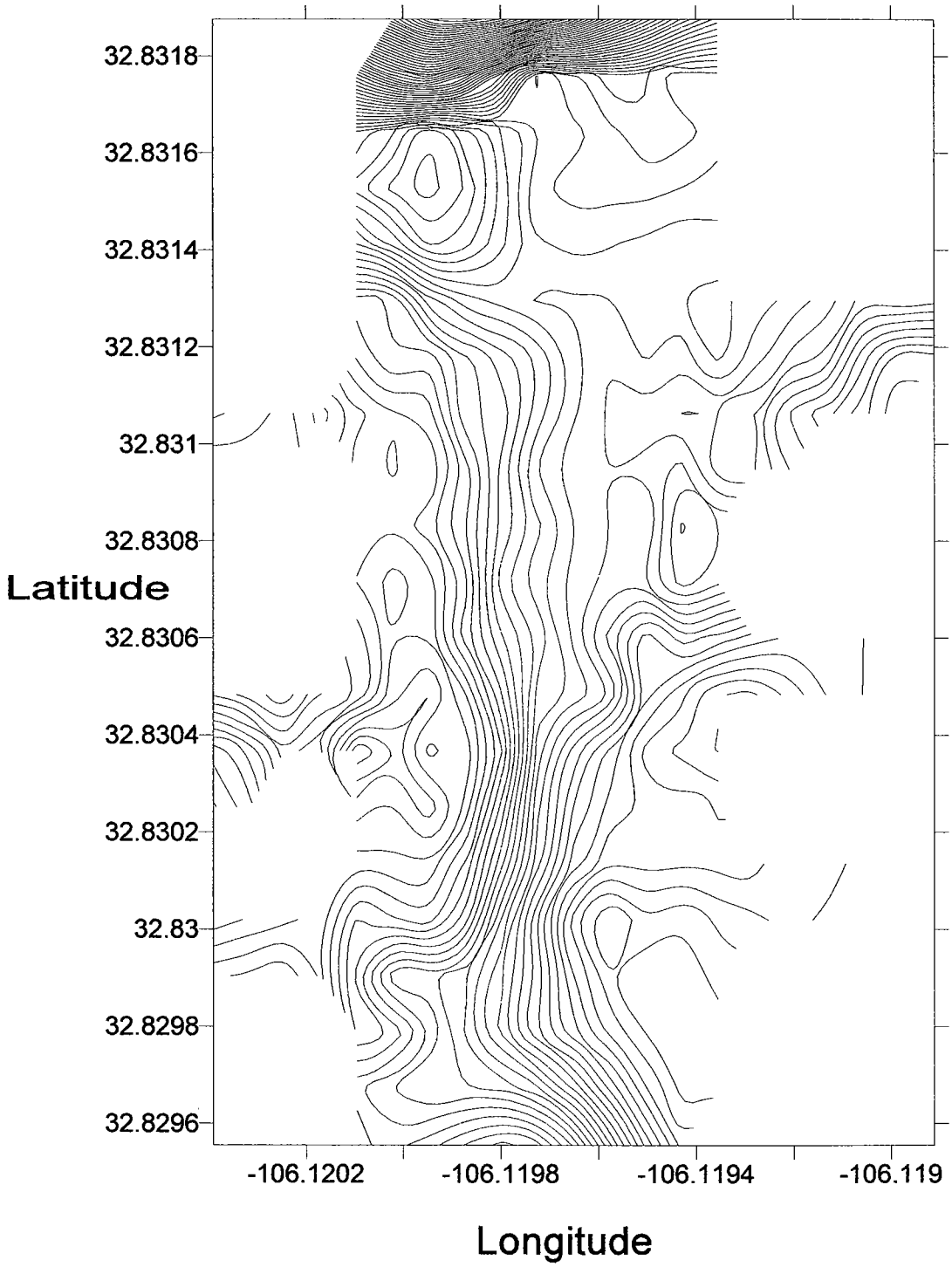
Landfill 23

Terrain Conductivity Data



Landfill 23

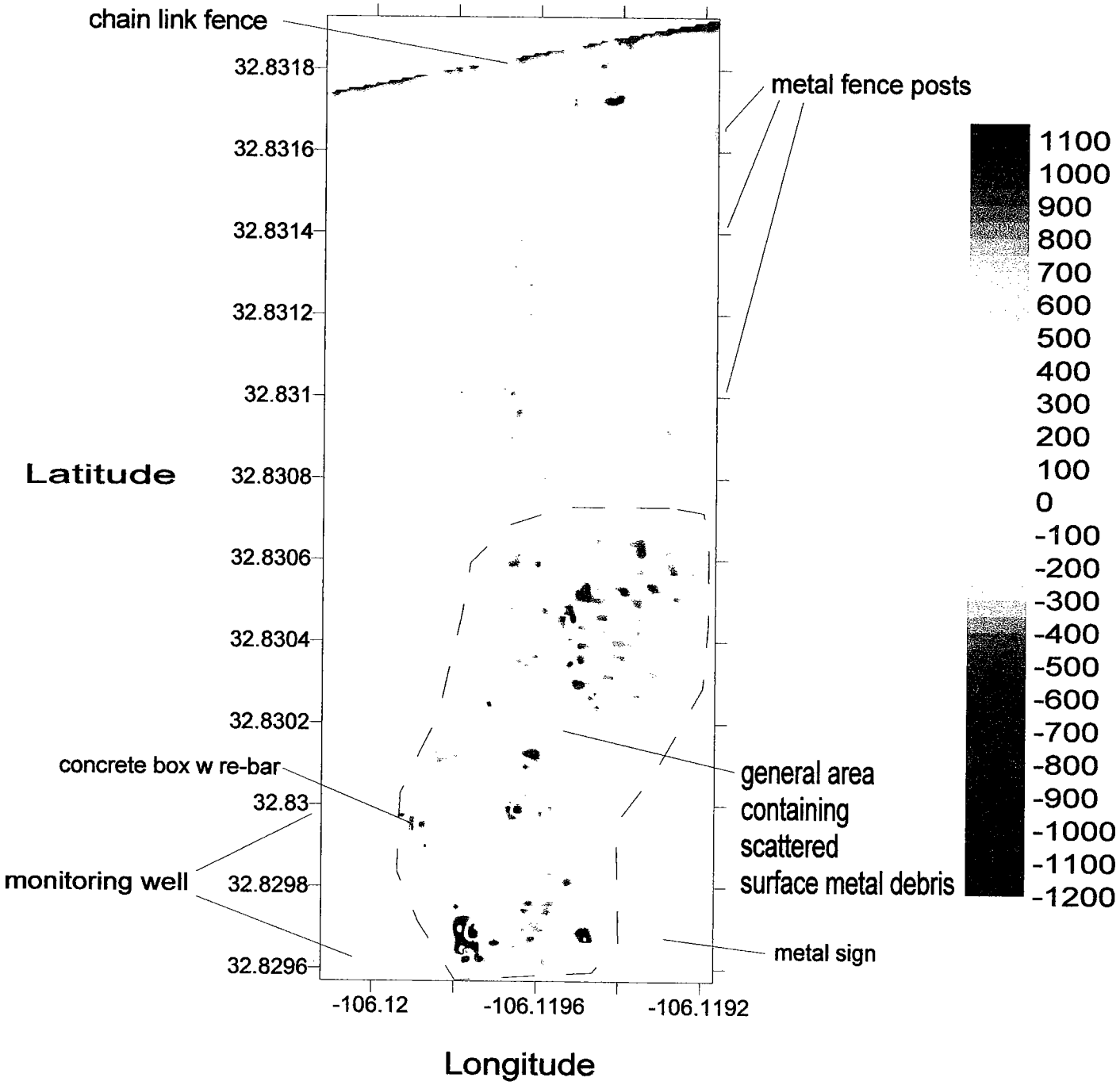
Terrain Conductivity Data



Contour Interval = 10 mS/m

Landfill 23

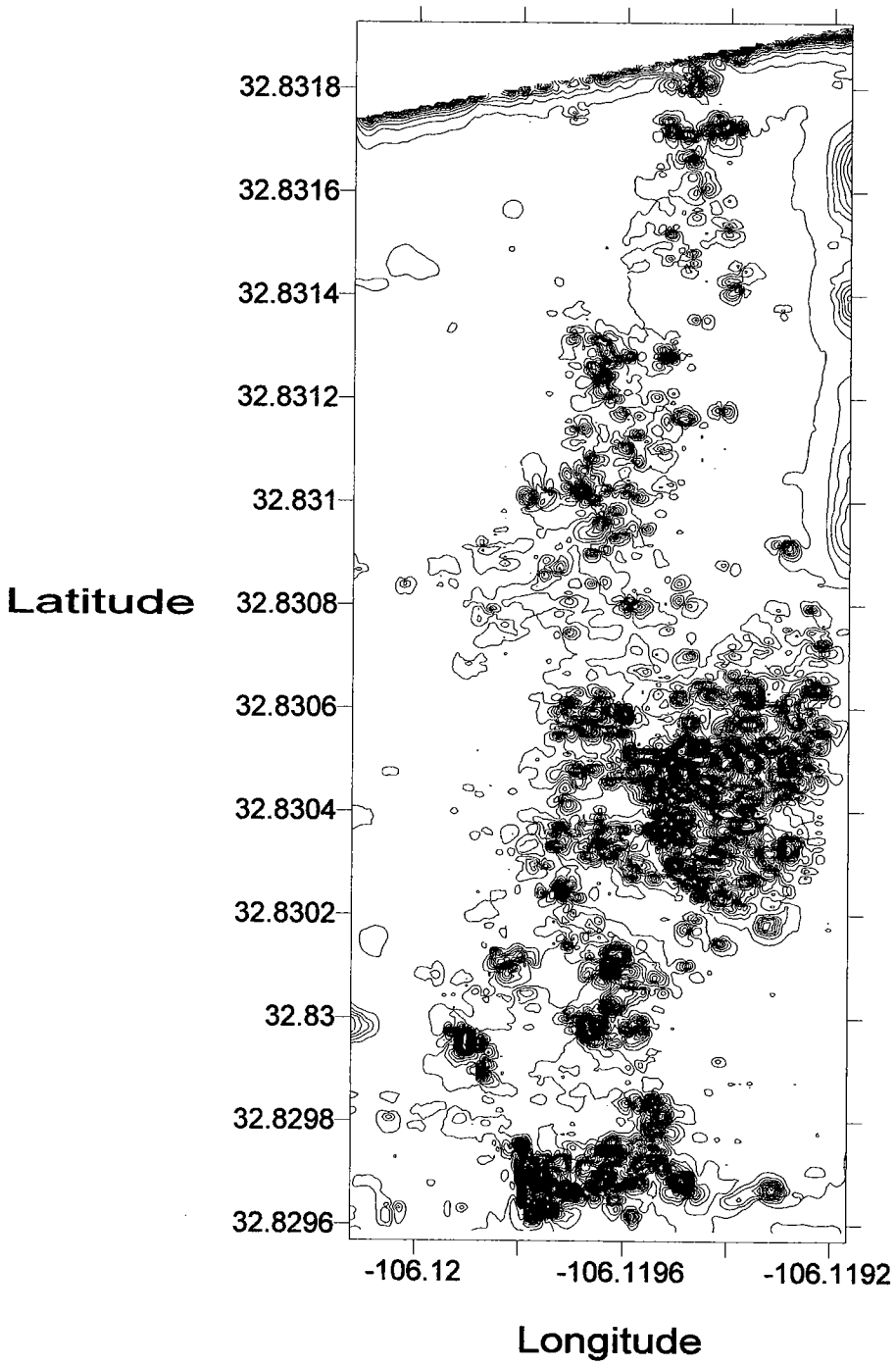
Magnetometer Residual Data



NOTE - unlabeled aomalies are probably buried metal debris

Landfill 23

Magnetometer Residual Data



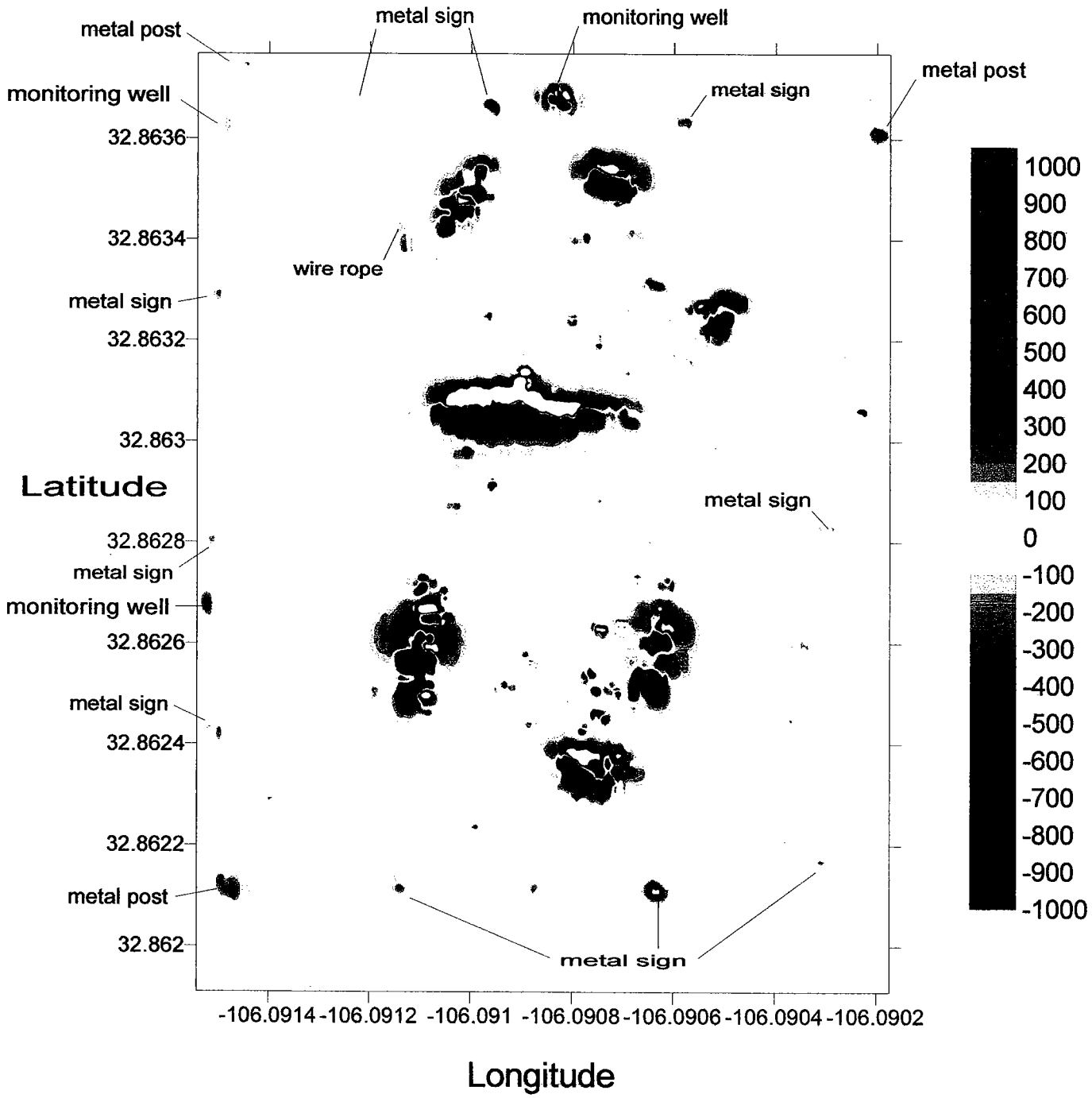
Contour Interval = 50 nT

Appendix G

LF-29 Maps

Landfill 29

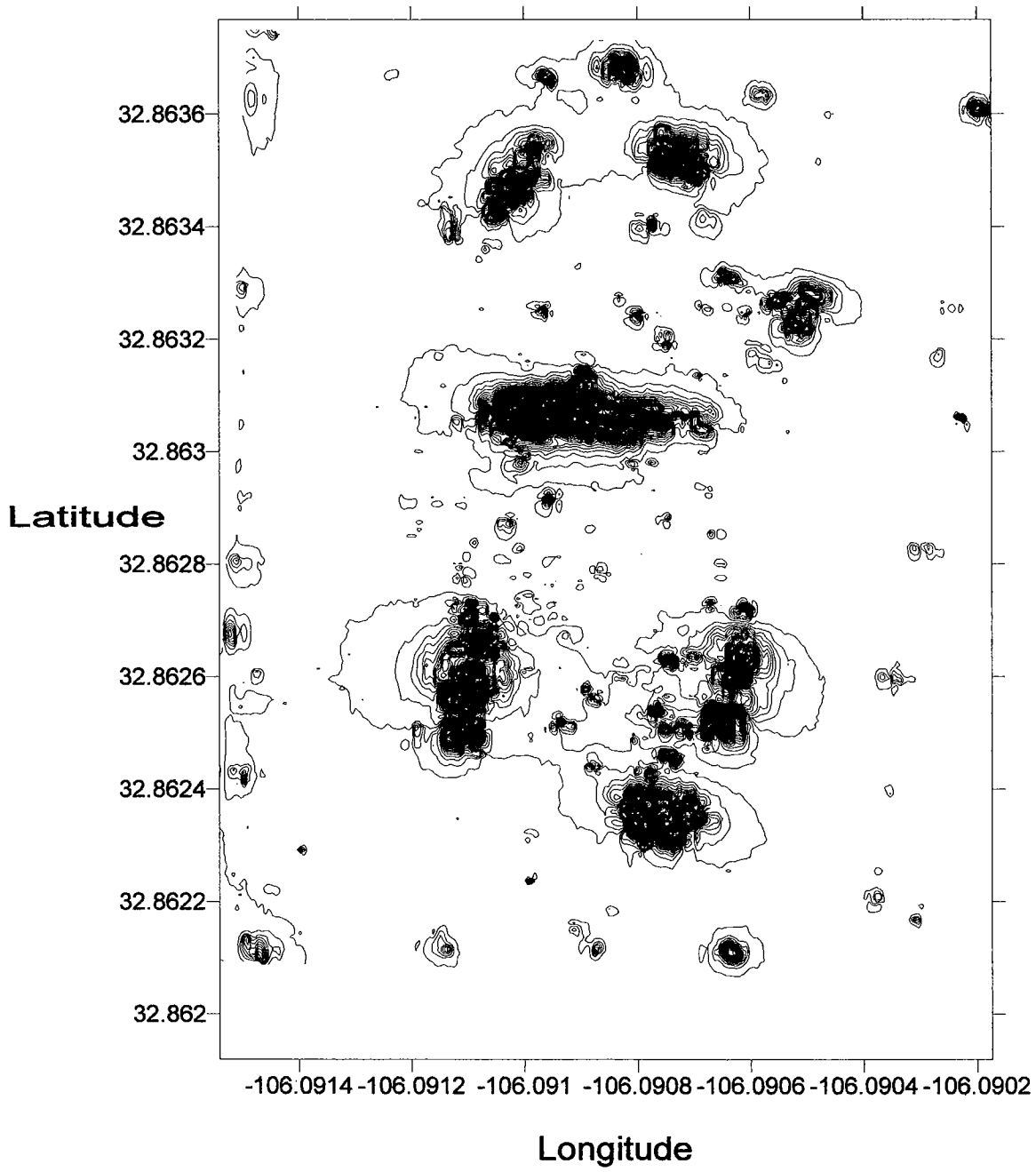
Magnetometer Residual Data



NOTE - LARGE unlabeled aomalies are probably buried metal debris

Landfill 29

Magnetometer Residual Data



Contour Interval = 50 nT

APPENDIX B

BORING LOGS

LF-10

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-516 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/7/88 8:30 DATE/TIME END 12/7/88 12:00 DRILL CREW Flair/Monroe*/Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 30 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671672.4475 E 554894.5856 WATER DURING DRILLING 11' 12.5'

WATER AT COMPLETION Caved 28' DELAYED WATER LEVEL Water @ 8' caved to 18' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement/1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Tan sandy SILT (ML)	7/14/9	.3		
			Brown silty SAND (SM)				
	SS	M		7/8/9	.3		
	SS	M		9/14/11	.4		
5			Tan sandy SILT (ML)				
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	3/3/5	.3		
	SS	M	Tan silty SAND w/clay seams (SM)	4/6/9	.3		
	SS	M		2/1/1	.3		
10	SS	M		9/6/27	.3		
	SS	W	-3" wet seam	17/32/37	.3		
	SS	M	Brown silty CLAY w/gypsum crystals	7/12/18	.3		
15	SS	M	-sand increasing (CL)	7/19/31	.4	Windshift during sampling	
	SS	M	Brown clayey silty SAND (SC)	6/6/5	.4	Background raised to .4	
	SS	W	Brown silty sandy CLAY (CL)	7/19/27	.4		
	SS	W/M	Brown sandy CLAY w/gypsum crystals (CL)	12/13/16	.4		
20							
	SS	M		7/12/19	.4		
	SS	M	Brown & gray sandy CLAY w/gypsum crystals (CL)	14/18/25	.4		
	SS	M	Gray sandy CLAY w/gypsum crystals (CL)	12/12/23	.4		
25	SS	M		12/18/24	.4		
			Brown & gray clayey SAND w/gypsum crystals (SC)				

SOIL SAMPLE TYPE
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THD CORE

MOISTURE TYPE
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-516 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/7/88 8:30 DATE/TIME END 12/7/88 12:00 DRILL CREW Flair/Monroe*/Luraschi

* Geologist

DRILLING METHOD: AUGER 0 FT TO 30.0'FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671672.4475 E 554894.5856 WATER DURING DRILLING 11'

WATER AT COMPLETION 12.5' Caved to 28 DELAYED WATER LEVEL Water @ 8' caved to 18' on 12/15/88.

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	P.I.D (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown & gray clayey SAND w/gypsum crystals (SC)	28/28/32	.4		
	SS	M	Gray sandy CLAY (CL)	16/32/45	.4		
30	SS	W		17/28/39	.4		
			Boring Terminated @ 30 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
HA = HAND AUGER
NC = ROCK CORE
TC = THIN CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-517 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/5/88 8:00 DATE/TIME END 12/5/88 10:15 DRILL CREW Flair/Monroe*/Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 30 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel/Topsoil

G.S. ELEV. Not Required BORING COORDINATES N 671522.3846 E 554868.2140 WATER DURING DRILLING 13'

WATER AT COMPLETION 11' open to 30' DELAYED WATER LEVEL Water @ 7.5' caved 21' on 12/15/88

DATE GROUTED 12/15/89 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Tan sandy SILT (SM)	4/3/3	.3		
	SS	M	Brown clayey silty SAND w/organic stains (SM)	2/3/5	.2		
	SS	M		6/15/11	.3		
5	SS	M	Tan clayey silty SAND (SM)				
	SS	M	Tan clayey sandy SILT (ML)	7/11/8	.2		
	SS	M	sand increasing	18/16/26	.6		
	SS	M		13/13/10	.4		
10	SS	M		12/16/20	.4		
	SS	M	Brown sandy CLAY w/gypsum crystals (CL)				
	SS	W		7/19/22	.2		
	SS	W	Tan clayey sandy SILT (SM)	10/23/26	.2		
15	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	15/17/24	.2		
	SS	M		14/19/23	.2		
	SS	W	wet seam 6" - 8"	12/16/26	.2		
20	SS	M		13/19/27	.2		
	SS	M		10/17/20	.2		
	SS	M		7/9/19	.2		
	SS	M	Gray sandy CLAY w/gypsum crystals (CL)	9/12/21	.2		
25	SS	M		9/13/22	.2		

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-517 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/5/88 8:00 DATE/TIME END 2/6/88 10:15 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 30 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Gravel/Topsoil

G.S. ELEV Not Required BORING COORDINATES N 671522.3846 E 554868.2140 WATER DURING DRILLING 13'

WATER AT COMPLETION open to 30' DELAYED WATER LEVEL Water @ 7.5' caved to 21' on 12/15/88 11'

DATE GROUTED 12/15/89 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
		M	Gray & tan silty CLAY w/gypsum crystals (CL)				
	SS			9/13/21	.2		
	SS	M		10/16/22	.2		
	SS	M		13/26/28	.6		
30			Boring terminated @ 30 feet				
			** Hollow Core Auger				
			NOTE: Drill and sample to 7½ feet when cathead rope broke on 12/5/88. Finish boring on 12/6/88.				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PITCHER BARREL
RC = ROCK CORE
TC = TWO CONE

B = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-518 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/6/88 12:00 DATE/TIME END 12/6/88 2:00 DRILL CREW Flair/Monroe */Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Topsoil

G.S. ELEV. Not required BORING COORDINATES N 671551.6164 E 554773.0256 WATER DURING DRILLING 13'

WATER AT COMPLETION Open 31.5' DELAYED WATER LEVEL Water @ 9' caved to 29' on 12/15/88 11.5'

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Tan sandy SILT w/2" layer of rusted trash (possible car part) (SM)	3/2/3	.8		
			Brown silty SAND (SM)				
	SS	M	Tan sandy SILT (ML)	3/6/6	.2		
5	SS	M		5/12/4	.2		
	SS	M	wet seam	2/12/16	.2		
10	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	9/13/18	.2		
	SS	W	Gray sandy SILT (SM)	12/11/16	.2		
15	SS	W	Brown silty CLAY (CL)	9/14/24	.3		
	SS	M	Gray & brown silty CLAY w/ gypsum crystals (CL)	12/24/27	.3		
20	SS	M		12/27/28	.2		
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	9/16/27	.2		
25							

SOIL SAMPLE KEY
SS - SPLIT SPOON
ST - SHELBY TUBE
PB - PITCHER BARREL
RC - ROCK CORE
TC - TRIO CONE

MOISTURE KEY
D - DRY (VERY LITTLE MOISTURE)
M - MOIST (SOME MOISTURE)
W - WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-518 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/6/88 12:00 DATE/TIME END 12/6/88 2:00 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES N 671551.6164 E 554773.0256 WATER DURING DRILLING 13'

WATER AT COMPLETION Open 31.5' DELAYED WATER LEVEL Water @ 9', caved to 29' on 12/15/88 11.5'

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty CLAY w/gypsum (CL)	11/17/28	.2		
	SS	M		12/12/17	.2		
-30		M					
	SS			11/15/19	.2		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
-35							
-40							
-45							
-50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-519 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/7/88 2:30 DATE/TIME END 12/7/88 4:00 DRILL CREW Elair/Monroe*/Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671692.2829 E 554797.0891 WATER DURING DRILLING 10.5'

WATER AT COMPLETION 12.5' Caved 28.0 DELAYED WATER LEVEL Water @ 8', caved to 20' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Tan sandy SILT (SM)	12/4/6	.3		
	SS	M		9/4/2	.4		
5			Brown silty SAND w/organics (SM)				
	SS	M	Tan silty SAND (SM)	6/8/1	.3		
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	12/10/14	.3		
10							
	SS	M	Tan SAND (SP)	15/23/28	.3		
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	9/14/21	.4		
15							
	SS	W	Tan silty SAND (SM)	4/6/7	.1		
	SS	M	Brown silty CLAY w/gypsum (CL)	12/17/22	.4		
20							
	SS	M		15/19/32	.3		
	SS	M	Gray silty CLAY w/gypsum crystals (CL)	16/21/30	.3		
25							

SAMPLE TYPE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TWO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-519 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/7/88 2:30 DATE/TIME END 12/7/88 4:00 DRILL CREW Flair/Monroe*/Luraschi

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55 * Geologist

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671692.2829 E 554797.0891 WATER DURING DRILLING 10.5'

WATER AT COMPLETION Caved 28.0 DELAYED WATER LEVEL Water @ 8', caved to 20' on 12/15/88 12.5'

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Gray silty CLAY w/gypsum crystals (CL)	17/27/32	.3		
	SS	M	Gray silty SAND (SM)	16/33/32	.3		
30	SS	W	Brown silty SAND (SM)	14/32/42	.3		
			Boring terminated @ 31.5 Feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PITCHER BARREL
RC = ROCK CORE
TC = TWO CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 6DC-520 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/16/88 2:00 DATE/TIME END 12/18/88 9:00 DRILL CREW Flair, Monroe*, Luraschi

DENNISON 0 FT TO 7.5 FT. * Geologist

DRILLING METHOD: AUGER 7.5 FT TO 20 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671598.3980 E 554833.6964 WATER DURING DRILLING N/A

WATER AT COMPLETION N/A DELAYED WATER LEVEL Water within 2 feet of surface on 12/20/ Water added to boring during Dennison Co

DATE GROUTED 12/20/88 MATERIAL(S) & QUANTITY 3 bags cement, 1/3 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	DC		Brown & tan silty clayey SAND (SC)				
	DC						Sampled to a depth of about 5 feet on 12/16/88. Finished boring on 12/18/88
5	DC		Brown silty SAND w/landfill material				
10			Dennison Refusal @ 13.0 feet				
15							
20			Dennison Refusal @ 20.0 feet				
			Boring terminated at 20.0 feet				
25			** Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THD CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-521 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/9/88 8:45 DATE/TIME END 12/9/88 11:30 DRILL CREW Flair/Monroe */Lurasch.. * Geologist

DRILLING METHOD: AUGER 0 FT TO 30 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671885.2025 E 555200.1747 WATER DURING DRILLING 9'

WATER AT COMPLETION Open 30.0' 11' DELAYED WATER LEVEL Water @ 9', caved to 26' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Gravel surface cover Tan silty SAND w/gravel (SM)	7/11/10	.3		
	SS	M		6/7/8	.2		
	SS	M		7/10/11	3.0		
5	SS	M	Brown silty sandy CLAY w/gypsum crystals (CL)	6/8/8	.2		
	SS	M		5/28/29	.2		
	SS	M/W	Tan silty clayey SAND (SC) wet seam 6"	36/31/33=5"	.2		
10	SS	M/W	3" wet seam	41/18/13	.2		
	SS	W	clay increasing	9/16/29	.2		
	SS	W/M		14/21/23	.2		
15	SS	M		10/14/16	.2		
	SS	W/M	Tan sandy CLAY (CL)	6/6/7	.2		
	SS	M	Brown & tan sandy CLAY w/gypsum crystals (CL)	10/16/16	.4		
20	SS	M		12/18/21	.4		
	SS	M	Brown & gray sandy CLAY w/gypsum crystals (SM)	8/22/26	1.4		
	SS	M	Gray silty CLAY w/gypsum crystals (CL)	10/15/19	1.6		
25	SS	W	Gray sandy CLAY (CL)	15/16/26	1.4		
				18/21/26	1.6		

SOIL SOURCE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-521 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/9/88 8:45 DATE/TIME END 12/9/88 11:30 DRILL CREW Flair/Monroe */Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 30.0 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671885.2025 E 555200.1747 WATER DURING DRILLING 9'

WATER AT COMPLETION open 30.0' 11' DELAYED WATER LEVEL Water @ 9', caved to 26' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Gray sandy CLAY (CL)				
	SS	M	Tan & gray clayey SAND (SC)	15/16/21	1.4		
	SS	M	Tan & gray clayey SAND (SC)	15/21/27	1.6		
	SS	M		17/21/26	1.4		
30			Boring terminated @ 30. feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
DC = DRIVE CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-522 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/9/88 1:30 DATE/TIME END 12/9/88 4:00 DRILL CREW Flair/Monroe*/Luraschi

* Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671757.4424 E 555172.2342 WATER DURING DRILLING 12.5'

WATER AT COMPLETION 13' Caved 27.5' DELAYED WATER LEVEL Water @ 9.5', caved to 24' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown CLAY w/gravel (CL)	10/11/10	.3		
			Brown & tan silty clayey SAND (SC)				
	SS	M		5/9/12	.2		
5							
	SS	M	iron staining	4/3/4	2.8		
	SS	M		4/4/4	1.6		
10							
	SS	M	Brown clayey SAND w/gypsum crystals (SC)	37/25/18	1.4		
	SS	W	6" wet seam	9/20/38	1.4		
15			Brown sandy CLAY (CL)				
	SS	M		4/5/6	.9		
	SS	M		8/7/9	1.0		
20							
	SS	W		7/11/21	1.0		
			Brown silty SAND (SM)				
	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	18/31/21	1.0		
25							

SAMPLE TYPE
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-522 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/9/88 1:30 DATE/TIME END 12/9/88 4:00 DRILL CREW Flair/Monroe*/Luraschi

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671757.4424 E 555172.2342 WATER DURING DRILLING 12.5'

WATER AT COMPLETION 13.0' Caved 27.5' DELAYED WATER LEVEL Water @ 9.5', caved to 24' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty CLAY w/gypsum cyrstals (CL)	14/16/24	1.0		
			Gray sandy CLAY w/gypsum (CL)				
	SS	M					
		W/M	- 6" wet seam/gypsum increasing	15/19/52	1.0		
30							
	SS	W	Gray silty SAND (SM)	47/53=5"	1.0		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-523 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/10/88 9:00 DATE/TIME END 12/10/88 1:30 DRILL CREW Flair/Monroe*/Lurasch.
* Geologist

DRILLING METHOD: AUGER 0 FT TO 30 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671793.8794 E 555029.4085 WATER DURING DRILLING 13'
13.5'

WATER AT COMPLETION open to 30' DELAYED WATER LEVEL Water @ 7.5' caved to 28' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	5" Gravel	8/6/4	14		
			Tan clayey silty SAND (SC)				
	SS	M	Clay decreasing	8/11/9	32		
	SS	M		8/7/7	34		
5							
	SS	M	Brown silty SAND (SM) 2" layer of trash	1/1/2	240		
	SS	M	4" Landfill material	1/1/1	146		
	SS	M	Landfill material	1/2/3	152		
10	SS	M		3/4/15	200		
			Brown silty CLAY w/gypsum crystals (CL)				
	SS	M	Tan silty SAND (SM)	20/28/30	2.2		
	SS	M	Brown silty CLAY w/gypsum (CL)	20/21/33	1.8		
		M/W					
15	SS		Tan clayey SAND (SC)	15/70/32			
	SS	M		17/42/39	.9		
			Tan silty SAND (SM)				
	SS	M	Tan sandy clayey SILT (ML)	17/33/29	1.4		
	SS	W	-Sand increasing	16/30/34	1.6		
20							
	SS	M		15/20/24	1.6		
	SS	M	Brown silty CLAY w/gypsum cyrstals (CL)	11/29/30	1.8		
	SS	M/W		23/21/30	1.8		
25	SS	W		33/42/25=2"	2.8		

SAMPLE TYPE
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
DC = DUAL CORE

MOISTURE
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-523 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/10/88 9:00 DATE/TIME END 12/10/88 1:30 DRILL CREW Flair/Monroe*/Luraschi *Engineer

DRILLING METHOD: AUGER 0 FT TO 30.0 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671793.8794 E 555029.4085 WATER DURING DRILLING 13'

WATER AT COMPLETION 13.5' open to 30' DELAYED WATER LEVEL Water @ 7.5' caved to 28' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	W	Brown silty CLAY w/gypsum (CL)	12/8/20	1.6		
	SS	W	Gray clayey SAND (SC)	30/36/34@5"	.9		
	SS	W		34/38/45@4"	1.0		
30			Boring terminated @ 30 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON D = DRY (VERY LITTLE MOISTURE)
ST = SHELBY TUBE M = MOIST (SOME MOISTURE)
PS = PITCHER SAMPLE W = WET (SATURATED)
RC = ROCK CORE
TC = TRIO CONE

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-524 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/11/88 10:00 DATE/TIME END 12/11/88 1:30 DRILL CREW Flair/Monroe*/Luraschi *Engineer

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671926.9614 E 555028.1419 WATER DURING DRILLING 13' 13.5'

WATER AT COMPLETION caved to 26 DELAYED WATER LEVEL Water @ 11' caved to 26' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	8" Gravel Tan silty SAND w/gravel (SM)	9/12/17	.1		
	SS	M	Brown & tan silty SAND w/gravel (SM)	12/14/5	.1		
5	SS	M	Tan silty SAND (SM) Trash encountered (nylon rope)	4/2/2	.1		
	SS	M		14/17/14	.1		
10	SS	M	Brown silty CLAY w/gypsum cyrstals (CL)	4/7/40	.1		
	SS	M	Brown silty SAND (SM)	63/37=5"	6.0		
15				3" Spoon for Extra Sample			
	SS	W/M	Tan clayey SAND (SC)	17/30/34	.1		
	SS	W/M		50/50	.1		
20	SS	M		53/24/23	.1		
			Brown sandy CLAY (CL)				
	SS	M	Brown & gray SILT w/gypsum crystals (ML)	14/24/17	.1		
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PISTON BARREL
RC = ROCK CORE
TC = TWO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-524 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/11/88 10:00 DATE/TIME END 12/11/88 1:30 DRILL CREW Flair/Monroe*/Luraschi

*Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671926.9614 E 555028.1419 WATER DURING DRILLING 13'

WATER AT COMPLETION 13.5' Caved 26' DELAYED WATER LEVEL Water @ 11' caved to 26' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 Bags Cement / 1 bag Bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	10/11/15	.1		
	SS	M		6/8/14	.1		
30							
	SS	M		6/9/11	.1		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
HC = HOLLOW CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 6DC-525 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/20/88 9:30 DATE/TIME END 12/20/88 2:00 DRILL CREW Flair,Monroe*, Lurasch

DENNISON 0 FT. TO 6.5 FT. * Geologist

DRILLING METHOD: AUGER 6.5 FT TO 30.0 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671837.9061 E 555132.0207 WATER DURING DRILLING N/A

WATER AT COMPLETION N/A DELAYED WATER LEVEL Water within 2 feet of surface on 12/21 Water added to boring during Dennison C

DATE GROUTED 12/21/88 MATERIAL(S) & QUANTITY 6 bags cement, 2/3 bags bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Brown silty sandy CLAY w/gravel (CL)				
	DC		Tan silty SAND (SM)				
5	DC						
	DC		Brown sandy CLAY w/gypsum crystals (CL)				
	SS		Gray silty SAND (SM)	12/36/51=4½"			
10	SS		Tan silty SAND (SM)	48/52=3"			
			Brown clayey SAND w/gypsum crystals (SC)	14/19/17			
	SS		Tan silty SAND (SM)				
15	SS			17/21/25			
			Brown clayey SAND (SC)				
	SS			9/5/7			
			Brown sandy CLAY (CL)				
20	SS		Brown & tan silty CLAY w/gypsum crystals (CL)	9/20/19			
	SS			12/14/18			
			Gray clayey SILT (ML)				
25	SS		Gray silty CLAY w/gypsum crystals (CL)	8/12/17			

SOIL SAMPLE KEY
SS - SPLIT SPOON
ST - SHELBY TUBE
PB - PITCHER BARREL
RC - ROCK CORE
DC - DRIVE CORE

MOISTURE KEY
D - DRY (VERY LITTLE MOISTURE)
M - MOIST (SOME MOISTURE)
W - WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 6DC-525 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/20/88 9:30 DATE/TIME END 12/20/88 2:00 DRILL CREW Flair, Monroe*, Luraschi

DRILLING METHOD: AUGER 6.5 FT TO 30.0 FT, ROTARY - FT TO - FT DRILL RIG CME55

DENNISON 2 FT TO 6.5 FT. * Geologist

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 671837.9061 E 555132.0207 WATER DURING DRILLING N/A

WATER AT COMPLETION N/A DELAYED WATER LEVEL Water within 2 feet of surface on 12/21/88 Water added to boring during Dennison Core

DATE GROUTED 12/21/88 MATERIAL(S) & QUANTITY 6 bags cement, 2/3 bags bentonite

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Gray sandy CLAY w/gypsum crystals				
	SS		(CL)	19/23/29			
	SS			27/63/10=2"			
-30			Boring terminated at 30.0 feet				
			** Hollow Core Auger				
-35							
-40							
-45							
-50							

SOIL SAMPLE KEY
SS. = SPLIT SPOON
ST = SHELBY TUBE
PR = PITCHER BARREL
RC = ROCK CORE
DC = DIAMOND CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-526 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/12/88 7:30 DATE/TIME END 12/12/88 10:00 DRILL CREW Flair/Monroe*/Luraschi
* Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Topsoil & Grave

G.S. ELEV. Not Required BORING COORDINATES N 672166.4416 E 555029.3602 WATER DURING DRILLING 13'
9'

WATER AT COMPLETION Caved 29.5 DELAYED WATER LEVEL Water @ 7', caved to 20' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 Bags Cement / 1 Bag Bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown & tan silty SAND (SM)	3/3/5	2.3		
	SS	M		6/10/10	17.2		
5	SS	M	Tan silty SAND (SM)	5/40/35=5"	3.6		
	SS	M	Tan & brown silty SAND (SM)	14/20/24	.6		
10	SS	M		25/43/3=5"	.4		
	SS	W	Tan SAND (SP)	40/60=3"	.4		
15	SS	W	Brown silty CLAY w/gypsum crystals (CL)	13/14/29	.6		
	SS	M		8/20/50	1.4		
20	SS	W/M	Gray sandy CLAY w/gypsum crystals (CL)	25/46/31=5"	1.8		
	SS	W	Gray silty SAND w/gypsum crystals (SM)	17/60/23=2"	.6		
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-526 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/12/88 7:30 DATE/TIME END 12/12/88 10:00 DRILL CREW Flair/Monroe*/Luraschi

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55 *Geologist

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Topsoil & gravel

G.S. ELEV. Not Required BORING COORDINATES N 672166.4416 E 555029.3602 WATER DURING DRILLING 13'

WATER AT COMPLETION Caved 29.5 DELAYED WATER LEVEL Water @ 7', caved to 20' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty SAND (SM)	70/30=1"	.4		
		M	Brown & tan sandy CLAY w/gypsum crystals (CL)	17/21/22	.6		
	SS						
30	SS	M	Tan & gray clayey SAND (SC)	25/40/35=3"	.4		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
HC = HOLLOW CORE
TC = TRIB CONE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-527 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/12/88 11:00 DATE/TIME END 12/12/88 1:30 DRILL CREW Flair/Monroe */Luraschi

* Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672063.7490 E 555005.8622 WATER DURING DRILLING 10'

WATER AT COMPLETION 9.5' Open 31.5' DELAYED WATER LEVEL Water @ 7.5', caved to 21' on 12/15/8

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	8" Gravel	3/5/7	.4		
			Brown silty SAND w/layers of landfill material (SM)				
	SS	M		1/10/21	.4		
5							
	SS	M	Brown silty SAND (SM)	10/30/45	.4		
	SS	M	Tan silty SAND (SM)	28/72	11		
10							
	SS	M	Gray clayey SAND (SC)	10/17/24	4.6		
	SS	M		10/11/14	3.4		
15							
	SS	W	Gray silty SAND w/gypsum crystals (SM)	12/30/39	4.0		
	SS	M	Brown & gray silty CLAY (CL)	15/16/29	3.2		
20							
	SS	M	Brown clayey SAND (SC)		3.6		
	SS	M	Gray clayey SILT (ML)	12/17/35	3.2		
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TWO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-527 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/12/88 11:00 DATE/TIME END 12/12/88 1:30 DRILL CREW Flair/Monroe*/Luraschi

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55 * Geologist

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672063.7490 E 555005.8622 WATER DURING DRILLING 10'

WATER AT COMPLETION 9.5' Open 31.5' DELAYED WATER LEVEL Water @ 7.5', caved to 21' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Gray clayey SILT (ML)	18/50/31=2"	4.2		
	SS	W	Brown & tan silty SAND (SM)	30/60/10=½"	4.0		
30	SS			66/34=2"	4.0		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON D = DRY (VERY LITTLE MOISTURE)
ST = SHELBY TUBE M = MOIST (SOME MOISTURE)
PB = PITCHER BARREL W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-528 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/12/88 2:50 DATE/TIME END 12/12/88 4:00 DRILL CREW Flair/Monroe*/Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672100.2565 E 554809.0250 WATER DURING DRILLING 8'

WATER AT COMPLETION 9.0' Caved 24.5' DELAYED WATER LEVEL Water @ 8.5', caved to 10' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	4" Gravel	5/10/8	3.0		
			Brown silty SAND (SM)				
	SS	M	Tan silty SAND (SM)	5/5/6	3.0		
5	SS	M		15/26/31	3.0		
	SS	W		14/24/39	3.0		
10	SS	W	Brown silty SAND w/gypsum crystals (SM)	11/21/25	4.0		
	SS	W	Tan silty SAND w/menthol smell (SM)	5/13/19	7.0		
15	SS	W		82/18=2"	10		
	SS	M		15/17/32	40		
20	SS	W	Brown silty SAND (SM)	40/60=4	35		
	SS	M	Brown & gray sandy CLAY w/gypsum (CL)	25/16/14	60		
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-528 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/12/88 2:50 DATE/TIME END 12/12/88 4:00 DRILL CREW Flair/Monroe*/Luraschi
* Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672100.2565 E 554809.0250 WATER DURING DRILLING 8'

WATER AT COMPLETION 9.0' Caved 24.5' DELAYED WATER LEVEL Water @ 8.5', caved to 10' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag benonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	W/M	Brown silty SAND (SM)	15/17/21	55	--	
			Gray sandy CLAY w/gypsum crystals (CL)				
	SS	W		21/68/11=½'	80		* See Note Below
30	SS	W		52/48=5"	40		
			Boring terminated @ 31.5 Feet				
			*No sample taken for PSI, all of sample given to EPS for analytical purposes.				
35			** Hollow Core Auger				
40							
45							
50							

TS = THIN WALL SHELBY TUBE
SS = SPLIT SPOON
PS = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE
B = DRY AUGER (LITTLE RESISTANCE)
W = WET (ESTIMATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-529 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/11/88 2:30 DATE/TIME END 12/11/88 4:30 DRILL CREW Flair/Monroe*/Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME 55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672211.7698 E 554843.1721 WATER DURING DRILLING 8'

WATER AT COMPLETION 9.0' Caved 29.0 DELAYED WATER LEVEL Water @ 8', caved to 29' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	6" Gravel	7/7/7	.3		
			Brown clayey SAND (SC)				
	SS	M	Tan sandy SILT (ML)	8/9/8	.2		
5	SS	M	Sand decreasing	5/5/8	.2		
	SS	W	Brown silty SAND (SM)	6/20/35	.2		
10	SS	W	Tan silty SAND (SM)	13/24/37	.3		
	SS	W		25/48/27=3"	.2		
15	SS	W		100=6"	.2		
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	18/28/36	.4		
20	SS	W	Brown silty SAND (SM)	15/30/40	.9		
	SS	M	Gray silty SAND (SM)	7/7/9	12.8		
25							

SOIL SAMPLE KEY

SS - SPLIT SPOON
ST - SHELBY TUBE
PB - PITCHER BARREL
RC - ROCK CORE
DC - DUAL CORE

MOISTURE KEY

D - DRY (VERY LITTLE MOISTURE)
M - MOIST (SOME MOISTURE)
W - WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO 8A25-529 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/11/88 2:30 DATE/TIME END 12/11/88 4:30 DRILL CREW Flair/Monroe*/Luraschi * Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Gravel

G.S. ELEV Not Required BORING COORDINATES N 672211.7698 E 554843.1721 WATER DURING DRILLING 8'

WATER AT COMPLETION 9.0' Caved 29.0 DELAYED WATER LEVEL Water @ 8', caved to 29' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Gray silty SAND (SM)	20/25/21	4.0		
			Brown & tan silty CLAY w/gypsum (CL)				
	SS	W	Tan silty SAND (SM)	50/50=4"	4.5		
30	SS			24/26/31	3.0		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON — D = DRY (VERY LITTLE MOISTURE)

ST = SHELBY TUBE — M = MOIST (SOME MOISTURE)

RB = RITCHER BARREL — W = WET (SATURATED)

HC = HOLE CORE

TC = THIN CORE

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 6DC-530 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/19/88 8:30 DATE/TIME END 12/19/88 6:30 DRILL CREW Flair, Monroe*, Lurasch
* Geologist

DRILLING METHOD: AUGER 6.5 FT TO 31.5 FT, ROTARY _ FT TO _ FT DRILL RIG CME55
DENNISON 0 FT TO 6.5 FT.

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672145.6372 E 554924.1398 WATER DURING DRILLING

WATER AT COMPLETION N/A DELAYED WATER LEVEL Water within 2 feet of surface on 12/
Water added to boring during Dennison

DATE GROUTED 12/20/88 MATERIAL(S) & QUANTITY 6 bags cement, 2/3 bag bentonite powde

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Dennison Refusal @ 3 inches				
			Brown clayey SAND (SC)				
	DC						
5	DC						
10			Dennison Refusal @ 10.0 feet				
15	SS		Dennison Refusal @ 15.0 feet	35/60/5=½"			
	SS		Brown clayey SAND w/cemented sand layers and clay seams (SC)	13/60/27=2'			
20	SS		Brown silty CLAY w/gypsum cyrstals (CL)	24/40/36=3'			
			Brown silty SAND (SM)				
	SS		Tan & gray clayey SAND (SC)	27/50/23=3'			
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRI CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 6DC-530 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/19/88 8:30 DATE/TIME END 12/19/88 6:30 DRILL CREW Flair, Monroe*, Luraschi

DENNISON 0 FT. TO 6.5 FT * Geologist

DRILLING METHOD: AUGER 6.5 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES N 672145.6372 E 554924.1398 WATER DURING DRILLING N/A

WATER AT COMPLETION N/A DELAYED WATER LEVEL Water within 2 feet of surface on 12/20/8 Water added to boring during Dennison Co

DATE GROUTED 12/20/88 MATERIAL(S) & QUANTITY 6 bags cement, 2/3 bags bentonite powder

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS		Tan & gray clayey SAND (SC)	24/36/40			
			Gray clayey SILT (ML)				
	SS		Brown clayey SAND w/gypsum crystals (SC)	25/26/35			
30	SS		Gray sandy CLAY (CL)	18/87/27			
			Boring terminated at 31.5 feet				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIA CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-531 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/13/88 12:45 DATE/TIME END 12/13/88 3:00 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY _ FT TO _ FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES N 672391.1435 E 554915.6843 WATER DURING DRILLING 8.5'

WATER AT COMPLETION Open 31.5' 8.0' DELAYED WATER LEVEL Water @ 9', caved to 29' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty SAND (SM)	1/3/5	.4		
			Tan silty SAND (SM)				
	SS	M		12/13/13	.4		
5							
	SS	M		18/24/41	.4		
	SS	M	Gray SAND (SP)	14/16/16	.4		
10			Gray & tan silty CLAY w/gypsum (CL)				
	SS	W	Gray SAND 8" iron stained sand (SP)	11/21/19	.4		
	SS	M	Gray sandy CLAY w/iron stains (CL)	3/4/14	.4		
15							
	SS	W/M	Gray silty SAND (SM)	70/30=1"	.4		
			Brown silty CLAY w/gypsum (CL)				
	SS	W/M	Tan silty SAND (SM)	50/32/18=3"	.4		
20							
	SS	W		11/24/40	.4		
	SS	W		30/32/68	.4		
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TWO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-531 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/13/88 12:45 DATE/TIME END 12/13/88 3:00 DRILL CREW Flair/Monroe*/Luraschi
* Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES N 672391.1435 E 554915.6843 WATER DURING DRILLING 8.5'

WATER AT COMPLETION 8.0' Open 31.5' DELAYED WATER LEVEL Water @ 9', caved to 29' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	W	Brown & gray silty SAND (SM)	80/20=¼"	.4		
	SS	M	Gray silty SAND (SM)	49/51=3"	.5		
-30	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	60/21/10=1"	.4		
			Boring terminated @ 31.5 feet ** Hollow Core Auger				
-35							
-40							
-45							
-50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PA = PITCHER BARREL
RC = ROCK CORE
TC = TUBE CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (GROUNDWATER)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-532 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/13/88 8:45 DATE/TIME END 12/13/88 11:15 DRILL CREW Flair/Monroe*/Lurasch
* Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES N 672163.8984 E 554676.7649 WATER DURING DRILLING 8'

WATER AT COMPLETION Caved 26' 8.0' DELAYED WATER LEVEL Water @ 9.5', caved to 10' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown & tan SAND (Apparent Fill) (SP)	11/10/8	.4		
	SS	M	Brown clayey SAND (SC)	5/7/6	.4		
5	SS	M	Tan silty SAND (SM)	16/17/18	.4		
	SS	W		17/27/24	.6		
10	SS	W	Brown & tan clayey SAND (SC)		140		
	SS	W	Discolored contaminated soil (drove extra spoon for E.P.S. Samples) Tan SAND w/odor (SP)	14/16/14 27/36/37	400.		
15	SS	W	Tan & gray sandy CLAY w/odor (CL)	27/73	500		75-100 ppm from open bore hole
	SS	M/W	Brown silty CLAY w/gypsum crystals (CL)	14/14/20	150		
20	SS	M	Brown silty clayey SAND (SC)	30/50/20=2"	130		No sample
	SS	W	Gray & brown silty CLAY w/odor & sand seams (CL)	76/24=5"	100		
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TWO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. 8A25-532 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/13/88 8:45 DATE/TIME END 12/13/88 11:15 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 31.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES N 672163.8984 E 554676.7649 WATER DURING DRILLING 8'

WATER AT COMPLETION 8' caved 26.5 DELAYED WATER LEVEL Water @ 9.5', caved to 10' on 12/15/88

DATE GROUTED 12/15/88 MATERIAL(S) & QUANTITY 6 bags cement / 1 bag bentonite

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Gray silty CLAY w/gypsum crystals (CL)	8/17/27	100		
	SS	M	Tan & gray silty SAND (SM)	24/17/27	190		
30	SS	M		22/18/31	110		
			Boring terminated @ 31.5 feet				
			** Hollow Core Auger				
35							
40							
45							
50							

SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PITCHER SAMPLE
RC = ROCK CORE
TC = THIN CORE

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW1 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/29/88 10:12 DATE/TIME END 11/29/88 2:00 DRILL CREW Flair/Luraschi/Monroe* * Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA* SURFACE COVER Gravel

TOC ELEV. 4087.66 BORING COORDINATES N 672256 E 555046 WATER DURING DRILLING 6.5'

WATER AT COMPLETION 9' DELAYED WATER LEVEL Monitor well installed in boring Water @ 10.7' below T.O.C on 2/11/89 8:

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Tan & brown sandy SILT w/gravel @ surface (ML)	5/5/7	0		
	SS	D	Tan clayey SILT w/sand seams (ML)	3/1/WH	.1		
5	SS	M/W	Dark gray landfill material (i.e. paper, trash, green sludge)	WH/1/1	.1		
	SS	M	Possible ash layer	14/50/35	340		PID 3 ppm bore hole
10	SS	W	Tan silty SAND (SM)	32/33/34	.1		
			Brown silty CLAY w/gypsum crystals (CL)				
15	SS	W	Tan silty SAND (SM-SP)	37/17/24	.4		
			Light gray SAND (SP)				
20	SS	M	Tan clayey SAND (SC)	19/30/26	.1		
			Boring terminated @ 21.5'				
			* Hollow Core Auger				
25							

SAMPLE TYPE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW2 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/29/88 2:45 DATE/TIME END 11/29/88 4:30 DRILL CREW Flair/Luraschi/Monroe*
*Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME 55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA* SURFACE COVER Gravel

TOC ELEV. 4089.00 BORING COORDINATES N 671943 E 554584 WATER DURING DRILLING Wet Sean 4.5

WATER AT COMPLETION 8' DELAYED WATER LEVEL Water @ 11.4' below T.O.C. on 2/11/89 @ 1 Monitor Well installed in bore hole

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Tan sandy SILT w/surface gravel (Possible Fill) (ML)	7/12/13	.1		
	SS	M		9/4/4	.1		
5	SS	M	Brown clayey SILT w/gypsum crystals (ML)	8/12/14	.1		
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	12/17/19	0		.2 PID Down Hole
10	SS	W		30/60/10=1¼"	.1		
15	SS	W	Gypsum increasing		4.0		
				4/6/8			
20	SS	W		6/9/18	220		
			Boring terminated at 21.5 feet				
25			* Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO MW3 PROJECT NO. 342-65219 PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/30/88 11:30 DATE/TIME END 11/30/88 1:00 DRILL CREW Flair/Luraschi/Monro *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

TOC ELEV. 4084.21 BORING COORDINATES N 671537 E 554540 WATER DURING DRILLING 6'

WATER AT COMPLETION 9' DELAYED WATER LEVEL Water @ 7.7' below TOC on 2/11/89 @ 10: Monitor well installed in boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Brown clayey SAND w/organics & gypsum (SC)	5/3/2	.4	0	1 down hole
	SS	W	Light gray sandy SILT (ML)	3/7/16	.4		
5	SS	W	Brown silty SAND w/gypsum (SM)	7/7/13	.4	0	.6 down hole
	SS	W	Brown sandy CLAY w/gypsum (CL)	8/9/12	.4		
10	SS	W		5/4/3	.4		
15	SS	W	Brown silty SAND w/gypsum (SM)	6/8/8	.4		
20	SS	W	gypsum crystals increasing	10/27/32	.4		
			Boring terminated at 21.5'				
25			** Hollow Core Auger				

SOIL SAMPLE KEY

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE KEY

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW3A PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/30/88 10:45 DATE/TIME END 11/30/88 11:00 DRILL CREW Flair/Luraschi/Monroe*
*Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None

DATE GROUTED N/A MATERIAL(S) & QUANTITY Backfilled w/cuttings

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Fill Material				
5			Trash encountered @ 4'				
			No Samples Taken ** Solid Stem Auger				
10							
15							
20							
25							

SOIL SAMPLE KEY

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THD CORE

MOISTURE KEY

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 2:00 DATE/TIME END 12/1/88 4:10 DRILL CREW Flair/Monroe*/Lurasc.
* Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./ HCA** SURFACE COVER Gravel

TOC ELEV. 4081.31 BORING COORDINATES N 670903 E 554854 WATER DURING DRILLING 4'
Water @ 7.2' below TOC on 2/11/89 @ 9:5(

WATER AT COMPLETION 7.5' DELAYED WATER LEVEL Monitor well installed in boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty SAND (SM)	3/3/3	.2		
	SS	M/W	Tan silty SAND (SM)	15/12/5	.2		
5	SS	W	Brown silty clayey SAND (SC)	5/7/13	.2		
	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	7/10/17	.2		6 Down hole
10	SS	M	Tan clayey SAND w/silt seams & gypsum crystals (SC)	16/21/35	180		
15	SS	M	Light gray dense SAND w/iron stains (SP)	16/34/50	145		
20	SS		Fewer iron stains	28/53/19	65		
			Boring terminated at 21.5 feet ** Hollow Core Auger				
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PITCHER BARREL
RC = ROCK CORE
HC = HOLLOW CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4A PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 10:00 12/1/88 DATE/TIME END 10:30 12/1/88 DRILL CREW Flair/Monroe*/Luraschi

* Geologist

DRILLING METHOD: AUGER 0 FT TO 6 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None Backfilled with cuttings

DATE GROUTED N/A MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				Background
							.4
							.5
5							
			Boring terminated at 5 feet Terminated because of landfill material encountered No samples taken				
10			** Solid Stem Auger				
15							
20							
25							

SOIL SAMPLE KEY

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE KEY

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4B PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Ba

DATE/TIME START 11:00 12/1/88 DATE/TIME END 11:30 12/1/88 DRILL CREW Flair/Monroe*/Luraschi
* Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None Backfilled with cuttings

DATE GROUTED N/A MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				
5			Boring terminated at 5 feet Pilot hole for trash exploration ** Solid Stem Auger				
10							
15							
20							
25							

SAMPLE TYPE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
DC = DUAL CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4C PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 11:30 DATE/TIME END 12/1/88 12:00 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None, Backfilled with cuttings

DATE GROUTED N/A MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				
5			Boring terminated at 5 feet Pilot hole for trash exploration ** Solid Stem Auger				
10							
15							
20							
25							

SOIL SAMPLE KEY

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE KEY

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4D PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 12:30 DATE/TIME END 12/1/88 1:00 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING 5'

WATER AT COMPLETION N/A DELAYED WATER LEVEL None, Backfilled with cuttings

DATE GROUTED - MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				
5			Boring terminated at 5 feet Pilot hole for trash exploration ** Solid Stem Auger				
10							
15							
20							
25							

SOIL SAMPLE KEY

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TUB CORE

MOISTURE KEY

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW5 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 7:50 DATE/TIME END 12/1/88 10:00 DRILL CREW Flair/Monroe */Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Sand

TOC ELEV. 4081.54 BORING COORDINATES N 672981 E 556061 WATER DURING DRILLING 4'

WATER AT COMPLETION 4.5' DELAYED WATER LEVEL Water @ 5.4' below TOC on 2/11/89 @ 7:4 Monitor well installed in boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty SAND (SM)	2/2/3	.2		
	SS	W	Light gray & tan clayey SAND w/ gypsum crystals (SC)	3/4/12	.2		
5	SS	W		12/18/26	.2		
	SS	W	Tan SAND w/gypsum crystals (SP)	16/23/32	.2		
10	SS	W		21/28/31	.2		
15	SS	M	Brown clayey SAND w/gypsum crystals (SC)	12/12/80	.2		
20	SS	W	Tan SAND (SP)	15/30/55	.2		
			Boring terminated at 21.5 feet				
25			** Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW-6 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 9:00 1/13/89 DATE/TIME END 10:30 1/13/89 DRILL CREW Flair, Monroe*, Arthur *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Topsoil

TOC ELEV. 4083.50 BORING COORDINATES N 671752 E 555313 WATER DURING DRILLING 8'

WATER AT COMPLETION 7.5' DELAYED WATER LEVEL Water @ 8.6' below TOC on 2/11/89 @ 8:45 Monitor Well Installed in Boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Materials List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Tan silty SAND (SM)	4/5/7	0		
			Brown clayey SAND (SC)				
	SS	M	Wood chips	4/5/4	0		
5	SS	M/W	Tan SAND w/landfill material & rust colored stains (SP)	4/2/2	0		
	SS	W/M	Tan silty SAND (SM)	5/7/12	16		
10	SS	M	Brown clayey SAND (SC)	10/10/11	1.6		
15	SS	M	Brown & gray sandy CLAY (CL)	7/11/14	.2		
20	SS	W/M	Gray clayey silty SAND (SM)	17/27/56	.2		
25			Boring terminated at 21.5 feet ** Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW7 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 3:00 1/13/89 DATE/TIME END 4:30 1/13/89 DRILL CREW Flair, Monroe*, Arthur *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

TOC ELEV. 4088.24'. BORING COORDINATES N 672448 E 554755 WATER DURING DRILLING 10.5'

WATER AT COMPLETION 10.5' DELAYED WATER LEVEL Water @ 10.6 feet below TOC on 2/11/89

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Materials List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	3" gravel at surface Tan sandy SILT (ML)	4/8/8	0.2		
	SS	M	Brown silty sandy CLAY w/gypsum (CL)	5/6/9	0.2		
5	SS	M	Tan silty SAND (SM)	5/18/31	0.2		
	SS	M	Brown silty clayey SAND (SC)	12/18/29	0.2		
10	SS	M/W		8/13/25	0.2		
15	SS	M	Brown sandy CLAY w/gypsum (CL)	10/45/45=3¾"	0.2		
20	SS	M	Gray clayey silty SAND (SM-SC)	6/8/12	0.2		
25			Boring terminated at 21.5 feet ** Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PISTON SAMPLE
RC = ROCK CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

SOIL BORINGS

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Fax: 703-471-4180

BORING NUMBER SB10-01

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/15/06 COMPLETED 5/15/06
GROUND ELEVATION ____ HOLE SIZE 2.5"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 3.0 ft
LOGGED BY B. Brodersen/S. Gillette CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES No landfill waste observed
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0		GP		Light brown, sandy GRAVEL (GS)	0.0
0.5		SP		Light beige, SAND (SP), medium grained, well sorted, loose	
1.4		SM		Brown, silty SAND (SM), moist, no clay	0.0
2					0.0
2.5		SM		Black oxide and yellow-orange precipitate (at 2.5 ft. below ground surface) ▽	
3.5		CL		Light brown whitish brown, silty CLAY (CL), plastic	0.3
4.5		SM		Whitish brown, silty SAND (SM), fine to medium grained, no recovery 5'-5.5'	0.0
5.8		SM		Reddish brown, silty SAND (SM), no clay, saturated	0.0
7.0		SC		Reddish brown, clayey SAND (SC), moist	0.0
8.0		ML		Clayey sandy SILT (ML), very wet, gypsum crystals	0.0
10.0				Bottom of hole at 10.0 feet.	0.0

HGL_BOREHOLE 1 LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-02

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/15/06 COMPLETED 5/15/06
GROUND ELEVATION ___ HOLE SIZE 2.5"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 3.0 ft
LOGGED BY B. Brodersen/S. Gillette CHECKED BY B.T. Brodersen
AT END OF DRILLING ---
NOTES No landfill waste observed
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0		GP		Light brown, sandy GRAVEL (GS)
			0.5	
1		SP		Light beige, SAND (SP), medium grained, well sorted, loose
			1.4	
2		SM		Brown, silty SAND (SM), moist, no clay
			2.5	
3		SM		Black oxide and yellow-orange precipitate (at 2.5 ft. below ground surface) ▽
			3.5	
4		CL		Light brown whitish brown, silty CLAY (CL), plastic
			4.5	
5		SM		Whitish brown, silty SAND (SM), fine to medium grained, no recovery 5'-5.5'
			5.8	
6		SM		Reddish brown, silty SAND (SM), no clay, saturated
7			7.0	
		SC		Reddish brown, clayey SAND (SC), moist
8			8.0	
		ML		Clayey sandy SILT (ML), very wet, gypsum crystals
9				
10			10.0	
				Bottom of hole at 10.0 feet.

HGL_BOREHOLE_1_LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-03

CLIENT AFCEE
PROJECT NUMBER AFC002-037-04-02-05
DATE STARTED 5/15/06 COMPLETED 5/15/06
DRILLING CONTRACTOR Bhate/ESN
DRILLING METHOD DPT
LOGGED BY B. Brodersen/S. Gillette CHECKED BY B.T. Brodersen
NOTES Landfill waste material encountered

PROJECT NAME Supplemental RFI
PROJECT LOCATION Holloman AFB LF-10
GROUND ELEVATION ____ HOLE SIZE 2.5"
GROUND WATER LEVELS:
▽ AT TIME OF DRILLING 11.0 ft
AT END OF DRILLING ---
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					No recovery, gravel - 3"	0.0
					0.5	
1			SM		Brown, silty SAND (SM), damp	0.0
2						0.0
3					Roots at 2.2 ft. below ground surface	0.0
4					Gypsum nodule (3.9 to 4.1 ft. below ground surface)	0.0
					4.2	
			SM		Reddish, silty SAND (SM), matrix with glass, vinyl, cut timber, scap metal, burnt wood, waste from 4.2'-4.7'	
5					4.7	
			SM		Reddish, silty SAND (SM)	
					5.0	
					No recovery	
6					5.6	
			SM		Waste mixed with layers of silty SAND (SM), brown to light brown silty SAND (3" intervals containing cut timber, glass, and paper)	0.0
7						0.0
8						0.0
9						0.0
10			SM		Dark gray, stained silty SAND (SM), diesel odor with cut wood	
					10.0	
					No recovery (10'-12')	0.7
11					▽	

HGL_BOREHOLE LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-03

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05

PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11						
12			SM		Gray, silty SAND (SM), sewage odor, wet	2.3
					12.5 Red, clayey silty SAND (SM), fine to coarse grained (potentially fill), damp to moist	
13			SM			0.3
14						0.0
15					15.0	
			ML		Reddish brown, sandy SILT (ML), damp with gypsum crystals in soil fractures, uniform, unstratified	0.0
16						0.0
17						0.0
18					High concentration of gypsum crystals	0.0
19						0.0
					19.8	
20			SM		20.0 Bluish-gray, silty SAND (SM), glass fragments, rounded pebbles-1/2" diameter, damp	
					Grayish brown, silty SAND (SM), wet, fine to medium grained.	
21	HGL9810-03-2002		SM			0.0
22					Reddish brown, silty SAND (SM), 2/8" gypsum crystals	
23					Light gray brown, same as above.	

HGL_BOREHOLE_1_LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-03

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05

PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
24		CH4=0.04%, O2=19.6%, CO2=0.00%, Hg=26.0, LEL: 8%			Light gray brown, same as above *(continued)* 24.0 Bottom of hole at 24.0 feet.	

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BORING NUMBER SB10-04

CLIENT AFCEE
PROJECT NUMBER AFC002-037-04-02-05
DATE STARTED 5/15/06 COMPLETED 5/15/06
DRILLING CONTRACTOR Bhate/ESN
DRILLING METHOD DPT
LOGGED BY B. Brodersen/S. Gillette CHECKED BY B.T. Brodersen
NOTES No landfill waste observed

PROJECT NAME Supplemental RFI
PROJECT LOCATION Holloman AFB LF-10
GROUND ELEVATION ____ HOLE SIZE 2"
GROUND WATER LEVELS:
▽ AT TIME OF DRILLING 9.0 ft
AT END OF DRILLING —
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0			GW		0.3 3" Gravel base	0.0
1			SM		Light brown, silty SAND (SM)	0.0
2						0.0
3					Silty SAND (SM) and clay, semi-cemented caliche layer 2.5'-2.6', medium to fine grained, varying concentrations of clay	0.
4						0.0
5						0.0
6			ML		5.5 Reddish brown, sandy SILT (ML), with gypsum nodules, friable hardpan	0.0
7					7.0	0.0
					7.3 Concrete 4", 2" pebbles, sand and silt (FILL)	
8			ML			
9	HGLSB10-04-0910				White, 3" hard caliche layer at 8.5 ft. below ground surface 9.0 ▽ Burnt timber at 8.75 ft. below ground surface	0.0
10			SM		Reddish brown, silty SAND (SM), moist to wet Brown, silty SAND (SM), wet 10.0	0.0
11			SM		Silty SAND (SM) with gravel	0.0

HGL_BOREHOLE_1_LF-10.GPJ_GINT US.GDT 6/15/07

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BORING NUMBER SB10-04

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05

PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11					Silty SAND (SM) with varying amounts of gypsum crystals, highly saturated	0.0
12			SM			0.0
13						0.0
14					Greenish-yellow fracture staining	0.0
15		CH4=0.03%, CO2=0.00%, O2=19.2%, Hg=26.0, LEL=6%			15.0	0.0
					Bottom of hole at 15.0 feet.	

HGL_BOREHOLE_LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-05

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/15/06 COMPLETED 5/15/06
GROUND ELEVATION ____ HOLE SIZE 2"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 7.5 ft
LOGGED BY B.T. Brodersen CHECKED BY B.T. Brodersen
AT END OF DRILLING ---
NOTES Landfill waste material encountered
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0						
1			SM		Light brown, SAND (SM), with some gravel and white precipitate	0.0
2					2.0	
3			SM		Waste material: Reddish yellow, cut timber, concrete 1/2" diameter, glass fragments	0.0
4					3.0 No recovery due to waste in shoe	0.0
5					5.0	
6			SM		Waste material: Green, silty SAND (SM), fill material in lenses	0.0
7						0.0
8					▽	0.0
9					Silty SAND (SM), with green coloring surrounding concrete, rubber piece, saturated	0.0
10			SM		9.0 Light gray to grayish brown silty SAND (SM)	0.0
11			SM		9.3 Brownish-red silty SAND (SM) with gypsum crystals	
			SM		10.0 Waste material: Sand, silt, clay with glass concrete porcelein, and yellow-staining	
			SM		10.6 Reddish medium brown, silty SAND (SM), fine to medium grained, moist	
					11.0	

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HGL_BOREHOLE_1 LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-05

CLIENT AFCEE **PROJECT NAME** Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 **PROJECT LOCATION** Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11						
12	HGLSB10-05-1011		SM		Whitish-brown, silty SAND (SM), no variability, hard, reddish staining, wet	0.0 0.0
13						0.0 0.0
14		CH4=2.2%, CO2=0.00%, O2=19.00%, Hg=26, LEL=44%			14.0 Bottom of hole at 14.0 feet.	0.0

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BORING NUMBER SB10-06

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/15/06 COMPLETED 5/15/06
GROUND ELEVATION ____ HOLE SIZE 2"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 11.0 ft
LOGGED BY B.T. Brodersen CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES Landfill waste material encountered
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					Very light brown, silty SAND (SM) with gravel, dry	0.0
1						0.0
2			SM			0.0
3						0.0
4					Silty SAND matrix surrounding waste material, (cardboard, paper, and burnt wood)	0.0
5					5.0	
6					No recovery	0.0
7					6.5 Dark reddish brown, silty SAND (SM) with waste material (burnt wood and glass)	0.0
8			SM			0.0
9					8.5 Silt sand CLAY (CL) with waste material (burnt wood and glass), moist	0.0
10			CL			0.0
11					11.0 ▽	

HGL BOREHOLE 1 LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-06

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05

PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11						
12	HGL-SB10-06-1112		SM		Brown to light brown, silty SAND (SM), wet	0.0
13						0.0
14		CH4=0.02%, CO2=0.0%, O2=19.6%, Hg=26.0, LEL=4%			14.0	0.0
					Bottom of hole at 14.0 feet.	

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BORING NUMBER SB10-07

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/15/06 **COMPLETED** 5/15/06
GROUND ELEVATION _____ **HOLE SIZE** 2"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING 13.0 ft
LOGGED BY B.T. Brodersen **CHECKED BY** B.T. Brodersen
AT END OF DRILLING —
NOTES Landfill waste material encountered
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0						
1			SM		Whitish-brown, silty SAND (SM) with gravel	0.0
2						0.0
					2.0	
3			GP		Dark gray, silty sand GRAVEL with waster material (burnt wood)	0.0
4						0.0
					4.0	
					4.2 Burnt wood, sheen on wood	0.0
5			SM		Brown, silty SAND (SM), damp, grades from medium grayish brown to whitish-brown	0.0
					5.5	
6			ML		Reddish, sandy SILT (ML) matrix with gypsum crystals along fractures (patch-quilt type mottling)	0.0
7						0.0
8						0.0
9						0.0
10						
					10.0	
					No Recovery	
					10.5	
11	HGLSB10-07-1011		SM		Brown, silty SAND (SM), moist, loose	0.0

HGL_BOREHOLE_1 LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-07

CLIENT AFCEE PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11			SM		Brown, silty SAND (SM), moist, loose *(continued)*	0.0
					11.3 Reddish brown, sandy SILT (ML), moist to wet, stiff, with crystalline precipitate (white)	
12						
13					▽ Saturated	
14	HGLSB10-07-1314		ML			0.0
15		CH4=0.02%, CO2=0.0%, O2=18.6%, Hg=26.0, LEL=4%				0.0
					15.0 Bottom of hole at 15.0 feet.	

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BORING NUMBER SB10-08

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 | PROJECT LOCATION Holloman AFB LF-10

DATE STARTED 5/17/06 | COMPLETED 5/17/06 | GROUND ELEVATION ____ | HOLE SIZE 2"

DRILLING CONTRACTOR Bhate/ESN | GROUND WATER LEVELS:

DRILLING METHOD DPT | AT TIME OF DRILLING —

LOGGED BY B.T. Brodersen | CHECKED BY B.T. Brodersen | AT END OF DRILLING —

NOTES Landfill waste material encountered | AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		SM		Light brown, silty SAND (SM), fine to medium grained, damp, moderately loose	0.0
2				Waste material (wood)	0.0
3				Paper/wood at 2 ft. below ground surface	0.
4					0.0
5				5.0	0.0
6		SM		Brown, silty SAND (SM), fine to medium grained, damp, (loose)	0.0
7				Light grayish brown, silty SAND (SM), fine to medium grained, moist, moderately hard	0.0
8				7.5	0.0
9		SM		Reddish brown, silty SAND (SM), fine to medium grained, moist to wet, moderately hard, white clay precipitate in soil fractures	0.0
10				10.0	0.0
11		SM		Reddish brown, silty SAND (SM), moderately loose, wet	0.4

HGL_BOREHOLE_1 LF-10.GPJ GINT US.GDT 6/15/07

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Fax: 703-471-4180

BORING NUMBER SB10-08

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				Reddish brown, silty SAND (SM), moderately loose, wet *(continued)*	0.0
12		SM			0.0
13				13.0 Light brown, silty SAND (SM), moderately hard	0.0
14		SM		14.0 Light brown, silty SAND (SM), fine to medium grained, moderately loose, wet	0.0
15		SM		15.0 Bottom of hole at 15.0 feet.	0.0

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BORING NUMBER SB10-09

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/17/06 COMPLETED 5/17/06
GROUND ELEVATION ____ HOLE SIZE 2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
▽ AT TIME OF DRILLING 3.0 ft
LOGGED BY S. Gillette CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES No landfill waste observed
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		SM		Silty SAND (SM)	0.0
2				Brown, silty SAND (SM), hard, gypsum crystals in fractures, moist	0.0
				2.0	
3		ML		Light brown, sandy SILT (ML)	0.0
4				▽ Saturated at 3 ft.	0
				4.0	
5				No recovery	0.0
				5.0	
6		ML		Light brown, sandy SILT (ML), saturated	0.0
7				Gypsum crystals from 6.5 to 9 ft. below ground surface	0.0
8					0.0
9				Brown, sandy SILT (ML)	0.0
10					0.
11					

HGL_BOREHOLE_1 LF-10.GPJ GINT US.GDT 5/15/07

(Continued Next Page)

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BORING NUMBER SB10-09

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05

PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				Light brown, sandy SILT (ML), gypsum crystals, moist	0.0
12		ML			0.0
13				Light grayish brown, sandy SILT (ML), moist	0.0
14				14.0	0.0
15				No recovery (14'-17')	0.0
16					0.0
17				17.0	0.0
18		ML		Reddish brown, sand SILT (ML), wet Gypsum layer 2" thick	0.0
19		SM		18.5 Sand, hard, black, red, and white staining	0.0
20				20.0 Bottom of hole at 20.0 feet.	0.0

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BORING NUMBER SB10-10

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/17/06 COMPLETED 5/17/06
GROUND ELEVATION ____ HOLE SIZE 3.25"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
▽ AT TIME OF DRILLING 2.0 ft
LOGGED BY S. Gillette CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES No landfill waste observed
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					Brown, silty CLAY (CL), moist	0.0
1						0.0
2			CL		Same as above	0.0
3					▽ Wet at 2'	0.
4			GP		Caliche deposits interbedded in silty CLAY 3.0 3" in diameter gravel 4.0	0.0
5		Water covering probes, starts at 5', 6' push			Light brown silty CLAY (CL), caliche, gypsum crystals, wet	0.0
6						0.0
7			CL		Moist to wet, gypsum crystals	0.0
8						0.0
9					Dry at 8.5 ft. below ground surface	0.0
10		3' of water in hole			10.0	0.
11			SM		Medium brown, silty SAND (SM), coarse grained, saturated	

(Continued Next Page)

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BORING NUMBER SB10-10

CLIENT AFCEE **PROJECT NAME** Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 **PROJECT LOCATION** Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11					Medium brown, silty SAND (SM), coarse grained, saturated *(continued)*	0.0
12						0.0
13			SM			0.0
14					Gypsum crystals from 13.5 ft. to 15.0 ft. below ground surface	0.0
15					15.0	0.0
					Bottom of hole at 15.0 feet.	

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BORING NUMBER SB10-11

CLIENT AFCEE
PROJECT NUMBER AFC002-037-04-02-05
DATE STARTED 5/17/06 COMPLETED 5/17/06
DRILLING CONTRACTOR Bhate/ESN
DRILLING METHOD DPT
LOGGED BY S. Gillette CHECKED BY B.T. Brodersen
NOTES No landfill waste observed

PROJECT NAME Supplemental RFI
PROJECT LOCATION Holloman AFB LF-10
GROUND ELEVATION ___ HOLE SIZE 2.5"
GROUND WATER LEVELS:
▽ AT TIME OF DRILLING 9.0 ft
AT END OF DRILLING —
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0		GW		Gravel top 6"	0.0
0.5				Light brown, silty SAND (SM), fine grained	
1		SM			0.0
2					0.0
3				4" brown moist layer, silty SAND (SM), fine to medium grained	
3.0				Light brown, silty SAND (SM)	0.0
4		SM			0.0
4.5				Becomes light reddish brown, moist	
5		SM			0.0
5.5				Brown, silty SAND (SM), increasing moisture with depth	
6		SM			0.0
7					0.0
7.5				Becomes very light brown	
8		SM			0.0
9				▽ Wet at 9 ft.	0.0
10					0.0
10.0				Top 6" black and white precipitates in silty SAND (SM) matrix, 3" layer at 10.5' of light brown silty SAND (SM)	
11					
10.9					

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BORING NUMBER SB10-11

CLIENT AFCEE **PROJECT NAME** Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 **PROJECT LOCATION** Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		SM		Brownish red, silty SAND (SM), saturated *(continued)*	0.0
12					0.0
13		SM			0.0
14				Becomes light brown to light gray, moist	0.0
15				15.0	0.0
				Bottom of hole at 15.0 feet.	

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BORING NUMBER SB10-12

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/17/06 **COMPLETED** 5/17/06
GROUND ELEVATION ___ **HOLE SIZE** 2.5"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ **AT TIME OF DRILLING** 7.0 ft
LOGGED BY S. Gillette **CHECKED BY** B.T. Brodersen
AT END OF DRILLING ---
NOTES No landfill waste observed
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		SM		Light brown, silty SAND (SM), dry	0.0
1.5					
2		SM		Reddish-brown, silty SAND (SM), dry, gypsum crystals throughout	0.1
3					0.
3.5					
4		SW		Light brown, SAND (SW), fine, very moist	0.0
5				Becomes brown	0.0
6					0.0
7				▽ Saturated, black striations	0.0
8					0.0
9				Gypsum crystals	0.0
10					0.0
10.0					
11		SP		Reddish-brown, silty SAND (SP), medium to fine grained, wet	

HGL_BOREHOLE_1_LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-12

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05

PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				Reddish-brown, silty SAND (SP), medium to fine grained, wet *(continued)*	0.0
12					0.0
13		SP		Greenish gray, caliche layer, hard pan with gypsum crystals	0.0
14					0.0
15				15.0 Bottom of hole at 15.0 feet.	0.0

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BORING NUMBER SB10-13

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/20/06 COMPLETED 5/20/06
GROUND ELEVATION ____ HOLE SIZE 3.25"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 7.0 ft
LOGGED BY S. Gillette CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES No landfill waste observed
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		SM		Light reddish brown, silty SAND (SM) with some clay, gypsum crystals	0.0
2					0.0
3				Increasing clay content, moist	0.0
4					0.
				4.0	
5		CL		Light brown, silty CLAY (CL), moist	0.0
6					0.0
				6.0	
7		CL		Light reddish-brown, silty sandy CLAY (CL), very moist ▽	0.0
8		CL			0.0
9					0.0
				9.0	
10		CL		Reddish-brown silty sandy CLAY (CL), moist	
11					

HGL_BOREHOLE_1_LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-13

CLIENT AFCEE **PROJECT NAME** Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 **PROJECT LOCATION** Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				Reddish-brown silty sandy CLAY (CL), moist *(continued)*	
12		CL		Saturated	
13					
14				14.0	
		SM		Very (stiff) silty SAND (SM) with clay, grayish-white, some precipitate	
15				15.0	
				Bottom of hole at 15.0 feet.	

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BORING NUMBER SB10-14

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 5/23/06 COMPLETED 5/23/06
GROUND ELEVATION ____ HOLE SIZE 2"
DRILLING CONTRACTOR HGL
GROUND WATER LEVELS:
DRILLING METHOD One-man auger
AT TIME OF DRILLING —
LOGGED BY S. Gillette CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES No landfill waste observed
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		SM		Light brown, silty SAND (SM), medium to fine grained, dry	0.0
				1.0	
2		SM		Medium brown, silty SAND (SM), medium to coarse grained, dry	0.0
3					0.0
4					0.0
5				5.0 Moist	0.0
				Bottom of hole at 5.0 feet.	

HGL_BOREHOLE_1_LF-10.GPJ GINT US.GDT 5/16/07

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BORING NUMBER SB10-15

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-02-05
PROJECT LOCATION Holloman AFB LF-10
DATE STARTED 6/14/06 COMPLETED 6/14/06
GROUND ELEVATION ___ HOLE SIZE 2.5"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 10.3 ft
LOGGED BY Gillette/Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES No landfill waste observed
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		SM		Pale yellowish brown, silty SAND (SM), trace pea gravel, dry, loose, poorly graded	0.0
				1.0	
2		ML		Moderate orangish pink, SILT (ML), some very fine sand, very moist	0.0
				2.3	
3		ML		2.5 Light brown, SILT (ML) and very fine sand, very moist	0.4
		SC		Very pale orange, clayey very fine SAND (SC), soft, very moist	
4				3.6 Light brown, silty SAND (SP), very fine, very moist to wet, soft, poorly graded	0.5
5		SM			0.0
6					0.0
7				6.5 Grayish red, silty SAND (SM), very fine, with some clay, gypsum crystals, soft, moist	0.0
8		SM			0.0
9					
10					0.0
				10.3 ▽	0.0
11		SM		Grayish red, silty SAND (SM), very fine, wet, soft	

HGL_BOREHOLE_LF-10.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB10-15

CLIENT AFCEE PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-02-05 PROJECT LOCATION Holloman AFB LF-10

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		SM		11.3 Grayish red, silty SAND (SM), very fine, wet, soft *(continued)*	
12		CL		Grayish red, fine sand, silt, and CLAY (CL), gypsum crystals, damp, stiff, moderate plasticity	0.0
13					0.0
14					0.0
15				15.0 Bottom of hole at 15.0 feet.	0.0

MONITORING WELLS

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW1 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/29/88 10:12 DATE/TIME END 11/29/88 2:00 DRILL CREW Flair/Luraschi/Monroe* * Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA* SURFACE COVER Gravel

TOC ELEV. 4087.66 BORING COORDINATES N 672256 E 555046 WATER DURING DRILLING 6.5'

WATER AT COMPLETION 9' DELAYED WATER LEVEL Monitor well installed in boring Water @ 10.7' below T.O.C on 2/11/89 8:

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Tan & brown sandy SILT w/gravel @ surface (ML)	5/5/7	0		
	SS	D	Tan clayey SILT w/sand seams (ML)	3/1/WH	.1		
5	SS	M/W	Dark gray landfill material (i.e. paper, trash, green sludge)	WH/1/1	.1		
	SS	M	Possible ash layer	14/50/35	340		PID 3 ppm bore hole
10	SS	W	Tan silty SAND (SM)	32/33/34	.1		
15	SS	W	Brown silty CLAY w/gypsum crystals (CL)	37/17/24	.4		
			Tan silty SAND (SM-SP)				
20	SS	M	Light gray SAND (SP)	19/30/26	.1		
			Tan clayey SAND (SC)				
25			Boring terminated @ 21.5' * Hollow Core Auger				

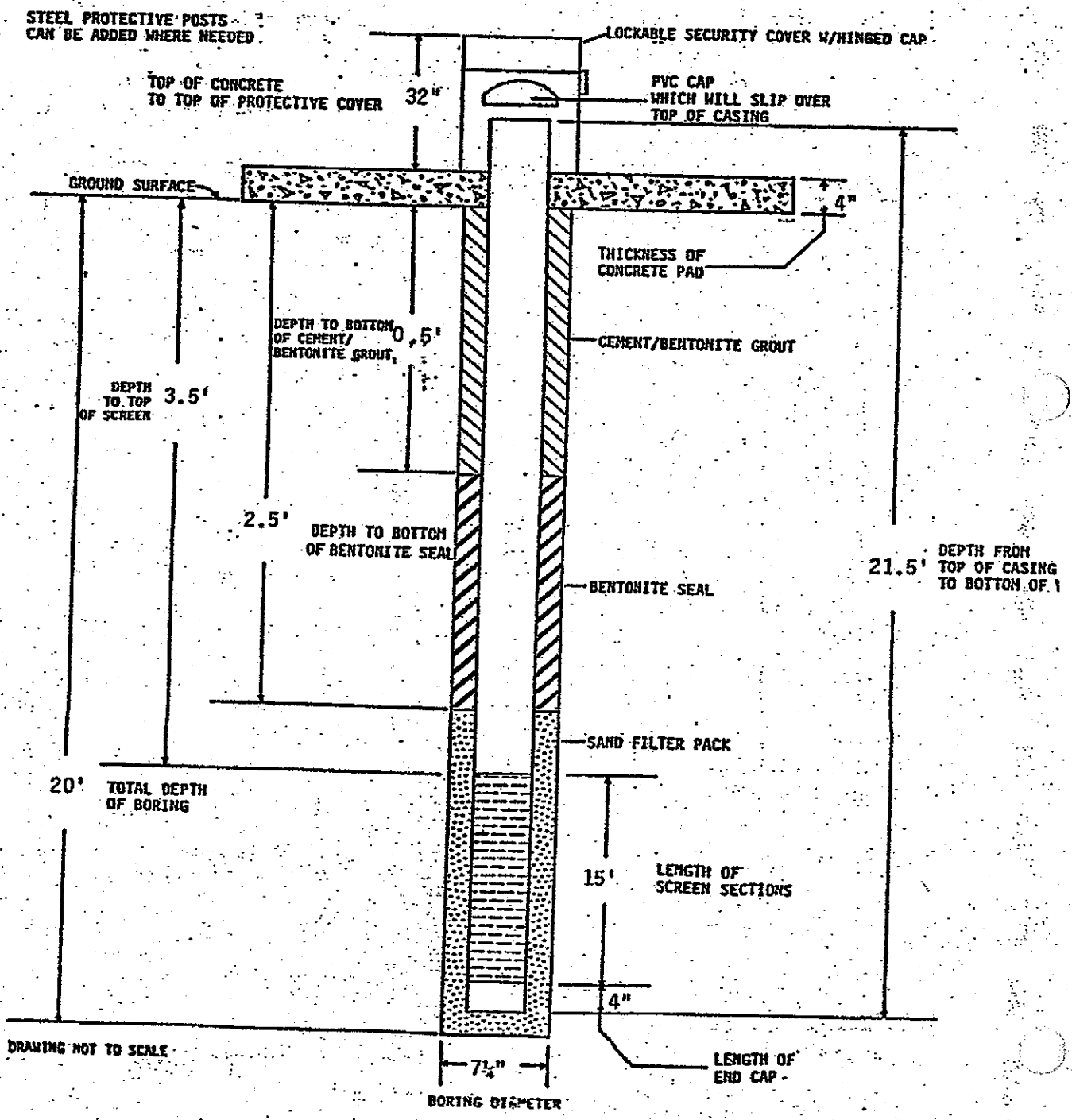
SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THO CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW1

Monitor Well Data Sheet

TOC ELEV = 4087.66



PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW2 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/29/88 2:45 DATE/TIME END 11/29/88 4:30 DRILL CREW Flair/Luraschi/Monroe* *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME 55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA* SURFACE COVER Gravel

TOC ELEV. 4089.00 BORING COORDINATES N 671943 E 554584 WATER DURING DRILLING Wet Sean 4.5

WATER AT COMPLETION 8' DELAYED WATER LEVEL Water @ 11.4' below T.O.C. on 2/11/89 @ 1 Monitor Well installed in bore hole

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Tan sandy SILT w/surface gravel (Possible Fill) (ML)	7/12/13	.1		
	SS	M		9/4/4	.1		
5	SS	M	Brown clayey SILT w/gypsum crystals (ML)	8/12/14	.1		
	SS	M	Brown silty CLAY w/gypsum crystals (CL)	12/17/19	0		.2 PID Down Hole
10	SS	W		30/60/10=1½"	.1		
15	SS	W	Gypsum increasing	4/6/8	4.0		
20	SS	W		6/9/18	220		
25			Boring terminated at 21.5 feet * Hollow Core Auger				

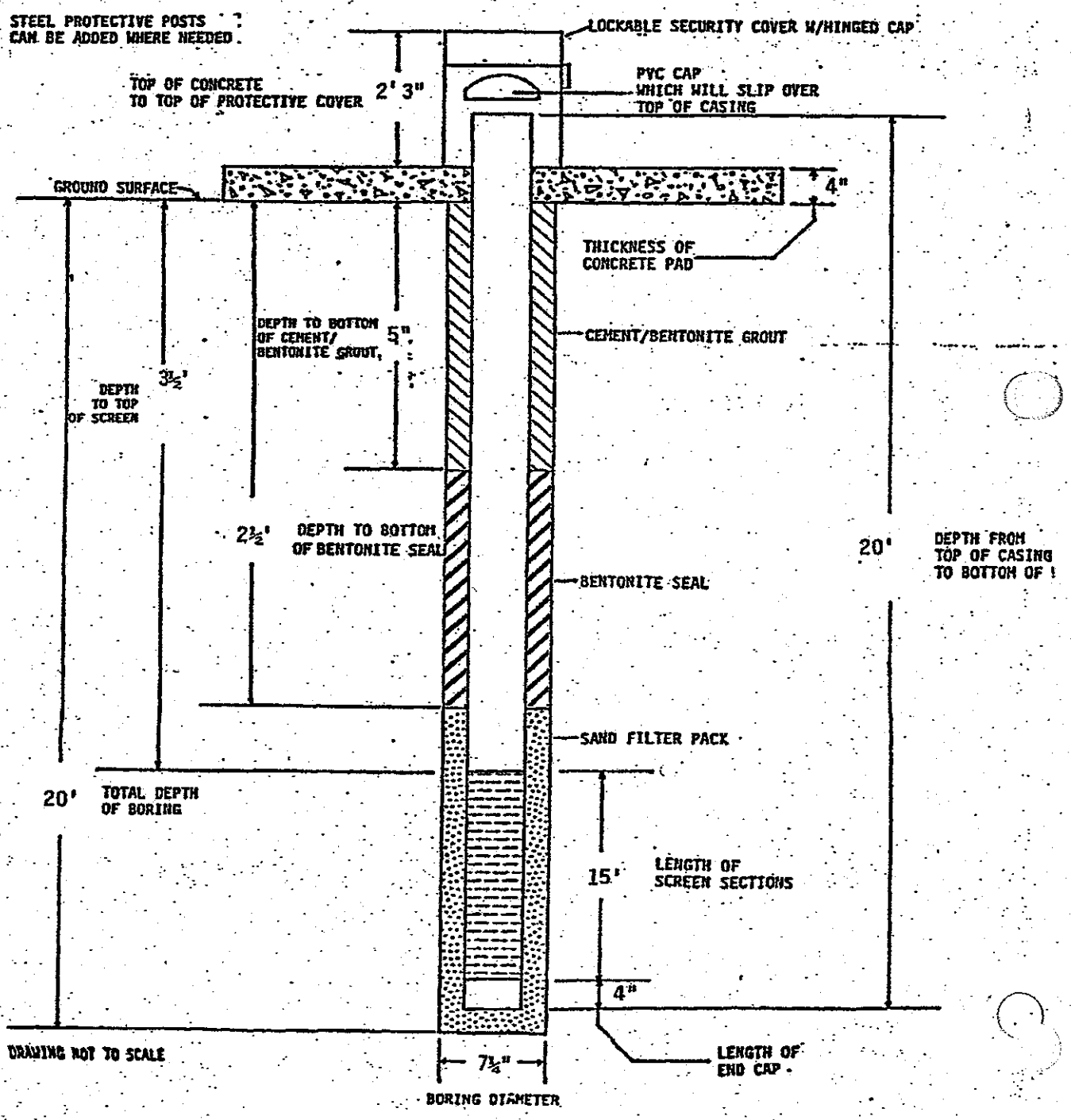
SOIL SAMPLE TYPE
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TE = THIN CORE

MOISTURE TYPE
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW2

Monitor Well Data Sheet

TOC ELEV = 4089.00



PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO MW3 PROJECT NO. 342-65219 PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/30/88 11:30 DATE/TIME END 11/30/88 1:00 DRILL CREW Flair/Luraschi/Monro *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

TOC ELEV. 4084.21 BORING COORDINATES N 671537 E 554540 WATER DURING DRILLING 6'

WATER AT COMPLETION 9' DELAYED WATER LEVEL Water @ 7.7' below TOC on 2/11/89 @ 10: Monitor well installed in boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Brown clayey SAND w/organics & gypsum (SC)	5/3/2	.4	0	1 down hole
	SS	W	Light gray sandy SILT (ML)	3/7/16	.4		
5	SS	W	Brown silty SAND w/gypsum (SM)	7/7/13	.4	0	.6 down hole
	SS	W					
10	SS	W	Brown sandy CLAY w/gypsum (CL)	8/9/12	.4		
				5/4/3	.4		
15	SS	W	Brown silty SAND w/gypsum (SM)	6/8/8	.4		
			gypsum crystals increasing				
20	SS	W		10/27/32	.4		
			Boring terminated at 21.5'				
25			** Hollow Core Auger				

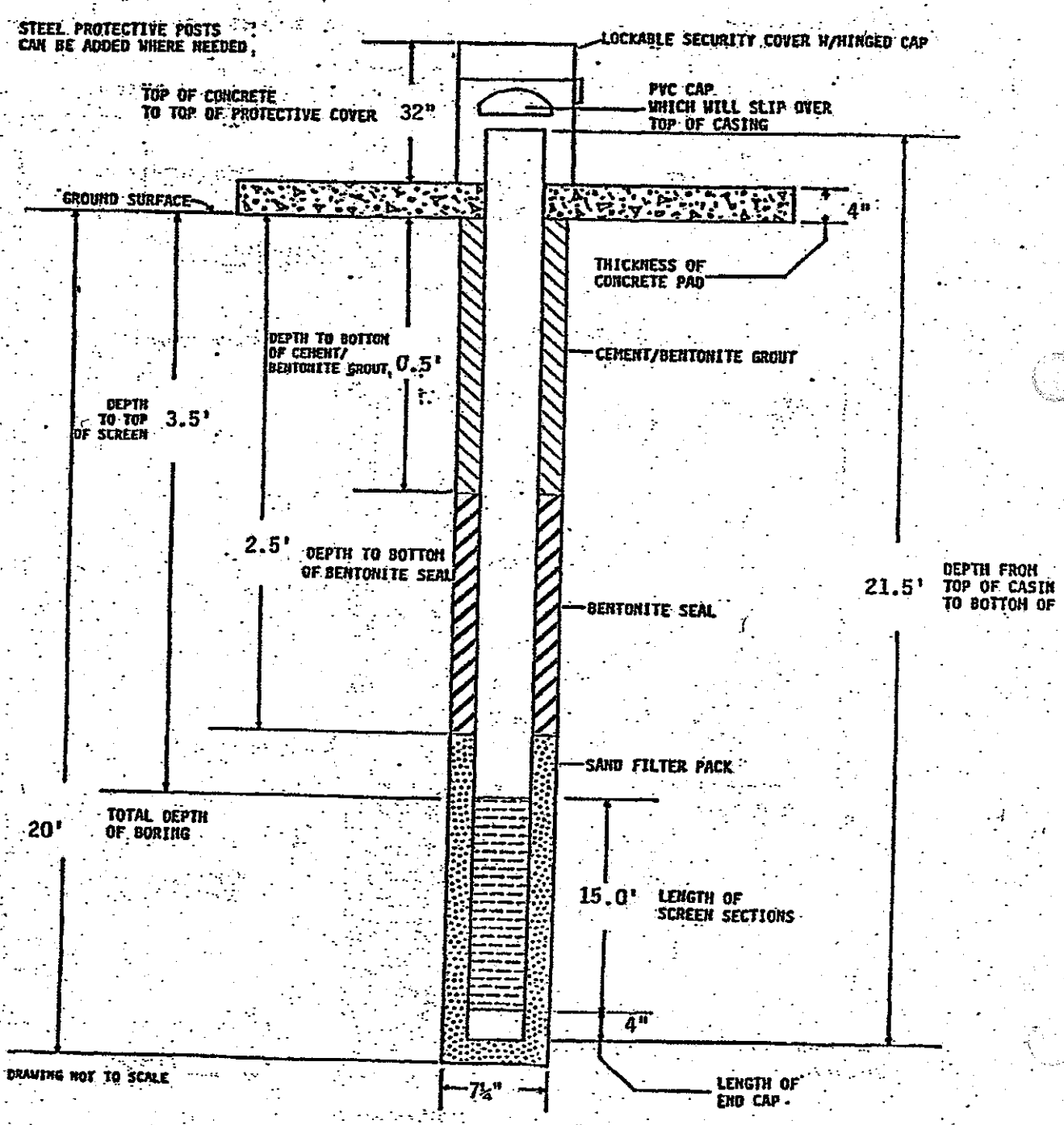
SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW3

Monitor Well Data Sheet

TOC ELEV = 4084.21



PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW3A PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 11/30/88 10:45 DATE/TIME END 11/30/88 11:00 DRILL CREW Flair/Luraschi/Monroe*
*Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA** SURFACE COVER Gravel

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None

DATE GROUTED N/A MATERIAL(S) & QUANTITY Backfilled w/cuttings

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Fill Material				
5			Trash encountered @ 4'				
			No Samples Taken ** Solid Stem Auger				
10							
15							
20							
25							

SAMPLE TYPE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TWO CONE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 2:00 DATE/TIME END 12/1/88 4:10 DRILL CREW Flair/Monroe*/Lurasc.
* Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./ HCA** SURFACE COVER Gravel

TOC ELEV. 4081.31 BORING COORDINATES N 670903 E 554854 WATER DURING DRILLING 4'
Water @ 7.2' below TOC on 2/11/89 @ 9:5(

WATER AT COMPLETION 7.5' DELAYED WATER LEVEL Monitor well installed in boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty SAND (SM)	3/3/3	.2		
	SS	M/W	Tan silty SAND (SM)	15/12/5	.2		
5	SS	W	Brown silty clayey SAND (SC)	5/7/13	.2		
	SS	M	Brown sandy CLAY w/gypsum crystals (CL)	7/10/17	.2		6 Down hole
10	SS	M	Tan clayey SAND w/silt seams & gypsum crystals (SC)	16/21/35	180		
15	SS	M	Light gray dense SAND w/iron stains (SP)	16/34/50	145		
20	SS		Fewer iron stains	28/53/19	65		
25			Boring terminated at 21.5 feet ** Hollow Core Auger				

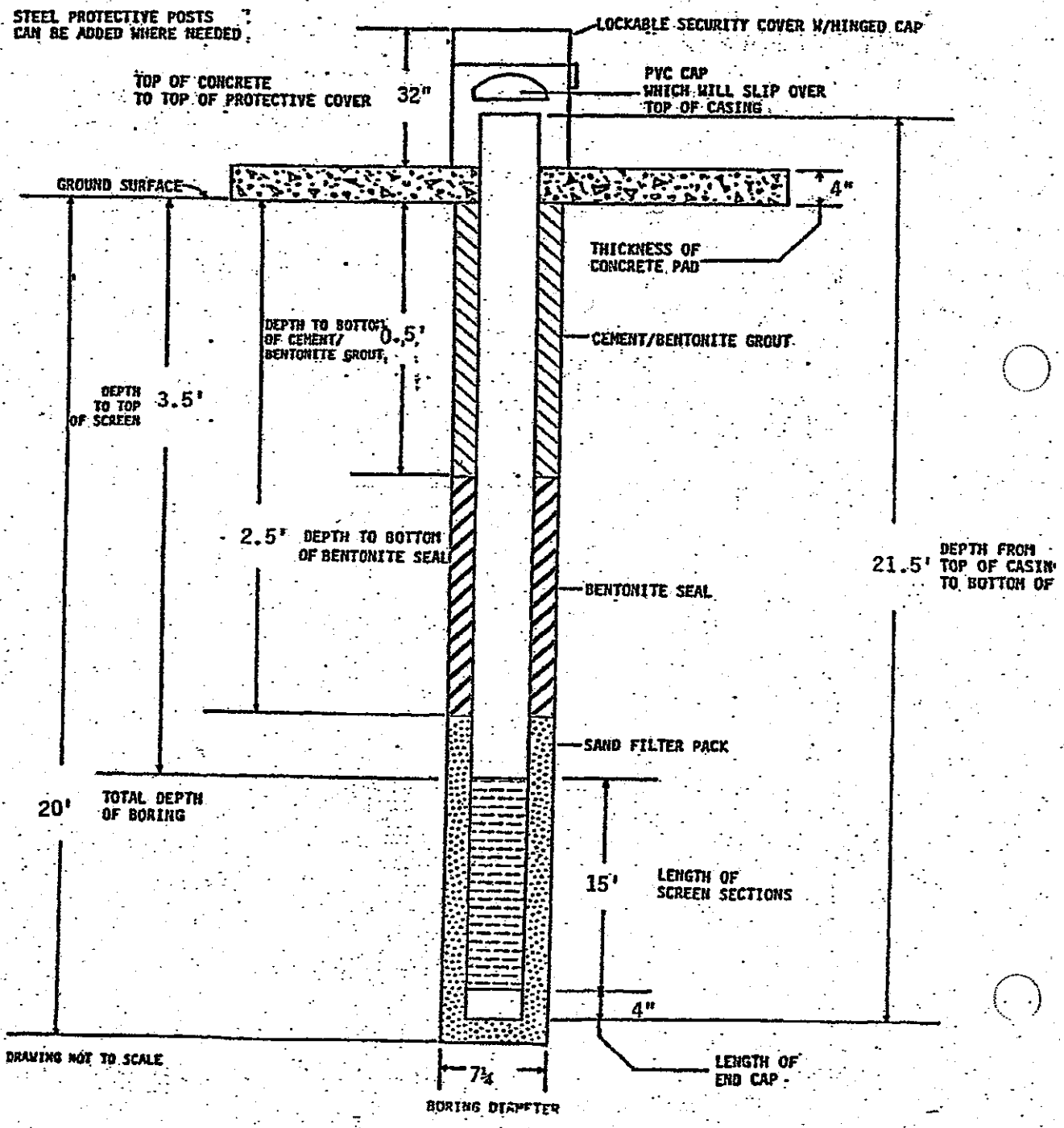
SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PE = PITCHER BARREL
RC = ROCK CORE
DC = DIA CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW4

Monitor Well Data Sheet

TOC ELEV = 4081.31'



PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4A PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 10:00 DATE/TIME END 12/1/88 10:30 DRILL CREW Flair/Monroe*/Luraschi

* Geologist

DRILLING METHOD: AUGER 0 FT TO 6 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None Backfilled with cuttings

DATE GROUTED N/A MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				Background
							.4
							.5
5							
			Boring terminated at 5 feet Terminated because of landfill material encountered No samples taken				
10			** Solid Stem Auger				
15							
20							
25							

SAMPLE TYPE
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4B PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Ba

DATE/TIME START 11:00 12/1/88 DATE/TIME END 11:30 12/1/88 DRILL CREW Flair/Monroe*/Luraschi
* Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None Backfilled with cuttings

DATE GROUTED N/A MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				
5			Boring terminated at 5 feet Pilot hole for trash exploration ** Solid Stem Auger				
10							
15							
20							
25							

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4C PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 11:30 DATE/TIME END 12/1/88 12:00 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING None

WATER AT COMPLETION None DELAYED WATER LEVEL None, Backfilled with cuttings

DATE GROUTED N/A MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				
5			Boring terminated at 5 feet Pilot hole for trash exploration ** Solid Stem Auger				
10							
15							
20							
25							

SOIL SAMPLE KEY

SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CONE

MOISTURE KEY

D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW4D PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12:30 12/1/88 DATE/TIME END 1:00 12/1/88 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 4" O.D. SSA ** SURFACE COVER Topsoil

G.S. ELEV. Not Required BORING COORDINATES Not Required WATER DURING DRILLING 5'

WATER AT COMPLETION N/A DELAYED WATER LEVEL None, Backfilled with cuttings

DATE GROUTED - MATERIAL(S) & QUANTITY N/A

DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
			Landfill Material				
5			Boring terminated at 5 feet Pilot hole for trash exploration ** Solid Stem Auger				
10							
15							
20							
25							

SOIL SAMPLE TYPE
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = THIN CORE

MOISTURE TYPE
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW5 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 12/1/88 7:50 DATE/TIME END 12/1/88 10:00 DRILL CREW Flair/Monroe*/Luraschi *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D. / HCA ** SURFACE COVER Sand

TOC ELEV. 4081.54 BORING COORDINATES N 672981 E 556061 WATER DURING DRILLING 4'

WATER AT COMPLETION 4.5' DELAYED WATER LEVEL Water @ 5.4' below TOC on 2/11/89 @ 7:4 Monitor well installed in boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Material List

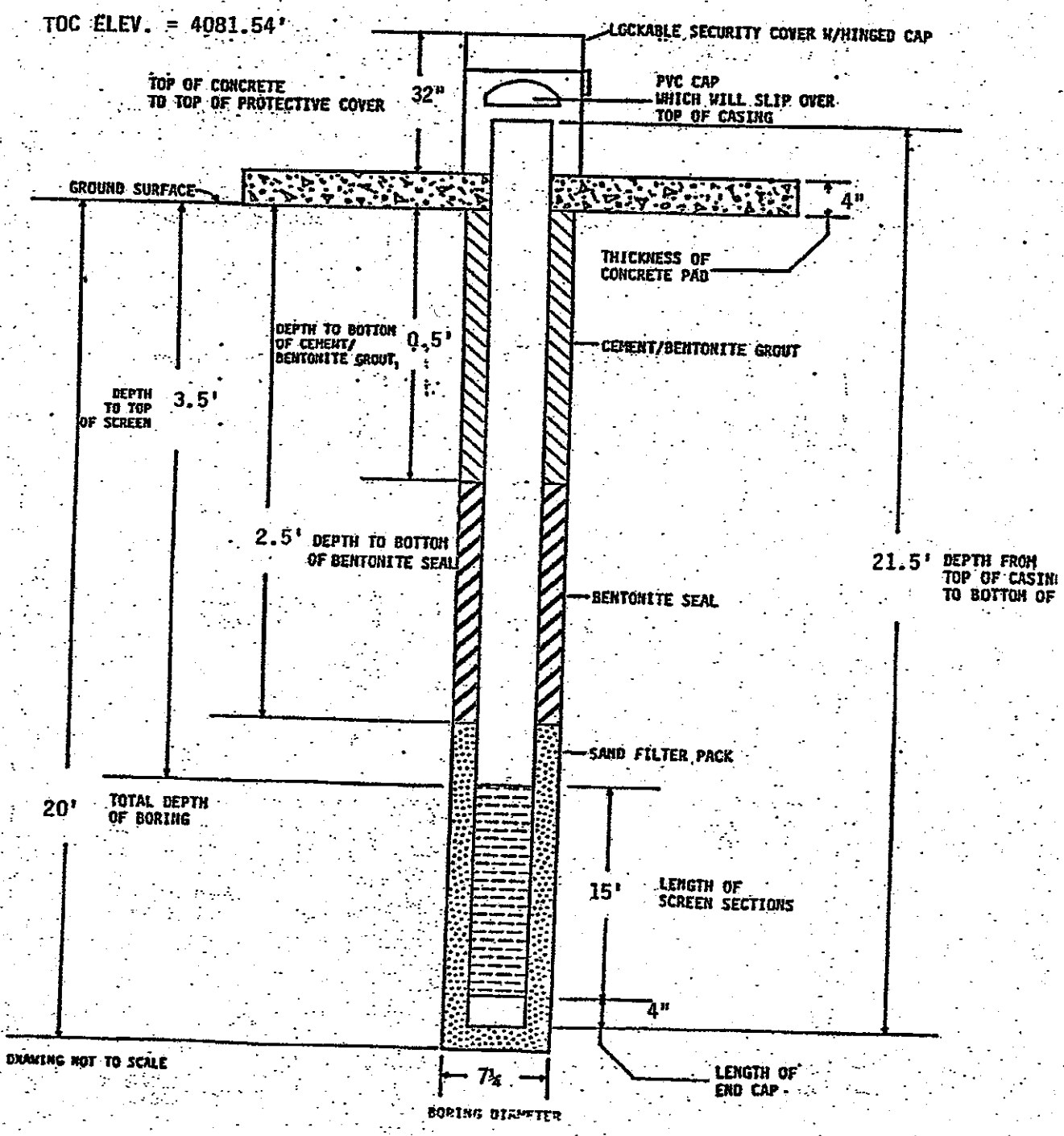
DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	Brown silty SAND (SM)	2/2/3	.2		
	SS	W	Light gray & tan clayey SAND w/ gypsum crystals (SC)	3/4/12	.2		
5	SS	W		12/18/26	.2		
	SS	W	Tan SAND w/gypsum crystals (SP)	16/23/32	.2		
10	SS	W		21/28/31	.2		
15	SS	M	Brown clayey SAND w/gypsum crystals (SC)	12/12/80	.2		
20	SS	W	Tan SAND (SP)	15/30/55	.2		
			Boring terminated at 21.5 feet				
25			** Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE
TC = TRIO CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW5

Monitor Well Data Sheet



PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW-6 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 9:00 1/13/89 DATE/TIME END 10:30 1/13/89 DRILL CREW Flair, Monroe*, Arthur *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA ** SURFACE COVER Topsoil

TOC ELEV. 4083.50 BORING COORDINATES N 671752 E 555313 WATER DURING DRILLING 8'

WATER AT COMPLETION 7.5' DELAYED WATER LEVEL Water @ 8.6' below TOC on 2/11/89 @ 8:45 Monitor Well Installed in Boring

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Materials List

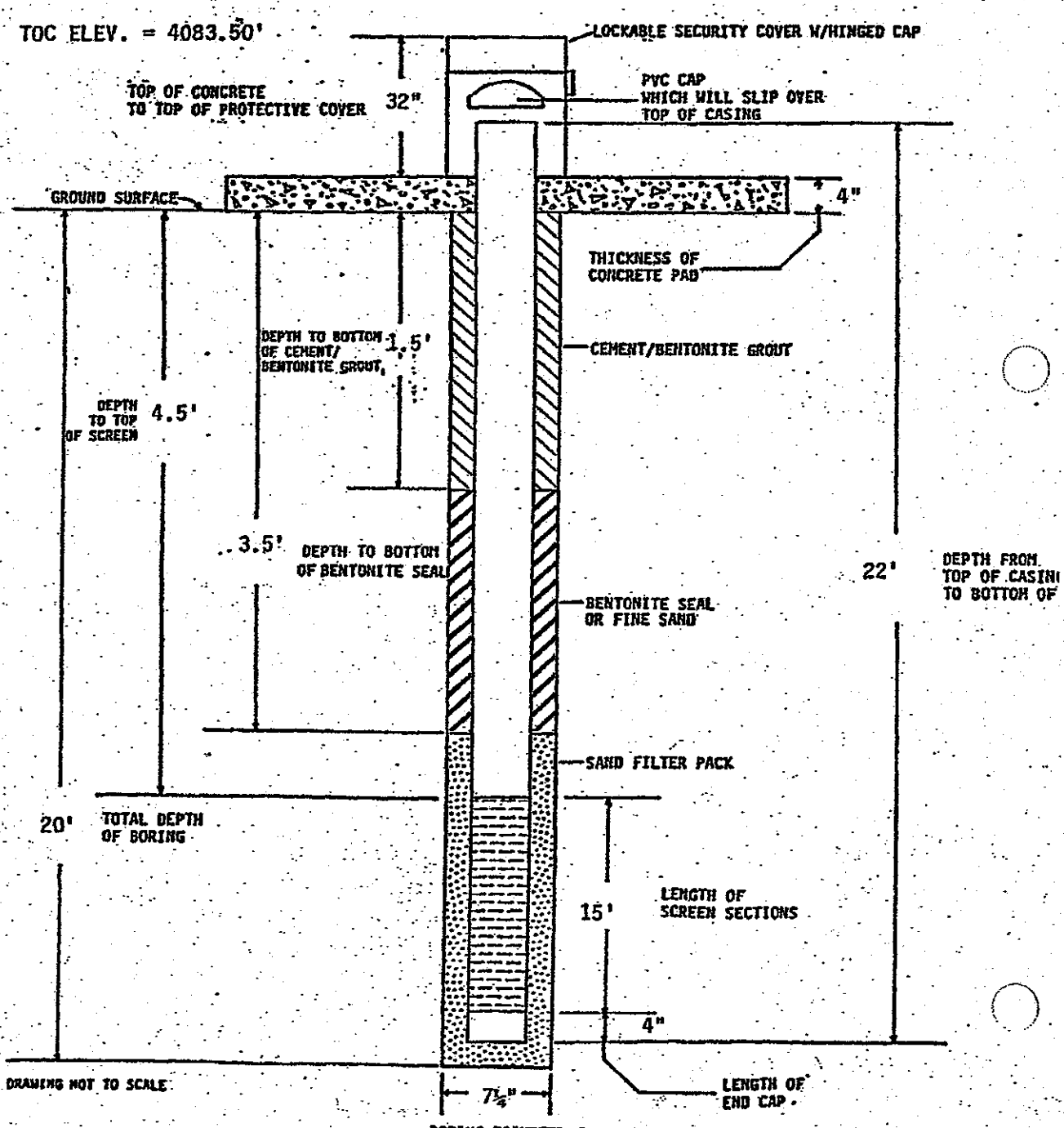
DEPTH FT.	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	S.P.T	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	D	Tan silty SAND (SM)	4/5/7	0		
			Brown clayey SAND (SC)				
	SS	M	wood chips	4/5/4	0		
5	SS	M/W	Tan SAND w/landfill material & rust colored stains (SP)	4/2/2	0		
	SS	W/M	Tan silty SAND (SM)	5/7/12	16		
10	SS	M	Brown clayey SAND (SC)	10/10/11	1.6		
15	SS	M	Brown & gray sandy CLAY (CL)	7/11/14	.2		
20	SS	W/M	Gray clayey silty SAND (SM)	17/27/56	.2		
25			Boring terminated at 21.5 feet ** Hollow Core Auger				

SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PB = PITCHER BARREL
RC = ROCK CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW6

Monitor Well Data Sheet



PROFESSIONAL SERVICE INDUSTRIES, INC.

BORING NO. MW7 PROJECT NO. 342-65219H PROJECT NAME Holloman Air Force Base

DATE/TIME START 1/13/89 3:00 DATE/TIME END 1/13/89 4:30 DRILL CREW Flair, Monroe*, Arthur *Geologist

DRILLING METHOD: AUGER 0 FT TO 21.5 FT, ROTARY - FT TO - FT DRILL RIG CME55

AUGER/BIT SIZE(S) & INTERVAL(S) 3¼" I.D./HCA** SURFACE COVER Gravel

TOC ELEV. 4088.24' BORING COORDINATES N 672448 E 554755 WATER DURING DRILLING 10.5'

WATER AT COMPLETION 10.5' DELAYED WATER LEVEL Water @ 10.6 feet below TOC on 2/11/89

DATE GROUTED N/A MATERIAL(S) & QUANTITY See Monitor Well Materials List

DEPTH FT	SAMPLE TYPE & INTERVAL	MOISTURE	SOIL DESCRIPTION & VISUAL CLASSIFICATION	SPT	PID (ppm)	HAND PENETROMETER (tsf)	OTHER
	SS	M	3" gravel at surface Tan sandy SILT (ML)	4/8/8	0.2		
	SS	M	Brown silty sandy CLAY w/gypsum (CL)	5/6/9	0.2		
5	SS	M	Tan silty SAND (SM)	5/18/31	0.2		
	SS	M	Brown silty clayey SAND (SC)	12/18/29	0.2		
10	SS	M/W		8/13/25	0.2		
15	SS	M	Brown sandy CLAY w/gypsum (CL)	10/45/45=3¾"	0.2		
20	SS	M	Gray clayey silty SAND (SM-SC)	6/8/12	0.2		
25			Boring terminated at 21.5 feet ** Hollow Core Auger				

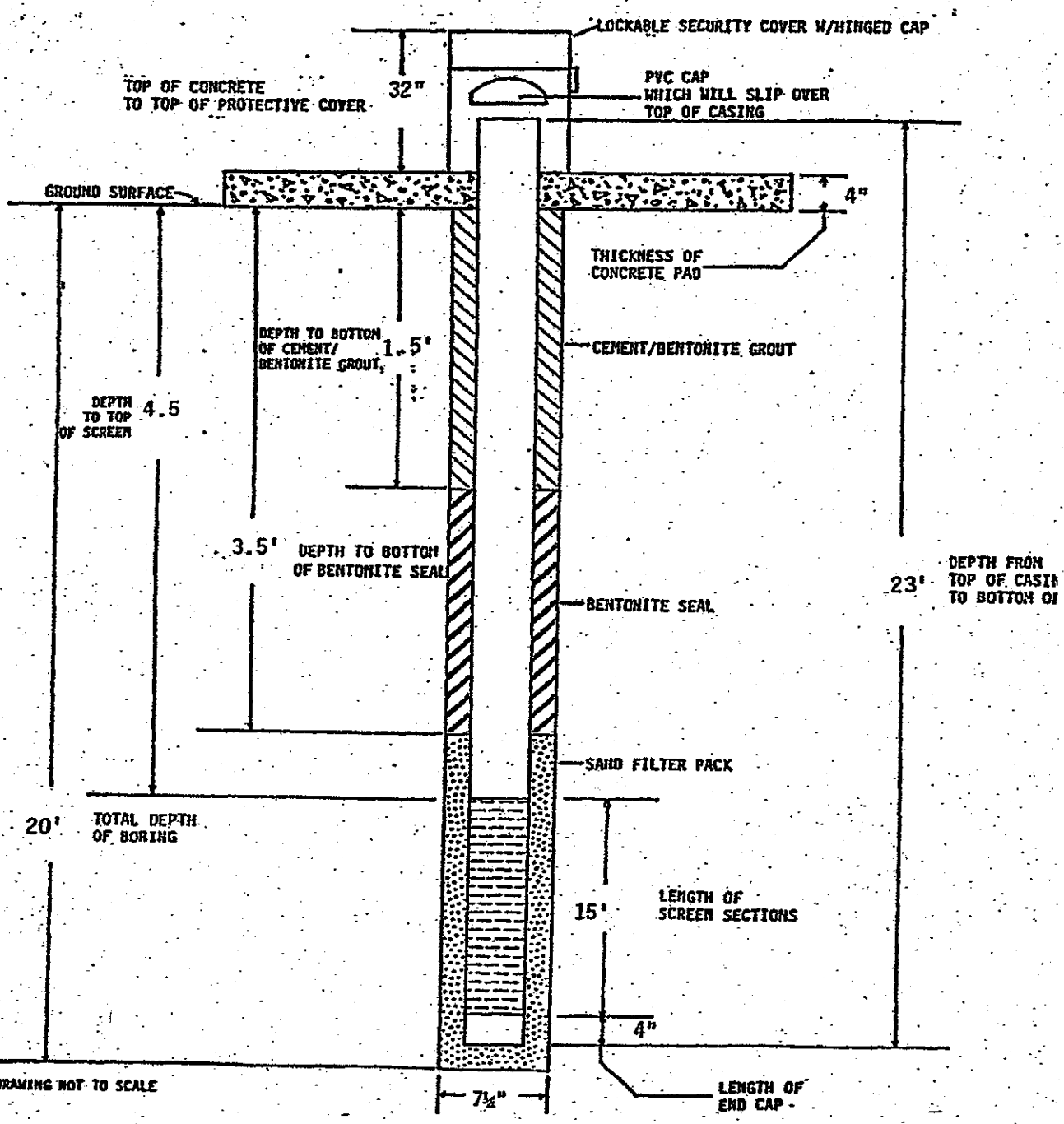
SOIL SAMPLE KEY
SS = SPLIT SPOON
ST = SHELBY TUBE
PS = PITCHER BARREL
RC = ROCK CORE

MOISTURE KEY
D = DRY (VERY LITTLE MOISTURE)
M = MOIST (SOME MOISTURE)
W = WET (SATURATED)

PROJECT Holloman Air Force Base MONITOR WELL I.D. NO. MW-7

Monitor Well Data Sheet

TOC ELEV. = 4088.24'



LF-29

SOIL BORINGS

HydroGeoLogic Inc.
1155 Herndon Parkway Suite 900
Herndon VA 20170
Telephone: 703-478-5186
Fax: 703-471-4180

BORING NUMBER SB29-A5

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/17/06 COMPLETED 6/17/06
GROUND ELEVATION ____ HOLE SIZE 2 1/4"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES MEC/MD cleared to 8'
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		ML		10R 8/2 Grayish orangish pink, SILT and very fine sand, poorly graded, dry, loose, caliche fragments	0.0
2					0.0
3					0.0
4					0.0
5				5.0	
6		SP		5YR 7/2 Grayish orangish pink, fine to very fine SAND, trace silt, poorly graded, loose, dry, subangular to subrounded, dark minerals < 5%	0.0
7					0.0
8					0.0
9					0.0
10					0.0
11					

HGL_BOREHOLE 1 LF-29.GPJ GINT US.GDT 5/15/07

(Continued Next Page)

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Telephone: 703-478-5186
Fax: 703-471-4180

BORING NUMBER SB29-A5

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		SP		5YR 7/2 Grayish orangish pink, fine to very fine SAND, trace silt, poorly graded, loose, dry, subangular to subrounded, dark minerals < 5% *(continued)*	0.0
				11.5	
				5YR 7/2 Grayish orangish pink, SILT and very fine sand, damp, (soft)	
12		ML			0.0
				12.6	
				10YR 8/2 Very pale orange, SILT, damp, (moderately stiff), very fine sand	
13					0.0
14					0.0
		ML			
15					0.0
				Becomes mottled with pale yellowish brown (10R 6/2)	
16					0.0
				16.5	
				10R 6/2 Pale yellowish brown, silty SAND, damp, moderately hard, poorly graded, fine sand, subangular to subrounded	
17		SM			0.0
				17.5	
				10YR 8/2 Very pale orange, SILT, damp, (stiff)	
18					0.0
		ML			
19				19.0	
				5YR 4/4 Moderately brown, sandy CLAY, damp, (stiff), low plasticity, some gypsum crystals	0.0
20					0.0
21		CL			0.0
22					0.0
				22.5	
				5YR 7/2 Grayish orangish pink, SILT and very fine sand, damp, (stiff)	
23		ML			0.0

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Telephone: 703-478-5186
Fax: 703-471-4180

BORING NUMBER SB29-A5

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
24		ML		5YR 7/2 Grayish orangish pink, SILT and very fine sand; damp, (stiff) *(continued)*	0.0
				24.5	
		SM		5YR 6/4 Light brown, silty SAND, fine sand, wet, (loose), poorly graded, mostly subrounded	
25				25.0	
				Bottom of hole at 25.0 feet.	0.0

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BORING NUMBER SB29-D3

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/17/06 COMPLETED 6/17/06
GROUND ELEVATION HOLE SIZE 2 1/4"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES MEC/MD cleared to 8'
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0				5YR 7/2 Grayish orangish pink, SILT, dry, (soft), loose	0.0
1					0.0
2		ML			0.0
3				Become grayish orangish pink 10R 8/2	0.0
4				Caliche fragments Becomes pale red 10R 6/2, and very stiff	0.0
5				4.5 10R 8/2 Grayish orangish pink, SILT and very fine sand, dry, trace dark minerals, (stiff)	0.0
6		ML			0.0
7		ML		6.3 5YR 7/2 Grayish orangish pink, SILT, dry, (soft)	0.0
8		SM		7.6 10R 8/2 Grayish orangish pink, silty SAND, very fine sand, trace dark minerals, dry, poorly graded, (hard)	0.0
9				Becomes light brown 5YR 6/4	0.0
10		CL		9.5 5YR 7/2 Grayish orangish pink, CLAY and very fine sand, dry, (very stiff), low plasticity	0.0
11		ML		10.0 5YR 7/2 Grayish orangish pink, clayey SILT, damp, very stiff, gypsum, low to no plasticity	

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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HydroGeoLogic Inc.
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BORING NUMBER SB29-D3

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05

PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11					
12		ML		5YR 7/2 Grayish orangish pink, clayey SILT, damp, very stiff, gypsum, low to no plasticity *(continued)*	0.0
				12.2	
				5YR 7/2 Grayish orangish pink, silty SAND, less clayey, damp, (stiff), friable, gypsum	0.0
13		SM			0.0
14				14.0	
				10R 3/2 Grayish orangish pink, SILT and very fine sand, poorly graded, trace dark minerals, very moist, (stiff)	0.0
15					0.0
				Becomes wet @ 15.4 ft	
16		ML			0.0
17					0.0
18				18.0	
		CL		18.2 10R 4/2 Grayish red, sandy CLAY, damp, very stiff, some gypsum	0.0
				Bottom of hole at 18.2 feet.	

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Fax: 703-471-4180

BORING NUMBER SB29-D6

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/17/06 COMPLETED 6/17/06
GROUND ELEVATION ____ HOLE SIZE 2 1/4"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES Boring relocated approximately 15' south; 1st boring: obstruct @ 5 ft; 2nd [illegible] @ 4ft

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0				5YR 7/2 Grayish orangish pink, SILT, dry, loose, (soft)	0.0
1					0.0
2					0.0
3					0.
4		ML		Becomes grayish orangish pink 10R 8/2, SILT and fine sand, dry, (soft), poorly graded	0.0
5					0.0
6					0.0
7				6.7	0.0
8				10R 7/4 Moderate orangish pink, very fine SAND, 10% dark minerals, poorly graded, trace silt, dry, (loose), subangular to subrounded	0.0
9		SP			0.0
10					0.0
11					

HGL_BOREHOLE 1_LF-29.GPJ GINT US.GDT 5/15/07

(Continued Next Page)

HydroGeoLogic Inc.
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Fax: 703-471-4180

BORING NUMBER SB29-D6

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05

PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		SP		10R 7/4 Moderate orangish pink, very fine SAND, 10% dark minerals, poorly graded, trace silt, dry, (loose), subangular to subrounded *(continued)*	0.0
				11.5	
				10R 6/2 Pale red, silty SAND, dry, moderately stiff	
12		SM			0.0
				12.7	
13		SP		10R 7/4 Moderately orangish pink, fine SAND, 10% dark minerals, poorly graded, dry, (loose), subangular to subrounded	0.0
14					0.0
				14.5	
				5R 8/1 Pinkish gray, clayey SAND, damp, (loose)	
15		SC			0.0
				15.5	
				Becomes mottled with grayish red 10R 4/2	
16		SC			0.0
				16.5	
				10R 6/2 Pale red, SILT, damp, (moderately stiff), some fine and very fine sand	
17		ML			0.0
18				18.0	
		ML		10R 4/2 Grayish red, clayey SILT, damp, (stiff), some sand	0.0
19				19.0	
				5YR 4/4 Medium brown, clayey SAND, very moist to wet, (loose), fine and medium sand, some gypsum, poorly graded	0.0
20		SC			0.0
21					0.0
22				22.0	
		ML		5YR 4/4 Medium brown, clayey SILT, damp, (very stiff), some fine sand	0.0
				22.5	
23		SC		5YR 4/4 Medium brown, clayey SAND, (hard), damp	0.0

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-D6

CLIENT AFCEE **PROJECT NAME** Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 **PROJECT LOCATION** Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
24		SC		5YR 4/4 Medium brown, clayey SAND, (hard), damp *(continued)*	
				24.6	
25	GB HGL-SB29-D6-2425	SC		5R 8/2 Grayish pink, clayey SAND, wet, (moderately hard), moderate plasticity	0.0
				25.2	
		ML		10R 8/2 Grayish orangish pink, SILT and very fine sand, wet, poorly graded, (moderately hard)	
				25.8	
26		SP		10YR 8/2 Very pale orange, fine SAND, wet, poorly graded, (soft), trace dark minerals and feldspar, subangular to subrounded	0.0
				26.4	
		SM		5YR 6/4 Light brown, silty SAND, wet, (hard), poorly graded	
				26.5	
				Bottom of hole at 26.5 feet.	

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BORING NUMBER SB29-F4

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/17/06 COMPLETED 6/17/06
GROUND ELEVATION ___ HOLE SIZE 2 1/4"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING ---
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING ---
NOTES MEC/MDcleared to 8'
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0				5YR 7/2 Grayish orangish pink, SILT, dry, (soft)	0.0
1		ML			0.0
2				Caliche fragments	0.0
2.2				10R 8/2 Grayish orangish pink, SILT, dry, (soft), some fine sand and caliche fragments	
3		ML			0.0
4					0.0
4.7				10R 7/4 Moderate orangish pink, SAND, 10% dark minerals, dry, (loose), poorly graded, trace silt	
5					0.0
6					0.0
7		SP			0.0
8					0.0
9					0.0
9.1				10R 7/4 Moderate orangish pink, silty SAND, fine grained, dry, (loose), poorly graded	
10		SM			0.0
10.9				5YR 6/4 Light brown, SILT with fine sand, dry, (moderately stiff), gypsum	
11		ML			0.0

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HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-F4

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		ML		11.2	0.0
				5YR 4/4 Moderate brown, clayey SILT, dry, (stiff)	
12		ML		12.0	0.0
		ML		10YR 7/9 Grayish orange, SILT, damp, (stiff)	
				12.6	
13		SP		10YR 8/2 Very pale orange, very fine SAND, trace dark minerals, damp, (stiff), poorly graded	0.0
14					0.0
				14.2	
15		SC		10R 6/2 Pale red, clayey fine SAND, damp, (hard), poorly graded	0.0
				15.3	
16		CL		10R 4/2 Grayish red sandy CLAY, gypsum crystals, damp, (very stiff)	0.0
17				17.0	0.0
				10YR 4/2 Grayish red, gypsiferous CLAY, dry, (very stiff), crystals to 5mm	
18					
19	GB HGLSB29-F4-1820	CL			
20					
21				20.8	
		SM		10R 8/2 Grayish orangish pink, silty SAND, very fine sand, trace dark minerals, wet	
22				22.8	
				Bottom of hole at 22.8 feet.	

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-F7

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/17/06 COMPLETED 6/17/06
GROUND ELEVATION ____ HOLE SIZE 2 1/4"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES MEC/MD cleared to 8'
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					10YR 6/2 Pale yellowish brown, SILT, dry, (soft), loose	0.0
1			ML			0.0
2					2.0	
					10R 8/2 Grayish orangish pink, SILT and very fine sand, (loose), dry	0.0
3						0.0
4						0.0
5			ML		Becomes clayey and (moderately stiff), pale red (10R 6/2)	0.0
6						0.0
7					7.0	
					10R 7/4 Moderate orangish pink, fine to very fine SAND, some silt, 10% dark minerals, dry, (loose)	0.0
8						0.0
9			SP			0.0
10					10.0	
					10R 6/2 Pale red, clayey SILT, damp, (stiff), with gypsum	0.0
11			ML			

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-F7

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11					10R 6/2 Pale red, clayey SILT, damp, (stiff), with gypsum *(continued)*	0.0
12			ML			0.0
13						0.0
					13.7	
14					10R 8/2 Grayish orangish pink, SILT, dry, (very stiff)	0.0
15			ML		Becomes moist and (soft)	0.0
16						0.0
					16.3	
17			ML		5YR 5/6 Light brown, clayey SILT, dry, (very stiff), with fine sand and gypsum, very sand 16.8'-17.2'	0.0
					17.8	
18		Liner jammed 18'-20'; no recovery			10YR 8/2 Very pale red, SILT and very fine sand, trace dark minerals, damp, (moderately stiff), poorly graded	0.0
19			ML			0.0
20						
					20.0	
			CL		Sandy CLAY, dry, (stiff), mottled 10R 8/2 Pale red & 10R 8/2 Grayish orange	
					20.7	
21	GB HGLB829-F7-2022		CL		Becomes grayish red 10R 4/2, abundant gypsum	0.0
22						
					22.0	
			SC		10R 6/2 Pale red, clayey SAND, wet, (soft), fine grained, poorly graded, subangular to subrounded	0.0
23						0.0
					23.0	
					Bottom of hole at 23.0 feet.	

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-I5

CLIENT AFCEE | PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/17/06 | COMPLETED 6/17/06 | GROUND ELEVATION ____ | HOLE SIZE 2 1/2"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN | GROUND WATER LEVELS:
DRILLING METHOD DPT | AT TIME OF DRILLING —
LOGGED BY Gillette/Gerike | CHECKED BY B.T. Brodersen | AT END OF DRILLING —
NOTES MEC/MD cleared to 8' | AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0		ML		5YR 8/2 Grayish pink, SILT, dry, (soft), color changes to grayish orangish pink (10R 8/2) at bottom 1'	0.0
1					0.0
2					0.0
3					0.0
4				5YR 7/2 Grayish orangish pink, clayey SILT, dry, (moderately stiff)	0.0
5					0.0
5.3		SP		5YR 8/4 Moderate orangish pink, SAND (fine to very fine), traces of silt, 10% dark minerals, dry, (loose), poorly graded	
6					0.0
6.3		ML		5YR 7/2 Grayish orangish pink SILT, dry, (soft)	
7					0.0
7.0		SM		5YR 8/4 Moderate orangish pink, silty SAND, fine sand with silt, dry, (loose), poorly graded	
8					0.0
9					0.0
9.4		CL		5YR 4/4 Moderate brown, silty CLAY, (stiff), dry, low plasticity, gypsiferous	
10				Gypsum content increases with depth, also becomes sandy with depth, dry, very stiff	0.0
11					

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HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-I5

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				5YR 4/4 Moderate brown, silty CLAY, (stiff), dry, low plasticity, gypsiferous *(continued)*	0.0
12		CL			0.0
13					0.0
14				13.7 10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, damp, (moderately stiff), poorly graded	
15	SB HGL8929-I5-1417	ML		Becomes wet	0.0
16		ML		15.5 10YR 8/2 Very pale orange, clayey SILT and fine sand, mottled with 10R 6/2 pale red, damp, (very stiff) 15.8 Color changes to pinkish gray 5Y 8/1	0.0
17		ML		17.2	0.0
18		CL		10YR 8/2 Very pale orange, silty CLAY, with gypsum and some fine sand, dry to damp, (stiff)	0.0
19				Becomes mottled with pale red 10R 6/2, very moist to wet 18.1'-18.4'	0.0
20					0.0
21		SC		20.5 Clayey SAND, fine sand, with gysum, dry, (very hard)	
22				22.0 Bottom of hole at 22.0 feet.	

HGL_BOREHOLE_1 LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-K3

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/16/06 COMPLETED 6/16/06
GROUND ELEVATION ____ HOLE SIZE 2 1/2"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES MEC/MD cleared to 8'
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0				10R 8/2 Grayish orangish pink, SILT and very fine sand, dry, (soft), poorly graded	0.0
1		ML			0.0
2					0.0
2.4				5YR 6/4 Light brown, same as above, more sandy	
3		ML			0.0
3.6				5YR 6/4 Light brown, silty fine SAND, dry, (loose), 10% dark minerals and feldspar, mostly subangular, soft, poorly graded	
4					0.0
5					0.0
6		SP-SM			0.0
7					0.0
8					0.0
8.7				5YR 6/4 Light brown, gypsiferous CLAY, low plasticity, some silt, dry, (very stiff)	
9					0.0
10		CL			0.0
11				Color changes to pale red 10R 6/2	

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HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 6/15/07

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BORING NUMBER SB29-K3

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				5YR 6/4 Light brown, gypsiferous CLAY, low plasticity, some silt, dry, (very stiff) *(continued)*	0.0
12		CL			0.0
				Gypsum increases with depth, hard	
13					0.0
				13.5	
14				10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, damp, hard	
15	GB HGLSB29-K3-1416	ML			0.0
16					0.0
				16.7	
17				10R 4/2 Grayish red, gypsiferous CLAY, low plasticity, crystals 3-5mm, damp, hard	0.0
18					0.0
19		CL			0.0
20					0.0
21					0.0
				21.2	
22		SM		5YR 8/1 Pinkish gray, silty SAND, find sand, damp, (moderately hard)	0.0
				22.2	
		ML		10YR 8/2 Very pale orange, SILT and very fine sand, moist, (stiff)	
23				23.0	
				Bottom of hole at 23.0 feet.	

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-K6

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/16/06 COMPLETED 6/16/06
GROUND ELEVATION ____ HOLE SIZE 2 1/2"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY Gillette/Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES MEC/MD cleared to 8'
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0				10R 8/2 Grayish orangish pink SILT, dry, (soft)	0.0
1		ML			0.0
2				2.0	
				10R 7/4 Moderate orangish pink, SILT and very fine sand, dry, (soft), 5% dark minerals	0.0
3		ML			0.0
4				4.0	
				5YR 6/4 Light brown, silty fine SAND, dry, (loose), silt content very low, 10% dark minerals and feldspar	0.0
5					0.0
6					0.0
7		SP-SM			0.0
8					0.0
9					0.0
10				10.4	0.0
				10R 6/2 Pale red, SILT, some clay, some fine sand, gypsum, dry, (moderately stiff)	
11		ML			

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-K6

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		ML		10R 6/2 Pale red, SILT, some clay, some fine sand, gypsum, dry, (moderately stiff) *(continued)*	0.0
				11.6	
12		CL		10R 6/2 Pale red, gypsiferous CLAY, damp, (very stiff)	0.0
13					0.0
				13.8	
14		ML		10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, damp, (stiff)	0.0
15					0.0
16					0.0
17				17.0	
		ML		5YR 7/2 Grayish orangish pink, SILT, damp, (moderately stiff)	0.0
				17.3	
18		ML		5YR 5/6 Light brown, SILT, damp, (stiff)	0.0
				18.5	
19		ML		10YR 8/2 Very pale orange, SILT, damp, (very stiff)	0.0
20				20.0	
		SC		5YR 5/6 Light brown, clayey very fine SAND with gypsum	0.0
21				21.0	
		CL		10R 4/2 Grayish red, gypsiferous CLAY, low plasticity, damp, (stiff)	0.0
22					0.0
				22.5	
23		SP		10YR 6/2 Pale yellowish brown, SAND, wet, quartz with 10% dark minerals and feldspar, subangular to subrounded, fine grain, (loose)	0.0
				23.2	
		ML		10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, very moist, (moderately stiff)	

HGL_BOREHOLE_1_LF-29.GPJ_GINT_US.GDT 5/15/07

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BORING NUMBER SB29-K6

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05

PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		ML		10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, very moist, (moderately stiff) *(continued)*	
23.9				Bottom of hole at 23.9 feet.	

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BORING NUMBER SB29-K7

CLIENT AFCEE | PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/16/06 | COMPLETED 6/16/06 | GROUND ELEVATION ____ | HOLE SIZE 2 1/2"-2 1/8"
DRILLING CONTRACTOR Bhate/ESN | GROUND WATER LEVELS:
DRILLING METHOD DPT | AT TIME OF DRILLING —
LOGGED BY Gillette/Gerike | CHECKED BY B.T. Brodersen | AT END OF DRILLING —
NOTES MEC/MD cleared to 8' | AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					
1		ML		10YR 6/2 Pale yellowish brown, clayey SILT, dry, (stiff), friable	0.0
				1.0	
2		ML		10YR 8/2 Very pale orange, SILT and very fine sand, soft, (stiff), dry	0.0
					0.0
3				2.4	
4		ML		5YR 7/2 Grayish orangish pink, SILT and very fine sand, dry, (stiff)	
				4.6	
5		SP		10YR 7/4 Moderate orangish pink, very fine SAND, trace silt, soft, (loose), dry	
6				5.9	
		ML		5YR 7/2 Grayish orangish pink SILT with very fine sand, dry, (soft)	
7				6.3	
				10R 7/9 Moderate orangish pink, very fine SAND, trace silt, soft, (loose), dry	
8		SP			
9					
10				10.0	0.0
				5YR 7/2 Grayish orangish pink, SILT, damp, (moderately stiff)	
11		ML			

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 6/16/07

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BORING NUMBER SB29-K7

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11		ML		5YR 7/2 Grayish orangish pink, SILT, damp, (moderately stiff) *(continued)*	0.0
				11.5	
		ML		5YR 6/4 Light brown, SILT, damp, (moderately stiff)	
12				11.9	
		ML		10R 6/2 Pale red, clayey SILT	0.0
				12.2	
		CL		10R 4/2 Grayish red, gypsiforous CLAY	
				12.6	
13		ML		10YR 8/2 Very pale orange, SILT and very fine sand	0.0
14				14.0	
		ML		5YR 6/4 Light brown clayey SILT, damp, (soft)	0.0
15					0.0
				Becomes gypsiforous	
16				16.2	0.0
		ML		10YR 8/2 Very pale orange, SILT and very fine sand	
17				17.2	0.0
		ML		5YR 6/4 Light brown, clayey SILT, gysiforous, damp, (soft)	
18					0.0
19					0.0
20					0.0
				20.3	
21		CL		5YR 5/6 Light brown, gypsiforous CLAY, some silt, dry, (stiff)	0.0
22					0.0
				22.6	
23		CL		5YR 6/4 Light brown, color changed only	0.0

HGL_BOREHOLE_1 LF-29.GPJ GINT US.GDT 5/15/07

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BORING NUMBER SB29-K7

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		CL		23.8	
24		SM		24.0 10R 8/2 Grayish oragnish pink, very fine SAND with silt, damp, moderately stiff	0.0
				Bottom of hole at 24.0 feet.	

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

HydroGeoLogic Inc.
1155 Herndon Parkway Suite 900
Herndon VA 20170
Telephone: 703-478-5186
Fax: 703-471-4180

BORING NUMBER SB29-L4

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/16/06 COMPLETED 6/16/06
GROUND ELEVATION ____ HOLE SIZE 3.25"/2.5"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
AT TIME OF DRILLING —
LOGGED BY G. Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES Subsurface obstruction @ 3' bgs; relocated borehole 5ft SW
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0		ML		10R 8/2 Grayish orangish pink, SILT and very fine sand, dry, (soft), poorly graded	0.0
0.5				10YR 6/2 Pale yellowish brown, color changed only	
1					0.0
2		ML		1.3' slough, 10R 8/2 Grayish orangish pink, SILT and very fine sand, dry, loose, <5% dark minerals	0.0
2.7				Caliche	
2.8				5R 8/2 Grayish pink, SILT and very fine sand, dry, (soft)	0.0
3		ML			
4					
4.0				5YR 5/6 Light brown, very fine SAND, 10% dark minerals, dry, (loose), soft, poorly graded	0.0
5					0.0
6					0.0
7		SP		Same, mostly subangular	0.0
8					0.0
9					0.0
10					0.0
10.2				5YR 6/4 Light brown, clayey SILT, dry, (stiff), low plasticity, gypsum crystals	
11		ML			

HGL BOREHOLE - LF-29.GPJ GINT US.GDT 5/15/07

(Continued Next Page)

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Herndon VA 20170
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Fax: 703-471-4180

BORING NUMBER SB29-L4

CLIENT AFCEE | PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05 | PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11				5YR 6/4 Light brown, clayey SILT, dry, (stiff), low plasticity, gypsum crystals *(continued)*	0.0
12		ML			0.0
				12.6	
13		ML		10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, damp, hard	0.0
14					0.0
				14.7	
15		ML		5YR 6/4 Light brown, clayey SILT, dry, (very stiff), low plasticity, gypsum crystals	0.0
				15.1	
		ML		10R 6/2 Pale red, SILT with fine sand, and gypsum, dry, moderately stiff	
16				16.0	0.0
		ML		10YR 8/2 Very pale orange, SILT and very fine sand, damp, (stiff)	
17				17.0	0.0
		CL		10R 4/2 Grayish red, gypsiferous CLAY, low plasticity, crystals to 4mm	
18					0.0
				18.7	
19		ML		10R 5/4 Pale reddish brown, SILT and very fine sand, very moist, (moderately stiff), some gypsum, trace clay	0.0
				19.4	
		ML		19.7 10YR 8/2 Very pale orange, SILT and very fine sand, trace dark minerals, damp, stiff	
20		CL		10R 4/2 Grayish red, gypsiferous CLAY, low plasticity	0.0
				20.7	
21		ML		10R 8/2 Grayish orangish pink, SILT, very moist to wet, (stiff), trace dark minerals	0.0
				21.6	
22		ML		10R 6/2 Pale red, clayey SILT, and very fine sand, (stiff), damp	0.0
				22.5	
				Bottom of hole at 22.5 feet.	

HGL_BOREHOLE_1 LF-29.GPJ GINT US.GDT 5/15/07

HydroGeoLogic Inc.
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BORING NUMBER SB29-L6

CLIENT AFCEE
PROJECT NAME Supplemental RFI
PROJECT NUMBER AFC002-037-04-07-05
PROJECT LOCATION Holloman AFB LF-29
DATE STARTED 6/16/06 COMPLETED 6/16/06
GROUND ELEVATION ____ HOLE SIZE 3.25"/2.5"
DRILLING CONTRACTOR Bhate/ESN
GROUND WATER LEVELS:
DRILLING METHOD DPT
▽ AT TIME OF DRILLING 23.2 ft
LOGGED BY Gillette/Gerike CHECKED BY B.T. Brodersen
AT END OF DRILLING —
NOTES MEC/MD cleared to 7.5'
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0						
1		Disturbed sample, pullout 1.2'-2' for UXO check, hole caves	ML		0.3 10R 8/2 Grayish orangish pink, SILT, dry, (soft)	0.0
2	GB HGL-SB29-10-0103				10YR 8/2 Very pale orange, SILT, caliche, dry, (soft), becomes (stiff)	0.0
3		Mag. instrument indicates metal in upper 3' sidewall	ML			0.0
4					3.7 10R 8/2 Grayish orangish pink, SILT, some very fine sand, damp, (soft), poorly graded	0.0
5			ML			0.0
6			ML		5.1 10R 7/4 Moderate orangish pink, color changes only, SILT and very fine sand	0.0
7					5.5 10R 6/6 Moderate reddish orange, fine SAND, 5-10% dark minerals and feldspars, poorly graded, subangular soft	0.0
8		Stop downhold mag. at 7.5'	SP			0.0
9						0.0
10		RS-60 to 10' below ground surface macrocore to T.D.				0.0
11			CL		10.5 10R 5/4 Pale reddish brown, CLAY some silt and gypsum, dry, (stiff), to very stiff, low plasticity	

HGL_BOREHOLE_1_LF-29.GPJ GINT US.GDT 5/15/07

(Continued Next Page)

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BORING NUMBER SB29-L6

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05

PROJECT LOCATION Holloman AFB LF-29

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
11					10R 5/4 Pale reddish brown, CLAY some silt and gypsum, dry, (stiff), to very stiff, low plasticity *(continued)*	
12						
13			CL			
14						
15					15.0	
					No recovery, disturbed sample, liner jams	
16						
17						
18						
19						
20					20.0	
					20' from shoe: 10R 5/4 Pale reddish brown and 5R 8/2 Grayish pink mottled, silty CLAY and clayey SILT, coarsely crystalline, gypsum (3-5mm), some fine sand, dry, (stiff)	
21			CL-ML			
22		Hole caved to 21.5' on pullout			22.0	
			CL		10R 4/6 Moderate reddish brown, CLAY, low plasticity, crystalline gypsum, some silt and fine sand, damp, (stiff)	
					22.5	
			ML		5YR 6/4 Light brown, SILT, some clay and fine sand, soft, very moist to wet	0.0
23					23.2 ▽	
			SM		5YR 6/4 Light brown, silty fine SAND, wet, (loose), some dark minerals and feldspar	0.0

(Continued Next Page)

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BORING NUMBER SB29-L6

CLIENT AFCEE

PROJECT NAME Supplemental RFI

PROJECT NUMBER AFC002-037-04-07-05

PROJECT LOCATION Holloman AFB LF-29

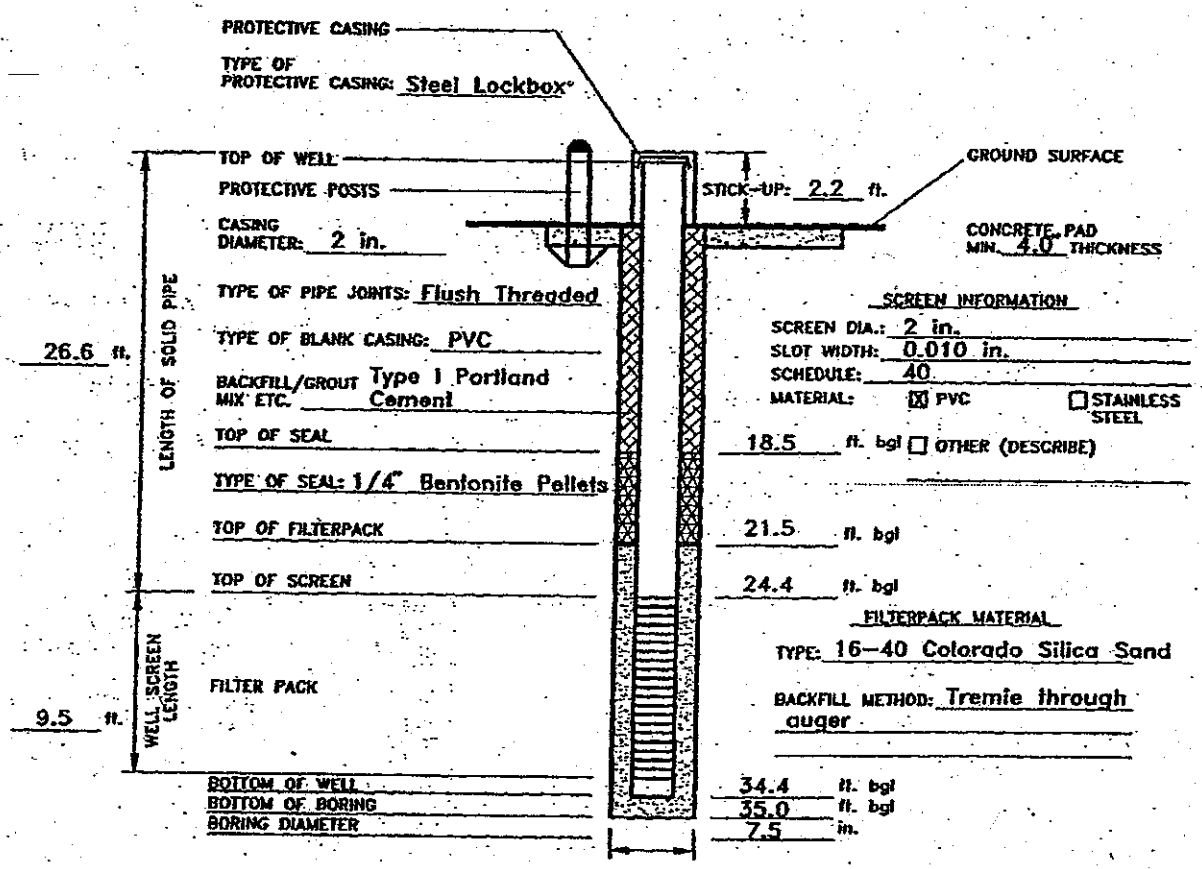
DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
24			SM		5YR 6/4 Light brown, silty fine SAND, wet, (loose), some dark minerals and feldspar *(continued)*	
					24.0	
			ML		5YR 6/4 Light brown, SILT and fine sand, (very stiff), wet, <5% dark minerals	0.0
					24.8	
25			ML		25.0 10YR 8/2 Very pale orange, SILT, damp, hard, trace iron oxide staining	
					Bottom of hole at 25.0 feet.	

MONITORING WELLS

ELEVATION GROUND WATER			PROJECT: HOLLOMAN AFB RI/FS	
DATE INSTALLED: 10 SEP 91	STARTED: 0900	COMPLETED: 1300	LOCATION (Coordinates or Station): 29	
ELEVATION TOP OF CASING: 4103.37			SIGNATURE OF INSPECTOR/INSTALLER: LEM	
DRILLING METHOD: HOLLOW STEM AUGER			WELL NO. (as shown on drawing: title and file number): MW-29-01	

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



WELL DEVELOPMENT

METHOD: See well development record

TIME SPENT DEVELOPING:

VOLUME OF WATER REMOVED:

VOLUME OF WATER ADDED:

DESCRIPTION OF PREDEVELOPMENT WATER:

DESCRIPTION OF POST DEVELOPMENT WATER:

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS

DATE/TIME/LEVEL 10 SEP 91/1300/26.0 ft bgl
23 OCT 91/1000/24.6 ft bmp
04 NOV 91/1349/24.65 ft bmp

DEPTH FROM TOP CASING AFTER DEVELOPMENT:

F2356

DRILLING LOG

HOLE NO. MW-29-01

1. COMPANY NAME: RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR: SOUTHWEST ENG INC
SHEET 1 OF 3 SHEETS
3. PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES
4. LOCATION: 29
5. NAME OF DRILLER: ALEX SANCHEZ
6. MANUFACTURER'S DESIGNATION OF DRILL: HOLLOW-STEM AUGER
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: BOREHOLE DIA.: 7.5"
8. HOLE LOCATION: 677999.7 (Y),549358.1 (X)
9. SURFACE ELEVATION: 4102.16
10. DATE STARTED: 10 SEP 91
11. DATE COMPLETED: 10 SEP 91
12. OVERBURDEN THICKNESS:
15. DEPTH GROUNDWATER ENCOUNTERED: 26.0 ft bgl
13. DEPTH DRILLED INTO ROCK:
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 04 NOV 91 24.65 ft bmp
14. TOTAL DEPTH OF HOLE: 35.0 ft.
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES — DISTURBED: | UNDISTURBED: X
19. TOTAL NUMBER OF CORE BOXES:
20. SAMPLES FOR CHEMICAL ANALYSIS — VOC: | METALS: | OTHER (SPECIFY): | OTHER (SPECIFY): | OTHER (SPECIFY):
21. TOTAL CORE RECOVERY: %
22. DISPOSITION OF HOLE — BACKFILLED: | MONITORING WELL: X | OTHER (SPECIFY):
23. SIGNATURE OF INSPECTOR: LEM

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	1	SILTY SAND: very pale orange (10YR 8/2), sand very fine to medium grained, moderately graded, caliche. (SM)					5.0/5.0 ft
	2						
	3	SILTY SAND: moderate orange pink (5YR 8/4), sand very fine grained, poorly graded, gypsum crystals. (SM)					
	4						
	5	SILTY SAND: light brown (5YR 6/4), sand very fine grained, poorly graded, gypsum crystals. (SM)					3.5/5.0 ft
	6	SAND: light brown (5YR 5/6), sand very fine grained, poorly graded. (SP)					
	7						
	8						
	9						

PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES — HOLE NO.: MW-29-01

DRILLING LOG

HOLE NO. MW-29-01

PROJECT: HOLLOMAN AFB RI/FS

INSPECTOR: LEM

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
		SAND, as above. (SP)					
	11	SILTY SAND: light brown (5YR 6/4), sand very fine to medium grained, moderately graded, caliche. (SM)					3.5/5.0 ft
	12						
	13	SILTY SAND: light brown (5YR 4/4), sand very fine to fine grained, poorly graded. (SM)					
	14	SILTY CLAY: moderate brown 5YR 4/4, gypsum crystals, medium plasticity. (CH)					
	15	SILTY CLAY, as above. (CH)					5.0/5.0 ft
	16						
	17						
	18						
	19	SILTY SAND: greyish-orange (10YR 7/4), sand very fine to fine grained, poorly graded. (SM)					
	20	SILTY SAND, some clay: low plasticity, caliche, moist. (SM)					4.5/5.0 ft
	21						
	22						
	23	SILTY CLAY: moderate brown (5YR 4/4), medium plasticity, gypsum crystals, moist. (CH)					water level at 22.45 ft bgl
	24						
	25	SILTY CLAY, as above. (CH)					
	26						
	27	saturated					

PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES

HOLE NO. MW-29-01

DRILLING LOG

PROJECT: HOLLOMAN AFB RI/FS

INSPECTOR: LEM

HOLE NO.: MW-29-01

SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	29	SILTY SAND: very pale orange (10YR 8/2), sand very fine to fine grained, poorly graded, caliche, saturated. (SM)					
	30						
	31	SILTY SAND: light brown (5YR 6/4), sand very fine to fine grained, poorly graded. (SM)					
	32						
	33						
	34			MW-029-001			geotechnical sample 32.5-35.0 ft
	35						TD= 35.0 ft
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						
	45						

PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES

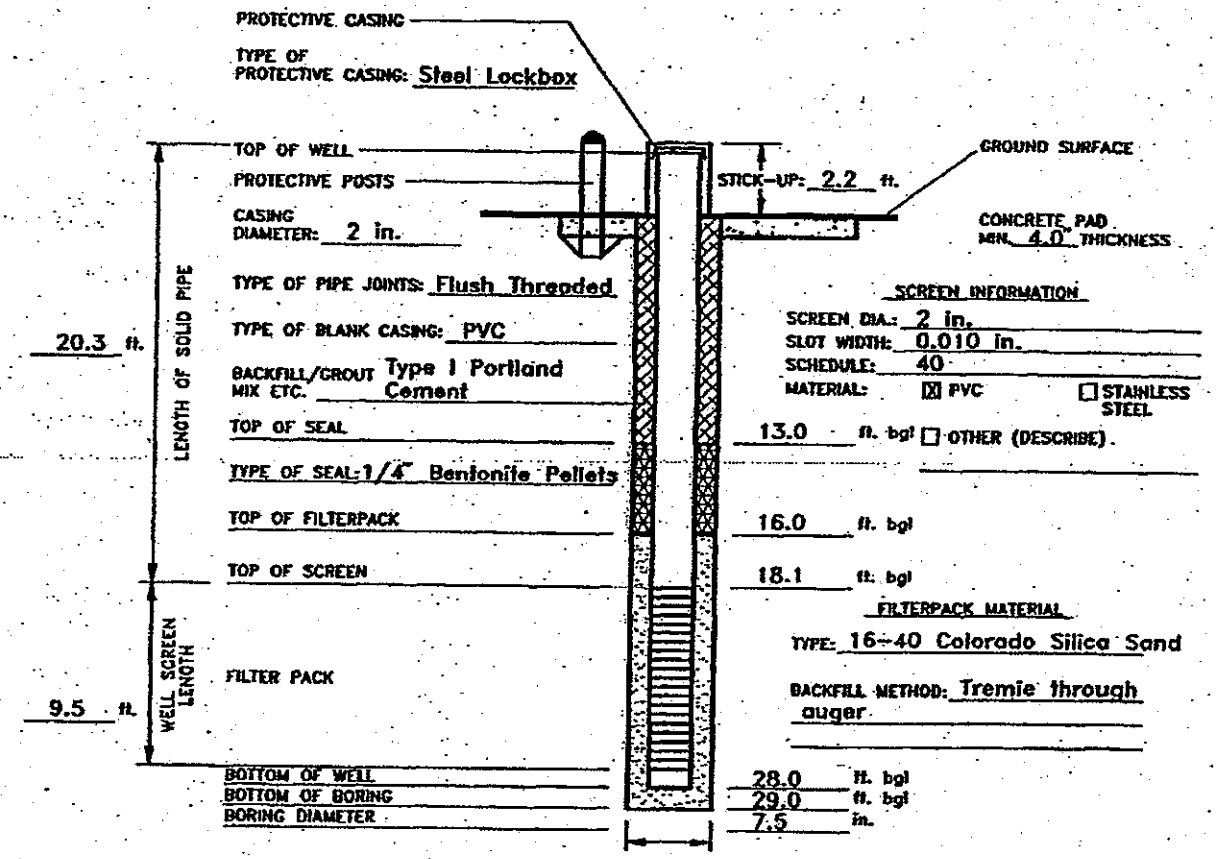
HOLE NO.: MW-29-01

12466

ELEVATION GROUND WATER			PROJECT: HOLLOMAN AFB RI/FS	
DATE INSTALLED: 10 SEPT 91	STARTED: 1520	COMPLETED: 1745	LOCATION (Coordinates or Station): 29	
ELEVATION TOP OF CASING: 4097.81			SIGNATURE OF INSPECTOR/INSTALLER: LEM	
DRILLING METHOD: HOLLOW STEM AUGER			WELL NO. (as shown on drawing: title and file number): MW-29-02	

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



WELL DEVELOPMENT

METHOD: See Well Development Record

TIME SPENT DEVELOPING:

VOLUME OF WATER REMOVED:

VOLUME OF WATER ADDED:

DESCRIPTION OF PREDEVELOPMENT WATER:

DESCRIPTION OF POST DEVELOPMENT WATER:

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS

DATE/TIME/LEVEL: 10 SEP 91/1745/20.0 ft. bgl
23 OCT 91/0930/20.3 ft. bmp
4 NOV 91/1345/20.37 ft. bmp

DEPTH FROM TOP CASING AFTER DEVELOPMENT:

AL738S

DRILLING LOG

HOLE NO. MW-29-02

1. COMPANY NAME: RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR: SOUTHWEST ENG INC
SHEET 1 OF 3 SHEETS
3. PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES
4. LOCATION: 29
5. NAME OF DRILLER: ALEX SANCHEZ
6. MANUFACTURER'S DESIGNATION OF DRILL: HOLLOW-STEM AUGER
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: BOREHOLE DIA.: 7.5
8. HOLE LOCATION: 677665.9 (Y),548729.3 (X)
9. SURFACE ELEVATION: 4096.25
10. DATE STARTED: 10 SEP 91
11. DATE COMPLETED: 10 SEP 91
12. OVERBURDEN THICKNESS:
15. DEPTH GROUNDWATER ENCOUNTERED: 20.0 ft bgl
13. DEPTH DRILLED INTO ROCK:
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 04 NOV 91 20.37 ft bmp
14. TOTAL DEPTH OF HOLE: 20.0 ft.
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: DISTURBED; UNDISTURBED: X
19. TOTAL NUMBER OF CORE BOXES:
20. SAMPLES FOR CHEMICAL ANALYSIS: VOC; METALS; OTHER (SPECIFY); OTHER (SPECIFY); OTHER (SPECIFY)
21. TOTAL CORE RECOVERY %
22. DISPOSITION OF HOLE: BACKFILLED; MONITORING WELL: X; OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR: LEM

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	1	SILTY SAND: very pale orange (10YR 8/2), sand very fine to medium grained, moderately graded. (SM)					5.0/5.0 ft
	2						
	3	SILTY SAND: light brown (5YR 6/4), sand very fine to fine grained, poorly graded. (SM)					
	4						
	5	SILTY SAND: light brown (5YR 5/6), sand very fine to fine grained, poorly graded. (SM)					
		SILTY SAND, as above. (SM)					3.5/5.0 ft
	6						
	7	SILTY SAND, some clay: low plasticity, gypsum crystals. (SM)					
	8						
	9	SAND: very pale orange (10YR 8/2), sand very fine grained, poorly graded, stained moderate yellow (5Y 7/4), dark yellowish-orange (10YR 6/6) and a rust color. (SP)					

DRILLING LOG

HOLE NO. MW-29-02

PROJECT: HOLLOMAN AFB RI/FS

INSPECTOR: LEM

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	11	SILTY CLAY: light brown (5YR 5/6), low plasticity. (CL)					3.0/5.0 ft
	12	SILTY SAND, some clay: moderate brown (5YR 4/4), sand very fine to fine grained, poorly graded, very low plasticity. (SM)					
	13						
	14	SAND: very pale orange (10YR 6/2), very fine grained, poorly graded. (SP)					
	15	SILTY CLAY: very pale orange (10YR 8/2), moderate plasticity. (CH)					3.0/5.0 ft
	16						
	17	CLAYEY SILT: moderate yellowish brown (10YR 5/4), low plasticity, (ML)					
	18	SILTY CLAY: dusky yellow (5YR 6/4), medium plasticity. (CH)					▽ water level at 18.17 ft bgl
	19	SANDY CLAY: moderate brown (5YR 4/4), sand very fine grained, low plasticity, gypsum crystals. (CL)					
	20						
	21	SANDY CLAY, as above; saturated at 21.0 ft. (CL)					3.0/5.0 ft
	22	SAND: greyish-orange pink (5YR 7/2), stained dusky yellow (5YR 6/4) in places with thin black and rust colored layers, saturated. (SP)					
	23						
	24						
	25						
	26						
	27			MW-029-002			3.0/5.0 ft geotechnical sample 26.5-29.0 ft

PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES

HOLE NO. MW-29-02

DRILLING LOG

HOLE NO. MW-29-02

PROJECT HOLLOMAN AFB RI/FS

INSPECTOR LEM

SHEET 3 OF 3 SHEETS

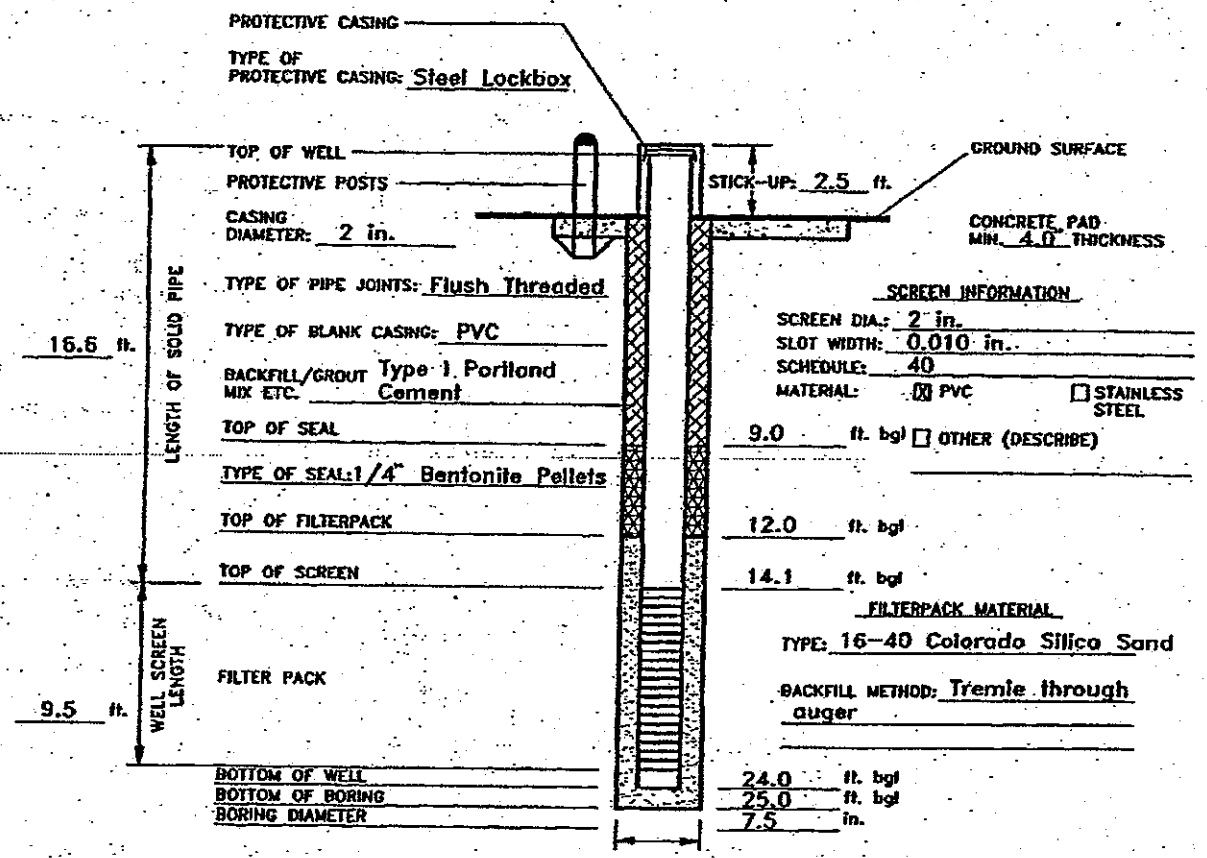
ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	29						TD= 29 ft
	30						
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						
	45						

PROJECT HOLLOMAN AFB RI/FS FOR 29 SITES HOLE NO. MW-29-02

ELEVATION GROUND WATER			PROJECT: HOLLOMAN AFB RI/FS	
DATE INSTALLED: 11 SEPT 91	STARTED: 0745	COMPLETED: 0900	LOCATION (Coordinates or Station): 29	
ELEVATION TOP OF CASING: 4097.14			SIGNATURE OF INSPECTOR/INSTALLER: LEM	
DRILLING METHOD: HOLLOW STEM AUGER			WELL NO. (as shown on drawing: title and file number): MW-29-03	

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



WELL DEVELOPMENT

METHOD: See Well Development Record

TIME SPENT DEVELOPING:

VOLUME OF WATER REMOVED:

VOLUME OF WATER ADDED:

DESCRIPTION OF PREDEVELOPMENT WATER:

DESCRIPTION OF POST DEVELOPMENT WATER:

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS

DATE/TIME/LEVEL: 23 OCT 91/0900/18.56 ft. bmp

4 NOV 91/1343/18.53 ft. bmp

DEPTH FROM TOP CASING AFTER DEVELOPMENT:

D1735T

DRILLING LOG

HOLE NO. MW-29-03

1. COMPANY NAME: RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR: SOUTHWEST ENG INC
SHEET 1 OF 2 SHEETS
3. PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES
4. LOCATION: 29
5. NAME OF DRILLER: ART VALTIERRA
6. MANUFACTURER'S DESIGNATION OF DRILL: HOLLOW-STEM AUGER
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: BOREHOLE DIA.: 7.5"
8. HOLE LOCATION: 677162.19(Y), 548755.18(X)
9. SURFACE ELEVATION: 4094.92
10. DATE STARTED: 10 SEP 91
11. DATE COMPLETED: 11 SEP 91
12. OVERBURDEN THICKNESS:
13. DEPTH DRILLED INTO ROCK:
14. TOTAL DEPTH OF HOLE: 25 ft.
15. DEPTH GROUNDWATER ENCOUNTERED: 14.5 ft bgl
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 04 NOV 91 18.53 ft bmp
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: DISTURBED / UNDISTURBED
19. TOTAL NUMBER OF CORE BOXES:
20. SAMPLES FOR CHEMICAL ANALYSIS: VOC / METALS / OTHER (SPECIFY) / OTHER (SPECIFY) / OTHER (SPECIFY)
21. TOTAL CORE RECOVERY: X
22. DISPOSITION OF HOLE: BACKFILLED / MONITORING WELL: X / OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR: TAC

a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	1	SANDY SILT: moderate brown (5YR 4/4), dry, soft, crumbly, sand very fine grained, (non-plastic). SILT: very pale orange (10YR 8/2), dry, crumbly, non-plastic, gypsum, moderately soft, (ML)				5,6,13,14	1.8/2.0 ft
	2						
	3						
	4						
	5	SILTY SAND: light brown (5YR 6/4), dry, soft, very fine to fine grained, very poorly graded. (SM)				18,26,25, 22	2.0/2.0 ft
	6						
	7						
	8						
	9						

DRILLING LOG

HOLE NO. MW-29-03

PROJECT: HOLLOMAN AFB RI/FS

INSPECTOR: TAC

SHEET 2 OF 2 SHEETS

a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	11	SILTY SAND: light brown (5YR 5/6), soft to 11.3', dry, then light brown (5YR 6/4), hard, fine to very fine grained becoming more silty, gypsum mottling. (SM)				20,36,30, 42	2.0/2.0 ft
	12						
	13	SILT: very pale orange (10YR 8/2) at ~12.5' crumbly, moist, gypsum. (ML)					
	14						
	15	SILTY CLAY: moderate brown (5YR 4/4), moderately plastic, moderately hard, moist, abundant small gypsum crystals, mottling/ veins. (CL)				9,12,18,24	cuttings wet at 14.5 ft
	16						▽ water at 16.03 ft
	17						
	18						
	19						
	20	SILTY SAND: light brown (5YR 6/4), wet, soft, fine grained, gypsum crystals at 21.3 ft. (SM)				12,10,14, 32	2.0/2.0 ft
	21						
	22						
	23	SILT: saturated, light brown, cuttings consistency of melted ice cream. (ML)					
	24						
	25						TD= 25.0 ft
	26						
	27						

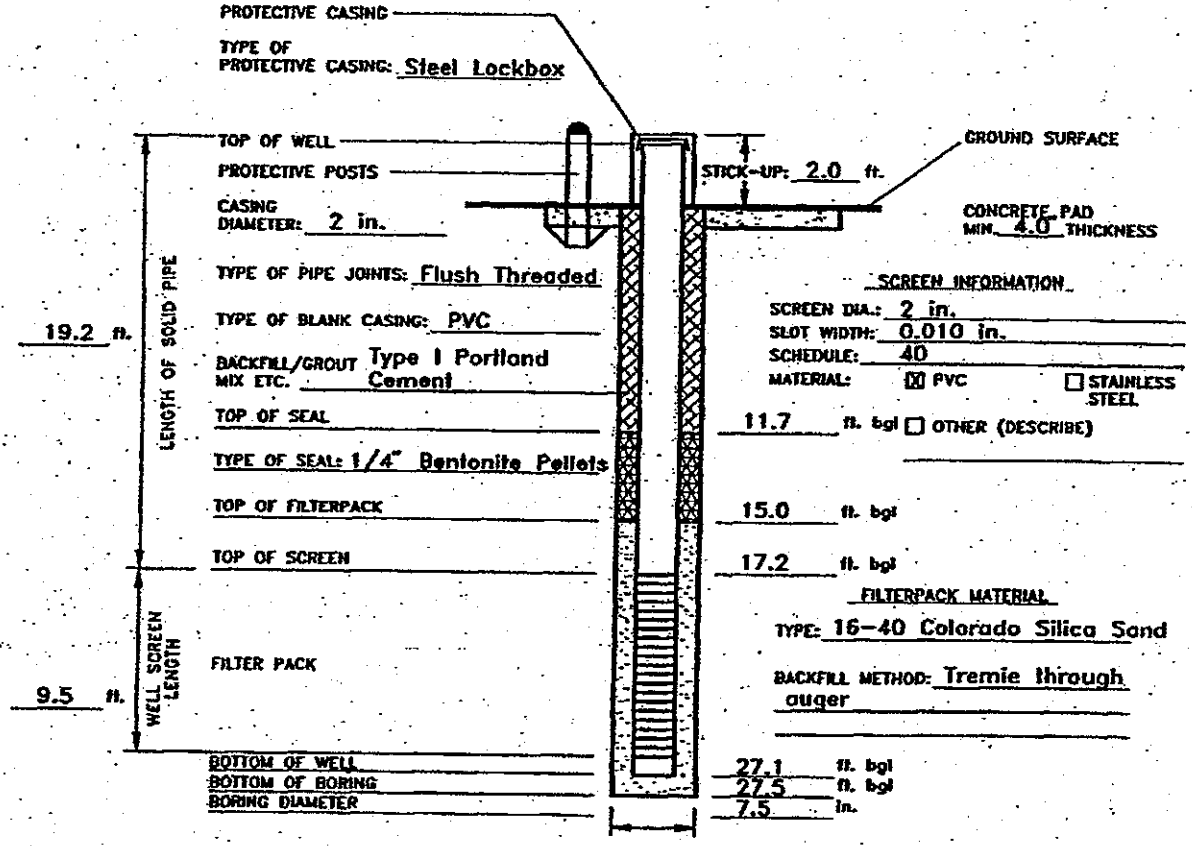
PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES

HOLE NO. MW-29-03

ELEVATION GROUND WATER: 4079.1			PROJECT: HOLLOMAN AFB RI/FS	
DATE INSTALLED: 10 SEPT 91	STARTED: 0900	COMPLETED: 1300	LOCATION (Coordinates or Station): 29	
ELEVATION TOP OF CASING: 4098.5			SIGNATURE OF INSPECTOR/INSTALLER: TAC	
DRILLING METHOD: HOLLOW STEM AUGER			WELL NO. (as shown on drawing: title and file number): MW-29-04	

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



SCREEN INFORMATION

SCREEN DIA.: 2 in.
SLOT WIDTH: 0.010 in.
SCHEDULE: 40
MATERIAL: ☒ PVC ☐ STAINLESS STEEL ☐ OTHER (DESCRIBE)

FILTERPACK MATERIAL

TYPE: 16-40 Colorado Silica Sand
BACKFILL METHOD: Tremie through auger

WELL DEVELOPMENT

METHOD: See well development record
TIME SPENT DEVELOPING:
VOLUME OF WATER REMOVED:
VOLUME OF WATER ADDED:
DESCRIPTION OF PREDEVELOPMENT WATER:
DESCRIPTION OF POST DEVELOPMENT WATER:

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS
DATE/TIME/LEVEL
10 SEP 91/1300/17.4 ft bgl
23 OCT 91/0900/19.34 ft bmp
04 NOV 91/1341/19.41 ft bmp

DEPTH FROM TOP CASING AFTER DEVELOPMENT:

2558

DRILLING LOG

HOLE NO. MW-29-04

1. COMPANY NAME: RADIAN CORPORATION
2. DRILLING SUBCONTRACTOR: SOUTHWEST ENG INC
SHEET 1 OF 3 SHEETS
3. PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES
4. LOCATION: 29
5. NAME OF DRILLER: ART VALTERRA
6. MANUFACTURER'S DESIGNATION OF DRILL: HOLLOW-STEM AUGER
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: BOREHOLE DIA.: 7.5"
8. HOLE LOCATION: 677011.5(Y), 548931.1(X)
9. SURFACE ELEVATION: 4096.93
10. DATE STARTED: 10 SEP 91
11. DATE COMPLETED: 10 SEP 91
12. OVERBURDEN THICKNESS:
13. DEPTH DRILLED INTO ROCK:
14. TOTAL DEPTH OF HOLE: 30.0 ft.
15. DEPTH GROUNDWATER ENCOUNTERED: 17.4 ft bgl
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 04 NOV 91 19.41 ft bmp
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: DISTURBED: ; UNDISTURBED:
19. TOTAL NUMBER OF CORE BOXES:
20. SAMPLES FOR CHEMICAL ANALYSIS: VOC: ; METALS: ; OTHER (SPECIFY): ; OTHER (SPECIFY): ; OTHER (SPECIFY): ; 21. TOTAL CORE RECOVERY: %
22. DISPOSITION OF HOLE: BACKFILLED: ; MONITORING WELL: X; OTHER (SPECIFY): ; 23. SIGNATURE OF INSPECTOR: TAC

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	1	SILTY SAND: greyish-orange (10YR 7/4), dry, soft, very poorly sorted, very fine grained. (SM)				3,5,5,3	1.5/2.0 ft
	2						
	3						
	4						cuttings change to lighter color
	5	SILTY SAND, as above: very pale orange (10YR 8/2).				4,6,5,2	1.7/2.0 ft
	6	changes to light brown (5YR 5/6).					
	7						
	8	SILT: very pale orange (10YR 8/2), gypsum (from cuttings). (ML)					
	9						

PROJECT: HOLLOMAN AFB RI/FS FOR 29 SITES — HOLE NO. MW-29-04

DRILLING LOG

HOLE NO. MW-29-04

PROJECT: HOLLOMAN AFB RI/FS

INSPECTOR: TAC

SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOTECH SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	11	SAND: light brown (5YR 5/6), slightly moist, soft, sand fine to medium grained, poorly graded, clean. (SP)				9,8,23,43	2.0/2.0 ft
	12	SILT: very pale orange (10YR 8/2), hard, moist, non-plastic, crumbly. (ML)					
	13						
	14						
	15	SILT: very pale orange (10YR 8/2), hard, slightly moist, non-plastic, cemented in zones, gypsum. (ML)				50+	0.5/0.5 ft
	16						
	17						cuttings wet ▽
	18	SANDY SILT: light brown (5YR 5/6), moderate plasticity, moist, clayey (from cuttings.					Water level at 17.4 ft. bgl.
	19						
	20	SILTY SAND: moderate brown (5YR 4/4), soft, wet, fine grained, minor gypsum mottling, clayey. (SM)				18,19,24, 35	2.0/2.0 ft -split spoon wet
	21						
	22						
	23						
	24	SILTY SAND: very pale orange (10YR 8/2), wet (cuttings).					
	25	SILTY SAND: very pale orange (10YR 8/2), fine grained, moderately hard, poorly graded. (SM).				45,28,14, 12	2.0/2.0 ft
	26	grades at 25.8 ft to light brown (5YR 6/4).					
	27	CLAY: moderate brown (5YR 4/4), gypsum crystals, highly plastic, soft, wet. (CH)					

DRILLING LOG

PROJECT: HOLLOMAN AFB RI/FS

INSPECTOR: TAC

HOLE NO. MW-29-04

SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	FIELD SCREENING RESULTS d	GEOLOGIC SAMPLE OR CORE BOX NO. e	ANALYTICAL SAMPLE NO. f	BLOW COUNTS g	REMARKS/RECOVERY h
	29						
	30						TD= 30.0 ft
	31						
	32						
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						
	45						

F2516

PROJECT HOLLOMAN AFB RI/FS FOR 29 SITES HOLE NO. MW-29-04

APPENDIX C

SUPPLMENTAL RFI FIELD DATA SHEETS

LF-10

SOIL GAS SAMPLE DATA SHEETS

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broadus
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
Trip-1					
Trip-2					
Trip-3					
Trip-4					
LF10-N800E600		good condition	10/01/05	1354	BTB
LF10-N800E500				1358	BTB
LF10-N800E400				1431	BTB
LF10-N900E400				1432	BTB
LF10-N700E400				1546	BTB
LF10-N700E500				1547	BTB
LF10-N900E300				1555	BTB
LF10-N800E300				1558	BTB
LF10-N900E200				1611	BTB
LF10-N800E200				1606	BTB
LF10-N800E100				1616	BTB
LF10-N700-E200				1619	BTB
LF10-N700E300				1624	BTB
LF10-N700E100				1626	BTB
LF10-N600E300				1638	BTB
LF10-N600E200				1637	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheidt	9-21-2005 / 1700	FEDEX	Brett Broadus	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Broadus	10/05/05 1900	FedEX		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	[signature]
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
LF10 - N500 E300			10/01/05	1645	BTB
LF10 - N1000 E400				1654	BTB
LF10 - N1100 ~~E400~~ E350 BTB		→ Noted change w/ Beacon (Harry O'Neil) on 10/06/05		1656	BTB
LF10 - N900 E500				1704	BTB
LF10 - N900 E600				1706	BTB
LF10 - N600 E600			10/02/05	0750	BTB
LF10 - N600 E700				0759	BTB
LF10 - N700 E600				0802	BTB
LF10 - N700 E700				0807	BTB
LF10 - N800 E700				0809	BTB
LF10 - N800 E800				0812	BTB
LF10 - N900 E700				0818	BTB
LF10 - N1000 E600				0821	BTB
LF10 - N600 E500				0827	BTB
LF10 - N500 E600				0830	BTB
LF10 - N500 E500				0834	BTB
LF10 - N400 E500				0835	BTB
LF10 - ~~N500~~ 400 ~~E500~~ 400 BTB				0840	BTB
LF10 - N400 E400				0842	BTB
LF10 - N1000 E300				0850	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheick	9-21-2005 / 1700	FEDEX	[signature]	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
[signature]	10/05/05 1900	FedEx		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broad
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10 - N600 E400		vials - good condition	10/02/05	0847	BTB
LF10 - N1100 E500				0911	BTB
LF10 - N1200 E600				0912	BTB
LF10 - N1100 E700				0915	BTB
LF10 N1100 E600				0928	BTB
LF10 - N1100 E790				0930	BTB
LF10 - N900 E800				0932	BTB
LF10 - N1000 E800				0933	BTB
LF10 - N1160 E700				0936	BTB
LF10 - N1070 E200				1021	BTB
LF10 - N1070 E300				1023	BTB
LF10 - N1000 E200				1024	BTB
LF10 - N1000 E100				1026	BTB
LF10 - N900 E100				1026	BTB
LF10 - N900 E0				1029	BTB
LF10 - N800 E0				1030	BTB
LF10 - N700 E0				1036	BTB
LF10 - N600 E100				1041	BTB
LF10 - N600 E0				1042	BTB
LF10 - N500 E100				1044	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FEDEX	Brett Broad	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Broad	10/05/05 1900	Fed Ex		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Scott Hagood
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N500 E0		vials - good condition	10/02/05	1035	BTB
LF10-N400 E100				1046	BTB
LF10-N400 E0				1047	BTB
LF10-N300 E100				1049	BTB
LF10-N300 E0				1050	BTB
LF10-N200 E100				1051	BTB
LF10-N190 E0				1052	BTB
LF10-N100 E100				1057	BTB
LF10-N0 E100				1056	BTB
LF10-N010 E0				1105	BTB
LF10-N100 E0				1108	BTB
LF10-N100 E200				1555	BTB
LF10-N200 E200				1557	BTB
LF10-N300 E200				1558	BTB
LF10-N500 E200				1602	BTB
LF10-N300 E400				1620	BTB
LF10-N300 E500			10/03/05	1448	BTB
LF10-N300 E600				1449	BTB
LF10-N400 E600				1450	BTB
LF10-N700 E800				1453	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	9-21-2005 / 1700	FedEx	Scott Hagood	09/25/05 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Scott Hagood	10/05/05 1900	FedEx		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broad
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N300 E700		vial - good condit	10/03/05	1454	BTB
LF10-N200 E700				1455	BTB
LF10-N300 E800				1502	BTB
LF10-N400 E900				1503	BTB
LF10-N400 E700				1504	BTB
LF10-N400 E800				1505	BTB
LF10-N500 E900				1506	BTB
LF10-N500 E700				1507	BTB
LF10-N600 E900				1508	BTB
LF10-N500 E800				1509	BTB
LF10-N600 E800				1510	BTB
LF10-N600 E1000				1510	BTB
LF10-N700 E900				1511	BTB
LF10-N800 E900				1512	BTB
LF10-N700 E1000				1520	BTB
LF10-N800 E1000				1514	BTB
LF10-N1000 E900				1517	BTB
LF10-N1000 E1000				1518	BTB
LF10-N1100 E900				1520	BTB
LF10-N900 E1000				1523	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheich	9-21-2005 / 1700	FEDEX	Brett Broad	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Broad	10/05/05 1900	FEDEX		

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number EM1776 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broom
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
LF10-N900E900		Vial - good condition	10/03/05	1515	BTB
LF10-N1000E500		↓	↓	1531	BTB
LF10-N1000E700			10/05/05	0933	BTB
LF10-N400E200				1600	BTB
LF10-N400E300				1602	BTB
LF10-N0E200				1618	BTB
LF10-N200E400				1624	BTB
LF10-N200E500				1625	BTB
LF10-N200E600				1627	BTB
LF10-N200E300				1633	BTB
LF10-N300E300		↓	↓	1635	BTB

Shipment of Field Kit to Site — Custody Seal # 00424474, 00424476 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheich	9-21-2005 / 1700	FedEx	Brett Broom	09/25/05 / 1700

Shipment of Field Kit to Laboratory — Custody Seal # 00424489 **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Brett Broom	10/05/05 1900	FEDEX		

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

Project Information	
Beacon Project No.:	EM1776
Site Name:	LF10
Site Location:	Holloman AFB, NM

BEACON ENVIRONMENTAL SERVICES, INC.

323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Collected By:	

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, sampling hole depth, cartridge/vial condition)
LF10 - N800 E600	9/28/05 / 1359	10/01/05 / 1354	Concrete Pad (6"); 3ft boring; vial good condition
LF10 - N800 E500	9/28/05 / 1412	10/01/05 / 1358	Concrete Pad (6"); 3ft boring; vial-good condition
LF10 - N800 E400	9/28/05 / 1431	10/01/05 / 1431	Concrete Pad (6"); 3 ft boring; vial-good condition - vehicle parking area
LF10 - N700 E400	9/28/05 / 1431	10/01/05 / 1432	Concrete Pad (6"); 3 ft boring; vial-good condit.
LF10 - N700 E400	9/28/05 / 1550	10/01/05 / 1546	Concrete Pad (6"); 3 ft boring; vial-good condit; vehicle- parking area
LF10 - N700 E500	9/28/05 / 1431	10/01/05 / 1547	Concrete Pad (6"); 3ft boring; vial-good condit.
LF10 - N900 E300	9/28/05 / 1601	10/01/05 / 1555	Concrete Pad (6"); 3ft boring; vial-good condit.
LF10 N800 E300	9/28/05 / 1600	10/01/05 / 1558	Concrete Pad (6"); 3 ft boring vial-good condit
LF10 N800 E200	9/28/05 / 1610	10/01/05 / 1606	~~Concrete Pad~~ Gravel Cover (4"); 3ft boring; vial-good condit.
LF10 N900 E200	9/28/05 / 1612	10/01/05 / 1611	Gravel Cover (3"); 3ft boring, vial-good condit.
LF10 N800 E100	9/28/05 / 1616	10/01/05 / 1616	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 N700 E200	9/28/05 / 1619	10/01/05 / 1619	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 ~~300~~ N700 E~~200~~	9/28/05 / 1627	10/01/05 / 1624	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 N700 E100	9/28/05 / 1627	10/01/05 / 1626	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 N600 E300	9/28/05 / 1637	10/01/05 / 1636	Gravel Cover (2"); 3ft boring; vial-good condit.

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 N600 E200	9/28/05 / 1637	10/01/05 / 1637	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 N500 E300	9/28/05 / 1642	10/01/05 / 1645	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N1000 E400	9/28/05 / 1654	10/01/05 / 1654	Asphalt Pavement (2"); 3ft boring; vial-good condit.
LF10 - N1100 E350	9/28/05 / 1655	10/01/05 / 1656	Asphalt Pavement (2"); 3ft boring; vial-good condit.
LF10 - N900 E500	9/28/05 / 1703	10/01/05 / 1704	Gravel Cover (4"); 3ft boring; vial-good condit
LF10 - N900 E600	9/28/05 / 1706	10/01/05 / 1706	Asphalt Pavement (3"); 3ft boring; vial-good condit.
LF10 N600 E600	9/29/05 / 0750	10/02/05 / 0750	Gravel Cover (2"); 3ft boring (Refusal); vial-good condit.
LF10 N600 E700	9/29/05 / 0759	10/02/05 / 0759	Gravel Cover (2"); 3ft boring; vial-good condit.
LF10 - N700 E600	9/29/05 / 0802	10/02/05 / 0802	Gravel Cover (2"); 3ft boring; vial-good condit
LF10 - N700 E700	9/29/05 / 0807	10/02/05 / 0807	Gravel Cover (2"); 3ft boring; vial-good condit
LF10 - N800 E700	9/29/05 / 0809	10/02/05 / 0809	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N800 E800	9/29/05 / 0812	10/02/05 / 0812	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N900 E700	9/29/05 / 0818	10/02/05 / 0818	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N1000 E600	9/29/05 / 0821	10/02/05 / 0821	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N600 E500	9/29/05 / 0828	10/02/05 / 0827	Gravel Cover (3"); 3ft boring; vial-good condit.
LF10 - N500 E600	9/29/05 / 0830	10/02/05 / 0830	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 - N500 E500	9/29/05 / 0834	10/02/05 / 0834	Gravel Cover (3"); 3ft boring; vial-good condit
LF10 N400 E500	9/29/05 / 0835	10/02/05 / 0835	Gravel Cover (2"); 3ft boring; vial-good condit

BEACON ENVIRONMENTAL SERVICES, INC.
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PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N500 E400	9/29/05 / 0840	10/02/05 / 0840	Gravel Cover (3"); 3 ft boring; vial-good condit
LF10 - N400 E400	9/29/05 / 0842	10/02/05 / 0842	Gravel Cover (2"); 3 ft boring; vial-good condit.
LF10 - N600 E400	9/29/05 / 0847	10/02/05 / 0847	Gravel Cover (2"); 3 ft boring; vial-good condit.
LF10 - N1000 E300	9/29/05 / 0850	10/02/05 / 0850	Gravel Cover (4"); 3 ft boring; vial-good condit
LF10 - N1100 E500	9/29/05 / 0909	10/02/05 / 0911	Gravel Cover (4"); 3 ft boring; vial-good condit
LF10 - N1200 E600	9/29/05 / 0910	10/02/05 / 0912	Gravel Cover (3"); 3 ft boring; vial-good condit. Beer can in boring.
LF10 - N1100 E700	9/29/05 / 0912	10/02/05 / 0915	Gravel Cover (3"); 3 ft boring; vial-good condit.
LF10 - N1100 E600	9/29/05 / 0919	10/02/05 / 0928	Grass/gravel cover (3"); 3 ft boring; vial-good condit.
LF10 - N1100 E790	9/29/05 / 0923	10/02/05 / 0930	Soil cover; 3 ft boring; vial-good condit
LF10 - N900 E800	9/29/05 / 0924	10/02/05 / 0932	Soil Cover; 3 ft boring; vial-good condit
LF10 - N1000 E800	9/29/05 / 0926	10/02/05 / 0933	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N1160 E700	9/29/05 / 0935	10/02/05 / 0936	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N1070 E200	9/29/05 / 1021	10/02/05 / 1021	Gravel Cover (4") ~~Soil Surface~~; 3 ft boring; vial-good condit.
LF10 - N1070 E300	9/29/05 / 1022	10/02/05 / 1023	Gravel Cover (4"); 3 ft boring; vial-good condit
LF10 - N1000 E200	9/29/05 / 1025	10/02/05 / 1024	Gravel Cover (4"); 3 ft boring; vial-good condit.
LF10 - N900 E100	9/29/05 / 1030	10/02/05 / 1026	Gravel Cover (4"); 3 ft boring; vial-good condit.
LF10 - N1000 E100	9/29/05 / 1027	10/02/05 / 1026	Gravel Cover (3"); 3 ft boring; vial-good condit.
LF10 - N900 E0	9/29/05 / 1031	10/02/05 / 1029	Gravel Cover (1"); 3 ft boring; vial-good condit.

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PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N800 E0	9/29/05 / 1036	10/02/05 / 1030	Gravel Cover (~1"); 3 ft boring; vial - good condit.
LF10 - N700 E0	9/29/05 / 1038	10/02/05 / 1036	Soil/Gravel Cover; 3 ft boring; vial - good condit; Monit. Well 10 ft away
LF10 - N600 E100	9/29/05 / 1042	10/02/05 / 1041	Soil Surface; 3 ft boring; vial - good condit
LF10 - N600 E0	9/29/05 / 1043	10/02/05 / 1042	Soil Surface; 3 ft boring; vial - good condit
LF10 - N500 E100	9/29/05 / 1044	10/02/05 / 1044	Soil Surface; 3 ft boring; vial - good condit
LF10 - N500 E0	9/29/05 / 1045	10/02/05 / 1045	Soil Surface; 3 ft boring; vial - good condit
LF10 - N400 E100	9/29/05 / 1047	10/02/05 / 1046	Soil Surface; 3 ft boring; vial - good condit
LF10 - N400 E0	9/29/05 / 1048	10/02/05 / 1047	Soil Surface; 3 ft boring; vial - good condit
LF10 - N300 E100	9/29/05 / 1050	10/02/05 / 1049	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N300 E0	9/29/05 / 1051	10/02/05 / 1050	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E100	9/29/05 / 1052	10/02/05 / 1051	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N190 E0	9/29/05 / 1054	10/02/05 / 1052	Soil Surface; 3 ft boring; vial - good condit; gas-line 10 ft away
LF10 - N100 E100	9/29/05 / 1057	10/02/05 / 1057	Soil Surface; 3 ft boring; vial - good condit
LF10 - N0 E100	9/29/05 / 1102	10/02/05 / 1056	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N010 E0	9/29/05 / 1105	10/02/05 / 1105	Soil Surface; 3 ft boring; vial - good condit
LF10 - N100 E0	9/29/05 / 1108	10/02/05 / 1108	Soil Surface; 3 ft boring; vial - good condit
LF10 - N100 E200	9/29/05 / 1531	10/02/05 / 1555	Soil Surface; 3 ft boring; vial - good condit.
LF10 - N200 E200	9/29/05 / 1535	10/02/05 / 1557	Soil Surface; 3 ft boring; vial - good condit.

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PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10 - N300 E200	9/29/05 / 1540	10/02/05 / 1558	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N500 E200	9/29/05 / 1548	10/02/05 / 1602	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N300 E400	9/29/05 / 1603	10/02/05 / 1620	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N300 E500	9/30/05 / 1451	10/03/05 / 1448	Soil Surface; 2.5 ft boring (obst.); vial-good condit.
LF10 - N300 E600	9/30/05 / 1451	10/03/05 / 1449	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N400 E600	9/30/05 / 1456	10/03/05 / 1450	Soil Surface; 2.5 ft boring; vial-good condit.
LF10 - N700 E800	9/30/05 / 1458	10/03/05 / 1453	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N300 E700	9/30/05 / 1458	10/03/05 / 1454	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N200 E700	9/30/05 / 1500	10/03/05 / 1455	Soil Surface; 3 ft boring; vial-good condit
LF10 - N300 E800	9/30/05 / 1509	10/03/05 / 1502	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N400 E900	9/30/05 / 1509	10/03/05 / 1503	Soil Surface; 3 ft boring; vial-good condit; wet soil @ 2.5 ft
LF10 - N400 E700	9/30/05 / 1511	10/03/05 / 1504	Soil Surface; 2.75 ft boring; vial-good condit.
LF10 - N400 E800	9/30/05 / 1513	10/03/05 / 1505	Soil Surface; 3 ft boring; vial-good condit
LF10 - N500 E900	9/30/05 / 1513	10/03/05 / 1506	Soil Surface; 3 ft boring; vial-good condit.
LF10 - N500 E700	9/30/05 / 1514	10/03/05 / 1507	Soil Surface; 2 ft boring (obst.); vial-good condit; wood debris present.
LF10 - N600 E900	9/30/05 / 1514	10/03/05 / 1508	Soil Surface; 3 ft boring; vial-good condit; wet soil @ 1.5 ft
LF10 - N500 E800	9/30/05 / 1515	10/03/05 / 1509	Soil Surface; 2.5 ft boring (obst.); vial-good condit
LF10 - N600 E800	9/30/05 / 1516	10/03/05 / 1510	Soil Surface; 1.5 ft boring (obst); vial-good condit.

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PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10-N600E1000	9/30/05 / 1516	10/03/05 / 1510	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft
LF10-N700E900	9/30/05 / 1518	10/03/05 / 1511	Soil Surface; 3ft boring; vial-good condit
LF10-N800E900	9/30/05 / 1519	10/03/05 / 1512	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft
LF10-N700E1000	9/30/05 / 1520	10/03/05 / 1520	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft
LF10-N800E1000	9/30/05 / 1522	10/03/05 / 1514	Soil Surface; 3ft boring; vial-good condit; wet soil @ 1.5ft.
LF10-N1000E900	9/30/05 / 1525	10/03/05 / 1517	Soil Surface; 3ft boring; vial-good condit
LF10-N1000E1000	9/30/05 / 1525	10/03/05 / 1518	Soil Surface; 3ft boring; vial-good condit
LF10-N1100E900	9/30/05 / 1525	10/03/05 / 1520	Soil Surface; 3ft boring; vial-good condit.
LF10-N900E1000	9/30/05 / 1525	10/03/05 / 1523	Soil Surface; 3ft boring; vial-good condit.
LF10-N900E900	9/30/05 / 1525	10/03/05 / 1515	Soil Surface; 3ft boring; vial-good condit
LF10-N1000E500	9/30/05 / 1531	10/03/05 / 1531	~~Soil Surface~~ Gravel cover (4") ; 3ft boring; vial-good condit.
LF10-N1000 E700	10/2/05 / 0927	10/05/05 / 0933	Soil Surface; 3ft boring; vial-good condit.
LF10-N400E200	10/02/05 / 1601	10/05/05 / 1600	Soil Surface; 3ft boring; vial-good condit.
LF10-N400E300	10/02/05 / 1604	10/05/05 / 1602	Soil Surface; 3ft boring; vial-good condit.
LF10-N0E200	10/02/05 / 1622	10/05/05 / 1618	Soil Surface; 3ft boring; vial-good condit
LF10-N200E400	10/02/05 / 1628	10/05/05 / 1624	Soil Surface; 3ft boring; vial-good condit.
LF10-N200E500	10/02/05 / 1629	10/05/05 / 1625	Soil Surface; 3ft boring; vial-good condit.
LF10-N200E600	10/02/05 / 1630	10/05/05 / 1627	Soil Surface; 3ft boring; vial-good condit

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (*e.g.*, asphalt/concrete covering, description of sample location, cartridge/vial condition)
LF10-N200 E300	10/02/05 / 1637	10/05/05 / 1633	Soil Surface; 3 ft boring; vial - good condit.
LF10-N300 E300	10/02/05 / 1639	10/05/05 / 1635	Soil Surface; 3 ft boring; vial - good condit.

BEACON ENVIRONMENTAL SERVICES, INC.
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CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	1900
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number 1911 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
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Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Burt Bird
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
Trip-4					
N700 - E100					
N600 - E100					
N500 - E100					
N400 - E100					
N300 - E100					
N200 - E100					
N100 - E100					
"N80 E200					
"N90 E300					
"N100 E400					
"N100 E500					
"N100 E600					
N0 E700					
N100 E700					
N0 E600					
N0 E500					
N100 E500					
N100 E400					
N0 E400					

Shipment of Field Kit to Site — Custody Seal # 0220804, 0220802 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scherl	May 17, 2006 / 1700 hours	FedEx	Burt Bird	5/18/06 / 1800

Shipment of Field Kit to Laboratory — Custody Seal # **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	1900
Site Name:	LF-10
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number 1911 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Burt Bacon
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
N0 E300					
N100 E300					
N0 E800					
N100 E800					
N200 E875					
N100 E900					

Shipment of Field Kit to Site — Custody Seal # 0220804, 0220802 **Intact? (Y) N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	May 17, 2006 / 1700 hours	FedEx	Burt Bacon	5/18/06 / 1800

Shipment of Field Kit to Laboratory — Custody Seal # **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

Project Information	
Beacon Project No.:	1900
Site Name:	LF-10
Site Location:	Holloman AFB, NM

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Collected By:	

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, sampling hole depth, cartridge/vial condition)
N700 E100	5/23/06 0903		~~Borehole~~ unpaved location (packed soil); unvegetated area; boring depth = 4ft
N600 -E100	0906		" " " " " boring depth = 3.5ft
N500 -E100	0908		" " " " " " " = 4ft
N400 -E100	0911		" " " " " " " 4ft
N300 -E100	0914		" " " " " " " 3.5ft
N200 -E100	0917 ~~0914~~		" " " " " " " 3.5ft
N100 -E100	0919		" " " " " " " 3.5ft
-N80 E200	0923		Packed soil/gravel surface; unvegetated areas; Boring Depth: 4ft
-N90 E300	0926		" " " " " " "
-N100 E400	0930		" " " " " " "
-N100 E500	0933		unpaved location (soil covered); unvegetated location (shrubs around location) Surface debris present; Boring Depth = 4ft
-N100 E600	0935		unpaved location (soil covering); unvegetated area; Boring Depth = 4ft
N0 E700	0937		" " " " " " "
~~N0~~ N100 E700	0940		" " " " " " "
N0 E600	0943		" " " " " " "

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced	Date Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
	5/23/06		
	Time Emplaced	Time Retrieved	
N0 E500	0945		unpaved location (soil covered); unvegetated area (shrubs around location) Boring Depth = 4ft
N100 E500	0949		unpaved location (soil/gravel cover); unvegetated area; Boring Depth = 4ft
N100 E400	0951		" " " " " " " "
N0 E400	0954		" " " " " " " "
N0 E300	0956		" " " " " " " "
N100 E300	0959		" " " " " " " "
N0 E800	0917		unpaved location (soil cover); surrounding area mod. veget. Borehole depth = 4ft
N100 E800	0923		" " " " " "
N200 E875	0926		" " " " " "
N100 E900	0935		" " " " " " Water at 1ft bgs.

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SOIL SAMPLE DATA SHEETS

HGL HydroGeoLogic, Inc
Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-10

SAMPLE INFORMATION

MATRIX SO SAMPLE ID: HGLSB10-03-2022

SAMPLING METHOD DT DUP./REP. OF: SB Dup 01

BEGINNING DEPTH 20 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (✓)

END DEPTH 22

GRAB (✓) COMPOSITE ( ) DATE: 5/15/06 TIME: 1436

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4oz jar	2	ice		8015	TPH GRO/DRO
				8260B	Volatiles
				8270C	Semivolatiles
				6000/7421	RCRA Metals

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMP ____

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: TraceAnalysis

COMMENTS: ____

SAMPLER: ____ OBSERVER: ____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: Supplemental RFI

SITE: LF10 SB04 (HGLSB10-04)

SAMPLE INFORMATION

MATRIX: So:l SAMPLE ID: HGLSB10-04-0810

SAMPLING METHOD: 5ft st. Macrocore Sampler DUP./REP. OF: NA

BEGINNING DEPTH: 8.5 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH: 10

GRAB (X) COMPOSITE ( ) DATE: 5/15/06 TIME: 1505

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4oz	2			8260	VOC
				8270	SVOC
				8015	TPH GRO + DRO
					RCRA Metals

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Rdish Brown	
2nd	ODOR: None	
	OTHER: Moist to wet; silty SAND	

pH _____ Temperature _____ Dissolved oxygen _____ Specific Conductivity _____

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DRIECTION NE AMBIENT TEMP 82

SHIPMENT VIA: FED-X _____ HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: _____

COMMENTS: Sample collected immediately below waste material + depth to water table 30

SAMPLER: S. Gillette OBSERVER: B. Biedersen

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT : Supplemental RFI

SITE: LF10 SB05 (HGLSB10-05)

SAMPLE INFORMATION

MATRIX Soil SAMPLE ID: HGLSB10-05-1011

SAMPLING METHOD DPT Sampler 5ft st st. Macrocore DUP./REP. OF : NA

BEGINNING DEPTH 10.5 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH 11

GRAB (X) COMPOSITE ( ) DATE: 5/15/06 TIME: 1535

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 oz	2			8260	VOC
				8270	SVOC
				8015	TPH GRO + DRO
					RCRA Metals

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Rdish med brown	
2nd	ODOR: None	
	OTHER: Silty SAND	

pH _____ Temperature _____ Dissolved oxygen _____ Specific Conductivity _____

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 82

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: ____

COMMENTS: Sample collected immediately below waste Material + above/at water table

SAMPLER: S. Gillette OBSERVER: B. Brodersen

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Hollomon AFB PROJECT: Supplemental RFI

SITE: LF-10 SB06 (HGLSB10-06)

SAMPLE INFORMATION

MATRIX Soil SAMPLE ID: HGLSB10-06-1112

SAMPLING METHOD DPT Macrocore Sample DUP./REP. OF: NA

BEGINNING DEPTH 11 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH 12

GRAB (X) COMPOSITE ( ) DATE: 5/15/06 TIME: 1552

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4g	2			8260	VOC
				8270	SVOC
				8015	TPH-GRO + DRO
					RCRA Metals

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Brown	
2nd	ODOR: None	
	OTHER: Silty SAND	

pH _____ Temperature _____ Dissolved oxygen _____ Specific Conductivity _____

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DRIECTION _____ AMBIENT TEMP 82°

SHIPMENT VIA: FED-X _____ HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: _____

COMMENTS: Sampled below waste material + top of water table (1 and same)

SAMPLER: S. Gillette OBSERVER: B. Brodersen

MATRIX TYPE CODES

DC=DRILL CUTTINGS	SL=SLUDGE
WG=GROUND WATER	SO=SOIL
LH=HAZARDOUS LIQUID WASTE	GS=SOIL GAS
SH=HAZARDOUS SOLID WASTE	WS=SURFACE WATER
SE=SEDIMENT	SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER	G=GRAB
BR=BRASS RING	HA=HAND AUGER
CS=COMPOSITE SAMPLE	H=HOLLOW STEM AUGER
C=CONTINUOUS FLIGHT AUGER	HP=HYDRO PUNCH
DT=DRIVEN TUBE	SS=SPLIT SPOON
W=SWAB\WIPE	SP=SUBMERSIBLE PUMP

HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Hollomon AFB PROJECT : Supplemental RFI

SITE: LF10 SB07 (HGLSB10-07)

SAMPLE INFORMATION

MATRIX Soil SAMPLE ID: HGLSB10-07-1011

SAMPLING METHOD DPT (5 ft sst of Macrocore Samp) DUP./REP. OF : NA

BEGINNING DEPTH 10.5 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO(X)

END DEPTH 11

GRAB(X) COMPOSITE ( ) DATE: 5/15/06 TIME: 1620

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 g	2			8260	VOCs
				8270	SVOCs
				8015	TPH GRO + DRO
					RCRA Metals

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Beam	
2nd	ODOR: None	
	OTHER: silty SAND	

pH _____ Temperature _____ Dissolved oxygen _____ Specific Conductivity _____

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DRIECTION _____ AMBIENT TEMP 82°

SHIPMENT VIA: FED-X _____ HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: _____

COMMENTS: Sampled below water material

SAMPLER: S. Gillette OBSERVER: B. Bradensen

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT : Supplemental RFI

SITE: LF10 SB07 (HGLSB10-07)

SAMPLE INFORMATION

MATRIX Soil SAMPLE ID: HGLSB10-07-134

SAMPLING METHOD DPT (5ft sh st. Macrocore Sampler) DUP./REP. OF : NA

BEGINNING DEPTH 13 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES (X) NO ( )

END DEPTH 14

GRAB (X) COMPOSITE ( ) DATE: 5/15/06 TIME: 1623

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 g	2			8260	VOCs
				8270	SVOCs
				8015	TPH ~~8015~~ GRO + DRO
					RCRA Metals

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Brown	
2nd	ODOR: None	
	OTHER: Sandy SILT, stiff	

pH _____ Temperature _____ Dissolved oxygen _____ Specific Conductivity _____

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN _____ WIND DRIECTION _____ AMBIENT TEMP 82°

SHIPMENT VIA: FED-X _____ HAND DELIVER _____ COURIER _____ OTHER _____

SHIPPED TO: _____

COMMENTS: Sample collected at W.T. below waste Material

SAMPLER: S. Gillette OBSERVER: B. Broderson

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

LF-29

SOIL GAS SAMPLE DATA SHEETS

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	1900
Site Name:	LF-29
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number 1911 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	[signature]
Contact Phone No.:	703-478-5186

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
Trip-1					
Trip-2					
Trip-3					
~~SG-C4~~ C3		Good	5/25/06	1340	SG
C5			5/25/06	1350	SG
C6			5/25/06	1352	SG
C7			5/25/06	1354	SG
D7			5/25/06	1357	SG
D6			5/25/06	1359	SG
D5			5/25/06	1402	SG
D4			5/25/06	1405	SG
D3			5/25/06	1408	SG
E2			5/25/06	1438	SG
~~E3~~ E3			5/25/06	1440	SG
~~E4~~ E4			5/25/06	1444	SG
~~E5~~ E5			5/25/06	1446	SG
~~E6~~ E6			5/25/06	1448	SG
~~E7~~ E7			5/25/06	1452	SG
~~F8~~ E8			5/25/06	1454	SG
~~F7~~ F8			5/25/06	1455	SG

BTM

Shipment of Field Kit to Site — Custody Seal # 0220804, 0220802 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	May 17, 2006 / 1700 hours	FedEx	[signature]	5/18/06 / 1800

Shipment of Field Kit to Laboratory — Custody Seal # **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	1900
Site Name:	LF-29
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number 1911 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brent Brown
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
F7		Good	5/25/06	1457	SG
F6			5/25/06	1459	SG
F5			5/25/06	1501	SG
F4			5/25/06	1503	SG
F3			5/25/06	1505	SG
F2			5/25/06	1507	SG
G3			5/25/06	1509	SG
G4			5/25/06	1510	SG
G5			5/25/06	1512	SG
G7			5/25/06	1514	SG
H6			5/25/06	1518	SG
H5			5/25/06	1519	SG
H4			5/25/06	1520	SG
H3			5/25/06	1521	SG
I3			5/25/06	1522	SG
I4			5/25/06	1523	SG
I5			5/25/06	1524	SG
I6			5/25/06	1525	SG
I7			5/25/06	1528	SG
J8				1529	SG

Shipment of Field Kit to Site — Custody Seal # 0220804, 0220802 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Sheid	May 17, 2006 / 1700 hours	FedEx	Brent Brown	5/18/06 / 1800

Shipment of Field Kit to Laboratory — Custody Seal # **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	1900
Site Name:	LF-29
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number 1911 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Burt Brodsky
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy)			
		Condition of sample or vial	Date	Time	Initial
J7		Good	5/25/06	1532	SG
J6			5/25/06	1538	SG
J5			5/25/06	1540	SG
J4			5/25/06	1542	SG
K4			5/25/06	1608	SG
K5			5/25/06	1610	SG
K6			5/25/06	1612	SG
K7			5/25/06	1614	SG
L7			5/25/06	1616	SG
L6			5/25/06	1617	SG
L5			5/25/06	1620	SG
L4			5/25/06	1622	SG
L3			5/25/06	1624	SG
M1			5/25/06	1627	SG
M3			5/25/06	1629	SG
M4			5/25/06	1631	SG
M5			5/25/06	1633	SG
M6			5/25/06	1636	SG
M7			5/25/06	1637	SG
M9			5/25/06	1641	SG

Shipment of Field Kit to Site — Custody Seal # 0220804, 0220802 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Scheid	May 17, 2006 / 1700 hours	FedEx	Burt Brodsky	5/18/06 / 1800

Shipment of Field Kit to Laboratory — Custody Seal # **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information	
Beacon Project No.:	1900
Site Name:	LF-29
Site Location:	Holloman AFB, NM
Analytical Method:	EPA Method 8260B
Target Compounds:	Beacon Project Number 1911 Target Compound List

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Submitted By:	Brett Broce
Contact Phone No.:	

Field Sample ID	Lab Sample ID (for lab use only)	Comments (only necessary if problem or discrepancy) Condition of sample or vial	Date	Time	Initial
K9		Good	5/25/06	1613	SG
I9			5/25/06	1645	SG
G9			5/25/06	1647	SG
E9			5/25/06	1650	SG
C9			5/25/06	1652	SG
A9			5/25/06	1654	SG
A7			5/25/06	1656	SG
A5			5/25/06	1658	SG
A3			5/25/06	1700	SG
A1			5/25/06	1712	SG
C1			5/25/06	1714	SG
E1			5/25/06	1716	SG
G1			5/25/06	1718	SG
I1			5/25/06	1720	SG
K1			5/25/06	1722	SG
K3			5/25/06	1740	SG

Shipment of Field Kit to Site — Custody Seal # 0220804, 0220802 **Intact?** (Y) N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Ryan Sheil	May 17, 2006 / 1700 hours	FedEx	Brett Broce	5/18/06/1800

Shipment of Field Kit to Laboratory — Custody Seal # **Intact?** Y N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

Project Information	
Beacon Project No.:	1900
Site Name:	LF-29
Site Location:	Holloman AFB, NM

BEACON ENVIRONMENTAL SERVICES, INC.

323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

Client Information	
Company Name:	HydroGeoLogic, Inc.
Office Location:	Herndon, VA
Samples Collected By:	Brent Beeler

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, sampling hole depth, cartridge/vial condition)
SG-C3	5/22/06 1340	5/25/06 1340	Unpaved location, moderately vegetated (shrubs), boring depth = 4 ft
C5	5/22/06 1350	5/25/06 1350	" " Boring refusal @ 4 ft bgs - caliche
C6	5/22/06 1352	5/25/06 1352	" " "
C7	5/22/06 1354	5/25/06 1354	" " "
D7	5/22/06 1357	5/25/06 1357	" " "
D6	5/22/06 1359	5/25/06 1359	" " "
D5	5/22/06 1402	5/25/06 1402	" " "
D4	5/22/06 1405	5/25/06 1405	" " "
D3	5/22/06 1408	5/25/06 1408	" " "
E2	5/22/06 1430	5/25/06 1438	" " "
E3	5/22/06 1432	5/25/06 1446	" " "
E4	5/22/06 1435	5/25/06 1444	" " "
E5	5/22/06 1438	5/25/06 1446	" " "
E6	5/22/06 1440	5/25/06 1448	" " "
E7	5/22/06 1441	5/25/06 1452	" " "

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
E8	5/22/06 1443	5/25/06 1454	unpaved location, mod. vegetated (shrubs); boring depth = 4ft
F8	5/22/06 1445	5/25/06 1455	" " "
F7	5/22/06 1447	5/25/06 1457	" " "
F6	5/22/06 1450	5/25/06 1459	" " "
F5	5/22/06 1451	5/25/06 1501	" " "
F4	5/22/06 1453	5/25/06 1503	" " "
F3	5/22/06 1456	5/25/06 1505	" " "
F2	5/22/06 1457	5/25/06 1507	" " "
G3	5/22/06 1507	5/25/06 1509	" " " Borehole collapse to 1 ft bgs
G4	5/22/06 1510	5/25/06 1510	" " "
G5	5/22/06 1512	5/25/06 1512	" " "
G7	5/22/06 1514	5/25/06 1514	" " "
H6	5/22/06 1518	5/25/06 1518	" " "
H5	5/22/06 1519	5/25/06 1519	" " "
H4	5/22/06 1521	5/25/06 1520	" " "
H3	5/22/06 1524	5/25/06 1521	" " "
I3	5/22/06 1526	5/25/06 1522	" " "
I4	5/22/06 1528	5/25/06 1523	" " " Borehole collapsed to 1 ft bgs

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced	Date Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
	5/22/06	5/25/06	
	Time Emplaced	Time Retrieved	
I5	1530	1524	unpaved location; vegetated area (shrubs); borehole depth = 4 ft
I6	1532	1525	" " "
I7	1534	1528	" " "
J8	1536	1529	" " "
J7	1538	1532	" " "
J6	1540	1538	" " "
J5	1542	1540	" " "
J4	1543	1542	" " "
K4	1608	1608	" " "
K5	1610	1610	" " "
K6	1612	1612	" " "
K7	1614	1614	" " "
L7	1616	1616	" " "
L6	1617	1617	" " "
L5	1620	1620	" " "
L4	1622	1622	" " "
L3	1624	1624	" " "
M1	1627	1627	located approximately 5 ft fm a monit. well

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced	Date Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
	5/22/06	5/25/06	
	Time Emplaced	Time Retrieved	
M3	1629	1629	unpaved location; moderately vegetated (shrubs); boring depth = 4ft
M4	1631	1631	" " "
M5	1633	1633	" " "
M6	1636	1636	" " "
M7	1637	1637	" " "
M9	1641	1641	" " "
K9	1643	1643	" " "
I9	1645	1645	" " "
G9	1647	1647	" " "
E9	1650	1650	" " "
C9	1652	1652	" " "
A9	1654	1654	" " "
A7	1656	1656	" " "
A5	1658	1658	" " "
A3	1700	1700	" " "
A1	1712	1712	" " "
C1	1714	1714	" " "
E1	1716	1716	" " "

BEACON ENVIRONMENTAL SERVICES, INC.
424 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

PASSIVE SOIL-GAS SURVEY
FIELD DEPLOYMENT REPORT

FIELD SAMPLE ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	FIELD NOTES (e.g., asphalt/concrete covering, description of sample location, cartridge/vial condition)
G1	5/22/06 ~~1710~~ 1718	5/25/06 1718	unpaved location; moderately vegetated (shrubs); boring depth = 4ft
I1	1720	1720	" " "
K1	1723	1722	" " "
K3	1745	1740	" " "

BEACON ENVIRONMENTAL SERVICES, INC.
323 Williams Street, Suite D, Bel Air, MD 21014, 800-878-5510

SOIL SAMPLE DATA SHEETS

HGL HydroGeoLogic, Inc
Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Hollomon AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: So SAMPLE ID: HGLSB29-D6-2426

SAMPLING METHOD: DT DUP./REP. OF:

BEGINNING DEPTH: 24 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH: 26

GRAB (X) COMPOSITE ( ) DATE: 6/19/06 TIME: 1540

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 oz jar	4	Ice		8015	TPH GRO/DRO
				8260B	Volatiles
				8270C	Semivolatiles
					RCRA metals
					Explosives
					Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMP ____

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: TraceAnalysis

COMMENTS:

SAMPLER: OBSERVER:

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB/WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc
Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Hollomon AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: So SAMPLE ID: HGLSB29-F4-1820

SAMPLING METHOD: Soil DUP./REP. OF:

BEGINNING DEPTH: 19 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (✓)

END DEPTH: 20

GRAB (✓) COMPOSITE ( ) DATE: 6/17/06 TIME: 1115

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4oz jar	1	ice		8015	TPH GRO/DRO
				8260B	Volatiles
				8270C	Semivolatiles
					RCRA Metals
					Explosives
					Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN WIND DIRECTION AMBIENT TEMP

SHIPMENT VIA: FED-X HAND DELIVER COURIER X OTHER

SHIPPED TO: TraceAnalysis

COMMENTS:

SAMPLER: OBSERVER:

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB/WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeologic, Inc. Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Hollomnn AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX SO SAMPLE ID: HGLSB29-F7-2022

SAMPLING METHOD DT DUP./REP. OF:

BEGINNING DEPTH 20 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

END DEPTH 22 YES ( ) NO (✓)

GRAB (✓) COMPOSITE ( ) DATE: 6/17/06 TIME: 1015

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 oz jar	4	ice		8015	TPH GRO/DRO
				8260B	Volatiles
				8270C	Semivolatiles
					RCRA Metals
					Explosives
					Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMP ____

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: TraceAnalysis

COMMENTS:

SAMPLER: OBSERVER:

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc
Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: SO SAMPLE ID: HGLSB29-IS-1417

SAMPLING METHOD: DT DUP./REP. OF:

BEGINNING DEPTH: 14 MATRIX SPIKE/MATRIX SPIKE DUPLICATE
YES ( ) NO (✓)

END DEPTH: 17

GRAB (✓) COMPOSITE ( ) DATE: 6/17/06 TIME: 0840

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 oz. jars	4	ice		8015	TPH GRO / DRO
				8260B	Volatiles
				8270C	Semivolatiles

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMP ____

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: TraceAnalysis

COMMENTS: ____

SAMPLER: ____ OBSERVER: ____

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc
Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: SO SAMPLE ID: H6LSB29-K3-1416

SAMPLING METHOD: DT DUP./REP. OF:

BEGINNING DEPTH: 14 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (✓)

END DEPTH: 16

GRAB (✓) COMPOSITE ( ) DATE: 6/16/06 TIME: 1500

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 oz jar	4	ice		8015	TPH GRO/DRO
				8260B	Semi Volatiles
				8270C	Semivolatiles
					RCRA Metals
					Explosives
					Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN WIND DIRECTION AMBIENT TEMP

SHIPMENT VIA: FED-X HAND DELIVER COURIER X OTHER

SHIPPED TO: TraceAnalysis

COMMENTS:

SAMPLER: OBSERVER:

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB/WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc
Exceeding Expectations

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX So SAMPLE ID: HGLSB29-66-0103

SAMPLING METHOD DT DUP./REP. OF:

BEGINNING DEPTH 1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (✓)

END DEPTH 3

GRAB (✓) COMPOSITE ( ) DATE: 6/16/06 TIME: 1020

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
4 oz jar	4	Ice		8015	TPH GRO/DRO
				8260B	Volatiles
				8270C	Semivolatiles
					RCRA Metals
					Explosives
					Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st	COLOR:	
2nd	ODOR:	
	OTHER:	

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DIRECTION ____ AMBIENT TEMP ____

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: TraceAnalysis

COMMENTS:

SAMPLER: OBSERVER:

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAB/WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB/WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

GROUNDWATER SAMPLE DATA SHEETS

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: WG SAMPLE ID: HGLMW29-01

SAMPLING METHOD: B DUP./REP. OF: -

BEGINNING DEPTH: - MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH: -

GRAB (X) COMPOSITE ( ) DATE: 7/11/06 TIME: 13:40

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1 L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER:	

pH 7.28 Temperature 20.98 Dissolved oxygen 5.05 Specific Conductivity 38.68

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 100°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: Trace Analysis

COMMENTS: ____

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL
HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-01	Project Name: Holloman PH	LOCID:	
Sampler(s): S. Guillette, K. Evers	Project No.: AFC002-037-04		
Well Depth: 36.72 WC= 10.39	Date: 7/11 COC	Time: 1312	
DTW (ft TOC): 25.86	~~Screen Interval:~~ One well vol = 1.65 3 vol = 4.96 gal		
Well Diameter (in): 2"	Placement of Pump (ft TOC): Bail		
Type of Pump: ~~Peristaltic pump~~ Bailer	Courier: X Hand ___ FedEx ___ Other		

Field Parameters

Time	DTW (ft TOC)	Rate (rpm)	Vol (gal)	pH	Temp (°C)	Cond (mS/cm)	ORP (mV)	DO (mg/L)	Turb (NTU)	Description
1318	28.02	~	1.7	7.25	22.65	37.80	165.8	5.14	450	cloudy
1324	29.30	~	3.3	7.24	20.60	38.77	120.4	5.16	290	"
1329	29.50	~	4.8	7.28	20.98	38.68	110.6	5.05	290	"
Wait 10 min for water to recover										
1340	Sample MW2901									

Observations

Color: Clear (Other) (describe): light brown

Odor: (None) Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s): S Guillette

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX WG SAMPLE ID: HGLMW29-02

SAMPLING METHOD B DUP./REP. OF :

BEGINNING DEPTH - MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO ( )

END DEPTH -

GRAB (X) COMPOSITE ( ) DATE: TIME:

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1 L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER:	

pH 7.17 Temperature 19.89 Dissolved oxygen 2.48 Specific Conductivity 20.95

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 100°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO:

COMMENTS:

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL
HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-02		Project Name: Holloman RFI	LOCID:
Sampler(s): S.Gillette, K.Evers		Project No.: AFCO02-037-04	
Well Depth: 30.02	WC= 8.12	Date: 7/11/06	Time: 1100
DTW (ft TOC): ~~21.10~~ 21.9		~~Screen Interval~~ one well vol: 1.29	3 well vol. = 3.9 gal
Well Diameter (in): 2"		Placement of Pump (ft TOC): Bail	
Type of Pump: ~~Peristaltic pump~~ Bailer		Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (C)	Cond (mmhos/cm)	ORP	DO (mg/L)	Turb (NTU)	Description
1104	22.50	-	1.3	7.24	21.86	21.38	140.0	2.53	85	clear
1108	22.9	-	2.6	7.23	20.15	21.46	116.6	2.60	50	"
1112	22.8	-	4	7.17	19.89	20.95	74.8	2.48	26	"
1115	Sample MW-29-02									

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s): S Gillette

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: WG SAMPLE ID: HGLMW29-03

SAMPLING METHOD: B DUP./REP. OF: -

BEGINNING DEPTH: _____ MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO ( )

END DEPTH: _____

GRAB (X) COMPOSITE ( ) DATE: 7/11/06 TIME: 10:05

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1 L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER:	

pH 7.40 Temperature 20.92 Dissolved oxygen 5.06 Specific Conductivity 11.17

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 90°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: Trace Analysis

COMMENTS: _____

SAMPLER: S. Gillette OBSERVER: K. Ewers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-03	Project Name: Holloman RFI	LOCID: HGLMW29-0403
Sampler(s): S. Gillette & K. Evers	Project No.: AFCO02-037-04-07-04	
Well Depth: 26.22 water column 5.2	Date: 7/11/06	Time: 1005
DTW (ft TOC): 21.02	~~Screen Intervals~~ One well volume: 0.83gal, 3 vol.= 2.5gal	
Well Diameter (in): 2"	Placement of Pump (ft TOC): Bail	
Type of Pump: ~~Peristaltic pump~~ Bailer	Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (C)	Cond (mS/cm)	ORP	DO (mg/L)	Turb (NTU)	Description
1012	24.92	–	0.8	7.38	20.73	11.06	138.8	2.34	450	clear
1017	25.1	–	1.6	7.38	20.26	11.07	120.7	4.04	140	"
1027	25.96	–	2.5	7.40	20.92	11.17	101.8	5.06	360	"
well	dry									

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s):

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX Water SAMPLE ID: HGLMW29-04

SAMPLING METHOD Bailer DUP./REP. OF: N/A

BEGINNING DEPTH N/A MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH N/A

GRAB (X) COMPOSITE ( ) DATE: 7/11 TIME: 9:40

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1 L ~~Amber~~ Plastic	1	ice			perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: clear	
2nd	ODOR: none	
	OTHER:	

pH _____ Temperature _____ Dissolved oxygen _____ Specific Conductivity _____

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 90°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: Trace Analysis

COMMENTS: _____

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL
HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-04		Project Name: Holloman RFI	LOCID: HOLMW29-04
Sampler(s): S.Gillette, K.Evers		Project No.: AFC002-037-04	
Well Depth: 28.78		Date: 7/11/06	Time: 0940
DTW (ft TOC): 22.13	water column = 6.65	Screen Interval:	
Well Diameter (in): 2"	1well vol. = 1.06gal	Placement of Pump (ft TOC): Bail	
Type of Pump: ~~Peristaltic pump~~ Bailer		Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (C)	Cond (mS/cm)	ORP	DO (mg/L)	Turb (NTU)	Description
0948	26.50	-	1	6.79	21.52	11.36	1627	4.21	250	cloudy
0955	28.09	-	2	7.01	20.05	12.03	1523	3.85	270	"
1001	28.28	-	2.25	6.57	21.41	11.58	1726	5.46	550	"
well dry, will return when WT recovers 80%										
1455	Sample	MW2904								

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s): S Gillette

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX WG SAMPLE ID: HGLMW29-05

SAMPLING METHOD B DUP./REP. OF: -

BEGINNING DEPTH - MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH -

GRAB (X) COMPOSITE ( ) DATE: 7/11/06 TIME: 13:00

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER:	

pH 7.09 Temperature 21.29 Dissolved oxygen 2.49 Specific Conductivity 24.07

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 100°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER ____ OTHER ____

SHIPPED TO: Trace Analysis

COMMENTS: ____

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL
HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-05	Project Name: Holloman RFI	LOCID: HGLMW29-05
Sampler(s): S. Gillette, K. Evers	Project No.: AFC002-037-04	
Well Depth: 31.23 WC= 7.12	Date: 7/11/06	Time: 1245
DTW (ft TOC): 24.11	~~Screen Interval:~~ One well vol= 1.13 gal 3 vol.= 3.4 gal	
Well Diameter (in): 2"	Placement of Pump (ft TOC):	
Type of Pump: ~~Peristaltic pump~~ Bailer	Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (°C)	Cond. (mS/cm)	ORP	DO (mg/L)	Turb. (NTU)	Description
1248	24.55	-	1.2	7.10	22.63	24.48	103.4	2.48	15	clear
1251	24.50	-	2.2	7.08	20.95	23.86	108.6	2.45	23	"
1255	24.52	-	3.6	7.09	21.29	24.07	163.8	2.49	30	
1300	Sample MW-29-05									

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s):

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX WG SAMPLE ID: HGLMW29-06

SAMPLING METHOD B DUP./REP. OF: -

BEGINNING DEPTH - MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH -

GRAB (X) COMPOSITE ( ) DATE: 7/11/06 TIME: 14:05

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER:	

pH 7.26 Temperature 24.25 Dissolved oxygen 5.36 Specific Conductivity 21.15

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 100°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: TraceAnalysis

COMMENTS:

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL
HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-06		Project Name: Holloman RFI	LOCID: HGLMW2906
Sampler(s): J. Gillette, K. Evers		Project No.: AFC002-037-04	
Well Depth: 32.21	WC = 7.82 ft	Date: 7/11/06	Time: 1349
DTW (ft TOC): 24.39		~~Screen Interval:~~ One well vol. = 1.25 gal 3 well vol. = 3.75 gal	
Well Diameter (in): 2"		Placement of Pump (ft TOC): Bail	
Type of Pump: ~~Peristaltic pump~~ Bailer		Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (C)	Cond. (mS/cm)	ORP	DO (mg/L)	Turb. (NTU)	Description
1352	25.54	~	1.3	7.66	22.10	2201	154.6	4.59	95	cloudy
1358	25.70	~	3 gal	7.30	20.48	21.20	120.2	4.58	45	"
1400	26.0	~	3.8	7.26	24.25	21.15	125.0	5.36	60	"
1405	Sample MW29-06									

Observations

Color: Clear Other (describe): cloudy white

Odor: None Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s): J. Gillette

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX WG SAMPLE ID: HGLMW29-07

SAMPLING METHOD B DUP./REP. OF: —

BEGINNING DEPTH - MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH -

GRAB (X) COMPOSITE ( ) DATE: 7/11/06 TIME: 10:55

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1 L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER:	

pH 7.08 Temperature 20.18 Dissolved oxygen 2.62 Specific Conductivity 21.56

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 95°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: Trace Analysis

COMMENTS: ____

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW-29-07	Project Name: Holloman RFI	LOCID:
Sampler(s): S. Gillette & K. Evers	Project No.: AFC002-037-04	
Well Depth: 28.78 | Water column: 6.87	Date: 7/11/06	Time: 1035
DTW (ft TOC): 21.91	~~Screen Interval~~ one well vol. = 1.09 gal 3 vol. = 3.3 gal	
Well Diameter (in): 2"	Placement of Pump (ft TOC): Bail	
Type of Pump: ~~Peristaltic pump~~ Bailer	Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (C)	Cond. (mS/cm)	ORP	DO (mg/L)	Turb. (NTU)	Description
1041	22.70	-	1.1	7.16	21.41	20.96	148.0	2.63	100	clear
1044	23.3	-	2.2	7.13	19.53	21.48	142.5	~~44.48~~ 2.58	390	"
1048	23.31	-	3.3	7.08	20.18	21.56	134.7	2.62	600	cloudy
wait 5 min for water to recover										
1055	Sample MW29-07									

Observations

Color: (Clear) Other (describe):

Odor: (None) Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s): S Gillette

HGL HydroGeoLogic, Inc

FIELD SAMPLING REPORT

LOCATION: Holloman AFB PROJECT: RFI

SITE: LF-29

SAMPLE INFORMATION

MATRIX: WG SAMPLE ID: HGLMW29-08

SAMPLING METHOD: B DUP./REP. OF: HGLGWDUP09

BEGINNING DEPTH: - MATRIX SPIKE/MATRIX SPIKE DUPLICATE YES ( ) NO (X)

END DEPTH: -

GRAB (X) COMPOSITE ( ) DATE: 7/11/06 TIME: 14:25

CONTAINER SIZE/TYPE	#	PRESERVATIVE/ PREPARATION	EXTRACTION METHOD	ANALYTICAL METHOD	ANALYSIS
1 L plastic	1	ice			Perchlorate

NOTABLE OBSERVATIONS

PID READINGS	SAMPLE CHARACTERISTICS	MISCELLANEOUS
1st 0.0	COLOR: Clear	
2nd	ODOR: None	
	OTHER: -	

pH 7.27 Temperature 24.30 Dissolved oxygen 4.86 Specific Conductivity 23.17

GENERAL INFORMATION

WEATHER: SUN/CLEAR X OVERCAST/RAIN ____ WIND DRIECTION ____ AMBIENT TEMP 100°

SHIPMENT VIA: FED-X ____ HAND DELIVER ____ COURIER X OTHER ____

SHIPPED TO: Trace Analysis

COMMENTS: ____

SAMPLER: S. Gillette OBSERVER: K. Evers

MATRIX TYPE CODES

DC=DRILL CUTTINGS
WG=GROUND WATER
LH=HAZARDOUS LIQUID WASTE
SH=HAZARDOUS SOLID WASTE
SE=SEDIMENT
SL=SLUDGE
SO=SOIL
GS=SOIL GAS
WS=SURFACE WATER
SW=SWAP\WIPE

SAMPLING METHOD CODES

B=BAILER
BR=BRASS RING
CS=COMPOSITE SAMPLE
C=CONTINUOUS FLIGHT AUGER
DT=DRIVEN TUBE
W=SWAB\WIPE
G=GRAB
HA=HAND AUGER
H=HOLLOW STEM AUGER
HP=HYDRO PUNCH
SS=SPLIT SPOON
SP=SUBMERSIBLE PUMP

HGL
HydroGeoLogic, Inc
Exceeding Expectations

GROUNDWATER FIELD SAMPLING DATA SHEET

Location: Holloman AFB, Alamogordo, NM

Well Name.: MW29-08	Project Name: Holloman RFI	LOCID:
Sampler(s): S. Gillette & K. Evers	Project No.: AFCO02-037-04-07-04	
Well Depth: 28.95 | WC= 4.84	Date: 7/11/06	Time: 1410
DTW (ft TOC): 24.11	One well vol = Screen Interval: 0.77 gal 3 vol. = 2.3 gal	
Well Diameter (in): 2"	Placement of Pump (ft TOC):	
Type of Pump: ~~Peristaltic pump~~ Bailer	Courier: X Hand ___ FedEx ___ Other	

Field Parameters

Time	Depth to Water (ft)	Flow Rate (gpm)	Total Volume (gal)	pH	Temp (C)	Cond (umhos/cm)	ORP	D.O (mg/L)	Turb (NTU)	Description
1418	25.45	-	0.77	7.28	23.16	23.54	147.0	3.71	38	clear
1420	25.52	-	1.5	7.31	22.98	22.97	132.4	4.26	29	"
1422	25.60	-	2.5	7.27	24.30	23.17	112.0	4.86	TO	"
1425	Sample MW29-08 and DUP09									

Observations

Color: Clear Other (describe):

Odor: None Low Medium High Very Strong H_2S Fuel-like

Notes:

Signed/Sampler(s):

APPENDIX D

PHOTOGRAPHS

LF-10

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
Sep-05

Direction:
Northeast

Description:
View of the center portion of LF-10, looking at the Building 121

Photograph: LF10-01

Photographer:
Brett Brodersen

Date:
Sep-05

Direction:
Northwest

Description:
View of western portion of LF-10

Photograph: LF10-02

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

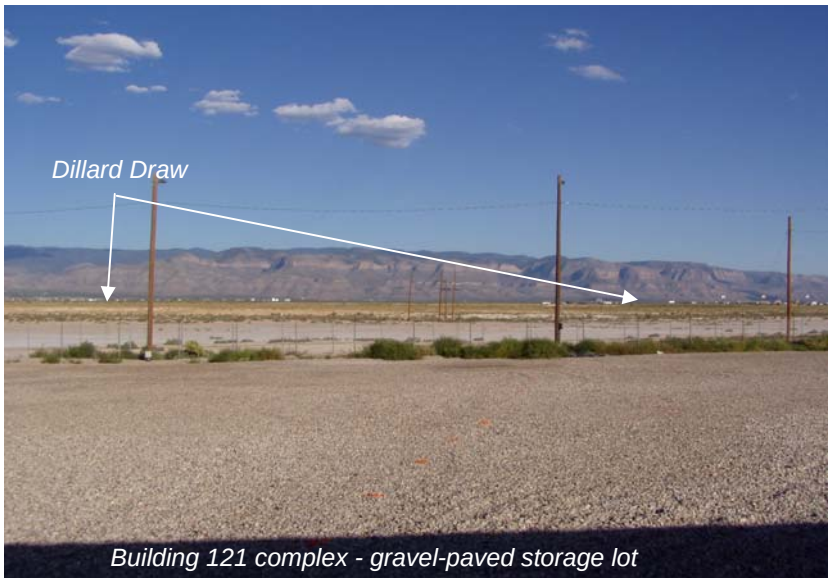
Photographer:
Sarah Gillette

Date:
Sep-05

Direction:
South-Southeast

Description:
Northcentral portion of LF-10 (part of the Building 121 complex, the gravel paved equipment storage lot)

Photograph: LF10-03



Building 121 complex - gravel-paved storage lot

Photographer:
Sarah Gillette

Date:
Sep-05

Direction:
East-Southeast

Description:
View of Building 121 and

Photograph: LF10-04

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

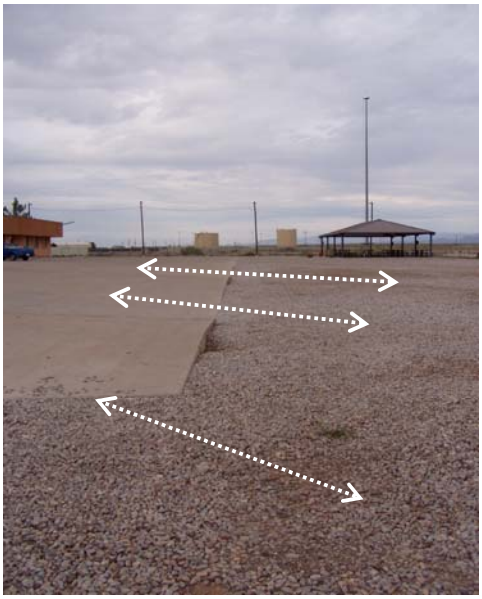
Photographer:
Brett Brodersen

Date:
9/1/2005

Direction:
East

Description:
Linear depressions crossing the site and warping the concrete pavement

Photograph: LF10-05



Photographer:
Sarah Gillette

Date:
9/1/2006

Direction:
Northwest

Description:
View of ponded water in western portion of LF-10

Photograph: LF10-06

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Sarah Gillette

Date:
Jan-06

Direction:

Description:
EMFLUX® passive soil gas sampler with trasportation cap (white cap).

Photograph: LF10-07

Photographer:
Sarah Gillette

Date:
Sep-05

Direction:
Northwest

Description:
Soil gas sample

Photograph: LF10-08

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

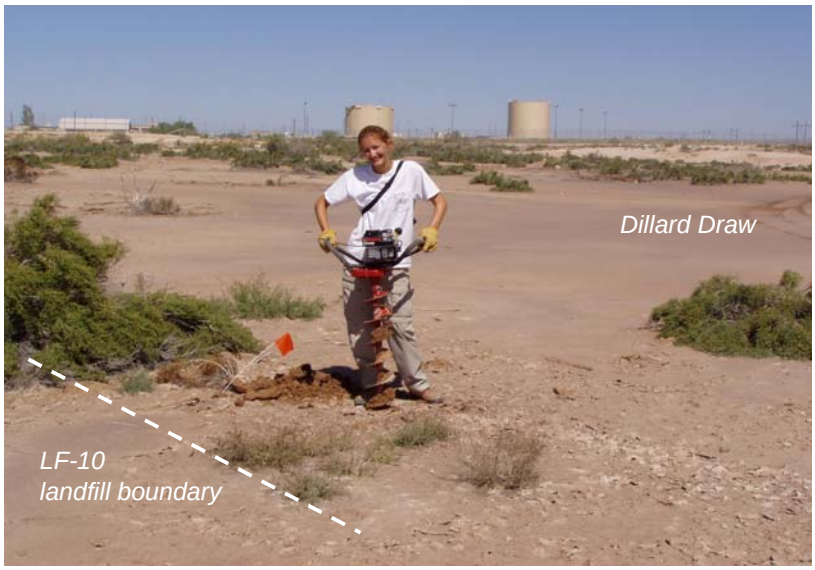
Photographer:
Sarah Gillette

Date:
Sep-05

Direction:
North

Description:
One man auger used to drill soil gas sample borings

Photograph: LF10-09



Photographer:
Sarah Gillette

Date:
Sep-05

Direction:
North

Description:
Dillard Draw looking northward

Photograph: LF10-10

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Sarah Gillette

Date:
Oct-05

Direction:

Description: Northwest
Magnetic surveying
of Building 121 complex
(concrete pavement)

Photograph: LF10-11

Photographer:
Sarah Gillette

Date:
Oct-05

Direction:
South

Description:
Magnetic surveying
of Building 121 complex
(equipment storage lot)

Photograph: LF10-12

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation

Supplemental RFI Photographs

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
May-06

Direction:
East

Description:
DPT drilling soil borings at LF-10 and continuous soil sampling

Photograph: LF10-13

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:
East

Description:
Field screening collected subsurface soil samples with PID

Photograph: LF10-14

LF-29

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation Technical Memo

LF-29 (SWMU 104) - Former Army Landfill

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

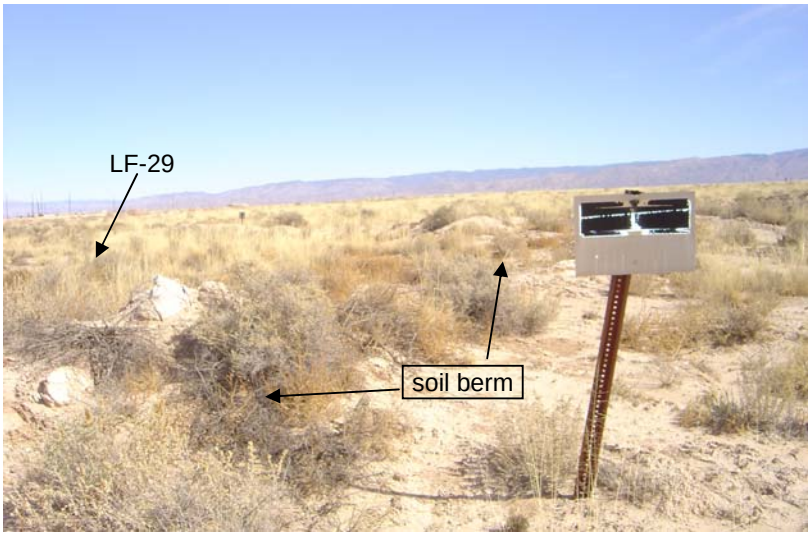
Photographer:
Sarah Gillette

Date:
5/1/2006

Direction:
North

Description:
View of soil berm surrounding LF-29

Photograph: LF29-01



Photographer:
Sarah Gillette

Date:
5/1/2006

Direction:
Northwest

Description:
Central portion of LF-29

Photograph: LF29-02

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation Technical Memo

LF-29 (SWMU 104) - Former Army Landfill

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
LF-29 debris in shallow soils

Photograph: LF29-03

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
LF-29 debris

Photograph: LF29-04

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation Technical Memo

LF-29 (SWMU 104) - Former Army Landfill

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
LF-29 debris

Photograph: LF29-05

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:
Southwest

Description:
Helicopter wheel

Photograph: LF29-06

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation Technical Memo

LF-29 (SWMU 104) - Former Army Landfill

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
LF-29 debris

Photograph: LF29-07

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
LF-29 debris

Photograph: LF29-08

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation Technical Memo

LF-29 (SWMU 104) - Former Army Landfill

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
Cluster bomblet debris used to deliver biological warfare agent (BWA)

Photograph: LF29-09

Photographer:
Brett Brodersen

Date:
5/1/2006

Direction:

Description:
LF-29 debris

Photograph: LF29-10

HGL, Inc.

Photo Record - Supplemental RCRA Facility Investigation Technical Memo

LF-29 (SWMU 104) - Former Army Landfill

SITE LOCATION:
Holloman AFB, Alamogordo, NM

PROJECT:
AFC002-037

CLIENT: AFCEE

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
West

Description:
Overview of southern portion of LF-29.

Photograph: LF29-11

Photographer:
Brett Brodersen

Date:
10/7/2005

Direction:
Northwest

Description:
ECA employee at Southern boundary of LF-29. Southern berm is shown behind the geophysicist and runs horizontally across the photo.

Photograph: LF29-12

APPENDIX E

DATA VALIDATION REPORTS

Quality by Design

Laboratory Quality Assurance Consulting

97 Puhili Street
Hilo, Hawaii 96720

Phone: (808) 969-9424
Fax: (808) 969-9094
e-mail: qbd-hilo@hawaiiantel.net

EPA Level 3
DATA VALIDATION REPORT

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Types of Samples: Soils and Waters
Dates of Sampling: May 15-16, 2006

Prepared for

HydroGeoLogic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, Virginia 20170

SDG No. 6051928
Purchase Order No. P0000715
QBD Job No. 1296A

Reviewed and approved,

Thomas S. Davis, Principal — 1/16/07 Date

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Attachments

Attachment 1 Data Qualifier Flag Definitions
Attachment 2 Summary Table of Data Qualifier Flags
Attachment 3 Reviewed/Revised Laboratory Forms

A. Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
%D	percent difference
%R	percent recovery
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
AA	atomic absorption
BFB	bromofluorobenzene
BNA	base/neutral/acid compounds
BS	blank spike
BSD	blank spike duplicate
CCB	continuing calibration blank
CCC	calibration check compound
CCS	continuing calibration standard
CCV	continuing calibration verification
CF	calibration factor
CLP	Contract Laboratory Program
COC	chain of custody record
CRA	contract required standard at the CRDL for graphite furnace AA method
CRDL	contract required detection limit
CRI	contract required standard at the CRDL for ICP method
CRQL	contract required quantitation limit
CV	coefficient of variation
CVAA	cold vapor atomic absorption
4,4'-DDD	4,4'-dechlorodiphenyldichloroethane
4,4'-DDE	4,4'-dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
DHG	dissolved hydrogen gas
DRO	diesel range organics
DQO	data quality objective
EB	equipment blank
EICP	extracted ion current profile
EPA	U.S. Environmental Protection Agency
ER	equipment rinsate
FB	field blank
GC/ECD	gas chromatography/electron capture detector

Acronym/ Abbreviation	Definition
GC/ELCD	gas chromatography/electrolytic conductivity detector (Hall detector)
GC/FID	gas chromatography/flame ionization detector
GC/PID	gas chromatography/photoionization detector
GC/MS	gas chromatography/mass spectrometry
GFAA	graphite furnace atomic absorption
GLP	good laboratory practices
GRO	gasoline range organics
GPC	gel permeation chromatography
HPLC	high-performance liquid chromatography
HRGC	high resolution gas chromatography
HRMS	high resolution mass spectrometry
ICB	initial calibration blank
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
IDL	instrument detection limit
IR	infrared spectroscopy
IS	internal standards
LCS	laboratory control standard
LCSD	laboratory control standard duplicate
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MS	matrix spike
MSA	method of standard addition
MSD	matrix spike duplicate
m/z	mass to charge ration
NIST	National Institute of Standards and Technology
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	performance evaluation
PEM	performance evaluation mixture
PPB	parts per billion
PPM	parts per million
PPT	parts per trillion
PNA	polynuclear aromatic hydrocarbon
PQL	practical quantitation limit
QA	quality assurance

Acronym/ Abbreviation	Definition
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RIC	reconstructed ion chromatograph
RPD	relative percent difference
RRF	relative response factor
RRT	relative retention time
RSD	relative standard deviation
RT	retention time
SDG	sample delivery group
SOP	standard operating procedure
SOW	statement of work
SVOC	semivolatile organic compound
SPCC	system performance check compound
SRM	standard reference material
TB	trip blank
TIC	tentatively identified compound
TPH	total petroleum hydrocarbons
TPH-G	total petroleum hydrocarbons - gasoline
TPH-D	total petroleum hydrocarbons - diesel
UV/VIS	ultraviolet/visible
VOA	volatile organic analysis

B. Introduction

Laboratory Sciences, Inc., d.b.a. *Quality by Design* (QBD), has completed an EPA Level 3 Data Validation on the submitted data packages in accordance with Purchase Order No. P0000715.

The reporting format and criteria for recommending data qualifying flags for this data set are described in the EPA *"Functional Guidelines for Evaluating Organics Analyses,"* as revised, 1999; *"Functional Guidelines for Evaluating Inorganics Analyses,"* as revised, 2004; the *Baseline Quality Assurance Project Plan, Holloman Air Force Base, New Mexico*, November, 2003; the *Quality Assurance Project Plan Addendum Supplemental RCRA Facility Investigation, Holloman Air Force Base, Alamogordo, New Mexico*, July 2005; or using criteria listed in the method referenced. Data may be qualified for any of the following reasons:

1. By the laboratory prior to receipt by the reviewer.
2. Because of laboratory deviation from the designated method.
3. Because the data may not meet the criteria listed in the reference above.
4. By the professional judgment of the reviewer.

This data validation report consists of several sections, each of which are formatted to follow *Functional Guidelines*, but which also include subsections discussing QBD contacts with the laboratory, other comments, and a summary table of data qualifiers.

The data set consists of an electronic data package consisting of a seven-page case narrative, a 158-page laboratory report and a 628-page analytical data package, from TraceAnalysis, Inc. of Lubbock, Texas, and contains data for the samples shown in Table 1. The data reviewers and senior reviewers are shown in Table 2.

Each data set includes an analytical data package for each sample, copies of the completed COC forms, and a QC data package. The analytical data package includes analytical results, blank sample results, both laboratory and client sample identifications, appropriate dates but not times, method reporting limits, method references, surrogate recoveries as appropriate, the laboratory's name and address, and the initials of the person releasing the data. The custody forms include the receipt of the sample but not the laboratory's internal tracking. The QC data package includes a tabular list of the laboratory's sample identification, spiking concentrations, recoveries, percentage calculations, and acceptance windows.

All results were acceptable, although some received qualification. A discussion of the QC criteria and data usability is presented in this report. A listing of all qualified results with the final qualifier flag is presented in tabular form in Attachment 2.

Table 1. Sample Identification and Analysis

Sample Identification	Laboratory Identification	Matrix	Method 8260B	Method 8270C	TPH-GRO	TPH-DRO
HGLSP10-03-2022	90817	Soil	X	X	X	X
HGLSB10-04-0810	90818	Soil	X	X	X	X
HGLSB10-05-1011	90819	Soil	X	X	X	X
HGLSB10-06-1112	90820	Soil	X	X	X	X
HGLSB10-07-1011	90821	Soil	X	X	X	X
HGLSB10-07-1314	90822	Soil	X	X	X	X
SBDup01	90825	Soil	X	X	X	X
TB-001	90826	Water	X			
HGLSB27-03-1113	90827	Soil	X	X	X	X
HGLSB27-03-1618	90828	Soil	X	X	X	X
HGLSB27-02-0608	90829	Soil	X	X	X	X
HGLSB27-02-1113	90830	Soil	X	X	X	X
HGLSB27-01-0608	90831	Soil	X	X	X	X
HGLSB27-04-0810	90832	Soil	X	X	X	X
SBDup02	90833	Soil	X	X	X	X
SBDup03	90834	Soil				
HGLGW27-03-051606	90835	Water	X	X	X	X
HGLSD27-01-0002	90836	Soil	X	X	X	X
HGLGW27-02-051606	90837	Water	X	X	X	X
GWDup-01	90838	Water	X	X	X	X
RB05-1506	90839	Water	X	X	X	X
RB05-051606	90840	Water	X	X	X	X

Sample Identification	Laboratory Identification	Methods 6010B/7470/7471	Methods 900/901		
HGLSP10-03-2022	90817	X			
HGLSB10-04-0810	90818	X			
HGLSB10-05-1011	90819	X			
HGLSB10-06-1112	90820	X			
HGLSB10-07-1011	90821	X			
HGLSB10-07-1314	90822	X			
SBDup01	90825	X			
TB-001	90826				
HGLSB27-03-1113	90827	X	NR		
HGLSB27-03-1618	90828	X	NR		
HGLSB27-02-0608	90829	X	NR		

Sample Identification	Laboratory Identification	Methods 6010B/7470/7471	Methods 900/901		
HGLSB27-02-1113	90830	X	NR		
HGLSB27-01-0608	90831	X	NR		
HGLSB27-04-0810	90832	X	NR		
SBDup02	90833	X			
SBDup03	90834		NR		
HGLGW27-03-051606	90835	X	NR		
HGLSD27-01-0002	90836	X			
HGLGW27-02-051606	90837	X	NR		
GWDup-01	90838	X	NR		
RB05-1506	90839	X			
RB05-051606	90840	X			

Key:

Method 8260B	=	Volatile organics by GC/MS
Method 8270C	=	Semivolatile organics by GC/MS (Aniline only)
TPH-GRO	=	Total Petroleum Hydrocarbons-Gasoline Range Organics by GC
TPH-DRO	=	Total Petroleum Hydrocarbons-Diesel Range Organics by GC
Methods 6010B/7470/7471	=	Metals by ICP/CVAA
Methods 900/901	=	Radiochemistry
NR	=	Not reported – Requested on COC, lab reported and QBD validated under separate cover

Table 2. Data Package, Reviewer, and Senior Reviewer

Analysis	SDG Number	Reviewer	Senior Reviewer
Method 8260B	6051928	Debbie Copsey	Thomas Davis
Method 8270C	6051928	Debbie Copsey	Thomas Davis
TPH-GRO	6051928	Debbie Copsey	Thomas Davis
TPH-DRO	6051928	Debbie Copsey	Thomas Davis
Methods 6010B/7470/7471	6051928	Lorraine Davis	Thomas Davis

C. Laboratory Report and Supporting Documentation

The laboratory report and supporting documentation were reviewed to determine that the data package supported the level of validation requested. The data package was checked for pagination, appropriate signatures and approvals, an adequate case narrative, and possible subcontracting. The supporting data was checked for completeness and to determine that the information necessary for validation was present. The laboratory documentation was acceptable.

D. Chain-of-Custody

The COC documentation associated with this SDG was reviewed to determine that all samples listed on the COC form were reported in the laboratory deliverables, that a date and time of sampling was provided, and that the sample custody trail was complete. Sample condition upon receipt was reviewed to determine that the samples were not compromised during shipping. All custody and shipping documentation was reviewed to determine if GLP were employed when errors occurred. All data reviewed were acceptable, except as noted below.

Discussion: The date and time relinquished and the date and time received by the laboratory do not match on the COC form. However, the shipping waybill was referenced and appropriate physical custody could be documented by obtaining shipping information from the courier service, so no data qualifier flags are recommended.

The COC contained several corrections that were not dated and initialed. No data qualifier flags are recommended, however, GLP stipulate that all corrections be dated and initialed.

E. Review of Volatile Organic Analyses by GC/MS

EPA Method 8260B

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment, field, and trip blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit, except as noted below.

Discussion: Several target analytes were detected in the six method blanks and the trip blank associated with all samples:

QC Batch No.	No. Analytes Detected	Common Lab Contaminants Found
26749	9	Acetone, Methylene Chloride, Toluene
26777	3	Toluene
26796	6	Methylene Chloride, Toluene
26849	9	Toluene
26929	4	Methylene Chloride, Toluene
27108	7	Toluene
Trip Blank	7	Methylene Chloride, Toluene

The analytes that were not common laboratory contaminants were evaluated in accordance with this decision tree, with any data qualifier flags listed in Table 3:

- If the sample result was less than five times (5X) the blank concentration and less than the reporting limit, then the sample result has been raised to the reporting limit.
- If the sample result was less than 5X the blank concentration and greater than the reporting limit, then the reporting limit of the sample has been raised to the observed value.
- If the sample result was greater than 5X the blank concentration or the compounds were not detected, then no data qualifier flag is recommended.

The common laboratory contaminants were evaluated in accordance with the following decision tree, with any data qualifier flags also listed in Table 3:

- If the sample result was less than ten times (10X) the blank concentration and less than the reporting limit, then the sample result has been raised to the reporting limit.
- If the sample result was less than 10X the blank concentration and greater than the reporting limit, then the reporting limit of the sample has been raised to the observed value.
- If the sample result was greater than 10X the blank concentration or the compounds were not detected, then no data qualifier flag is recommended.

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSP10-03-2022	Toluene	Method blank Trip blank	MB=3.76 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-04-0810	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-04-0810	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-04-0810	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB10-04-0810	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSB10-05-1011	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-05-1011	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-06-1112	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-06-1112	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB10-06-1112	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB10-07-1011	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-07-1011	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-07-1011	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB10-07-1314	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-07-1314	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-07-1314	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
SBDup01	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
SBDup01	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB27-03-1618	Methylene chloride	Method blank Trip blank	MB=7.48 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB27-03-1618	Toluene	Method blank Trip blank	MB=3.11 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB27-03-1618	n-Butylbenzene	Method blank	MB=2.24	MB=ND	10.0	U
HGLSB27-03-1618	Naphthalene	Method blank	MB=7.58	MB=ND	50.0	U
HGLSB27-02-0608	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSB27-02-0608	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB27-02-0608	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB27-02-0608	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB27-02-0608	n-Propylbenzene	Method blank	MB=1.46	MB=ND	10.0	U
HGLSB27-02-0608	1,3,5-Trimethylbenzene	Method blank	MB=1.36	MB=ND	10.0	U
HGLSB27-04-0810	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB27-04-0810	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB27-04-0810	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB27-04-0810	n-Propylbenzene	Method blank	MB=1.46	MB=ND	10.0	U
HGLSB27-04-0810	1,3,5-Trimethylbenzene	Method blank	MB=1.36	MB=ND	10.0	U
HGLSB27-04-0810	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSD27-01-0002	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSD27-01-0002	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	13.0	U
HGLSD27-01-0002	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSD27-01-0002	n-Propylbenzene	Method blank	MB=1.46	MB=ND	10.0	U
HGLSD27-01-0002	1,3,5-Trimethylbenzene	Method blank	MB=1.36	MB=ND	10.0	U
HGLSD27-01-0002	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
RB05-1506	Toluene	Trip blank	TB=3.76	TB=ND	1.00	U
RB05-1506	Ethylbenzene	Trip blank	TB=0.370	TB=ND	1.00	U
RB05-1506	m,p-Xylene	Trip blank	TB=0.450	TB=ND	1.00	U
RB05-051606	Benzene	Trip blank	TB=3.78	TB=ND	1.00	U
RB05-051606	Toluene	Trip blank	TB=3.76	TB=ND	1.00	U
RB05-051606	Ethylbenzene	Trip blank	TB=0.370	TB=ND	1.00	U
RB05-051606	m,p-Xylene	Trip blank	TB=0.450	TB=ND	1.00	U
HGLSP10-03-2022	Benzene	Trip blank	TB=3.78	TB=ND	10.0	U
HGLSP10-03-2022	Ethylbenzene	Trip blank	TB=0.370	TB=ND	10.0	U
HGLSP10-03-2022	m,p-Xylene	Trip blank	TB=0.450	TB=ND	10.0	U
HGLSB10-04-0810	m,p-Xylene	Trip blank	TB=0.450	TB=ND	10.0	U
HGLSB27-03-1618	Ethylbenzene	Trip blank	TB=0.370	TB=ND	10.0	U

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 4, these results have been flagged "J" to indicate an estimated value.

Sample HGLSB27-03-1113 contained target analytes that were reported at concentrations greater than the highest calibration standard. These results have been flagged "J" to indicate an estimated value in Table 4.

Table 4. VOC Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB10-04-0810	Naphthalene	Value < RL	Value=6.76	RL=50.0	6.76	J
HGLSB10-05-1011	p-Isopropylbenzene	Value < RL	Value=1.21	RL=10.0	1.21	J
HGLSB10-05-1011	n-Butylbenzene	Value < RL	Value=1.80	RL=10.0	1.80	J
HGLSB10-05-1011	Naphthalene	Value < RL	Value=4.76	RL=50.0	4.76	J
HGLSB10-06-1112	n-Butylbenzene	Value < RL	Value=1.45	RL=10.0	1.45	J
HGLSB10-06-1112	Naphthalene	Value < RL	Value=3.77	RL=50.0	3.77	J
HGLSB10-07-1011	Naphthalene	Value < RL	Value=3.16	RL=50.0	3.16	J
HGLSB10-07-1314	Naphthalene	Value < RL	Value=2.78	RL=50.0	2.78	J
SBDup01	Naphthalene	Value < RL	Value=4.55	RL=50.0	4.55	J
TB-001	Methylene chloride	Value < RL	Value=2.18	RL=5.00	2.18	J
TB-001	Ethylbenzene	Value < RL	Value=0.370	RL=1.00	0.370	J
TB-001	m,p-Xylene	Value < RL	Value=0.450	RL=1.00	0.450	J
HGLSB27-03-1113	Ethylbenzene	Value over calibration range	NA	NA	3490	J
HGLSB27-03-1113	m,p-Xylene	Value over calibration range	NA	NA	5170	J
HGLSB27-03-1113	o-Xylene	Value over calibration range	NA	NA	2480	J

Table 4. VOC Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB27-03-1113	n-Propylbenzene	Value over calibration range	NA	NA	1410	J
HGLSB27-03-1113	1,3,5-Trimethylbenzene	Value over calibration range	NA	NA	2450	J
HGLSB27-03-1113	1,2,4-Trimethylbenzene	Value over calibration range	NA	NA	2310	J
HGLSB27-03-1618	n-Propylbenzene	Value < RL	Value=1.08	RL=10.0	1.08	J
HGLSB27-03-1618	1,2,4-Trimethylbenzene	Value < RL	Value=2.67	RL=10.0	2.67	J
HGLSB27-03-1618	sec-Butylbenzene	Value < RL	Value=2.53	RL=10.0	2.53	J
HGLSB27-03-1618	p-Isopropyltoluene	Value < RL	Value=2.60	RL=10.0	2.60	J
HGLSB27-02-0608	o-Xylene	Value < RL	Value=4.44	RL=10.0	4.44	J
HGLSB27-02-0608	Isopropylbenzene	Value < RL	Value=2.62	RL=10.0	2.62	J
HGLSB27-02-0608	p-Isopropyltoluene	Value < RL	Value=3.92	RL=10.0	3.92	J
HGLSB27-02-0608	n-Butylbenzene	Value < RL	Value=6.37	RL=10.0	6.37	J
HGLSB27-02-0608	Naphthalene	Value < RL	Value=32.6	RL=50.0	32.6	J
HGLSB27-01-0608	m,p-Xylene	Value < RL	Value=3.12	RL=10.0	3.12	J
HGLSB27-01-0608	o-Xylene	Value < RL	Value=1.62	RL=10.0	1.62	J
HGLSB27-01-0608	Isopropylbenzene	Value < RL	Value=2.35	RL=10.0	2.35	J
HGLSB27-01-0608	1,2,4-Trimethylbenzene	Value < RL	Value=5.95	RL=10.0	5.95	J
HGLSB27-01-0608	Naphthalene	Value < RL	Value=14.1	RL=50.0	14.1	J
HGLSB27-04-0810	m,p-Xylene	Value < RL	Value=2.43	RL=10.0	2.43	J
HGLSB27-04-0810	o-Xylene	Value < RL	Value=1.76	RL=10.0	1.76	J
HGLSB27-04-0810	1,2,4-Trimethylbenzene	Value < RL	Value=4.16	RL=10.0	4.16	J
HGLSB27-04-0810	p-Isopropylbenzene	Value < RL	Value=1.48	RL=10.0	1.48	J
HGLSB27-04-0810	n-Butylbenzene	Value < RL	Value=1.83	RL=10.0	1.83	J
HGLSB27-04-0810	Naphthalene	Value < RL	Value=8.71	RL=50.0	8.71	J
SBDup02	Methylene chloride	Value < RL	Value=50.6	RL=500	50.6	J
SBDup02	Benzene	Value < RL	Value=42.8	RL=50.0	42.8	J
HGLGW27-03-051606	1,2-Dichloroethane	Value < RL	Value=52.4	RL=100	52.4	J
HGLGW27-03-051606	sec-Butylbenzene	Value < RL	Value=51.6	RL=100	51.6	J
HGLGW27-03-051606	p-Isopropyltoluene	Value < RL	Value=39.8	RL=100	39.8	J
HGLGW27-03-051606	n-Butylbenzene	Value < RL	Value=44.8	RL=100	44.8	J
HGLGW27-03-051606	Naphthalene	Value < RL	Value=163	RL=500	163	J

Table 4. VOC Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSD27-01-0002	Chloroform	Value < RL	Value=0.580	RL=10.0	0.580	J
HGLSD27-01-0002	Benzene	Value < RL	Value=5.42	RL=10.0	5.42	J
HGLSD27-01-0002	m,p-Xylene	Value < RL	Value=4.78	RL=10.0	4.78	J
HGLSD27-01-0002	o-Xylene	Value < RL	Value=2.28	RL=10.0	2.28	J
HGLSD27-01-0002	1,2,4-Trimethylbenzene	Value < RL	Value=3.68	RL=10.0	3.68	J
HGLSD27-01-0002	p-Isopropyltoluene	Value < RL	Value=1.66	RL=10.0	1.66	J
HGLSD27-01-0002	n-Butylbenzene	Value < RL	Value=2.10	RL=10.0	2.10	J
HGLSD27-01-0002	Naphthalene	Value < RL	Value=7.39	RL=50.0	7.39	J
HGLGW27-02-051606	Isopropylbenzene	Value < RL	Value=82.0	RL=100	82.0	J
HGLGW27-02-051606	sec-Butylbenzene	Value < RL	Value=28.0	RL=100	28.0	J
HGLGW27-02-051606	p-Isopropyltoluene	Value < RL	Value=20.2	RL=100	20.2	J
HGLGW27-02-051606	n-Butylbenzene	Value < RL	Value=33.2	RL=100	33.2	J
HGLGW27-02-051606	Naphthalene	Value < RL	Value=133	RL=500	133	J
GWDup-01	Acetone	Value < RL	Value=850	RL=1000	850	J
GWDup-01	p-Isopropyltoluene	Value < RL	Value=75.6	RL=100	75.6	J
GWDup-01	n-Butylbenzene	Value < RL	Value=95.6	RL=100	95.6	J
GWDup-01	Naphthalene	Value < RL	Value=232	RL=500	232	J
RB05-1506	Chloroform	Value < RL	Value=0.660	RL=1.00	0.660	J
RB05-1506	n-Butylbenzene	Value < RL	Value=0.0500	RL=1.00	0.0500	J
RB05-051606	n-Butylbenzene	Value < RL	Value=0.0500	RL=1.00	0.0500	J

8. Field Duplicates

Three sets of field duplicates were collected:

- Sample SBDup01 is a duplicate of Sample HGLSP10-03-2022,
- Sample SBDup02 is a duplicate of Sample HGLSB27-03-1113, and
- Sample GWDup-01 is a duplicate of Sample HGLGW27-03-051606.

All analytes, except those listed in Table 5, were reported as not detected.

Table 5. VOC Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGLSP10-03-2022	SBDup01	
Naphthalene	ND	4.55	NC

Compound	Sample Result	Duplicate Result	RPD
	HGLSB27-03-1113	SBDup02	
Methylene chloride	ND	50.6	NC
Benzene	34.4	42.8	21.8
Toluene	1500	1100	30.8
Ethylbenzene	3490	2880	19.2
m,p-Xylene	5170	5340	3.2
o-Xylene	2480	2320	6.7
Isopropylbenzene	1410	1080	26.5
n-Propylbenzene	2450	1740	33.9
1,3,5-Trimethylbenzene	2310	1910	19.0
1,2,4-Trimethylbenzene	5850	5950	1.7
sec-Butylbenzene	1330	874	41.4
p-Isopropyltoluene	1070	730	37.8
n-Butylbenzene	1210	932	26.0
Naphthalene	1050	1130	7.3

Compound	Sample Result	Duplicate Result	RPD
	HGLGW27-03-051606	GWDup-01	
Acetone	ND	850	NC
1,2-Dichloroethane	52.4	ND	NC
Benzene	2360	2800	17.1
Toluene	1940	2430	22.4
Ethylbenzene	2330	3080	27.7
m,p-Xylene	1460	1930	27.7
o-Xylene	1020	1390	30.7
Isopropylbenzene	230	374	47.7
n-Propyltoluene	264	443	50.6
1,3,5-Trimethylbenzene	266	427	46.5
1,2,4-Trimethylbenzene	940	1460	43.3
sec-Butylbenzene	51.6	105	68.2
p-Isopropyltoluene	39.8	75.6	62.0
n-Butylbenzene	44.8	95.6	72.4

Compound	Sample Result	Duplicate Result	RPD
	HGLGW27-03-051606	GWDup-01	
Naphthalene	163	232	34.9

Key: ND = Not detected
NC = Not calculable

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

F. Review of Semivolatile Organic Analyses by GC/MS

EPA Method 8270C

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable, except as noted below.

Discussion: A single surrogate was out of criteria in the base/neutral fraction of Samples SBDup01, HGLSB27-03-1618, HGLSB27-02-0608, HGLSB27-02-1113, HGLSB27-04-0810, HGLSD27-01-0002, and HGLSB27-03-1113. *Functional Guidelines* states that "data are not qualified . . . unless two or more semivolatile surrogates, within the same fraction . . . are out of specification". No data qualifier flags are recommended because the other surrogates were in criteria.

The percent recoveries for two surrogates in a fraction were out of the criteria in Sample HGLSB27-03-1113, SBDup02, and HGLSB27-02-0608. Since the recoveries indicated a high bias and all sample results in the fraction were not detected, no data qualifier flags are recommended.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 6, these results have been flagged "J" to indicate an estimated value.

Table 6. SVOC Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB10-07-1011	Fluoranthene	Value < RL	Value=0.116	RL=0.250	0.116	J
HGLGW27-03-051606	4-Methylphenol/3-Methylphenol	Value < RL	Value=0.00240	RL=0.0050	0.00240	J
HGLSD27-01-0002	Naphthalene	Value < RL	Value=0.0570	RL=0.250	0.0570	J
HGLSD27-01-0002	Acenaphthene	Value < RL	Value=0.124	RL=0.250	0.124	J
HGLSD27-01-0002	4-Nitrophenol	Value < RL	Value=0.0530	RL=0.250	0.0530	J

8. Field Duplicates

Three sets of field duplicates were collected:

- Sample SBDup01 is a duplicate of Sample HGLSP10-03-2022,
- Sample SBDup02 is a duplicate of Sample HGLSB27-03-1113, and
- Sample GWDup-01 is a duplicate of Sample HGLGW27-03-051606.

Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 7, were reported as not detected.

Table 7. SVOC Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGLSP10-03-2022	SBDup01	
	All ND	All ND	

Compound	Sample Result	Duplicate Result	RPD
	HGLSB27-03-1113	SBDup02	
Naphthalene	0.747	0.750	0.4
1-Methylnaphthalene	1.42	1.58	10.7
2-Methylnaphthalene	1.44	1.60	10.5

Compound	Sample Result	Duplicate Result	RPD
	HGLGW27-03-051606	GWDup-01	
4-Methylphenol/3-Methylphenol	0.00240	ND	NC
Acetophenone	0.0178	0.0228	24.6
Naphthalene	0.0421	0.0557	27.8
1-Methylnaphthalene	0.0232	0.0298	24.9
2-Methylnaphthalene	0.0153	0.0211	31.9

Key: ND = Not detected
NC = Not calculable

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

G. Review of Gasoline Range Organics (GRO) by GC

EPA Method 8015 Modified

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit, except as noted below.

Discussion: Gasoline range organics were detected in three of the method blanks associated with all samples, at levels of 0.341 in QC Batch No. 26698, 0.171 in QC Batch No. 26781, and 2.50 in QC Batch No. 26822. If the sample result was less than five times (5X) the blank concentration and greater than the reporting limit, then the reporting limit of the sample has been raised to the observed value and listed in Table 8. If the sample result was greater than 5X the blank concentration or was reported as not detected, no data qualifier flags are recommended.

Table 8. TPH-GRO Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSD27-01-0002	GRO	Method blank	MB=2.50	MB=ND	2.89	U

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable, except as noted below.

Discussion: The percent recoveries for one or both surrogates were out of the criteria in Samples HGLSB10-07-1314, HGLSB27-03-1113, HGLSB27-02-1113, HGLSB27-02-0608, SBDup02, HGLGW27-02-051606, RB05-1506, RB05-051606, and SBDup01 due to large dilutions. Since all other QC checks were in criteria, no data qualifier flags are recommended.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable, except as noted below.

Discussion: A single matrix spike for GRO in QC Batch No. 26698 was out of the criteria of 56 to 143 percent at 268 percent. Since all other accuracy measurements (e.g., the other matrix spike, the SSCV, and calibration verifications) were acceptable, no data qualifier flags are recommended.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable.

8. Field Duplicates

Four sets of field duplicates were collected:

- Sample SBDup01 is a duplicate of Sample HGLSP10-03-2022,
- Sample SBDup02 is a duplicate of Sample HGLSB27-03-1113, and
- Sample GWDup-01 is a duplicate of Sample HGLGW27-03-051606.

Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 9, were reported as not detected.

Table 9. TPH-GRO Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGLSP10-03-2022	SBDup01	
GRO	ND	ND	NC

Compound	Sample Result	Duplicate Result	RPD
	HGLSB27-03-1113	SBDup02	
GRO	419	282	39.1

Compound	Sample Result	Duplicate Result	RPD
	HGLGW27-03-051606	GWDup-01	
GRO	24.2	23.6	2.5

Key: ND = Not detected
NC = Not calculable

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

H. Review of Diesel Range Organics (DRO) Analyses by GC

EPA Method 8015 Modified

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit, except as noted below.

Discussion: Diesel range organics were detected in the method blank associated with Sample RB05-1506. If the sample result was less than five times (5X) the blank concentration and less than the reporting limit, then the sample result has been raised to the reporting limit, as listed in Table 10. If the sample result was greater than 5X the blank concentration or was reported as not detected, no data qualifier flags are recommended.

Table 10. TPH-DRO Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
RB05-1506	DRO	Method blank	MB=0.510	MB=ND	5.00	U
RB05-051606	DRO	Method blank	MB=0.510	MB=ND	5.00	U

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable, except as noted below.

Discussion: The percent recovery for the surrogate n-triacontane was out of the criteria of62.8 to 115 percent at 121 percent in Sample HGLSD27-01-0002 due to a large concentration of analyte. Since all other QC checks were in criteria, no data qualifier flags are recommended.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 11, these results have been flagged "J" to indicate an estimated value.

Table 11. TPH-DRO Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB10-07-1011	DRO	Value < RL	Value=12.8	RL=50.0	12.8	J
HGLSB10-07-1314	DRO	Value < RL	Value=9.48	RL=50.0	9.48	J
SBDup01	DRO	Value < RL	Value=12.8	RL=50.0	12.8	J
HGLGW27-02-051606	DRO	Value < RL	Value=4.17	RL=5.00	4.17	J

8. Field Duplicates

Three sets of field duplicates were collected:

- Sample SBDup01 is a duplicate of Sample HGLSP10-03-2022,
- Sample SBDup02 is a duplicate of Sample HGLSB27-03-1113, and
- Sample GWDup-01 is a duplicate of Sample HGLGW27-03-051606.

Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 12, were reported as not detected.

Table 12. TPH-DRO Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGLSP10-03-2022	SBDup01	
DRO	ND	12.8	NC

Compound	Sample Result	Duplicate Result	RPD
	HGLSB27-03-1113	SBDup02	
DRO	435	288	40.7

Compound	Sample Result	Duplicate Result	RPD
	HGLGW27-03-051606	GWDup-01	
DRO	29.1	60.2	69.7

Key: ND = Not detected
NC = Not calculable

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

I. Review of Metals Analyses by ICP and AA

EPA Method 6000 Series and 7471

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that the proper number of standards were used and the correlation coefficient criteria was met All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

5. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

6. Sample Duplicates

Sample duplicates were analyzed as required by the referenced method and all RPDs were within acceptable criteria.

7. CVAA Special Requirements

All special criteria for cold vapor atomic absorption analysis were performed at a frequency required by the referenced method and were within acceptable criteria.

8. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and digestion procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 13, these results have been flagged "J" to indicate an estimated value.

Table 13. Metals Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB10-05-1011	Mercury	Value < RL	Value=0.0120	RL=0.0400	0.0120	J
HGLSB10-07-1314	Arsenic	Value < RL	Value=1.34	RL=2.00	1.34	J
SBDup01	Mercury	Value < RL	Value=0.0270	RL=0.0400	0.0270	J
HGLSB27-04-0810	Lead	Value < RL	Value=0.886	RL=1.00	0.886	J
HGLGW27-02-051606	Chromium	Value < RL	Value=0.0030	RL=0.0100	0.0030	J
RB05-1506	Barium	Value < RL	Value=0.0020	RL=0.0100	0.0020	J

9. Field Duplicates

Three sets of field duplicates were collected:

- Sample SBDup01 is a duplicate of Sample HGLSP10-03-2022,
- Sample SBDup02 is a duplicate of Sample HGLSB27-03-1113, and
- Sample GWDup-01 is a duplicate of Sample HGLGW27-03-051606.

Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 14, were reported as not detected.

Table 14. Metals Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGLSP10-03-2022	SBDup01	
Arsenic	1.73	3.36	64.0
Barium	43.8	46.3	5.5
Chromium	7.73	9.77	23.3
Mercury	0.0460	0.0270	52.1
Lead	22.23	47.1	71.7

Compound	Sample Result	Duplicate Result	RPD
	HGLSB27-03-1113	SBDup02	
Barium	60.2	49.9	18.7
Chromium	4.76	3.72	24.5
Lead	6.26	4.46	33.6

Compound	Sample Result	Duplicate Result	RPD
	HGLGW27-03-051606	GWDup-01	
Barium, Dissolved	0.0220	0.0230	4.4
Barium, Total	0.0110	0.0360	106
Selenium, Dissolved	0.0970	0.0810	18.0
Silver, Total	0.0220	0.0140	44.4

Key: ND = Not detected
NC = Not calculable

10. Laboratory Contact

There was no verbal or written communication with the laboratory.

11. Other Comments

None.

12. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

Attachment 1 Data Qualifier Flag Definitions

Organics

U = The analyte was analyzed for but not detected above the numerical quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

N = The analysis indicates presumptive evidence of the presence of the analyte.

NJ = The analysis indicates presumptive evidence of the presence of the analyte, but the numerical value is an estimated quantity.

Inorganics

U = The analyte was analyzed for but not detected above the numerical quantitation limit. The numerical value may be either a detection limit or a quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

Attachment 2 Summary Table of Data Qualifier Flags

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Types of Samples: Soils and Waters
Dates of Sampling: May 15-16, 2006

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSP10-03-2022	Benzene	Trip blank	TB=3.78	TB=ND	10.0	U
HGLSP10-03-2022	Ethylbenzene	Trip blank	TB=0.370	TB=ND	10.0	U
HGLSP10-03-2022	m,p-Xylene	Trip blank	TB=0.450	TB=ND	10.0	U
HGLSP10-03-2022	Toluene	Method blank Trip blank	MB=3.76 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-04-0810	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB10-04-0810	m,p-Xylene	Trip blank	TB=0.450	TB=ND	10.0	U
HGLSB10-04-0810	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-04-0810	Naphthalene	Value < RL	Value=6.76	RL=50.0	6.76	J
HGLSB10-04-0810	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSB10-04-0810	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-05-1011	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-05-1011	Naphthalene	Value < RL	Value=4.76	RL=50.0	4.76	J
HGLSB10-05-1011	n-Butylbenzene	Value < RL	Value=1.80	RL=10.0	1.80	J
HGLSB10-05-1011	p-Isopropylbenzene	Value < RL	Value=1.21	RL=10.0	1.21	J
HGLSB10-05-1011	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-06-1112	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB10-06-1112	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-06-1112	Naphthalene	Value < RL	Value=3.77	RL=50.0	3.77	J
HGLSB10-06-1112	n-Butylbenzene	Value < RL	Value=1.45	RL=10.0	1.45	J
HGLSB10-06-1112	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-07-1011	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB10-07-1011	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-07-1011	Naphthalene	Value < RL	Value=3.16	RL=50.0	3.16	J
HGLSB10-07-1011	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB10-07-1314	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB10-07-1314	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB10-07-1314	Naphthalene	Value < RL	Value=2.78	RL=50.0	2.78	J
HGLSB10-07-1314	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
SBDup01	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
SBDup01	Naphthalene	Value < RL	Value=4.55	RL=50.0	4.55	J
SBDup01	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
TB-001	Ethylbenzene	Value < RL	Value=0.370	RL=1.00	0.370	J
TB-001	m,p-Xylene	Value < RL	Value=0.450	RL=1.00	0.450	J
TB-001	Methylene chloride	Value < RL	Value=2.18	RL=5.00	2.18	J
HGLSB27-03-1113	Ethylbenzene	Value over calibration range	NA	NA	3490	J
HGLSB27-03-1113	m,p-Xylene	Value over calibration range	NA	NA	5170	J
HGLSB27-03-1113	o-Xylene	Value over calibration range	NA	NA	2480	J
HGLSB27-03-1113	n-Propylbenzene	Value over calibration range	NA	NA	1410	J
HGLSB27-03-1113	1,3,5-Trimethylbenzene	Value over calibration range	NA	NA	2450	J
HGLSB27-03-1113	1,2,4-Trimethylbenzene	Value over calibration range	NA	NA	2310	J
HGLSB27-03-1618	1,2,4-Trimethylbenzene	Value < RL	Value=2 67	RL=10.0	2.67	J
HGLSB27-03-1618	Ethylbenzene	Trip blank	TB=0.370	TB=ND	10.0	U
HGLSB27-03-1618	Methylene chloride	Method blank Trip blank	MB=7.48 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB27-03-1618	Naphthalene	Method blank	MB=7.58	MB=ND	50.0	U
HGLSB27-03-1618	n-Butylbenzene	Method blank	MB=2.24	MB=ND	10.0	U
HGLSB27-03-1618	n-Propylbenzene	Value < RL	Value=1.08	RL=10.0	1.08	J
HGLSB27-03-1618	p-Isopropyltoluene	Value < RL	Value=2.60	RL=10.0	2.60	J

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB27-03-1618	sec-Butylbenzene	Value < RL	Value=2.53	RL=10.0	2.53	J
HGLSB27-03-1618	Toluene	Method blank Trip blank	MB=3.11 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB27-02-0608	1,3,5-Trimethylbenzene	Method blank	MB=1.36	MB=ND	10.0	U
HGLSB27-02-0608	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB27-02-0608	Isopropylbenzene	Value < RL	Value=2.62	RL=10.0	2.62	J
HGLSB27-02-0608	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB27-02-0608	Naphthalene	Value < RL	Value=32.6	RL=50.0	32.6	J
HGLSB27-02-0608	n-Butylbenzene	Value < RL	Value=6.37	RL=10.0	6.37	J
HGLSB27-02-0608	n-Propylbenzene	Method blank	MB=1.46	MB=ND	10.0	U
HGLSB27-02-0608	o-Xylene	Value < RL	Value=4.44	RL=10.0	4.44	J
HGLSB27-02-0608	p-Isopropyltoluene	Value < RL	Value=3.92	RL=10.0	3.92	J
HGLSB27-02-0608	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSB27-02-0608	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
HGLSB27-01-0608	1,2,4-Trimethylbenzene	Value < RL	Value=5.95	RL=10.0	5.95	J
HGLSB27-01-0608	Isopropylbenzene	Value < RL	Value=2.35	RL=10.0	2.35	J
HGLSB27-01-0608	m,p-Xylene	Value < RL	Value=3.12	RL=10.0	3.12	J
HGLSB27-01-0608	Naphthalene	Value < RL	Value=14.1	RL=50.0	14.1	J
HGLSB27-01-0608	o-Xylene	Value < RL	Value=1.62	RL=10.0	1.62	J
HGLSB27-04-0810	1,2,4-Trimethylbenzene	Value < RL	Value=4.16	RL=10.0	4.16	J
HGLSB27-04-0810	1,3,5-Trimethylbenzene	Method blank	MB=1.36	MB=ND	10.0	U
HGLSB27-04-0810	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSB27-04-0810	m,p-Xylene	Value < RL	Value=2.43	RL=10.0	2.43	J
HGLSB27-04-0810	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSB27-04-0810	Naphthalene	Value < RL	Value=8.71	RL=50.0	8.71	J
HGLSB27-04-0810	n-Butylbenzene	Value < RL	Value=1.83	RL=10.0	1.83	J
HGLSB27-04-0810	n-Propylbenzene	Method blank	MB=1.46	MB=ND	10.0	U
HGLSB27-04-0810	o-Xylene	Value < RL	Value=1.76	RL=10.0	1.76	J
HGLSB27-04-0810	p-Isopropylbenzene	Value < RL	Value=1.48	RL=10.0	1.48	J
HGLSB27-04-0810	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSB27-04-0810	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	10.0	U
SBDup02	Benzene	Value < RL	Value=42.8	RL=50.0	42.8	J

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
SBDup02	Methylene chloride	Value < RL	Value=50.6	RL=500	50.6	J
HGLGW27-03-051606	1,2-Dichloroethane	Value < RL	Value=52.4	RL=100	52.4	J
HGLGW27-03-051606	Naphthalene	Value < RL	Value=163	RL=500	163	J
HGLGW27-03-051606	n-Butylbenzene	Value < RL	Value=44.8	RL=100	44.8	J
HGLGW27-03-051606	p-Isopropyltoluene	Value < RL	Value=39.8	RL=100	39.8	J
HGLGW27-03-051606	sec-Butylbenzene	Value < RL	Value=51.6	RL=100	51.6	J
HGLSD27-01-0002	1,2,4-Trimethylbenzene	Value < RL	Value=3.68	RL=10.0	3.68	J
HGLSD27-01-0002	1,3,5-Trimethylbenzene	Method blank	MB=1.36	MB=ND	10.0	U
HGLSD27-01-0002	Benzene	Value < RL	Value=5.42	RL=10.0	5.42	J
HGLSD27-01-0002	Chloroform	Value < RL	Value=0.580	RL=10.0	0.580	J
HGLSD27-01-0002	Ethylbenzene	Method blank Trip blank	MB=0.870 TB=0.370	MB=ND TB=ND	10.0	U
HGLSD27-01-0002	m,p-Xylene	Value < RL	Value=4.78	RL=10.0	4.78	J
HGLSD27-01-0002	Methylene chloride	Method blank Trip blank	MB=5.51 TB=2.18	MB=ND TB=ND	50.0	U
HGLSD27-01-0002	Naphthalene	Value < RL	Value=7.39	RL=50.0	7.39	J
HGLSD27-01-0002	n-Butylbenzene	Value < RL	Value=2.10	RL=10.0	2.10	J
HGLSD27-01-0002	n-Propylbenzene	Method blank	MB=1.46	MB=ND	10.0	U
HGLSD27-01-0002	o-Xylene	Value < RL	Value=2.28	RL=10.0	2.28	J
HGLSD27-01-0002	p-Isopropyltoluene	Value < RL	Value=1.66	RL=10.0	1.66	J
HGLSD27-01-0002	sec-Butylbenzene	Method blank	MB=2.54	MB=ND	10.0	U
HGLSD27-01-0002	Toluene	Method blank Trip blank	MB=3.75 TB=3.76	MB=ND TB=ND	13.0	U
HGLGW27-02-051606	Isopropylbenzene	Value < RL	Value=82.0	RL=100	82.0	J
HGLGW27-02-051606	Naphthalene	Value < RL	Value=133	RL=500	133	J
HGLGW27-02-051606	n-Butylbenzene	Value < RL	Value=33.2	RL=100	33.2	J
HGLGW27-02-051606	p-Isopropyltoluene	Value < RL	Value=20.2	RL=100	20.2	J
HGLGW27-02-051606	sec-Butylbenzene	Value < RL	Value=28.0	RL=100	28.0	J
GWDup-01	Acetone	Value < RL	Value=850	RL=1000	850	J
GWDup-01	Naphthalene	Value < RL	Value=232	RL=500	232	J
GWDup-01	n-Butylbenzene	Value < RL	Value=95.6	RL=100	95.6	J

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
GWDup-01	p-Isopropyltoluene	Value < RL	Value=75.6	RL=100	75.6	J
RB05-1506	Chloroform	Value < RL	Value=0.660	RL=1.00	0.660	J
RB05-1506	Ethylbenzene	Trip blank	TB=0.370	TB=ND	1.00	U
RB05-1506	m,p-Xylene	Trip blank	TB=0.450	TB=ND	1.00	U
RB05-1506	n-Butylbenzene	Value < RL	Value=0.0500	RL=1.00	0.0500	J
RB05-1506	Toluene	Trip blank	TB=3.76	TB=ND	1.00	U
RB05-051606	Benzene	Trip blank	TB=3.78	TB=ND	1.00	U
RB05-051606	Ethylbenzene	Trip blank	TB=0.370	TB=ND	1.00	U
RB05-051606	m,p-Xylene	Trip blank	TB=0.450	TB=ND	1.00	U
RB05-051606	n-Butylbenzene	Value < RL	Value=0.0500	RL=1.00	0.0500	J
RB05-051606	Toluene	Trip blank	TB=3.76	TB=ND	1.00	U
SVOC Data Qualifiers						
HGLSB10-07-1011	Fluoranthene	Value < RL	Value=0.116	RL=0.250	0.116	J
HGLGW27-03-051606	4-Methylphenol/3-Methylphenol	Value < RL	Value=0.00240	RL=0.0050	0.00240	J
HGLSD27-01-0002	Naphthalene	Value < RL	Value=0.0570	RL=0.250	0.0570	J
HGLSD27-01-0002	Acenaphthene	Value < RL	Value=0.124	RL=0.250	0.124	J
HGLSD27-01-0002	4-Nitrophenol	Value < RL	Value=0.0530	RL=0.250	0.0530	J
TPH-GRO Data Qualifiers						
HGLSD27-01-0002	GRO	Method blank	MB=2.50	MB=ND	2.89	U
TPH-DRO Data Qualifiers						
HGLSB10-07-1011	DRO	Value < RL	Value=12.8	RL=50.0	12.8	J
HGLSB10-07-1314	DRO	Value < RL	Value=9.48	RL=50.0	9.48	J
SBDup01	DRO	Value < RL	Value=12.8	RL=50.0	12.8	J
HGLGW27-02-051606	DRO	Value < RL	Value=4.17	RL=5.00	4.17	J
RB05-1506	DRO	Method blank	MB=0.510	MB=ND	5.00	U
RB05-051606	DRO	Method blank	MB=0.510	MB=ND	5.00	U
Metals Data Qualifiers						
HGLSB10-05-1011	Mercury	Value < RL	Value=0.0120	RL=0.0400	0.0120	J
HGLSB10-07-1314	Arsenic	Value < RL	Value=1.34	RL=2.00	1.34	J
SBDup01	Mercury	Value < RL	Value=0.0270	RL=0.0400	0.0270	J
HGLSB27-04-0810	Lead	Value < RL	Value=0.886	RL=1.00	0.886	J
HGLGW27-02-051606	Chromium	Value < RL	Value=0.0030	RL=0.0100	0.0030	J
RB05-1506	Barium	Value < RL	Value=0.0020	RL=0.0100	0.0020	J

Attachment 3 Reviewed/Revised Laboratory Forms

Analytical Report

Sample: 90817 - HGLSB10-03-2022

Analysis: Semivolatiles
QC Batch: 27046
Prep Batch: 23470

Analytical Method: S 8270C
Date Analyzed: 2006-05-24
Sample Preparation: 2006-05-22

Prep Method: S 3550
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531

continued ...

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sample 90817 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.40	mg/Kg	1	2.67	52	10 - 98.8
Phenol-d5		1.45	mg/Kg	1	2.67	54	10 - 105
Nitrobenzene-d5		1.56	mg/Kg	1	2.67	58	10 - 114
2-Fluorobiphenyl		1.66	mg/Kg	1	2.67	62	10 - 122
2,4,6-Tribromophenol		2.75	mg/Kg	1	2.67	103	10 - 117
Terphenyl-d14		1.58	mg/Kg	1	2.67	59	10 - 116

Sample: 90817 - HGLSB10-03-2022

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26873	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic		**1.73**	**1.73**	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**43.8**	**43.8**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**7.73**	**7.73**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury		**0.0460**	**0.0460**	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**22.2**	**22.2**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 90817 - HGLSB10-03-2022

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		142	mg/Kg	1	150	94	62.8 - 115

Sample: 90817 - HGLSB10-03-2022

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.697	mg/Kg	10	0.100	70	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.826	mg/Kg	10	0.100	83	71.9 - 123.7

Sample: 90817 - HGLSB10-03-2022

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26777	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23508	Sample Preparation:	2006-05-23	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	U	<3.15	<50.0	<3.15	µg/Kg	10	0.315	5	0.3154	
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	J	~~4.84~~	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	10.0 U
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~9.38~~	<10.0	3.76	µg/Kg	10	0.135	1	0.1352	10.0 U

continued . . .

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sample 90817 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203
Ethylbenzene	J	~~1.63~~	<10.0	<0.599	µg/Kg	10	0.0599	1	0.0599 10.04
m,p-Xylene	J	~~2.10~~	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754 10.04
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142
n-Propylbenzene	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1007
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.54	µg/Kg	10	0.104	1	0.1042
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	U	<1.48	<10.0	1.53	µg/Kg	10	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene	U	<1.13	<10.0	<1.13	µg/Kg	10	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	U	<1.16	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	U	<2.58	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		484	µg/Kg	10	50.0	97	42 - 129
Toluene-d8		508	µg/Kg	10	50.0	102	93 - 107
4-Bromofluorobenzene (4-BFB)		498	µg/Kg	10	50.0	100	78 - 120

Sample: 90818 - HGLSB10-04-0810

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517

continued . . .

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sample 90818 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431

continued ...

Validated EPA Level 3 (Verification), Quality by Design, January 17, 2007

sample 90818 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.93	mg/Kg	1	2.67	72	10 - 98.8
Phenol-d5		2.21	mg/Kg	1	2.67	83	10 - 105
Nitrobenzene-d5		2.26	mg/Kg	1	2.67	85	10 - 114
2-Fluorobiphenyl		2.38	mg/Kg	1	2.67	89	10 - 122
2,4,6-Tribromophenol		2.70	mg/Kg	1	2.67	101	10 - 117
Terphenyl-d14		1.61	mg/Kg	1	2.67	60	10 - 116

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Sample: 90818 - HGLSB10-04-0810

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26873	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26990	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**24.7**	**24.7**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**2.73**	**2.73**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury		**0.0680**	**0.0680**	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**3.50**	**3.50**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 90818 - HGLSB10-04-0810

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		142	mg/Kg	1	150	95	62.8 - 115

Sample: 90818 - HGLSB10-04-0810

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.714	mg/Kg	10	0.100	71	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.854	mg/Kg	10	0.100	85	71.9 - 123.7

Sample: 90818 - HGLSB10-04-0810

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Analysis: Volatiles | Analytical Method: S 8260B | Prep Method: S 5030B
QC Batch: 26796 | Date Analyzed: 2006-05-23 | Analyzed By: JG
Prep Batch: 23529 | Sample Preparation: 2006-05-23 | Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~5.17~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~5.84~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~1.28~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0 U
m,p-Xylene	J	~~2.08~~	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	10.0 U
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	

continued . . .

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sample 90818 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142
n-Propylbenzene	U	<1.01	<10.0	1.46	µg/Kg	10	0.101	1	0.1007
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.36	µg/Kg	10	0.104	1	0.1042
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene	JB	~~1.43~~	<10.0	2.54	µg/Kg	10	0.113	1	0.1128 10.04
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	U	<1.16	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	J	**6.76**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585 J
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		462	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		506	µg/Kg	10	50.0	101	93 - 107
4-Bromofluorobenzene (4-BFB)		490	µg/Kg	10	50.0	98	78 - 120

Sample: 90819 - HGLSB10-05-1011

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034

continued ...

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sample 90819 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536

continued ...

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sample 90819 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.07	mg/Kg	1	2.67	78	10 - 98.8
Phenol-d5		2.09	mg/Kg	1	2.67	78	10 - 105
Nitrobenzene-d5		2.23	mg/Kg	1	2.67	84	10 - 114
2-Fluorobiphenyl		2.32	mg/Kg	1	2.67	87	10 - 122
2,4,6-Tribromophenol		2.79	mg/Kg	1	2.67	104	10 - 117
Terphenyl-d14		1.80	mg/Kg	1	2.67	67	10 - 116

Sample: 90819 - HGLSB10-05-1011

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26873	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic		**3.07**	**3.07**	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**23.0**	**23.0**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**5.71**	**5.71**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	J	**0.0120**	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**8.52**	**8.52**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 90819 - HGLSB10-05-1011

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		146	mg/Kg	1	150	98	62.8 - 115

Sample: 90819 - HGLSB10-05-1011

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.687	mg/Kg	10	0.100	69	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.782	mg/Kg	10	0.100	78	71.9 - 123.7

Sample: 90819 - HGLSB10-05-1011

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

continued . . .

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sample 90819 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~5.27~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~3.70~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	U	<0.599	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	
m,p-Xylene	U	<1.75	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	

continued ...

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sample 90819 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	
n-Propylbenzene	U	<1.01	<10.0	1.46	µg/Kg	10	0.101	1	0.1007	
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.36	µg/Kg	10	0.104	1	0.1042	
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963	
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482	
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405	
sec-Butylbenzene	U	<1.13	<10.0	2.54	µg/Kg	10	0.113	1	0.1128	
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924	
p-Isopropyltoluene	J	**1.21**	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046	J
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739	
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092	
n-Butylbenzene	J	**1.80**	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156	J
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915	
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906	
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107	
Naphthalene	J	**4.76**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585	J
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		464	µg/Kg	10	50.0	93	42 - 129
Toluene-d8		506	µg/Kg	10	50.0	101	93 - 107
4-Bromofluorobenzene (4-BFB)		490	µg/Kg	10	50.0	98	78 - 120

Sample: 90820 - HGLSB10-06-1112

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued . . .

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sample 90820 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued . . .

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sample 90820 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.34	mg/Kg	1	2.67	88	10 - 98.8
Phenol-d5		2.42	mg/Kg	1	2.67	91	10 - 105
Nitrobenzene-d5		2.42	mg/Kg	1	2.67	91	10 - 114
2-Fluorobiphenyl		2.55	mg/Kg	1	2.67	96	10 - 122
2,4,6-Tribromophenol		2.90	mg/Kg	1	2.67	109	10 - 117
Terphenyl-d14		1.78	mg/Kg	1	2.67	67	10 - 116

Sample: 90820 - HGLSB10-06-1112

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26873	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**23.3**	**23.3**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**2.05**	**2.05**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**3.53**	**3.53**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 90820 - HGLSB10-06-1112

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		158	mg/Kg	1	150	106	62.8 - 115

Sample: 90820 - HGLSB10-06-1112

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1]	0.619	mg/Kg	10	0.100	62	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.735	mg/Kg	10	0.100	74	71.9 - 123.7

Sample: 90820 - HGLSB10-06-1112

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

[1] Surrogate TFT out due to matrix interference. Sample was reran on 5/24/06 to confirm matrix interference results.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~6.50~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~4.08~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~0.670~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0 U
m,p-Xylene	U	<1.75	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	

continued . . .

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sample 90820 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene	U	<1.01	<10.0	1.46	µg/Kg	10	0.101	1	0.1007
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.36	µg/Kg	10	0.104	1	0.1042
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene	U	<1.13	<10.0	2.54	µg/Kg	10	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	J	**1.45**	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	J	**3.77**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		462	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		501	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		487	µg/Kg	10	50.0	97	78 - 120

Sample: 90821 - HGLSB10-07-1011

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444

continued ...

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sample 90821 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04

continued . . .

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sample 90821 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	J	**0.116**	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.41	mg/Kg	1	2.67	53	10 - 98.8
Phenol-d5		1.38	mg/Kg	1	2.67	52	10 - 105
Nitrobenzene-d5		1.40	mg/Kg	1	2.67	52	10 - 114
2-Fluorobiphenyl		1.45	mg/Kg	1	2.67	54	10 - 122
2,4,6-Tribromophenol		2.52	mg/Kg	1	2.67	94	10 - 117
Terphenyl-d14		1.92	mg/Kg	1	2.67	72	10 - 116

Sample: 90821 - HGLSB10-07-1011

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26873	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**17.8**	**17.8**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491

continued . . .

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sample 90821 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Chromium		**1.97**	**1.97**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**2.25**	**2.25**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 90821 - HGLSB10-07-1011

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	J	**12.8**	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		161	mg/Kg	1	150	107	62.8 - 115

Sample: 90821 - HGLSB10-07-1011

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[2]	0.637	mg/Kg	10	0.100	64	68 - 129.6
4-Bromofluorobenzene (4-BFB)	[3]	0.701	mg/Kg	10	0.100	70	71.9 - 123.7

Sample: 90821 - HGLSB10-07-1011

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

[2]Surrogate TFT out due to matrix interference. Sample was reran on 5/24/06 to confirm matrix interference results.
[3]Surrogate BFB out due to matrix interference. Sample was reran on 5/24/06 to confirm matrix interference results.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~4.68~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~4.39~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~0.600~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0U
m,p-Xylene	U	<1.75	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	

continued . . .

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sample 90821 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene	U	<1.01	<10.0	1.46	µg/Kg	10	0.101	1	0.1007
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.36	µg/Kg	10	0.104	1	0.1042
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene	U	<1.13	<10.0	2.54	µg/Kg	10	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	U	<1.16	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	J	**3.16**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		467	µg/Kg	10	50.0	93	42 - 129
Toluene-d8		513	µg/Kg	10	50.0	103	93 - 107
4-Bromofluorobenzene (4-BFB)		497	µg/Kg	10	50.0	99	78 - 120

Sample: 90822 - HGLSB10-07-1314

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444

continued . . .

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sample 90822 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04

continued ...

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sample 90822 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.35	mg/Kg	1	2.67	50	10 - 98.8
Phenol-d5		1.72	mg/Kg	1	2.67	64	10 - 105
Nitrobenzene-d5		1.66	mg/Kg	1	2.67	62	10 - 114
2-Fluorobiphenyl		1.70	mg/Kg	1	2.67	64	10 - 122
2,4,6-Tribromophenol		2.33	mg/Kg	1	2.67	87	10 - 117
Terphenyl-d14		2.07	mg/Kg	1	2.67	78	10 - 116

Sample: 90822 - HGLSB10-07-1314

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	J	**1.34**	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**27.7**	**27.7**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794

continued ...

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sample 90822 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Chromium		**3.82**	**3.82**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**4.36**	**4.36**	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90822 - HGLSB10-07-1314

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	J	**9.48**	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		160	mg/Kg	1	150	106	62.8 - 115

Sample: 90822 - HGLSB10-07-1314

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[4]	0.627	mg/Kg	10	0.100	63	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.737	mg/Kg	10	0.100	74	71.9 - 123.7

Sample: 90822 - HGLSB10-07-1314

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414

continued . . .

[4]Surrogate TFT out due to matrix interference. Sample was reran on 5/24/06 to confirm matrix interference results.

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sample 90822 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~<4.57~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~5.23~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~0.860~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0 U
m,p-Xylene	U	<1.75	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	

continued . . .

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sample 90822 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142
n-Propylbenzene	U	<1.01	<10.0	1.46	µg/Kg	10	0.101	1	0.1007
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.36	µg/Kg	10	0.104	1	0.1042
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene	U	<1.13	<10.0	2.54	µg/Kg	10	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	U	<1.16	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	J	**2.78**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		460	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		508	µg/Kg	10	50.0	102	93 - 107
4-Bromofluorobenzene (4-BFB)		491	µg/Kg	10	50.0	98	78 - 120

Sample: 90825 - SBDUP01

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403

continued . . .

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sample 90825 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349

continued . . .

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sample 90825 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.68	mg/Kg	1	2.67	63	10 - 98.8
Phenol-d5		1.72	mg/Kg	1	2.67	64	10 - 105
Nitrobenzene-d5		1.85	mg/Kg	1	2.67	69	10 - 114
2-Fluorobiphenyl		1.88	mg/Kg	1	2.67	70	10 - 122
2,4,6-Tribromophenol		3.11	mg/Kg	1	2.67	116	10 - 117
Terphenyl-d14	[5]	3.26	mg/Kg	1	2.67	122	10 - 116

Sample: 90825 - SBDUP01

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26873	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386

continued . . .

[5]High surrogate recovery. Sample non-detect, result bias high.

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sample 90825 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Arsenic		**3.36**	**3.36**	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**46.3**	**46.3**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**9.77**	**9.77**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	J	**0.0270**	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**47.1**	**47.1**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 90825 - SBDUP01

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	J	**12.8**	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		131	mg/Kg	1	150	88	62.8 - 115

Sample: 90825 - SBDUP01

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[6]	0.611	mg/Kg	10	0.100	61	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.754	mg/Kg	10	0.100	75	71.9 - 123.7

Sample: 90825 - SBDUP01

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

[6]Surrogate TFT out due to matrix interference. Sample was reran on 5/24/06 to confirm matrix interference results.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~5.19~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~3.64~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	U	<0.599	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	
m,p-Xylene	U	<1.75	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	U	<0.991	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	

continued . . .

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sample 90825 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene	U	<1.01	<10.0	1.46	µg/Kg	10	0.101	1	0.1007
1,3,5-Trimethylbenzene	U	<1.04	<10.0	1.36	µg/Kg	10	0.104	1	0.1042
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene	U	<1.13	<10.0	2.54	µg/Kg	10	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	U	<1.16	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	J	**4.55**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		468	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		505	µg/Kg	10	50.0	101	93 - 107
4-Bromofluorobenzene (4-BFB)		493	µg/Kg	10	50.0	99	78 - 120

Sample: 90826 - TB-001

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26749	Date Analyzed:	2006-05-22	Analyzed By:	JG
Prep Batch:	23488	Sample Preparation:	2006-05-22	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16
Acetone	U	<0.854	<10.0	2.32	µg/L	1	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736
Methylene chloride	JB	**2.18**	<5.00	2.41	µg/L	1	0.689	5	0.6888
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504

continued ...

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sample 90826 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	U	<0.0475	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene		**3.78**	**3.78**	<0.0495	µg/L	1	0.0495	1	0.0495	
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	J	**0.0500**	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	J
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene		**3.76**	**3.76**	0.370	µg/L	1	0.0736	1	0.0736	
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	<0.0696	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	U	<0.0217	<1.00	0.0300	µg/L	1	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	JB	**0.370**	<1.00	0.0600	µg/L	1	0.0566	1	0.0566	J
m,p-Xylene	JB	**0.450**	<1.00	0.0900	µg/L	1	0.0363	1	0.0363	J
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	J	**0.110**	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	0.0600	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	U	<0.0406	<1.00	<0.0406	µg/L	1	0.0406	1	0.0406	
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	
n-Propylbenzene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
1,3,5-Trimethylbenzene	U	<0.0557	<1.00	0.0600	µg/L	1	0.0557	1	0.0557	
tert-Butylbenzene	U	<0.0770	<1.00	<0.0770	µg/L	1	0.0770	1	0.077	
1,2,4-Trimethylbenzene	U	<0.0336	<1.00	<0.0336	µg/L	1	0.0336	1	0.0336	
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
sec-Butylbenzene	U	<0.0439	<1.00	<0.0439	µg/L	1	0.0439	1	0.0439	
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
p-Isopropyltoluene	U	<0.0513	<1.00	<0.0513	µg/L	1	0.0513	1	0.0513	
4-Chlorotoluene	U	<0.0460	<1.00	0.0500	µg/L	1	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	<0.0629	µg/L	1	0.0629	1	0.0629	
n-Butylbenzene	U	<0.0400	<1.00	<0.0400	µg/L	1	0.0400	1	0.04	
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663	
Naphthalene	U	<0.417	<5.00	<0.417	µg/L	1	0.417	5	0.4166	
Hexachlorobutadiene	U	<0.176	<5.00	<0.176	µg/L	1	0.176	5	0.1758	

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.0	µg/L	1	50.0	106	70 - 130
Toluene-d8		51.3	µg/L	1	50.0	103	70 - 130
4-Bromofluorobenzene (4-BFB)		47.0	µg/L	1	50.0	94	70 - 130

Sample: 90827 - HGLSB27-03-1113

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene		**0.747**	**0.747**	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene		**1.42**	**1.42**	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene		**1.44**	**1.44**	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403

continued . . .

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sample 90827 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049

continued . . .

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sample 90827 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.10	mg/Kg	1	2.67	79	10 - 98.8
Phenol-d5		2.25	mg/Kg	1	2.67	84	10 - 105
Nitrobenzene-d5		3.02	mg/Kg	1	2.67	113	10 - 114
2-Fluorobiphenyl		2.44	mg/Kg	1	2.67	91	10 - 122
2,4,6-Tribromophenol		2.55	mg/Kg	1	2.67	96	10 - 117
Terphenyl-d14	[7]	3.17	mg/Kg	1	2.67	119	10 - 116

Sample: 90827 - HGLSB27-03-1113

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**60.2**	**60.2**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**4.76**	**4.76**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**6.26**	**6.26**	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90827 - HGLSB27-03-1113

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**435**	**435**	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		123	mg/Kg	1	150	82	62.8 - 115

[7]8270 Only - One basic surrogate is out of control limits. The other two basic surrogates show extraction was performed properly.

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Sample: 90827 - HGLSB27-03-1113

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**419**	**419**	<2.42	mg/Kg	20	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.696	mg/Kg	20	0.0500	70	68 - 129.6
4-Bromofluorobenzene (4-BFB)	[8]	12.6	mg/Kg	20	0.0500	1260	71.9 - 123.7

Sample: 90827 - HGLSB27-03-1113

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166
Methylene chloride	JB	~~10.3~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154 50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599
Benzene		**34.4**	**34.4**	<2.36	µg/Kg	10	0.236	1	0.2365
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009

continued . . .

[8]High surrogate recovery due to peak interference.

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sample 90827 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene		**1500**	**1500**	3.75	µg/Kg	10	0.135	1	0.1352	
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	[9]	**3490**	**3490**	0.870	µg/Kg	10	0.0599	1	0.0599	J
m,p-Xylene	[10]	**5170**	**5170**	<1.75	µg/Kg	10	0.175	1	0.1754	J
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	[11]	**2480**	**2480**	<0.991	µg/Kg	10	0.0991	1	0.0991	J
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene		**1410**	**1410**	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	
n-Propylbenzene	[12]	**2450**	**2450**	1.46	µg/Kg	10	0.101	1	0.1007	J
1,3,5-Trimethylbenzene	[13]	**2310**	**2310**	1.36	µg/Kg	10	0.104	1	0.1042	J
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963	
1,2,4-Trimethylbenzene	[14]	**5850**	**5850**	<1.48	µg/Kg	10	0.148	1	0.1482	J
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405	
sec-Butylbenzene		**1330**	**1330**	2.54	µg/Kg	10	0.113	1	0.1128	
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924	
p-Isopropyltoluene		**1070**	**1070**	<1.05	µg/Kg	10	0.105	1	0.1046	
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739	
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092	
n-Butylbenzene		**1210**	**1210**	<1.16	µg/Kg	10	0.116	1	0.1156	
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915	
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906	
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107	
Naphthalene		**1050**	**1050**	<2.58	µg/Kg	10	0.258	5	0.2585	
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		468	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		529	µg/Kg	10	50.0	106	93 - 107
4-Bromofluorobenzene (4-BFB)		484	µg/Kg	10	50.0	97	78 - 120

[9]Estimated concentration value greater than standard range.
[10]Estimated concentration value greater than standard range.
[11]Estimated concentration value greater than standard range.
[12]Estimated concentration value greater than standard range.
[13]Estimated concentration value greater than standard range.
[14]Estimated concentration value greater than standard range.

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Sample: 90828 - HGLSB27-03-1618

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454

continued . . .

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sample 90828 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.40	mg/Kg	1	2.67	90	10 - 98.8
Phenol-d5		2.81	mg/Kg	1	2.67	105	10 - 105

continued ...

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sample continued . . .

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		3.03	mg/Kg	1	2.67	113	10 - 114
2-Fluorobiphenyl		3.06	mg/Kg	1	2.67	115	10 - 122
2,4,6-Tribromophenol	[15]	3.61	mg/Kg	1	2.67	135	10 - 117
Terphenyl-d14		2.96	mg/Kg	1	2.67	111	10 - 116

Sample: 90828 - HGLSB27-03-1618

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**38.4**	**38.4**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**5.75**	**5.75**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**7.80**	**7.80**	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90828 - HGLSB27-03-1618

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		133	mg/Kg	1	150	88	62.8 - 115

Sample: 90828 - HGLSB27-03-1618

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

[15]High surrogate recovery. Sample non-detect, result bias high.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.692	mg/Kg	10	0.100	69	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.847	mg/Kg	10	0.100	85	71.9 - 123.7

Sample: 90828 - HGLSB27-03-1618

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26929	Date Analyzed:	2006-05-25	Analyzed By:	JG
Prep Batch:	23645	Sample Preparation:	2006-05-25	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.0825	1	0.0825
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.0889	1	0.0889
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.0929	1	0.0929
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.0463	1	0.0463
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	0.171	5	0.171
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	0.368	1	0.368
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.0306	1	0.0306
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.0640	5	0.064
Carbon Disulfide	U	<0.346	<10.0	<0.346	µg/Kg	10	0.0346	1	0.0346
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	0.151	1	0.151
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	0.378	5	0.378
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	0.570	5	0.57
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.0639	1	0.0639
Methylene chloride	JB	~~7.39~~	<50.0	7.48	µg/Kg	10	0.119	5	0.119 50.0 U
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.0362	1	0.0362
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.0419	1	0.0419
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.0257	1	0.0257
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.0627	1	0.0627
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.0593	1	0.0593
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.0524	1	0.0524
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.0440	1	0.044
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.0750	1	0.075
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.0622	1	0.0622
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.0644	1	0.0644
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.0485	1	0.0485
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.0547	1	0.0547
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.0836	1	0.0836
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.0435	1	0.0435
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.0457	1	0.0457
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.0547	5	0.0547
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.0596	1	0.0596
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.0561	1	0.0561
Toluene	JB	~~3.22~~	<10.0	3.11	µg/Kg	10	0.112	1	0.112 10.0 U

continued...

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sample 90828 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	0.325	1	0.325
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.0505	1	0.0505
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.0552	1	0.0552
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.0688	1	0.0688
Tetrachloroethene (PCE)	U	<0.826	<10.0	<0.826	µg/Kg	10	0.0826	1	0.0826
Chlorobenzene	U	<0.426	<10.0	<0.426	µg/Kg	10	0.0426	1	0.0426
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.0289	1	0.0289
Ethylbenzene	J	~~0.700~~	<10.0	<0.376	µg/Kg	10	0.0376	1	0.0376 10.0 U
m,p-Xylene	U	<0.714	<10.0	<0.714	µg/Kg	10	0.0714	1	0.0714
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.0426	1	0.0426
Styrene	U	<0.796	<10.0	<0.796	µg/Kg	10	0.0796	1	0.0796
o-Xylene	U	<0.679	<10.0	<0.679	µg/Kg	10	0.0679	1	0.0679
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.0703	1	0.0703
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	0.126	1	0.126
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.0504	1	0.0504
Isopropylbenzene	U	<1.30	<10.0	<1.30	µg/Kg	10	0.130	1	0.13
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.0480	1	0.048
n-Propylbenzene	J	**1.08**	<10.0	<0.421	µg/Kg	10	0.0421	1	0.0421 J
1,3,5-Trimethylbenzene	U	<2.10	<10.0	<2.10	µg/Kg	10	0.210	1	0.21
tert-Butylbenzene	U	<0.410	<10.0	<0.410	µg/Kg	10	0.0410	1	0.041
1,2,4-Trimethylbenzene	J	**2.67**	<10.0	<0.535	µg/Kg	10	0.0535	1	0.0535 J
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.0387	1	0.0387
sec-Butylbenzene	J	**2.53**	<10.0	<0.632	µg/Kg	10	0.0632	1	0.0632 J
1,3-Dichlorobenzene (meta)	U	<0.534	<10.0	<0.534	µg/Kg	10	0.0534	1	0.0534
p-Isopropyltoluene	J	**2.60**	<10.0	<0.679	µg/Kg	10	0.0679	1	0.0679 J
4-Chlorotoluene	U	<0.675	<10.0	<0.675	µg/Kg	10	0.0675	1	0.0675
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	<0.475	µg/Kg	10	0.0475	1	0.0475
n-Butylbenzene	JB	~~4.34~~	<10.0	2.24	µg/Kg	10	0.0979	1	0.0979 10.0 U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<3.64	<50.0	<3.64	µg/Kg	10	0.364	5	0.364
1,2,4-Trichlorobenzene	U	<2.28	<50.0	<2.28	µg/Kg	10	0.228	5	0.228
Naphthalene	JB	~~8.44~~	<50.0	7.58	µg/Kg	10	0.441	5	0.441 10.0 U
Hexachlorobutadiene	U	<3.24	<50.0	<3.24	µg/Kg	10	0.324	5	0.324

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		456	µg/Kg	10	50.0	91	42 - 129
Toluene-d8		507	µg/Kg	10	50.0	101	93 - 107
4-Bromofluorobenzene (4-BFB)		503	µg/Kg	10	50.0	101	78 - 120

Sample: 90829 - HGLSB27-02-0608

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517

continued ...

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sample 90829 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431

continued . . .

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sample 90829 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.57	mg/Kg	1	2.67	96	10 - 98.8
Phenol-d5		2.69	mg/Kg	1	2.67	101	10 - 105
Nitrobenzene-d5		2.66	mg/Kg	1	2.67	100	10 - 114
2-Fluorobiphenyl		2.84	mg/Kg	1	2.67	106	10 - 122
2,4,6-Tribromophenol	16	3.46	mg/Kg	1	2.67	130	10 - 117
Terphenyl-d14		1.99	mg/Kg	1	2.67	74	10 - 116

[16]High surrogate recovery. Sample non-detect, result bias high.

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Sample: 90829 - HGLSB27-02-0608

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**11.5**	**11.5**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**47.7**	**47.7**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**1.00**	**1.00**	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90829 - HGLSB27-02-0608

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		122	mg/Kg	1	150	81	62.8 - 115

Sample: 90829 - HGLSB27-02-0608

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.842	mg/Kg	10	0.100	84	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.986	mg/Kg	10	0.100	99	71.9 - 123.7

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Sample: 90829 - HGLSB27-02-0608

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~6.65~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~4.46~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~3.42~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0 U
m,p-Xylene	J	7.29	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	J
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	

continued . . .

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sample 90829 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene	J	**4.44**	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	J
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	J	**2.62**	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	J
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	
n-Propylbenzene	JB	~~**5.02**~~	<10.0	1.46	µg/Kg	10	0.101	1	0.1007	10.0 U
1,3,5-Trimethylbenzene	JB	~~**5.17**~~	<10.0	1.36	µg/Kg	10	0.104	1	0.1042	10.0 U
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963	
1,2,4-Trimethylbenzene	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482	
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405	
sec-Butylbenzene	JB	~~**4.12**~~	<10.0	2.54	µg/Kg	10	0.113	1	0.1128	10.0 U
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924	
p-Isopropyltoluene	J	**3.92**	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046	J
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739	
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092	
n-Butylbenzene	J	**6.37**	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156	J
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915	
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906	
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107	
Naphthalene	J	**32.6**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585	J
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		455	µg/Kg	10	50.0	91	42 - 129
Toluene-d8		499	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		502	µg/Kg	10	50.0	100	78 - 120

Sample: 90830 - HGLSB27-02-1113

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued . . .

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sample 90830 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene		**11.5**	**11.5**	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene		**15.8**	**15.8**	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene		**16.7**	**16.7**	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued . . .

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sample 90830 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol	[17]	9.67	mg/Kg	1	2.67	362	10 - 98.8
Phenol-d5	[18]	5.28	mg/Kg	1	2.67	198	10 - 105
Nitrobenzene-d5	[19]	10.7	mg/Kg	1	2.67	401	10 - 114
2-Fluorobiphenyl		2.97	mg/Kg	1	2.67	111	10 - 122
2,4,6-Tribromophenol		3.03	mg/Kg	1	2.67	113	10 - 117
Terphenyl-d14		2.94	mg/Kg	1	2.67	110	10 - 116

Sample: 90830 - HGLSB27-02-1113

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26989	Date Analyzed:	2006-05-31	Analyzed By:	TP

[17]High surrogate recovery due to peak interference.
[18]High surrogate recovery due to peak interference.
[19]High surrogate recovery due to peak interference.

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Prep Batch: 23692 Sample Preparation: 2006-05-30 Prepared By: TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**9.50**	**9.50**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**5.60**	**5.60**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**7.03**	**7.03**	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90830 - HGLSB27-02-1113

Analysis: TPH DRO Analytical Method: Mod. 8015B Prep Method: N/A
QC Batch: 26755 Date Analyzed: 2006-05-22 Analyzed By: DS
Prep Batch: 23478 Sample Preparation: 2006-05-22 Prepared By: DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**3480**	**3480**	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		128	mg/Kg	1	150	85	62.8 - 115

Sample: 90830 - HGLSB27-02-1113

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035
QC Batch: 26822 Date Analyzed: 2006-05-24 Analyzed By: KB
Prep Batch: 23551 Sample Preparation: 2006-05-24 Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**4790**	**4790**	<12.1	mg/Kg	100	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[20]	0.486	mg/Kg	100	0.0100	49	68 - 129.6
4-Bromofluorobenzene (4-BFB)	[21]	95.8	mg/Kg	100	0.0100	9580	71.9 - 123.7

Sample: 90830 - HGLSB27-02-1113

Analysis: Volatiles Analytical Method: S 8260B Prep Method: S 5030B
QC Batch: 26796 Date Analyzed: 2006-05-23 Analyzed By: JG
Prep Batch: 23529 Sample Preparation: 2006-05-23 Prepared By: JG

[20] Surrogate out due to peak interference.
[21] Surrogate out due to peak interferencc.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<120	<500	<120	µg/Kg	500	0.241	1	0.2414
Dichlorodifluoromethane	U	<39.4	<500	<39.4	µg/Kg	500	0.0789	1	0.0789
Chloromethane (methyl chloride)	U	<114	<500	<114	µg/Kg	500	0.229	1	0.229
Vinyl Chloride	U	<71.0	<500	<71.0	µg/Kg	500	0.142	1	0.1425
Bromomethane (methyl bromide)	U	<350	<2500	<350	µg/Kg	500	0.700	5	0.7
Chloroethane	U	<86.5	<500	<86.5	µg/Kg	500	0.173	1	0.1732
Trichlorofluoromethane	U	<60.0	<500	<60.0	µg/Kg	500	0.120	1	0.1204
Acetone	U	<850	<5000	<850	µg/Kg	500	1.70	10	1.7044
Iodomethane (methyl iodide)	U	<244	<2500	<244	µg/Kg	500	0.488	5	0.4878
Carbon Disulfide	U	<47.4	<500	<47.4	µg/Kg	500	0.0947	1	0.0947
Acrylonitrile	U	<247	<500	<247	µg/Kg	500	0.494	1	0.4945
2-Butanone (MEK)	U	<700	<2500	<700	µg/Kg	500	1.40	5	1.4017
4-Methyl-2-pentanone (MIBK)	U	<393	<2500	<393	µg/Kg	500	0.786	5	0.786
2-Hexanone	U	<111	<2500	<111	µg/Kg	500	0.222	5	0.2224
trans 1,4-Dichloro-2-butene	U	<66.5	<5000	<66.5	µg/Kg	500	0.133	10	0.1331
1,1-Dichloroethene	U	<58.5	<500	<58.5	µg/Kg	500	0.117	1	0.1166
Methylene chloride	U	<158	<2500	<158	µg/Kg	500	0.315	5	0.3154
MTBE	U	<76.5	<500	<76.5	µg/Kg	500	0.153	1	0.1529
trans-1,2-Dichloroethene	U	<77.0	<500	<77.0	µg/Kg	500	0.154	1	0.1535
1,1-Dichloroethane	U	<25.6	<500	<25.6	µg/Kg	500	0.0513	1	0.0513
cis-1,2-Dichloroethene	U	<106	<500	<106	µg/Kg	500	0.213	1	0.2129
2,2-Dichloropropane	U	<49.1	<500	<49.1	µg/Kg	500	0.0982	1	0.0982
1,2-Dichloroethane (EDC)	U	<99.0	<500	<99.0	µg/Kg	500	0.198	1	0.198
Chloroform	U	<24.3	<500	<24.3	µg/Kg	500	0.0486	1	0.0486
1,1,1-Trichloroethane	U	<50.5	<500	<50.5	µg/Kg	500	0.101	1	0.101
1,1-Dichloropropene	U	<80.0	<500	<80.0	µg/Kg	500	0.160	1	0.1599
Benzene		**6170**	**6170**	<118	µg/Kg	500	0.236	1	0.2365
Carbon Tetrachloride	U	<54.0	<500	<54.0	µg/Kg	500	0.108	1	0.1082
1,2-Dichloropropane	U	<50.5	<500	<50.5	µg/Kg	500	0.101	1	0.1009
Trichloroethene (TCE)	U	<97.5	<500	<97.5	µg/Kg	500	0.195	1	0.1951
Dibromomethane (methylene bromide)	U	<81.0	<500	<81.0	µg/Kg	500	0.162	1	0.1618
Bromodichloromethane	U	<47.9	<500	<47.9	µg/Kg	500	0.0958	1	0.0958
2-Chloroethyl vinyl ether	U	<65.5	<2500	<65.5	µg/Kg	500	0.131	5	0.1314
cis-1,3-Dichloropropene	U	<59.5	<500	<59.5	µg/Kg	500	0.119	1	0.119
trans-1,3-Dichloropropene	U	<43.0	<500	<43.0	µg/Kg	500	0.0860	1	0.086
Toluene		**49900**	**49900**	<67.5	µg/Kg	500	0.135	1	0.1352
1,1,2-Trichloroethane	U	<102	<500	<102	µg/Kg	500	0.203	1	0.2031
1,3-Dichloropropane	U	<60.0	<500	<60.0	µg/Kg	500	0.120	1	0.1199
Dibromochloromethane	U	<66.0	<500	<66.0	µg/Kg	500	0.132	1	0.1317
1,2-Dibromoethane (EDB)	U	<74.0	<500	<74.0	µg/Kg	500	0.148	1	0.1477
Tetrachloroethene (PCE)	U	<92.5	<500	<92.5	µg/Kg	500	0.185	1	0.1848
Chlorobenzene	U	<62.0	<500	<62.0	µg/Kg	500	0.124	1	0.1236
1,1,1,2-Tetrachloroethane	U	<60.0	<500	<60.0	µg/Kg	500	0.120	1	0.1203
Ethylbenzene		**61000**	**61000**	<30.0	µg/Kg	500	0.0599	1	0.0599
m,p-Xylene		**74900**	**74900**	<87.5	µg/Kg	500	0.175	1	0.1754
Bromoform	U	<90.0	<500	<90.0	µg/Kg	500	0.180	1	0.1802
Styrene	U	<44.9	<500	<44.9	µg/Kg	500	0.0898	1	0.0898
o-Xylene		**33600**	**33600**	<49.6	µg/Kg	500	0.0991	1	0.0991
1,1,2,2-Tetrachloroethane	U	<128	<500	<128	µg/Kg	500	0.256	1	0.2555
2-Chlorotoluene	U	<49.8	<500	<49.8	µg/Kg	500	0.0997	1	0.0997
1,2,3-Trichloropropane	U	<46.8	<500	<46.8	µg/Kg	500	0.0935	1	0.0935
Isopropylbenzene		**14200**	**14200**	<52.5	µg/Kg	500	0.105	1	0.1048
Bromobenzene	U	<71.0	<500	<71.0	µg/Kg	500	0.142	1	0.142

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sample 90830 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene		**21600**	**21600**	<50.5	µg/Kg	500	0.101	1	0.1007
1,3,5-Trimethylbenzene		**17000**	**17000**	<52.0	µg/Kg	500	0.104	1	0.1042
tert-Butylbenzene	U	<98.0	<500	<98.0	µg/Kg	500	0.196	1	0.1963
1,2,4-Trimethylbenzene		**53800**	**53800**	<74.0	µg/Kg	500	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<220	<500	<220	µg/Kg	500	0.440	1	0.4405
sec-Butylbenzene		**7830**	**7830**	<56.5	µg/Kg	500	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<46.2	<500	<46.2	µg/Kg	500	0.0924	1	0.0924
p-Isopropyltoluene		**6160**	**6160**	<52.5	µg/Kg	500	0.105	1	0.1046
4-Chlorotoluene	U	<37.0	<500	<37.0	µg/Kg	500	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<54.5	<500	<54.5	µg/Kg	500	0.109	1	0.1092
n-Butylbenzene		**9680**	**9680**	<58.0	µg/Kg	500	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<96.0	<2500	<96.0	µg/Kg	500	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<595	<2500	<595	µg/Kg	500	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<156	<2500	<156	µg/Kg	500	0.311	5	0.3107
Naphthalene		**8280**	**8280**	<129	µg/Kg	500	0.258	5	0.2585
Hexachlorobutadiene	U	<79.0	<2500	<79.0	µg/Kg	500	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		23500	µg/Kg	500	50.0	94	42 - 129
Toluene-d8		25000	µg/Kg	500	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		24900	µg/Kg	500	50.0	100	78 - 120

Sample: 90831 - HGLSB27-01-0608

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444

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sample 90831 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04

continued . . .

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sample 90831 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.61	mg/Kg	1	2.67	98	10 - 98.8
Phenol-d5	22	3.03	mg/Kg	1	2.67	113	10 - 105
Nitrobenzene-d5	23	3.56	mg/Kg	1	2.67	133	10 - 114
2-Fluorobiphenyl		3.14	mg/Kg	1	2.67	118	10 - 122
2,4,6-Tribromophenol	24	3.36	mg/Kg	1	2.67	126	10 - 117
Terphenyl-d14		2.58	mg/Kg	1	2.67	97	10 - 116

Sample: 90831 - HGLSB27-01-0608

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26990	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444

continued . . .

[22]High surrogate recovery. Sample non-detect, result bias high.
[23]High surrogate recovery. Sample non-detect, result bias high.
[24]High surrogate recovery. Sample non-detect, result bias high.

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sample 90831 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**7.34**	**7.34**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**1.31**	**1.31**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead	U	<0.367	<1.00	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90831 - HGLSB27-01-0608

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**124**	**124**	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		133	mg/Kg	1	150	89	62.8 - 115

Sample: 90831 - HGLSB27-01-0608

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**309**	**309**	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.743	mg/Kg	10	0.100	74	68 - 129.6
4-Bromofluorobenzene (4-BFB)	[25]	2.16	mg/Kg	10	0.100	216	71.9 - 123.7

Sample: 90831 - HGLSB27-01-0608

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

[25] High surrogate recovery due to peak interference.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414	
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229	
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7	
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732	
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878	
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947	
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945	
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786	
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331	
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166	
Methylene chloride	JB	~~6.89~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154	50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	JB	~~4.35~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352	10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~2.02~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0 U
m,p-Xylene	J	**3.12**	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	J
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	J	**1.62**	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	J
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	J	**2.35**	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	J
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	

continued . . .

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sample 90831 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene	JB	~~2.05~~	<10.0	1.46	µg/Kg	10	0.101	1	0.1007 10.0 U
1,3,5-Trimethylbenzene	JB	~~2.36~~	<10.0	1.36	µg/Kg	10	0.104	1	0.1042 10.0 U
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963
1,2,4-Trimethylbenzene	J	**5.95**	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482 J
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405
sec-Butylbenzene		**30.5**	**30.5**	2.54	µg/Kg	10	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924
p-Isopropyltoluene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092
n-Butylbenzene	U	<1.16	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107
Naphthalene	J	**14.1**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585 J
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		460	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		494	µg/Kg	10	50.0	99	93 - 107
4-Bromofluorobenzene (4-BFB)		497	µg/Kg	10	50.0	99	78 - 120

Sample: 90832 - HGLSB27-04-0810

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444

continued ...

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sample 90832 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04

continued . . .

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sample 90832 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.65	mg/Kg	1	2.67	62	10 - 98.8
Phenol-d5		1.73	mg/Kg	1	2.67	65	10 - 105
Nitrobenzene-d5		1.71	mg/Kg	1	2.67	64	10 - 114
2-Fluorobiphenyl		1.86	mg/Kg	1	2.67	70	10 - 122
2,4,6-Tribromophenol		2.79	mg/Kg	1	2.67	104	10 - 117
Terphenyl-d14	[26]	6.53	mg/Kg	1	2.67	244	10 - 116

Sample: 90832 - HGLSB27-04-0810

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26990	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228

continued ...

[26]High surrogate recovery. Sample non-detect, result bias high.

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sample 90832 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Barium		**11.0**	**11.0**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**1.51**	**1.51**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead	J	**0.886**	<1.00	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90832 - HGLSB27-04-0810

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26755	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23478	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<7.28	<50.0	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		126	mg/Kg	1	150	84	62.8 - 115

Sample: 90832 - HGLSB27-04-0810

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	26822	Date Analyzed:	2006-05-24	Analyzed By:	KB
Prep Batch:	23551	Sample Preparation:	2006-05-24	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.676	mg/Kg	10	0.100	68	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.747	mg/Kg	10	0.100	75	71.9 - 123.7

Sample: 90832 - HGLSB27-04-0810

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26796	Date Analyzed:	2006-05-23	Analyzed By:	JG
Prep Batch:	23529	Sample Preparation:	2006-05-23	Prepared By:	JG

continued . . .

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sample 90832 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166
Methylene chloride	JB	~~7.40~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154 50.0 U
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198
Chloroform	U	<0.486	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599
Benzene	U	<2.36	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086
Toluene	JB	~~4.55~~	<10.0	3.75	µg/Kg	10	0.135	1	0.1352 10.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203
Ethylbenzene	JB	~~1.47~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599 10.0 U
m,p-Xylene	J	**2.43**	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754 ?
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898

continued . . .

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sample 90832 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene	J	**1.76**	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	J
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	
n-Propylbenzene	JB	~~1.24~~	<10.0	1.46	µg/Kg	10	0.101	1	0.1007	10.0 U
1,3,5-Trimethylbenzene	JB	~~1.29~~	<10.0	1.36	µg/Kg	10	0.104	1	0.1042	10.0 U
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963	
1,2,4-Trimethylbenzene	J	**4.16**	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482	J
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405	
sec-Butylbenzene	JB	~~2.01~~	<10.0	2.54	µg/Kg	10	0.113	1	0.1128	10.0 U
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924	
p-Isopropyltoluene	J	**1.48**	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046	J
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739	
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092	
n-Butylbenzene	J	**1.83**	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156	J
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915	
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906	
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107	
Naphthalene	J	**8.71**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585	J
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		462	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		502	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		501	µg/Kg	10	50.0	100	78 - 120

Sample: 90833 - SBDUP02

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued . . .

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sample 90833 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene		**0.750**	**0.750**	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene		**1.58**	**1.58**	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene		**1.60**	**1.60**	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued ...

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sample 90833 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		2.30	mg/Kg	1	2.67	86	10 - 98.8
Phenol-d5		2.34	mg/Kg	1	2.67	88	10 - 105
Nitrobenzene-d5	[27]	3.17	mg/Kg	1	2.67	119	10 - 114
2-Fluorobiphenyl		2.55	mg/Kg	1	2.67	96	10 - 122
2,4,6-Tribromophenol		3.00	mg/Kg	1	2.67	112	10 - 117
Terphenyl-d14	[28]	7.77	mg/Kg	1	2.67	291	10 - 116

Sample: 90833 - SBDUP02

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26990	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

[27]High surrogate recovery due to peak interference.
[28]High surrogate recovery due to peak interference.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic	U	<0.228	<2.00	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**49.9**	**49.9**	<0.0601	mg/Kg	1	0.0601	1	0.0601
Total Cadmium	U	<0.00794	<0.100	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**3.72**	**3.72**	<0.0125	mg/Kg	1	0.0125	0.5	0.0125
Total Mercury	U	<0.00880	<0.0400	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**4.46**	**4.46**	<0.367	mg/Kg	1	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90833 - SBDUP02

Analysis: TPH DRO
QC Batch: 26755
Prep Batch: 23478

Analytical Method: Mod. 8015B
Date Analyzed: 2006-05-22
Sample Preparation: 2006-05-22

Prep Method: N/A
Analyzed By: DS
Prepared By: DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**288**	**288**	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		129	mg/Kg	1	150	86	62.8 - 115

Sample: 90833 - SBDUP02

Analysis: TPH GRO
QC Batch: 26822
Prep Batch: 23551

Analytical Method: S 8015B
Date Analyzed: 2006-05-24
Sample Preparation: 2006-05-24

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**282**	**282**	<1.21	mg/Kg	10	0.121	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.798	mg/Kg	10	0.100	80	68 - 129.6
4-Bromofluorobenzene (4-BFB)	[29]	9.61	mg/Kg	10	0.100	961	71.9 - 123.7

Sample: 90833 - SBDUP02

Analysis: Volatiles
QC Batch: 26796
Prep Batch: 23529

Analytical Method: S 8260B
Date Analyzed: 2006-05-23
Sample Preparation: 2006-05-23

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

[29] High surrogate recovery due to peak interference.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<24.1	<100	<24.1	µg/Kg	100	0.241	1	0.2414	
Dichlorodifluoromethane	U	<7.89	<100	<7.89	µg/Kg	100	0.0789	1	0.0789	
Chloromethane (methyl chloride)	U	<22.9	<100	<22.9	µg/Kg	100	0.229	1	0.229	
Vinyl Chloride	U	<14.2	<100	<14.2	µg/Kg	100	0.142	1	0.1425	
Bromomethane (methyl bromide)	U	<70.0	<500	<70.0	µg/Kg	100	0.700	5	0.7	
Chloroethane	U	<17.3	<100	<17.3	µg/Kg	100	0.173	1	0.1732	
Trichlorofluoromethane	U	<12.0	<100	<12.0	µg/Kg	100	0.120	1	0.1204	
Acetone	U	<170	<1000	<170	µg/Kg	100	1.70	10	1.7044	
Iodomethane (methyl iodide)	U	<48.8	<500	<48.8	µg/Kg	100	0.488	5	0.4878	
Carbon Disulfide	U	<9.47	<100	<9.47	µg/Kg	100	0.0947	1	0.0947	
Acrylonitrile	U	<49.4	<100	<49.4	µg/Kg	100	0.494	1	0.4945	
2-Butanone (MEK)	U	<140	<500	<140	µg/Kg	100	1.40	5	1.4017	
4-Methyl-2-pentanone (MIBK)	U	<78.6	<500	<78.6	µg/Kg	100	0.786	5	0.786	
2-Hexanone	U	<22.2	<500	<22.2	µg/Kg	100	0.222	5	0.2224	
trans 1,4-Dichloro-2-butene	U	<13.3	<1000	<13.3	µg/Kg	100	0.133	10	0.1331	
1,1-Dichloroethene	U	<11.7	<100	<11.7	µg/Kg	100	0.117	1	0.1166	
Methylene chloride	J	**50.6**	<500	<31.5	µg/Kg	100	0.315	5	0.3154	J
MTBE	U	<15.3	<100	<15.3	µg/Kg	100	0.153	1	0.1529	
trans-1,2-Dichloroethene	U	<15.4	<100	<15.4	µg/Kg	100	0.154	1	0.1535	
1,1-Dichloroethane	U	<5.13	<100	<5.13	µg/Kg	100	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<21.3	<100	<21.3	µg/Kg	100	0.213	1	0.2129	
2,2-Dichloropropane	U	<9.82	<100	<9.82	µg/Kg	100	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<19.8	<100	<19.8	µg/Kg	100	0.198	1	0.198	
Chloroform	U	<4.86	<100	<4.86	µg/Kg	100	0.0486	1	0.0486	
1,1,1-Trichloroethane	U	<10.1	<100	<10.1	µg/Kg	100	0.101	1	0.101	
1,1-Dichloropropene	U	<16.0	<100	<16.0	µg/Kg	100	0.160	1	0.1599	
Benzene	J	**42.8**	<100	<23.6	µg/Kg	100	0.236	1	0.2365	J
Carbon Tetrachloride	U	<10.8	<100	<10.8	µg/Kg	100	0.108	1	0.1082	
1,2-Dichloropropane	U	<10.1	<100	<10.1	µg/Kg	100	0.101	1	0.1009	
Trichloroethene (TCE)	U	<19.5	<100	<19.5	µg/Kg	100	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<16.2	<100	<16.2	µg/Kg	100	0.162	1	0.1618	
Bromodichloromethane	U	<9.58	<100	<9.58	µg/Kg	100	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<13.1	<500	<13.1	µg/Kg	100	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<11.9	<100	<11.9	µg/Kg	100	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<8.60	<100	<8.60	µg/Kg	100	0.0860	1	0.086	
Toluene		**1110**	**1110**	<13.5	µg/Kg	100	0.135	1	0.1352	
1,1,2-Trichloroethane	U	<20.3	<100	<20.3	µg/Kg	100	0.203	1	0.2031	
1,3-Dichloropropane	U	<12.0	<100	<12.0	µg/Kg	100	0.120	1	0.1199	
Dibromochloromethane	U	<13.2	<100	<13.2	µg/Kg	100	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<14.8	<100	<14.8	µg/Kg	100	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<18.5	<100	<18.5	µg/Kg	100	0.185	1	0.1848	
Chlorobenzene	U	<12.4	<100	<12.4	µg/Kg	100	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<12.0	<100	<12.0	µg/Kg	100	0.120	1	0.1203	
Ethylbenzene		**2880**	**2880**	<5.99	µg/Kg	100	0.0599	1	0.0599	
m,p-Xylene		**5340**	**5340**	<17.5	µg/Kg	100	0.175	1	0.1754	
Bromoform	U	<18.0	<100	<18.0	µg/Kg	100	0.180	1	0.1802	
Styrene	U	<8.98	<100	<8.98	µg/Kg	100	0.0898	1	0.0898	
o-Xylene		**2320**	**2320**	<9.91	µg/Kg	100	0.0991	1	0.0991	
1,1,2,2-Tetrachloroethane	U	<25.6	<100	<25.6	µg/Kg	100	0.256	1	0.2555	
2-Chlorotoluene	U	<9.97	<100	<9.97	µg/Kg	100	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<9.35	<100	<9.35	µg/Kg	100	0.0935	1	0.0935	
Isopropylbenzene		**1080**	**1080**	<10.5	µg/Kg	100	0.105	1	0.1048	
Bromobenzene	U	<14.2	<100	<14.2	µg/Kg	100	0.142	1	0.142	

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sample 90833 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene		**1740**	**1740**	<10.1	µg/Kg	100	0.101	1	0.1007
1,3,5-Trimethylbenzene		**1910**	**1910**	<10.4	µg/Kg	100	0.104	1	0.1042
tert-Butylbenzene	U	<19.6	<100	<19.6	µg/Kg	100	0.196	1	0.1963
1,2,4-Trimethylbenzene		**5950**	**5950**	<14.8	µg/Kg	100	0.148	1	0.1482
1,4-Dichlorobenzene (para)	U	<44.0	<100	<44.0	µg/Kg	100	0.440	1	0.4405
sec-Butylbenzene		**874**	**874**	<11.3	µg/Kg	100	0.113	1	0.1128
1,3-Dichlorobenzene (meta)	U	<9.24	<100	<9.24	µg/Kg	100	0.0924	1	0.0924
p-Isopropyltoluene		**730**	**730**	<10.5	µg/Kg	100	0.105	1	0.1046
4-Chlorotoluene	U	<7.39	<100	<7.39	µg/Kg	100	0.0739	1	0.0739
1,2-Dichlorobenzene (ortho)	U	<10.9	<100	<10.9	µg/Kg	100	0.109	1	0.1092
n-Butylbenzene		**932**	**932**	<11.6	µg/Kg	100	0.116	1	0.1156
1,2-Dibromo-3-chloropropane	U	<19.2	<500	<19.2	µg/Kg	100	0.192	5	0.1915
1,2,3-Trichlorobenzene	U	<119	<500	<119	µg/Kg	100	1.19	5	1.1906
1,2,4-Trichlorobenzene	U	<31.1	<500	<31.1	µg/Kg	100	0.311	5	0.3107
Naphthalene		**1130**	**1130**	<25.8	µg/Kg	100	0.258	5	0.2585
Hexachlorobutadiene	U	<15.8	<500	<15.8	µg/Kg	100	0.158	5	0.1583

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4740	µg/Kg	100	50.0	95	42 - 129
Toluene-d8		4970	µg/Kg	100	50.0	99	93 - 107
4-Bromofluorobenzene (4-BFB)		4950	µg/Kg	100	50.0	99	78 - 120

Sample: 90835 - HGLGW27-03-051606

Analysis:	Ag, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	26992	Date Analyzed:	2006-06-01	Analyzed By:	RR
Prep Batch:	23648	Sample Preparation:	2006-05-30	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Silver	U	<0.000297	<0.00200	<0.000297	mg/L	1	0.000297	0.002	0.000297

Sample: 90835 - HGLGW27-03-051606

Analysis:	As, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	26992	Date Analyzed:	2006-06-01	Analyzed By:	RR
Prep Batch:	23648	Sample Preparation:	2006-05-30	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Arsenic	U	<0.00255	<0.00500	<0.00255	mg/L	1	0.00255	0.005	0.002551

Sample: 90835 - HGLGW27-03-051606

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Analysis: Ba, Dissolved | Analytical Method: S 6010B | Prep Method: S 3005A
QC Batch: 26992 | Date Analyzed: 2006-06-01 | Analyzed By: RR
Prep Batch: 23648 | Sample Preparation: 2006-05-30 | Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Barium		**0.0220**	**0.0220**	<0.00148	mg/L	1	0.00148	0.01	0.001475

Sample: 90835 - HGLGW27-03-051606

Analysis: Cd, Dissolved | Analytical Method: S 6010B | Prep Method: S 3005A
QC Batch: 26992 | Date Analyzed: 2006-06-01 | Analyzed By: RR
Prep Batch: 23648 | Sample Preparation: 2006-05-30 | Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Cadmium	U	<0.000595	<0.00100	<0.000595	mg/L	1	0.000595	0.001	0.000595

Sample: 90835 - HGLGW27-03-051606

Analysis: Cr, Dissolved | Analytical Method: S 6010B | Prep Method: S 3005A
QC Batch: 26992 | Date Analyzed: 2006-06-01 | Analyzed By: RR
Prep Batch: 23648 | Sample Preparation: 2006-05-30 | Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Chromium	U	<0.000238	<0.00500	<0.000238	mg/L	1	0.000238	0.005	0.000238

Sample: 90835 - HGLGW27-03-051606

Analysis: Hg, Dissolved | Analytical Method: S 7470A | Prep Method: N/A
QC Batch: 27000 | Date Analyzed: 2006-06-01 | Analyzed By: TP
Prep Batch: 23693 | Sample Preparation: 2006-05-31 | Prepared By: TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Mercury	U	<0.0000329	<0.000200	<0.0000329	mg/L	1	0.0000329	0.0002	3.29e-05

Sample: 90835 - HGLGW27-03-051606

Analysis: Pb, Dissolved | Analytical Method: S 6010B | Prep Method: S 3005A
QC Batch: 26992 | Date Analyzed: 2006-06-01 | Analyzed By: RR
Prep Batch: 23648 | Sample Preparation: 2006-05-30 | Prepared By: TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Lead	U	<0.00180	<0.00500	<0.00180	mg/L	1	0.00180	0.005	0.001796

Sample: 90835 - HGLGW27-03-051606

Analysis:	Se, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	26992	Date Analyzed:	2006-06-01	Analyzed By:	RR
Prep Batch:	23648	Sample Preparation:	2006-05-30	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Selenium		**0.0970**	**0.0970**	<0.00232	mg/L	1	0.00232	0.01	0.002318

Sample: 90835 - HGLGW27-03-051606

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	26843	Date Analyzed:	2006-05-23	Analyzed By:	AG
Prep Batch:	23468	Sample Preparation:	2006-05-19	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	J	**0.00240**	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone		**0.0178**	**0.0178**	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719

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sample 90835 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Naphthalene		**0.0421**	**0.0421**	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene		**0.0153**	**0.0153**	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene		**0.0232**	**0.0232**	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997

continued . . .

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sample 90835 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0169	mg/L	1	0.0800	21	10 - 84.7
Phenol-d5		0.0118	mg/L	1	0.0800	15	10 - 54.9
Nitrobenzene-d5		0.0401	mg/L	1	0.0800	50	10 - 202
2-Fluorobiphenyl		0.0414	mg/L	1	0.0800	52	10 - 199
2,4,6-Tribromophenol		0.0801	mg/L	1	0.0800	100	10 - 141
Terphenyl-d14		0.103	mg/L	1	0.0800	129	10 - 160

Sample: 90835 - HGLGW27-03-051606

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	26872	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23563	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27001	Date Analyzed:	2006-06-01	Analyzed By:	TP
Prep Batch:	23694	Sample Preparation:	2006-05-31	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.0110**	**0.0110**	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium		**0.0220**	**0.0220**	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000407	<0.000200	<0.0000407	mg/L	1	0.0000407	0.0002	4.07e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 90835 - HGLGW27-03-051606

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26809	Date Analyzed:	2006-05-24	Analyzed By:	JL

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Prep Batch: 23544 Sample Preparation: 2006-05-24 Prepared By: JL

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**29.1**	**29.1**	<0.119	mg/L	0.1	1.19	50	1.19

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		13.4	mg/L	0.1	150	89	66.6 - 111

Sample: 90835 - HGLGW27-03-051606

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5030B
QC Batch: 26698 Date Analyzed: 2006-05-21 Analyzed By: KB
Prep Batch: 23447 Sample Preparation: 2006-05-21 Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**24.2**	**24.2**	<0.144	mg/L	5	0.0288	0.1	0.02875

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[30]	0.861	mg/L	5	0.200	86	88.8 - 95.6
4-Bromofluorobenzene (4-BFB)	[31]	1.48	mg/L	5	0.200	148	75.6 - 111.2

Sample: 90835 - HGLGW27-03-051606

Analysis: Volatiles Analytical Method: S 8260B Prep Method: S 5030B
QC Batch: 26849 Date Analyzed: 2006-05-24 Analyzed By: JG
Prep Batch: 23577 Sample Preparation: 2006-05-24 Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<6.99	<100	<6.99	µg/L	100	0.0699	1	0.0699
Dichlorodifluoromethane	U	<5.98	<100	<5.98	µg/L	100	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<23.0	<100	<23.0	µg/L	100	0.230	1	0.2298
Vinyl Chloride	U	<9.02	<100	<9.02	µg/L	100	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<74.0	<100	<74.0	µg/L	100	0.740	1	0.7402
Chloroethane	U	<19.5	<100	<19.5	µg/L	100	0.195	1	0.1952
Trichlorofluoromethane	U	<16.0	<100	<16.0	µg/L	100	0.160	1	0.16
Acetone	U	<85.4	<1000	<85.4	µg/L	100	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<11.2	<500	<11.2	µg/L	100	0.112	5	0.1119
Carbon Disulfide	U	<7.64	<100	<7.64	µg/L	100	0.0764	1	0.0764
Acrylonitrile	U	<18.4	<100	<18.4	µg/L	100	0.184	1	0.1837
2-Butanone (MEK)	U	<39.4	<500	<39.4	µg/L	100	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<48.4	<500	<48.4	µg/L	100	0.484	5	0.484
2-Hexanone	U	<9.75	<100	<9.75	µg/L	100	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<42.1	<1000	<42.1	µg/L	100	0.421	10	0.4207

continued . . .

[30] Surrogate out due to peak interference.
[31] High surrogate recovery due to peak interference.

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sample 90835 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
1,1-Dichloroethene	U	<7.36	<100	<7.36	µg/L	100	0.0736	1	0.0736	
Methylene chloride	U	<68.9	<500	<68.9	µg/L	100	0.689	5	0.6888	
MTBE	U	<5.04	<100	<5.04	µg/L	100	0.0504	1	0.0504	
trans-1,2-Dichloroethene	U	<5.98	<100	<5.98	µg/L	100	0.0598	1	0.0598	
1,1-Dichloroethane	U	<2.99	<100	<2.99	µg/L	100	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<10.1	<100	<10.1	µg/L	100	0.101	1	0.1006	
2,2-Dichloropropane	U	<6.65	<100	<6.65	µg/L	100	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	J	**52.4**	<100	<5.57	µg/L	100	0.0557	1	0.0557	J
Chloroform	U	<4.75	<100	<4.75	µg/L	100	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<8.46	<100	<8.46	µg/L	100	0.0846	1	0.0846	
1,1-Dichloropropene	U	<4.23	<100	<4.23	µg/L	100	0.0423	1	0.0423	
Benzene		**2360**	**2360**	<4.95	µg/L	100	0.0495	1	0.0495	
Carbon Tetrachloride	U	<12.1	<100	<12.1	µg/L	100	0.121	1	0.1213	
1,2-Dichloropropane	U	<9.33	<100	<9.33	µg/L	100	0.0933	1	0.0933	
Trichloroethene (TCE)	U	<4.95	<100	<4.95	µg/L	100	0.0495	1	0.0495	
Dibromomethane (methylene bromide)	U	<6.40	<100	<6.40	µg/L	100	0.0640	1	0.064	
Bromodichloromethane	U	<6.51	<100	<6.51	µg/L	100	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<9.05	<500	<9.05	µg/L	100	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<6.40	<100	<6.40	µg/L	100	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<5.04	<100	<5.04	µg/L	100	0.0504	1	0.0504	
Toluene		**1940**	**1940**	<7.36	µg/L	100	0.0736	1	0.0736	
1,1,2-Trichloroethane	U	<10.6	<100	<10.6	µg/L	100	0.106	1	0.1056	
1,3-Dichloropropane	U	<6.25	<100	<6.25	µg/L	100	0.0625	1	0.0625	
Dibromochloromethane	U	<7.91	<100	<7.91	µg/L	100	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<4.60	<100	<4.60	µg/L	100	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<6.96	<100	<6.96	µg/L	100	0.0696	1	0.0696	
Chlorobenzene	U	<2.17	<100	<2.17	µg/L	100	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<12.5	<100	<12.5	µg/L	100	0.125	1	0.1253	
Ethylbenzene		**2330**	**2330**	<5.66	µg/L	100	0.0566	1	0.0566	
m,p-Xylene		**1460**	**1460**	<3.63	µg/L	100	0.0363	1	0.0363	
Bromoform	U	<8.59	<100	<8.59	µg/L	100	0.0859	1	0.0859	
Styrene	U	<3.94	<100	<3.94	µg/L	100	0.0394	1	0.0394	
o-Xylene		**1020**	**1020**	<5.04	µg/L	100	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
2-Chlorotoluene	U	<2.83	<100	<2.83	µg/L	100	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<6.79	<100	<6.79	µg/L	100	0.0679	1	0.0679	
Isopropylbenzene		**230**	**230**	<4.06	µg/L	100	0.0406	1	0.0406	
Bromobenzene	U	<10.3	<100	<10.3	µg/L	100	0.103	1	0.1033	
n-Propylbenzene		**264**	**264**	<4.23	µg/L	100	0.0423	1	0.0423	
1,3,5-Trimethylbenzene		**266**	**266**	<5.57	µg/L	100	0.0557	1	0.0557	
tert-Butylbenzene	U	<7.70	<100	<7.70	µg/L	100	0.0770	1	0.077	
1,2,4-Trimethylbenzene		**940**	**940**	<3.36	µg/L	100	0.0336	1	0.0336	
1,4-Dichlorobenzene (para)	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
sec-Butylbenzene	J	**51.6**	<100	<4.39	µg/L	100	0.0439	1	0.0439	J
1,3-Dichlorobenzene (meta)	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
p-Isopropyltoluene	J	**39.8**	<100	<5.13	µg/L	100	0.0513	1	0.0513	J
4-Chlorotoluene	U	<4.60	<100	<4.60	µg/L	100	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<6.29	<100	<6.29	µg/L	100	0.0629	1	0.0629	
n-Butylbenzene	J	**44.8**	<100	<4.00	µg/L	100	0.0400	1	0.04	J
1,2-Dibromo-3-chloropropane	U	<53.8	<200	<53.8	µg/L	100	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<50.4	<500	<50.4	µg/L	100	0.504	5	0.5035	

continued ...

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sample 90835 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2,4-Trichlorobenzene	U	<16.6	<500	<16.6	µg/L	100	0.166	5	0.1663
Naphthalene	J	**163**	<500	<41.7	µg/L	100	0.417	5	0.4166
Hexachlorobutadiene	U	<17.6	<500	<17.6	µg/L	100	0.176	5	0.1758

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.0	µg/L	1	50.0	98	70 - 130
Toluene-d8		50.4	µg/L	1	50.0	101	70 - 130
4-Bromofluorobenzene (4-BFB)		48.0	µg/L	1	50.0	96	70 - 130

Sample: 90836 - HGLSD27-01-0002

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27046	Date Analyzed:	2006-05-24	Analyzed By:	AG
Prep Batch:	23470	Sample Preparation:	2006-05-22	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	J	**0.0570**	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403

continued . . .

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sample 90836 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352	
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373	
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402	
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046	
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475	
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041	
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034	
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209	
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403	
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442	
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041	
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417	
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411	
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531	
Acenaphthylene		**0.291**	**0.291**	<0.0465	mg/Kg	1	0.0465	0.25	0.0465	
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454	
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278	
Acenaphthene	J	**0.124**	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461	J
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113	
Dibenzofuran		**0.352**	**0.352**	<0.0480	mg/Kg	1	0.0480	0.25	0.048	
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431	
4-Nitrophenol	J	**0.0530**	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166	J
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427	
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471	
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361	
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523	
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435	
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643	
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466	
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278	
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067	
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368	
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555	
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536	
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352	
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584	
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349	
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04	
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532	
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368	
Phenanthrene		**0.470**	**0.470**	<0.0438	mg/Kg	1	0.0438	0.25	0.0438	
Anthracene		**2.96**	**2.96**	<0.0565	mg/Kg	1	0.0565	0.25	0.0565	
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475	
Fluoranthene		**6.67**	**6.67**	<0.0456	mg/Kg	1	0.0456	0.25	0.0456	
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178	
Pyrene		**5.88**	**5.88**	<0.124	mg/Kg	1	0.124	0.25	0.124	
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407	
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15	
Benzo(a)anthracene		**2.68**	**2.68**	<0.0538	mg/Kg	1	0.0538	0.25	0.0538	
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427	
Chrysene		**3.80**	**3.80**	<0.0609	mg/Kg	1	0.0609	0.25	0.0609	

continued . . .

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sample 90836 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
bis(2-ethylhexyl)phthalate		**5.49**	**5.49**	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene		**4.10**	**4.10**	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene		**2.32**	**2.32**	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene		**3.20**	**3.20**	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene		**2.02**	**2.02**	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene		**1.25**	**1.25**	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene		**2.71**	**2.71**	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.61	mg/Kg	1	2.67	60	10 - 98.8
Phenol-d5		0.420	mg/Kg	1	2.67	16	10 - 105
Nitrobenzene-d5		2.41	mg/Kg	1	2.67	90	10 - 114
2-Fluorobiphenyl		2.51	mg/Kg	1	2.67	94	10 - 122
2,4,6-Tribromophenol	[32]	3.72	mg/Kg	1	2.67	139	10 - 117
Terphenyl-d14		2.87	mg/Kg	1	2.67	107	10 - 116

Sample: 90836 - HGLSD27-01-0002

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	26874	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23562	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	26990	Date Analyzed:	2006-05-31	Analyzed By:	TP
Prep Batch:	23692	Sample Preparation:	2006-05-30	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.00444	<0.0500	<0.00444	mg/Kg	1	0.00444	0.05	0.00444
Total Arsenic		**3.81**	**3.81**	<0.228	mg/Kg	1	0.228	2	0.228
Total Barium		**13500**	**13500**	<6.01	mg/Kg	100	0.0601	1	0.0601
Total Cadmium		**21.6**	**21.6**	<0.00794	mg/Kg	1	0.00794	0.1	0.00794
Total Chromium		**290**	**290**	<0.125	mg/Kg	10	0.0125	0.5	0.0125
Total Mercury		**0.0800**	**0.0800**	<0.00880	mg/Kg	1	0.00880	0.04	0.0088
Total Lead		**1900**	**1900**	<3.67	mg/Kg	10	0.367	1	0.367
Total Selenium	U	<0.0767	<1.00	<0.0767	mg/Kg	1	0.0767	1	0.0767

Sample: 90836 - HGLSD27-01-0002

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26810	Date Analyzed:	2006-05-24	Analyzed By:	JL
Prep Batch:	23545	Sample Preparation:	2006-05-24	Prepared By:	JL

[32] High surrogate recovery due to peak interference.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**107**	**107**	<7.28	mg/Kg	1	7.28	50	7.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	[33]	182	mg/Kg	1	150	121	62.8 - 115

Sample: 90836 - HGLSD27-01-0002

Analysis: TPH GRO
QC Batch: 26822
Prep Batch: 23551

Analytical Method: S 8015B
Date Analyzed: 2006-05-24
Sample Preparation: 2006-05-24

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		~~2.89~~	**2.89**	<1.21	mg/Kg	10	0.121	0.1	0.121

2.89 U

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.720	mg/Kg	10	0.100	72	68 - 129.6
4-Bromofluorobenzene (4-BFB)		1.04	mg/Kg	10	0.100	104	71.9 - 123.7

Sample: 90836 - HGLSD27-01-0002

Analysis: Volatiles
QC Batch: 26796
Prep Batch: 23529

Analytical Method: S 8260B
Date Analyzed: 2006-05-23
Sample Preparation: 2006-05-23

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<2.41	<10.0	<2.41	µg/Kg	10	0.241	1	0.2414
Dichlorodifluoromethane	U	<0.789	<10.0	<0.789	µg/Kg	10	0.0789	1	0.0789
Chloromethane (methyl chloride)	U	<2.29	<10.0	<2.29	µg/Kg	10	0.229	1	0.229
Vinyl Chloride	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.1425
Bromomethane (methyl bromide)	U	<7.00	<50.0	<7.00	µg/Kg	10	0.700	5	0.7
Chloroethane	U	<1.73	<10.0	<1.73	µg/Kg	10	0.173	1	0.1732
Trichlorofluoromethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1204
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	1.70	10	1.7044
Iodomethane (methyl iodide)	U	<4.88	<50.0	<4.88	µg/Kg	10	0.488	5	0.4878
Carbon Disulfide	U	<0.947	<10.0	<0.947	µg/Kg	10	0.0947	1	0.0947
Acrylonitrile	U	<4.94	<10.0	<4.94	µg/Kg	10	0.494	1	0.4945
2-Butanone (MEK)	U	<14.0	<50.0	<14.0	µg/Kg	10	1.40	5	1.4017
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	0.786	5	0.786
2-Hexanone	U	<2.22	<50.0	<2.22	µg/Kg	10	0.222	5	0.2224
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	0.133	10	0.1331
1,1-Dichloroethene	U	<1.17	<10.0	<1.17	µg/Kg	10	0.117	1	0.1166
Methylene chloride	JB	~~10.3~~	<50.0	5.51	µg/Kg	10	0.315	5	0.3154
MTBE	U	<1.53	<10.0	<1.53	µg/Kg	10	0.153	1	0.1529

50.0 U

continued ...

[33] High surrogate recovery due to peak interference.

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sample 90836 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
trans-1,2-Dichloroethene	U	<1.54	<10.0	<1.54	µg/Kg	10	0.154	1	0.1535	
1,1-Dichloroethane	U	<0.513	<10.0	<0.513	µg/Kg	10	0.0513	1	0.0513	
cis-1,2-Dichloroethene	U	<2.13	<10.0	<2.13	µg/Kg	10	0.213	1	0.2129	
2,2-Dichloropropane	U	<0.982	<10.0	<0.982	µg/Kg	10	0.0982	1	0.0982	
1,2-Dichloroethane (EDC)	U	<1.98	<10.0	<1.98	µg/Kg	10	0.198	1	0.198	
Chloroform	J	**0.580**	<10.0	<0.486	µg/Kg	10	0.0486	1	0.0486	J
1,1,1-Trichloroethane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.101	
1,1-Dichloropropene	U	<1.60	<10.0	<1.60	µg/Kg	10	0.160	1	0.1599	
Benzene	J	**5.42**	<10.0	<2.36	µg/Kg	10	0.236	1	0.2365	J
Carbon Tetrachloride	U	<1.08	<10.0	<1.08	µg/Kg	10	0.108	1	0.1082	
1,2-Dichloropropane	U	<1.01	<10.0	<1.01	µg/Kg	10	0.101	1	0.1009	
Trichloroethene (TCE)	U	<1.95	<10.0	<1.95	µg/Kg	10	0.195	1	0.1951	
Dibromomethane (methylene bromide)	U	<1.62	<10.0	<1.62	µg/Kg	10	0.162	1	0.1618	
Bromodichloromethane	U	<0.958	<10.0	<0.958	µg/Kg	10	0.0958	1	0.0958	
2-Chloroethyl vinyl ether	U	<1.31	<50.0	<1.31	µg/Kg	10	0.131	5	0.1314	
cis-1,3-Dichloropropene	U	<1.19	<10.0	<1.19	µg/Kg	10	0.119	1	0.119	
trans-1,3-Dichloropropene	U	<0.860	<10.0	<0.860	µg/Kg	10	0.0860	1	0.086	
Toluene	B	~~**13.0**~~	**13.0**	3.75	µg/Kg	10	0.135	1	0.1352	13.0 U
1,1,2-Trichloroethane	U	<2.03	<10.0	<2.03	µg/Kg	10	0.203	1	0.2031	
1,3-Dichloropropane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1199	
Dibromochloromethane	U	<1.32	<10.0	<1.32	µg/Kg	10	0.132	1	0.1317	
1,2-Dibromoethane (EDB)	U	<1.48	<10.0	<1.48	µg/Kg	10	0.148	1	0.1477	
Tetrachloroethene (PCE)	U	<1.85	<10.0	<1.85	µg/Kg	10	0.185	1	0.1848	
Chlorobenzene	U	<1.24	<10.0	<1.24	µg/Kg	10	0.124	1	0.1236	
1,1,1,2-Tetrachloroethane	U	<1.20	<10.0	<1.20	µg/Kg	10	0.120	1	0.1203	
Ethylbenzene	JB	~~**3.83**~~	<10.0	0.870	µg/Kg	10	0.0599	1	0.0599	10.0 U
m,p-Xylene	J	**4.78**	<10.0	<1.75	µg/Kg	10	0.175	1	0.1754	J
Bromoform	U	<1.80	<10.0	<1.80	µg/Kg	10	0.180	1	0.1802	
Styrene	U	<0.898	<10.0	<0.898	µg/Kg	10	0.0898	1	0.0898	
o-Xylene	J	**2.28**	<10.0	<0.991	µg/Kg	10	0.0991	1	0.0991	J
1,1,2,2-Tetrachloroethane	U	<2.56	<10.0	<2.56	µg/Kg	10	0.256	1	0.2555	
2-Chlorotoluene	U	<0.997	<10.0	<0.997	µg/Kg	10	0.0997	1	0.0997	
1,2,3-Trichloropropane	U	<0.935	<10.0	<0.935	µg/Kg	10	0.0935	1	0.0935	
Isopropylbenzene	U	<1.05	<10.0	<1.05	µg/Kg	10	0.105	1	0.1048	
Bromobenzene	U	<1.42	<10.0	<1.42	µg/Kg	10	0.142	1	0.142	
n-Propylbenzene	JB	~~**1.22**~~	<10.0	1.46	µg/Kg	10	0.101	1	0.1007	10.0 U
1,3,5-Trimethylbenzene	JB	~~**1.32**~~	<10.0	1.36	µg/Kg	10	0.104	1	0.1042	10.0 U
tert-Butylbenzene	U	<1.96	<10.0	<1.96	µg/Kg	10	0.196	1	0.1963	
1,2,4-Trimethylbenzene	J	**3.68**	<10.0	<1.48	µg/Kg	10	0.148	1	0.1482	J
1,4-Dichlorobenzene (para)	U	<4.40	<10.0	<4.40	µg/Kg	10	0.440	1	0.4405	
sec-Butylbenzene	JB	~~**1.32**~~	<10.0	2.54	µg/Kg	10	0.113	1	0.1128	10.0 U
1,3-Dichlorobenzene (meta)	U	<0.924	<10.0	<0.924	µg/Kg	10	0.0924	1	0.0924	
p-Isopropyltoluene	J	**1.66**	<10.0	<1.05	µg/Kg	10	0.105	1	0.1046	J
4-Chlorotoluene	U	<0.739	<10.0	<0.739	µg/Kg	10	0.0739	1	0.0739	
1,2-Dichlorobenzene (ortho)	U	<1.09	<10.0	<1.09	µg/Kg	10	0.109	1	0.1092	
n-Butylbenzene	J	**2.10**	<10.0	<1.16	µg/Kg	10	0.116	1	0.1156	J
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	0.192	5	0.1915	
1,2,3-Trichlorobenzene	U	<11.9	<50.0	<11.9	µg/Kg	10	1.19	5	1.1906	
1,2,4-Trichlorobenzene	U	<3.11	<50.0	<3.11	µg/Kg	10	0.311	5	0.3107	
Naphthalene	J	**7.39**	<50.0	<2.58	µg/Kg	10	0.258	5	0.2585	J
Hexachlorobutadiene	U	<1.58	<50.0	<1.58	µg/Kg	10	0.158	5	0.1583	

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		459	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		500	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		499	µg/Kg	10	50.0	100	78 - 120

Sample: 90837 - HGLGW27-02-051606

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	26843	Date Analyzed:	2006-05-23	Analyzed By:	AG
Prep Batch:	23468	Sample Preparation:	2006-05-19	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol		**0.0133**	**0.0133**	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol		**0.0538**	**0.0538**	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone		**0.0200**	**0.0200**	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol		**0.0152**	**0.0152**	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid		**0.106**	**0.106**	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene		**0.0541**	**0.0541**	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene		**0.0152**	**0.0152**	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene		**0.0211**	**0.0211**	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143

continued . . .

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sample 90837 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate		**0.0109**	**0.0109**	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548

continued . . .

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sample 90837 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0209	mg/L	1	0.0800	26	10 - 84.7
Phenol-d5		0.0147	mg/L	1	0.0800	18	10 - 54.9
Nitrobenzene-d5		0.0564	mg/L	1	0.0800	70	10 - 202
2-Fluorobiphenyl		0.0433	mg/L	1	0.0800	54	10 - 199
2,4,6-Tribromophenol		0.0928	mg/L	1	0.0800	116	10 - 141
Terphenyl-d14		0.102	mg/L	1	0.0800	128	10 - 160

Sample: 90837 - HGLGW27-02-051606

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	26872	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23563	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27001	Date Analyzed:	2006-06-01	Analyzed By:	TP
Prep Batch:	23694	Sample Preparation:	2006-05-31	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.000200	<0.00200	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium		**0.0400**	**0.0400**	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	J	**0.00300**	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000407	<0.000200	<0.0000407	mg/L	1	0.0000407	0.0002	4.07e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 90837 - HGLGW27-02-051606

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26754	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23476	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	JB	**4.17**	<5.00	0.510	mg/L	0.1	1.19	50	1.19

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		16.5	mg/L	0.1	150	110	66.6 - 111

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Sample: 90837 - HGLGW27-02-051606

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	26698	Date Analyzed:	2006-05-21	Analyzed By:	KB
Prep Batch:	23447	Sample Preparation:	2006-05-21	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**56.4**	**56.4**	<0.144	mg/L	5	0.0288	0.1	0.02875

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[34]	0.867	mg/L	5	0.200	87	88.8 - 95.6
4-Bromofluorobenzene (4-BFB)	[35]	1.21	mg/L	5	0.200	121	75.6 - 111.2

Sample: 90837 - HGLGW27-02-051606

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26849	Date Analyzed:	2006-05-24	Analyzed By:	JG
Prep Batch:	23577	Sample Preparation:	2006-05-24	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<6.99	<100	<6.99	µg/L	100	0.0699	1	0.0699
Dichlorodifluoromethane	U	<5.98	<100	<5.98	µg/L	100	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<23.0	<100	<23.0	µg/L	100	0.230	1	0.2298
Vinyl Chloride	U	<9.02	<100	<9.02	µg/L	100	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<74.0	<100	<74.0	µg/L	100	0.740	1	0.7402
Chloroethane	U	<19.5	<100	<19.5	µg/L	100	0.195	1	0.1952
Trichlorofluoromethane	U	<16.0	<100	<16.0	µg/L	100	0.160	1	0.16
Acetone	U	<85.4	<1000	<85.4	µg/L	100	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<11.2	<500	<11.2	µg/L	100	0.112	5	0.1119
Carbon Disulfide	U	<7.64	<100	<7.64	µg/L	100	0.0764	1	0.0764
Acrylonitrile	U	<18.4	<100	<18.4	µg/L	100	0.184	1	0.1837
2-Butanone (MEK)	U	<39.4	<500	<39.4	µg/L	100	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<48.4	<500	<48.4	µg/L	100	0.484	5	0.484
2-Hexanone	U	<9.75	<100	<9.75	µg/L	100	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<42.1	<1000	<42.1	µg/L	100	0.421	10	0.4207
1,1-Dichloroethene	U	<7.36	<100	<7.36	µg/L	100	0.0736	1	0.0736
Methylene chloride	U	<68.9	<500	<68.9	µg/L	100	0.689	5	0.6888
MTBE	U	<5.04	<100	<5.04	µg/L	100	0.0504	1	0.0504
trans-1,2-Dichloroethene	U	<5.98	<100	<5.98	µg/L	100	0.0598	1	0.0598
1,1-Dichloroethane	U	<2.99	<100	<2.99	µg/L	100	0.0299	1	0.0299
cis-1,2-Dichloroethene	U	<10.1	<100	<10.1	µg/L	100	0.101	1	0.1006
2,2-Dichloropropane	U	<6.65	<100	<6.65	µg/L	100	0.0665	1	0.0665
1,2-Dichloroethane (EDC)	U	<5.57	<100	<5.57	µg/L	100	0.0557	1	0.0557
Chloroform	U	<4.75	<100	<4.75	µg/L	100	0.0475	1	0.0475
1,1,1-Trichloroethane	U	<8.46	<100	<8.46	µg/L	100	0.0846	1	0.0846
1,1-Dichloropropene	U	<4.23	<100	<4.23	µg/L	100	0.0423	1	0.0423
Benzene		**7750**	**7750**	<4.95	µg/L	100	0.0495	1	0.0495
Carbon Tetrachloride	U	<12.1	<100	<12.1	µg/L	100	0.121	1	0.1213

continued . . .

[34] Surrogate out due to peak interference.
[35] High surrogate recovery due to peak interference.

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sample 90837 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
1,2-Dichloropropane	U	<9.33	<100	<9.33	µg/L	100	0.0933	1	0.0933	
Trichloroethene (TCE)	J	**6.89**	<100	<4.95	µg/L	100	0.0495	1	0.0495	f
Dibromomethane (methylene bromide)	U	<6.40	<100	<6.40	µg/L	100	0.0640	1	0.064	
Bromodichloromethane	U	<6.51	<100	<6.51	µg/L	100	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<9.05	<500	<9.05	µg/L	100	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<6.40	<100	<6.40	µg/L	100	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<5.04	<100	<5.04	µg/L	100	0.0504	1	0.0504	
Toluene		**5690**	**5690**	<7.36	µg/L	100	0.0736	1	0.0736	
1,1,2-Trichloroethane	U	<10.6	<100	<10.6	µg/L	100	0.106	1	0.1056	
1,3-Dichloropropane	U	<6.25	<100	<6.25	µg/L	100	0.0625	1	0.0625	
Dibromochloromethane	U	<7.91	<100	<7.91	µg/L	100	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<4.60	<100	<4.60	µg/L	100	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<6.96	<100	<6.96	µg/L	100	0.0696	1	0.0696	
Chlorobenzene	U	<2.17	<100	<2.17	µg/L	100	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<12.5	<100	<12.5	µg/L	100	0.125	1	0.1253	
Ethylbenzene		**1030**	**1030**	<5.66	µg/L	100	0.0566	1	0.0566	
m,p-Xylene		**1430**	**1430**	<3.63	µg/L	100	0.0363	1	0.0363	
Bromoform	U	<8.59	<100	<8.59	µg/L	100	0.0859	1	0.0859	
Styrene	U	<3.94	<100	<3.94	µg/L	100	0.0394	1	0.0394	
o-Xylene		**755**	**755**	<5.04	µg/L	100	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
2-Chlorotoluene	U	<2.83	<100	<2.83	µg/L	100	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<6.79	<100	<6.79	µg/L	100	0.0679	1	0.0679	
Isopropylbenzene	J	**82.0**	<100	<4.06	µg/L	100	0.0406	1	0.0406	f
Bromobenzene	U	<10.3	<100	<10.3	µg/L	100	0.103	1	0.1033	
n-Propylbenzene		**110**	**110**	<4.23	µg/L	100	0.0423	1	0.0423	
1,3,5-Trimethylbenzene		**118**	**118**	<5.57	µg/L	100	0.0557	1	0.0557	
tert-Butylbenzene	U	<7.70	<100	<7.70	µg/L	100	0.0770	1	0.077	
1,2,4-Trimethylbenzene		**412**	**412**	<3.36	µg/L	100	0.0336	1	0.0336	
1,4-Dichlorobenzene (para)	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
sec-Butylbenzene	J	**28.0**	<100	<4.39	µg/L	100	0.0439	1	0.0439	f
1,3-Dichlorobenzene (meta)	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
p-Isopropyltoluene	J	**20.2**	<100	<5.13	µg/L	100	0.0513	1	0.0513	f
4-Chlorotoluene	U	<4.60	<100	<4.60	µg/L	100	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<6.29	<100	<6.29	µg/L	100	0.0629	1	0.0629	
n-Butylbenzene	J	**33.2**	<100	<4.00	µg/L	100	0.0400	1	0.04	f
1,2-Dibromo-3-chloropropane	U	<53.8	<200	<53.8	µg/L	100	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<50.4	<500	<50.4	µg/L	100	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<16.6	<500	<16.6	µg/L	100	0.166	5	0.1663	
Naphthalene	J	**133**	<500	<41.7	µg/L	100	0.417	5	0.4166	f
Hexachlorobutadiene	U	<17.6	<500	<17.6	µg/L	100	0.176	5	0.1758	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	µg/L	1	50.0	99	70 - 130
Toluene-d8		50.2	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		48.1	µg/L	1	50.0	96	70 - 130

Sample: 90838 - GWDUP-01

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Analysis: Ag, Dissolved
QC Batch: 26992
Prep Batch: 23648

Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Silver	U	<0.000297	<0.00200	<0.000297	mg/L	1	0.000297	0.002	0.000297

Sample: 90838 - GWDUP-01

Analysis: As, Dissolved
QC Batch: 26992
Prep Batch: 23648

Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Arsenic	U	<0.00255	<0.00500	<0.00255	mg/L	1	0.00255	0.005	0.002551

Sample: 90838 - GWDUP-01

Analysis: Ba, Dissolved
QC Batch: 26992
Prep Batch: 23648

Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Barium		**0.0230**	**0.0230**	<0.00148	mg/L	1	0.00148	0.01	0.001475

Sample: 90838 - GWDUP-01

Analysis: Cd, Dissolved
QC Batch: 26992
Prep Batch: 23648

Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Cadmium	U	<0.000595	<0.00100	<0.000595	mg/L	1	0.000595	0.001	0.000595

Sample: 90838 - GWDUP-01

Analysis: Cr, Dissolved
QC Batch: 26992
Prep Batch: 23648

Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Chromium	U	<0.000238	<0.00500	<0.000238	mg/L	1	0.000238	0.005	0.000238

Sample: 90838 - GWDUP-01

Analysis: Hg, Dissolved
QC Batch: 27000
Prep Batch: 23693
Analytical Method: S 7470A
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-31
Prep Method: N/A
Analyzed By: TP
Prepared By: TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Mercury	U	<0.0000329	<0.000200	<0.0000329	mg/L	1	0.0000329	0.0002	3.29e-05

Sample: 90838 - GWDUP-01

Analysis: Pb, Dissolved
QC Batch: 26992
Prep Batch: 23648
Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30
Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Lead	U	<0.00180	<0.00500	<0.00180	mg/L	1	0.00180	0.005	0.001796

Sample: 90838 - GWDUP-01

Analysis: Se, Dissolved
QC Batch: 26992
Prep Batch: 23648
Analytical Method: S 6010B
Date Analyzed: 2006-06-01
Sample Preparation: 2006-05-30
Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Selenium		**0.0810**	**0.0810**	<0.00232	mg/L	1	0.00232	0.01	0.002318

Sample: 90838 - GWDUP-01

Analysis: Semivolatiles
QC Batch: 26843
Prep Batch: 23468
Analytical Method: S 8270C
Date Analyzed: 2006-05-23
Sample Preparation: 2006-05-19
Prep Method: S 3510C
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121

continued ...

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sample 90838 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone		**0.0228**	**0.0228**	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene		**0.0557**	**0.0557**	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene		**0.0211**	**0.0211**	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene		**0.0298**	**0.0298**	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803

continued ...

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sample 90838 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0173	mg/L	1	0.0800	22	10 - 84.7
Phenol-d5		0.0133	mg/L	1	0.0800	17	10 - 54.9
Nitrobenzene-d5		0.0473	mg/L	1	0.0800	59	10 - 202
2-Fluorobiphenyl		0.0490	mg/L	1	0.0800	61	10 - 199
2,4,6-Tribromophenol		0.0834	mg/L	1	0.0800	104	10 - 141
Terphenyl-d14		0.0892	mg/L	1	0.0800	112	10 - 160

Sample: 90838 - GWDUP-01

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Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	26872	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23563	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27001	Date Analyzed:	2006-06-01	Analyzed By:	TP
Prep Batch:	23694	Sample Preparation:	2006-05-31	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.0140**	**0.0140**	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium		**0.0360**	**0.0360**	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000407	<0.000200	<0.0000407	mg/L	1	0.0000407	0.0002	4.07e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 90838 - GWDUP-01

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26809	Date Analyzed:	2006-05-24	Analyzed By:	JL
Prep Batch:	23544	Sample Preparation:	2006-05-24	Prepared By:	JL

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO		**60.2**	**60.2**	<0.119	mg/L	0.1	1.19	50	1.19

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		14.8	mg/L	0.1	150	99	66.6 - 111

Sample: 90838 - GWDUP-01

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	26698	Date Analyzed:	2006-05-21	Analyzed By:	KB
Prep Batch:	23447	Sample Preparation:	2006-05-21	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**23.6**	**23.6**	<0.288	mg/L	10	0.0288	0.1	0.02875

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[36]	1.69	mg/L	10	0.200	84	88.8 - 95.6
4-Bromofluorobenzene (4-BFB)	[37]	2.46	mg/L	10	0.200	123	75.6 - 111.2

[36] Surrogate out due to peak interference.
[37] High surrogate recovery due to peak interference.

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Sample: 90838 - GWDUP-01

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	26849	Date Analyzed:	2006-05-24	Analyzed By:	JG
Prep Batch:	23577	Sample Preparation:	2006-05-24	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<6.99	<100	<6.99	µg/L	100	0.0699	1	0.0699
Dichlorodifluoromethane	U	<5.98	<100	<5.98	µg/L	100	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<23.0	<100	<23.0	µg/L	100	0.230	1	0.2298
Vinyl Chloride	U	<9.02	<100	<9.02	µg/L	100	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<74.0	<100	<74.0	µg/L	100	0.740	1	0.7402
Chloroethane	U	<19.5	<100	<19.5	µg/L	100	0.195	1	0.1952
Trichlorofluoromethane	U	<16.0	<100	<16.0	µg/L	100	0.160	1	0.16
Acetone	J	**850**	<1000	<85.4	µg/L	100	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<11.2	<500	<11.2	µg/L	100	0.112	5	0.1119
Carbon Disulfide	U	<7.64	<100	<7.64	µg/L	100	0.0764	1	0.0764
Acrylonitrile	U	<18.4	<100	<18.4	µg/L	100	0.184	1	0.1837
2-Butanone (MEK)	U	<39.4	<500	<39.4	µg/L	100	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<48.4	<500	<48.4	µg/L	100	0.484	5	0.484
2-Hexanone	U	<9.75	<100	<9.75	µg/L	100	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<42.1	<1000	<42.1	µg/L	100	0.421	10	0.4207
1,1-Dichloroethene	U	<7.36	<100	<7.36	µg/L	100	0.0736	1	0.0736
Methylene chloride	U	<68.9	<500	<68.9	µg/L	100	0.689	5	0.6888
MTBE	U	<5.04	<100	<5.04	µg/L	100	0.0504	1	0.0504
trans-1,2-Dichloroethene	U	<5.98	<100	<5.98	µg/L	100	0.0598	1	0.0598
1,1-Dichloroethane	U	<2.99	<100	<2.99	µg/L	100	0.0299	1	0.0299
cis-1,2-Dichloroethene	U	<10.1	<100	<10.1	µg/L	100	0.101	1	0.1006
2,2-Dichloropropane	U	<6.65	<100	<6.65	µg/L	100	0.0665	1	0.0665
1,2-Dichloroethane (EDC)	U	<5.57	<100	<5.57	µg/L	100	0.0557	1	0.0557
Chloroform	U	<4.75	<100	<4.75	µg/L	100	0.0475	1	0.0475
1,1,1-Trichloroethane	U	<8.46	<100	<8.46	µg/L	100	0.0846	1	0.0846
1,1-Dichloropropene	U	<4.23	<100	<4.23	µg/L	100	0.0423	1	0.0423
Benzene		**2800**	**2800**	<4.95	µg/L	100	0.0495	1	0.0495
Carbon Tetrachloride	U	<12.1	<100	<12.1	µg/L	100	0.121	1	0.1213
1,2-Dichloropropane	U	<9.33	<100	<9.33	µg/L	100	0.0933	1	0.0933
Trichloroethene (TCE)	U	<4.95	<100	<4.95	µg/L	100	0.0495	1	0.0495
Dibromomethane (methylene bromide)	U	<6.40	<100	<6.40	µg/L	100	0.0640	1	0.064
Bromodichloromethane	U	<6.51	<100	<6.51	µg/L	100	0.0651	1	0.0651
2-Chloroethyl vinyl ether	U	<9.05	<500	<9.05	µg/L	100	0.0905	5	0.0905
cis-1,3-Dichloropropene	U	<6.40	<100	<6.40	µg/L	100	0.0640	1	0.064
trans-1,3-Dichloropropene	U	<5.04	<100	<5.04	µg/L	100	0.0504	1	0.0504
Toluene		**2430**	**2430**	<7.36	µg/L	100	0.0736	1	0.0736
1,1,2-Trichloroethane	U	<10.6	<100	<10.6	µg/L	100	0.106	1	0.1056
1,3-Dichloropropane	U	<6.25	<100	<6.25	µg/L	100	0.0625	1	0.0625
Dibromochloromethane	U	<7.91	<100	<7.91	µg/L	100	0.0791	1	0.0791
1,2-Dibromoethane (EDB)	U	<4.60	<100	<4.60	µg/L	100	0.0460	1	0.046
Tetrachloroethene (PCE)	U	<6.96	<100	<6.96	µg/L	100	0.0696	1	0.0696
Chlorobenzene	U	<2.17	<100	<2.17	µg/L	100	0.0217	1	0.0217
1,1,1,2-Tetrachloroethane	U	<12.5	<100	<12.5	µg/L	100	0.125	1	0.1253
Ethylbenzene		**3080**	**3080**	<5.66	µg/L	100	0.0566	1	0.0566
m,p-Xylene		**1930**	**1930**	<3.63	µg/L	100	0.0363	1	0.0363
Bromoform	U	<8.59	<100	<8.59	µg/L	100	0.0859	1	0.0859
Styrene	U	<3.94	<100	<3.94	µg/L	100	0.0394	1	0.0394

continued . . .

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sample 90838 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene		**1390**	**1390**	<5.04	µg/L	100	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
2-Chlorotoluene	U	<2.83	<100	<2.83	µg/L	100	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<6.79	<100	<6.79	µg/L	100	0.0679	1	0.0679	
Isopropylbenzene		**374**	**374**	<4.06	µg/L	100	0.0406	1	0.0406	
Bromobenzene	U	<10.3	<100	<10.3	µg/L	100	0.103	1	0.1033	
n-Propylbenzene		**443**	**443**	<4.23	µg/L	100	0.0423	1	0.0423	
1,3,5-Trimethylbenzene		**427**	**427**	<5.57	µg/L	100	0.0557	1	0.0557	
tert-Butylbenzene	U	<7.70	<100	<7.70	µg/L	100	0.0770	1	0.077	
1,2,4-Trimethylbenzene		**1460**	**1460**	<3.36	µg/L	100	0.0336	1	0.0336	
1,4-Dichlorobenzene (para)	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
sec-Butylbenzene		**105**	**105**	<4.39	µg/L	100	0.0439	1	0.0439	
1,3-Dichlorobenzene (meta)	U	<6.72	<100	<6.72	µg/L	100	0.0672	1	0.0672	
p-Isopropyltoluene	J	**75.6**	<100	<5.13	µg/L	100	0.0513	1	0.0513	J
4-Chlorotoluene	U	<4.60	<100	<4.60	µg/L	100	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<6.29	<100	<6.29	µg/L	100	0.0629	1	0.0629	
n-Butylbenzene	J	**95.6**	<100	<4.00	µg/L	100	0.0400	1	0.04	J
1,2-Dibromo-3-chloropropane	U	<53.8	<200	<53.8	µg/L	100	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<50.4	<500	<50.4	µg/L	100	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<16.6	<500	<16.6	µg/L	100	0.166	5	0.1663	
Naphthalene	J	**232**	<500	<41.7	µg/L	100	0.417	5	0.4166	J
Hexachlorobutadiene	U	<17.6	<500	<17.6	µg/L	100	0.176	5	0.1758	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.9	µg/L	1	50.0	98	70 - 130
Toluene-d8		50.5	µg/L	1	50.0	101	70 - 130
4-Bromofluorobenzene (4-BFB)		47.6	µg/L	1	50.0	95	70 - 130

Sample: 91026 - RB05-1506

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	27049	Date Analyzed:	2006-05-29	Analyzed By:	AG
Prep Batch:	23541	Sample Preparation:	2006-05-24	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147

continued ...

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sample 91026 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone	U	<0.000684	<0.00500	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene	U	<0.000480	<0.00500	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene	U	<0.000416	<0.00500	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063

continued . . .

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sample 91026 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0147	mg/L	1	0.0800	18	10 - 84.7
Phenol-d5		0.0162	mg/L	1	0.0800	20	10 - 54.9
Nitrobenzene-d5		0.0805	mg/L	1	0.0800	101	10 - 202
2-Fluorobiphenyl		0.0779	mg/L	1	0.0800	97	10 - 199
2,4,6-Tribromophenol		0.0373	mg/L	1	0.0800	47	10 - 141
Terphenyl-d14		0.0876	mg/L	1	0.0800	110	10 - 160

Sample: 91026 - RB05-1506

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	26872	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23563	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27001	Date Analyzed:	2006-06-01	Analyzed By:	TP
Prep Batch:	23694	Sample Preparation:	2006-05-31	Prepared By:	TP

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.000200	<0.00200	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium	J	**0.00200**	<0.0100	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000407	<0.000200	<0.0000407	mg/L	1	0.0000407	0.0002	4.07e-05
Total Lead		**0.0270**	**0.0270**	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 91026 - RB05-1506

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26754	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23476	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	JB	~~0.540~~	<5.00	0.510	mg/L	0.1	1.19	50	1.19

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		13.6	mg/L	0.1	150	90	66.6 - 111

Sample: 91026 - RB05-1506

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	26781	Date Analyzed:	2006-05-23	Analyzed By:	KB
Prep Batch:	23513	Sample Preparation:	2006-05-23	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.144	<0.500	<0.144	mg/L	5	0.0288	0.1	0.02875

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[38]	0.414	mg/L	5	0.100	83	88.8 - 95.6
4-Bromofluorobenzene (4-BFB)		0.419	mg/L	5	0.100	84	75.6 - 111.2

Sample: 91026 - RB05-1506

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	27108	Date Analyzed:	2006-05-29	Analyzed By:	JG
Prep Batch:	23791	Sample Preparation:	2006-05-29	Prepared By:	JG

[38] Surrogate TFT out due to matrix interference. Sample was reran on 5/23/06 to confirm matrix interference results.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699	
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298	
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902	
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402	
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952	
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16	
Acetone	U	<0.854	<10.0	<0.854	µg/L	1	0.854	10	0.8536	
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119	
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764	
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837	
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941	
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484	
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975	
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207	
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736	
Methylene chloride	U	<0.689	<5.00	<0.689	µg/L	1	0.689	5	0.6888	
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	J	**0.660**	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	J
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	J	~~0.260~~	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736	1.00 U
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	<0.0696	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	U	<0.0217	<1.00	<0.0217	µg/L	1	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	J	~~0.0700~~	<1.00	<0.0566	µg/L	1	0.0566	1	0.0566	1.00 U
m,p-Xylene	J	~~0.170~~	<1.00	<0.0363	µg/L	1	0.0363	1	0.0363	1.00 U
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	U	<0.0406	<1.00	<0.0406	µg/L	1	0.0406	1	0.0406	
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	

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sample 91026 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423
1,3,5-Trimethylbenzene	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557
tert-Butylbenzene	U	<0.0770	<1.00	<0.0770	µg/L	1	0.0770	1	0.077
1,2,4-Trimethylbenzene	U	<0.0336	<1.00	<0.0336	µg/L	1	0.0336	1	0.0336
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672
sec-Butylbenzene	U	<0.0439	<1.00	<0.0439	µg/L	1	0.0439	1	0.0439
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672
p-Isopropyltoluene	U	<0.0513	<1.00	<0.0513	µg/L	1	0.0513	1	0.0513
4-Chlorotoluene	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	<0.0629	µg/L	1	0.0629	1	0.0629
n-Butylbenzene	J	**0.0500**	<1.00	<0.0400	µg/L	1	0.0400	1	0.04
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663
Naphthalene	U	<0.417	<5.00	<0.417	µg/L	1	0.417	5	0.4166
Hexachlorobutadiene	U	<0.176	<5.00	<0.176	µg/L	1	0.176	5	0.1758

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.1	µg/L	1	50.0	96	70 - 130
Toluene-d8		49.6	µg/L	1	50.0	99	70 - 130
4-Bromofluorobenzene (4-BFB)		45.6	µg/L	1	50.0	91	70 - 130

Sample: 91027 - RB05-051606

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	27049	Date Analyzed:	2006-05-29	Analyzed By:	AG
Prep Batch:	23541	Sample Preparation:	2006-05-24	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529

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sample 91027 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Acetophenone	U	<0.000684	<0.00500	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene	U	<0.000480	<0.00500	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene	U	<0.000416	<0.00500	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014

continued ...

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sample 91027 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0332	mg/L	1	0.0800	42	10 - 84.7
Phenol-d5		0.0224	mg/L	1	0.0800	28	10 - 54.9
Nitrobenzene-d5		0.0809	mg/L	1	0.0800	101	10 - 202
2-Fluorobiphenyl		0.0824	mg/L	1	0.0800	103	10 - 199
2,4,6-Tribromophenol		0.0736	mg/L	1	0.0800	92	10 - 141
Terphenyl-d14		0.0881	mg/L	1	0.0800	110	10 - 160

Sample: 91027 - RB05-051606

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	26872	Date Analyzed:	2006-05-26	Analyzed By:	RR
Prep Batch:	23563	Sample Preparation:	2006-05-25	Prepared By:	DS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27001	Date Analyzed:	2006-06-01	Analyzed By:	TP
Prep Batch:	23694	Sample Preparation:	2006-05-31	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.000200	<0.00200	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium	U	<0.00200	<0.0100	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004

continued . . .

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sample 91027 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000407	<0.000200	<0.0000407	mg/L	1	0.0000407	0.0002	4.07e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 91027 - RB05-051606

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	26754	Date Analyzed:	2006-05-22	Analyzed By:	DS
Prep Batch:	23476	Sample Preparation:	2006-05-22	Prepared By:	DS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	JB	~~0.390~~	<5.00	0.510	mg/L	0.1	1.19	50	1.19

5.00 U

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		13.1	mg/L	0.1	150	87	66.6 - 111

Sample: 91027 - RB05-051606

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	26781	Date Analyzed:	2006-05-23	Analyzed By:	KB
Prep Batch:	23513	Sample Preparation:	2006-05-23	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.144	<0.500	<0.144	mg/L	5	0.0288	0.1	0.02875

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[39]	0.422	mg/L	5	0.100	84	88.8 - 95.6
4-Bromofluorobenzene (4-BFB)		0.432	mg/L	5	0.100	86	75.6 - 111.2

Sample: 91027 - RB05-051606

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	27108	Date Analyzed:	2006-05-29	Analyzed By:	JG
Prep Batch:	23791	Sample Preparation:	2006-05-29	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699

continued . . .

[39] Surrogate TFT out due to matrix interference. Sample was reran on 5/23/06 to confirm matrix interference results.

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sample 91027 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298	
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902	
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402	
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952	
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16	
Acetone	U	<0.854	<10.0	<0.854	µg/L	1	0.854	10	0.8536	
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119	
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764	
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837	
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941	
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484	
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975	
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207	
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736	
Methylene chloride	U	<0.689	<5.00	<0.689	µg/L	1	0.689	5	0.6888	
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	J	**0.620**	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	J
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene	J	~~**0.0500**~~	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	1.00 U
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	J	~~**0.220**~~	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736	1.00 U
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	<0.0696	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	U	<0.0217	<1.00	<0.0217	µg/L	1	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	J	~~**0.0700**~~	<1.00	<0.0566	µg/L	1	0.0566	1	0.0566	1.00 U
m,p-Xylene	J	~~**0.160**~~	<1.00	<0.0363	µg/L	1	0.0363	1	0.0363	1.00 U
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	U	<0.0406	<1.00	<0.0406	µg/L	1	0.0406	1	0.0406	

continued ...

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sample 91027 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033
n-Propylbenzene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423
1,3,5-Trimethylbenzene	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557
tert-Butylbenzene	U	<0.0770	<1.00	<0.0770	µg/L	1	0.0770	1	0.077
1,2,4-Trimethylbenzene	U	<0.0336	<1.00	<0.0336	µg/L	1	0.0336	1	0.0336
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672
sec-Butylbenzene	U	<0.0439	<1.00	<0.0439	µg/L	1	0.0439	1	0.0439
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672
p-Isopropyltoluene	U	<0.0513	<1.00	<0.0513	µg/L	1	0.0513	1	0.0513
4-Chlorotoluene	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	<0.0629	µg/L	1	0.0629	1	0.0629
n-Butylbenzene	J	**0.0500**	<1.00	<0.0400	µg/L	1	0.0400	1	0.04
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663
Naphthalene	U	<0.417	<5.00	<0.417	µg/L	1	0.417	5	0.4166
Hexachlorobutadiene	U	<0.176	<5.00	<0.176	µg/L	1	0.176	5	0.1758

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.6	µg/L	1	50.0	97	70 - 130
Toluene-d8		49.9	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		45.9	µg/L	1	50.0	92	70 - 130

Method Blank (1)

QC Batch: 26698
Prep Batch: 23447

Date Analyzed: 2006-05-21
QC Preparation: 2006-05-21

Analyzed By: KB
Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
GRO		0.341	mg/L	0.02875

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.160	mg/L	1	0.200	80	70 - 130
4-Bromofluorobenzene (4-BFB)		0.175	mg/L	1	0.200	88	70 - 130

Method Blank (1)

QC Batch: 26749
Prep Batch: 23488

Date Analyzed: 2006-05-22
QC Preparation: 2006-05-22

Analyzed By: JG
Prepared By: JG

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.0699	µg/L	0.0699
Dichlorodifluoromethane		<0.0598	µg/L	0.0598
Chloromethane (methyl chloride)		<0.230	µg/L	0.2298
Vinyl Chloride		<0.0902	µg/L	0.0902

continued . . .

Validated EPA Level 3 (Verification), Quality by Design, January 17, 2007

Quality by Design

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EPA Level 3
DATA VALIDATION REPORT

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Soil
Dates of Sampling: June 16-17, 2006

Prepared for

HydroGeoLogic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, Virginia 20170

SDG No. D6F210285
Purchase Order No. P0000715
QBD Job No. 1296R

Reviewed and approved,

Thomas S. Davis, Principal — 1/15/07 Date

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Attachment 2 Summary Table of Data Qualifier Flags
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A. Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
%D	percent difference
%R	percent recovery
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
AA	atomic absorption
BFB	bromofluorobenzene
BNA	base/neutral/acid compounds
BS	blank spike
BSD	blank spike duplicate
CCB	continuing calibration blank
CCC	calibration check compound
CCS	continuing calibration standard
CCV	continuing calibration verification
CF	calibration factor
CLP	Contract Laboratory Program
COC	chain of custody record
CRA	contract required standard at the CRDL for graphite furnace AA method
CRDL	contract required detection limit
CRI	contract required standard at the CRDL for ICP method
CRQL	contract required quantitation limit
CV	coefficient of variation
CVAA	cold vapor atomic absorption
4,4'-DDD	4,4'-dechlorodiphenyldichloroethane
4,4'-DDE	4,4'-dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
DHG	dissolved hydrogen gas
DRO	diesel range organics
DQO	data quality objective
EB	equipment blank
EICP	extracted ion current profile
EPA	U.S. Environmental Protection Agency
ER	equipment rinsate
FB	field blank
GC/ECD	gas chromatography/electron capture detector

Acronym/ Abbreviation	Definition
GC/ELCD	gas chromatography/electrolytic conductivity detector (Hall detector)
GC/FID	gas chromatography/flame ionization detector
GC/PID	gas chromatography/photoionization detector
GC/MS	gas chromatography/mass spectrometry
GFAA	graphite furnace atomic absorption
GLP	good laboratory practices
GRO	gasoline range organics
GPC	gel permeation chromatography
HPLC	high-performance liquid chromatography
HRGC	high resolution gas chromatography
HRMS	high resolution mass spectrometry
ICB	initial calibration blank
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
IDL	instrument detection limit
IR	infrared spectroscopy
IS	internal standards
LCS	laboratory control standard
LCSD	laboratory control standard duplicate
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MS	matrix spike
MSA	method of standard addition
MSD	matrix spike duplicate
m/z	mass to charge ration
NIST	National Institute of Standards and Technology
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	performance evaluation
PEM	performance evaluation mixture
PPB	parts per billion
PPM	parts per million
PPT	parts per trillion
PNA	polynuclear aromatic hydrocarbon
PQL	practical quantitation limit
QA	quality assurance

Acronym/ Abbreviation	Definition
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RIC	reconstructed ion chromatograph
RPD	relative percent difference
RRF	relative response factor
RRT	relative retention time
RSD	relative standard deviation
RT	retention time
SDG	sample delivery group
SOP	standard operating procedure
SOW	statement of work
SVOC	semivolatile organic compound
SPCC	system performance check compound
SRM	standard reference material
TB	trip blank
TIC	tentatively identified compound
TPH	total petroleum hydrocarbons
TPH-G	total petroleum hydrocarbons - gasoline
TPH-D	total petroleum hydrocarbons - diesel
UV/VIS	ultraviolet/visible
VOA	volatile organic analysis

B. Introduction

Laboratory Sciences, Inc., d.b.a. *Quality by Design* (QBD), has completed an EPA Level 3 Data Validation on the submitted data packages in accordance with Purchase Order No. P0000715.

The reporting format and criteria for recommending data qualifying flags for this data set are described in the EPA *"Functional Guidelines for Evaluating Organics Analyses,"* as revised, 1999; the *Baseline Quality Assurance Project Plan, Holloman Air Force Base, New Mexico*, November, 2003; the *Quality Assurance Project Plan Addendum Supplemental RCRA Facility Investigation, Holloman Air Force Base, Alamogordo, New Mexico*, July 2005; or using criteria listed in the method referenced. Data may be qualified for any of the following reasons:

1. By the laboratory prior to receipt by the reviewer
2. Because of laboratory deviation from the designated method
3. Because the data may not meet the criteria listed in the reference above
4. By the professional judgment of the reviewer

This data validation report consists of several sections, each of which are formatted to follow *Functional Guidelines*, but which also include subsections discussing QBD contacts with the laboratory, other comments, and a summary table of data qualifiers.

The data set consists of an electronic data package for a 394-page laboratory report from Severn Trent Laboratory in Denver, Colorado, and contains data for the samples shown in Table 1. The data reviewers and senior reviewers are shown in Table 2.

Each data set includes an analytical data package for each sample, copies of the completed COC forms, and a QC data package. The analytical data package includes analytical results, blank sample results, both laboratory and client sample identifications, appropriate dates but not times, method reporting limits, method references, surrogate recoveries as appropriate, the laboratory's name and address, and the initials of the person releasing the data. The custody forms include the receipt of the sample but not the laboratory's internal tracking. The QC data package includes a tabular list of the laboratory's sample identification, spiking concentrations, recoveries, percentage calculations, and acceptance windows.

All results were acceptable, although some received qualification. A discussion of the QC criteria and data usability is presented in this report. A listing of all qualified results with the final qualifier flag is presented in tabular form in Attachment 2.

Table 1. Sample Identification and Analysis

Sample Identification	Laboratory Identification	Matrix	Method 8321A	Method 8330
93205 (HGLSB29-L6-0103)	D6F210285-001	Soil	X	X
93206 (HGLSBDUP08)	D6F210285-002	Soil	X	X
93239 (HGLSB29-L4-0204)	D6F210285-003	Soil	X	X
93243 (HGLSB29-I5-1417)	D6F210285-004	Soil	X	X
93244 (HGLSB29-F7-2022)	D6F210285-005	Soil	X	X
93245 (HGLSB29-F4-1820)	D6F210285-006	Soil	X	X
93246 (HGLSB29-D6-2426)	D6F210285-007	Soil	X	X
93247 (HGLRBSB-061706)	D6F210285-008	Soil		X

Key:

Method 8321A = Perchlorate by LCMS

Method 8330 = Nitroaromatics and nitroamines by HPLC

Table 2. Data Package, Reviewer, and Senior Reviewer

Analysis	SDG Number	Reviewer	Senior Reviewer
Method 8321A	D6F210285	Lorraine Davis	Thomas Davis
Method 8330	D6F210285	Lorraine Davis	Thomas Davis

C. Laboratory Report and Supporting Documentation

The laboratory report and supporting documentation were reviewed to determine that the data package supported the level of validation requested. The data package was checked for pagination, appropriate signatures and approvals, an adequate case narrative, and possible subcontracting. The supporting data was checked for completeness and to determine that the information necessary for validation was present. The laboratory documentation was acceptable.

D. Chain-of-Custody

The COC documentation associated with this SDG was reviewed to determine that all samples listed on the COC form were reported in the laboratory deliverables, that a date and time of sampling was provided, and that the sample custody trail was complete. Sample condition upon receipt was reviewed to determine that the samples were not compromised during shipping. All custody and shipping documentation was reviewed to determine if GLP were employed when errors occurred. All data reviewed were acceptable.

E. Review of Perchlorate Analyses by LC/MS

EPA Method 8321A

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained perchlorate that was reported at levels less than the reporting limit but greater than the MDL. These results have been flagged "J" to indicate an estimated value.

Table 3. Perchlorate Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
93205 (HGLSB29-L6-0103)	Perchlorate	Value < RL	Value=0.98	RL=1.0	0.98	J
93244 (HGLSB29-F7-2022)	Perchlorate	Value < RL	Value=0.31	RL=1.0	0.31	J
93245 (HGLSB29-F4-1820)	Perchlorate	Value < RL	Value=0.99	RL=1.0	0.99	J

8. Field Duplicates

Field duplicates were collected and analyzed. Sample 93206 (HGLSBDUP08) is a field duplicate of Sample 93205 (HGLSB29-L6-0103). Test results were reviewed and the RPD was calculated for perchlorate.

Table 4. Perchlorate Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	93205 (HGLSB29-L6-0103)	93206 (HGLSBDUP08)	
Perchlorate	0.98	1.3	28.1

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

F. Review of Explosives Analyses by HPLC

EPA Method 8330

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable.

8. Field Duplicates

Field duplicates were collected and analyzed. Sample 93206 (HGLSBDUP08) is a field duplicate of Sample 93205 (HGLSB29-L6-0103) and all analytes were not detected.

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data are acceptable for use. The analyses were generally within the requirements of the referenced method.

Attachment 1 Data Qualifier Flag Definitions

Organics

U = The analyte was analyzed for but not detected above the numerical quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

N = The analysis indicates presumptive evidence of the presence of the analyte.

NJ = The analysis indicates presumptive evidence of the presence of the analyte, but the numerical value is an estimated quantity.

Inorganics

U = The analyte was analyzed for but not detected above the numerical quantitation limit. The numerical value may be either a detection limit or a quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

Attachment 2 Summary Table of Data Qualifier Flags

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Soil
Dates of Sampling: June 16-17, 2006

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
Perchlorate Data Qualifiers						
93205 (HGLSB29-L6-0103)	Perchlorate	Value < RL	Value=0.98	RL=1.0	0.98	J
93244 (HGLSB29-F7-2022)	Perchlorate	Value < RL	Value=0.31	RL=1.0	0.31	J
93245 (HGLSB29-F4-1820)	Perchlorate	Value < RL	Value=0.99	RL=1.0	0.99	J
Explosives Data Qualifiers						
	None					

Attachment 3 Reviewed/Revised Laboratory Forms

Trace Analysis Inc

Client Sample ID: 93205

HPLC

Lot-Sample #...:	D6F210285-001	**Work Order #...:**	H7WFW1AC	**Matrix.....:**	SOLID
Date Sampled...:	06/16/06	**Date Received..:**	06/21/06		
Prep Date.....:	06/22/06	**Analysis Date..:**	06/29/06		
Prep Batch #...:	6173473	**Analysis Time..:**	07:14		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**0.98 J**	**1.0**	**ug/kg**	**0.14**

NOTE(S):

J Estimated result. Result is less than RL.

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93206

HPLC

Lot-Sample #...:	D6F210285-002	**Work Order #...:**	H7WF51AC	**Matrix.....:**	SOLID
Date Sampled...:	06/16/06	**Date Received..:**	06/21/06		
Prep Date.....:	06/22/06	**Analysis Date..:**	06/29/06		
Prep Batch #...:	6173473	**Analysis Time..:**	07:30		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**1.3**	**1.0**	**ug/kg**	**0.14**

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93239

HPLC

Lot-Sample #...: D6F210285-003	**Work Order #...:** H7WF71AC	**Matrix.....:** SOLID
Date Sampled...: 06/16/06	**Date Received..:** 06/21/06	
Prep Date.....: 06/22/06	**Analysis Date..:** 06/29/06	
Prep Batch #...: 6173473	**Analysis Time..:** 07:46	
Dilution Factor: 1		
	Method.....: SW846 8321A	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**1.6**	**1.0**	**ug/kg**	**0.14**

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93243

HPLC

Lot-Sample #...:	D6F210285-004	**Work Order #...:**	H7WGG1AC	**Matrix.....:**	SOLID
Date Sampled...:	06/17/06	**Date Received..:**	06/21/06		
Prep Date.....:	06/22/06	**Analysis Date..:**	06/29/06		
Prep Batch #...:	6173473	**Analysis Time..:**	08:51		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**1.8**	**1.0**	**ug/kg**	**0.14**

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93244

HPLC

Lot-Sample #...:	D6F210285-005	Work Order #...:	H7WGK1AC	Matrix.....:	SOLID
Date Sampled...:	06/17/06	Date Received..:	06/21/06		
Prep Date.....:	06/22/06	Analysis Date..:	06/29/06		
Prep Batch #...:	6173473	Analysis Time..:	11:01		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	0.31 J	1.0	ug/kg	0.14

NOTE(S):

J Estimated result. Result is less than RL.

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93245

HPLC

Lot-Sample #...:	D6F210285-006	Work Order #...:	H7WGN1AC	Matrix.....:	SOLID
Date Sampled...:	06/17/06	Date Received..:	06/21/06		
Prep Date.....:	06/22/06	Analysis Date..:	06/29/06		
Prep Batch #...:	6173473	Analysis Time..:	09:23		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	0.99 J	1.0	ug/kg	0.14

NOTE(S):

J Estimated result. Result is less than RL.

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93246

HPLC

Lot-Sample #...:	D6F210285-007	**Work Order #...:**	H7WGP1AC	**Matrix.....:**	SOLID
Date Sampled...:	06/17/06	**Date Received..:**	06/21/06		
Prep Date.....:	06/22/06	**Analysis Date..:**	06/29/06		
Prep Batch #...:	6173473	**Analysis Time..:**	09:39		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	ND	1.0	ug/kg	0.14

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93205

HPLC

Lot-Sample #...: D6F210285-001 **Work Order #...:** H7WFW1AD **Matrix.....:** SOLID
Date Sampled...: 06/16/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 14:25
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	100	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93206

HPLC

Lot-Sample #...: D6F210285-002 **Work Order #...:** H7WF51AD **Matrix.....:** SOLID
Date Sampled...: 06/16/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 15:01
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	99	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93239

HPLC

Lot-Sample #...: D6F210285-003 **Work Order #...:** H7WF71AD **Matrix.....:** SOLID
Date Sampled...: 06/16/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 15:37
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	99	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93243

HPLC

Lot-Sample #...: D6F210285-004 **Work Order #...:** H7WGG1AD **Matrix.....:** SOLID
Date Sampled...: 06/17/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 17:25
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	98	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93244

HPLC

Lot-Sample #...: D6F210285-005 **Work Order #...:** H7WGK1AD **Matrix.....:** SOLID
Date Sampled...: 06/17/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 18:02
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	100	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93245

HPLC

Lot-Sample #...: D6F210285-006 **Work Order #...:** H7WGN1AD **Matrix.....:** SOLID
Date Sampled...: 06/17/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 18:37
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	99	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93246

HPLC

Lot-Sample #...: D6F210285-007 **Work Order #...:** H7WGP1AD **Matrix.....:** SOLID
Date Sampled...: 06/17/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/26/06
Prep Batch #...: 6173466 **Analysis Time..:** 19:50
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	99	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93247

HPLC

Lot-Sample #...: D6F210285-008 **Work Order #...:** H7WGT1AA **Matrix.....:** WATER
Date Sampled...: 06/17/06 **Date Received..:** 06/21/06
Prep Date.....: 06/22/06 **Analysis Date..:** 06/22/06
Prep Batch #...: 6173138 **Analysis Time..:** 18:36
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.20	ug/L	0.051
4-Amino-2,6-dinitrotoluene	ND	0.20	ug/L	0.058
1,3-Dinitrobenzene	ND	0.20	ug/L	0.089
2,4-Dinitrotoluene	ND	0.20	ug/L	0.084
2,6-Dinitrotoluene	ND	0.20	ug/L	0.064
HMX	ND	0.20	ug/L	0.088
Nitrobenzene	ND	0.20	ug/L	0.091
2-Nitrotoluene	ND	0.20	ug/L	0.086
3-Nitrotoluene	ND	0.20	ug/L	0.083
4-Nitrotoluene	ND	0.40	ug/L	0.16
RDX	ND	0.20	ug/L	0.052
Tetryl	ND	0.20	ug/L	0.079
1,3,5-Trinitrobenzene	ND	0.20	ug/L	0.051
2,4,6-Trinitrotoluene	ND	0.20	ug/L	0.072

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	116	(75 - 118)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

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EPA Level 3
DATA VALIDATION REPORT

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Sample: Water
Date of Sampling: June 16, 2006

Prepared for

HydroGeoLogic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, Virginia 20170

SDG No. D6F270298
Purchase Order No. P0000715
QBD Job No. 1296S

Reviewed and approved,

Thomas Davis 1/15/07

Thomas S. Davis, Principal Date

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A. Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
%D	percent difference
%R	percent recovery
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
AA	atomic absorption
BFB	bromofluorobenzene
BNA	base/neutral/acid compounds
BS	blank spike
BSD	blank spike duplicate
CCB	continuing calibration blank
CCC	calibration check compound
CCS	continuing calibration standard
CCV	continuing calibration verification
CF	calibration factor
CLP	Contract Laboratory Program
COC	chain of custody record
CRA	contract required standard at the CRDL for graphite furnace AA method
CRDL	contract required detection limit
CRI	contract required standard at the CRDL for ICP method
CRQL	contract required quantitation limit
CV	coefficient of variation
CVAA	cold vapor atomic absorption
4,4'-DDD	4,4'-dechlorodiphenyldichloroethane
4,4'-DDE	4,4'-dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
DHG	dissolved hydrogen gas
DRO	diesel range organics
DQO	data quality objective
EB	equipment blank
EICP	extracted ion current profile
EPA	U.S. Environmental Protection Agency
ER	equipment rinsate
FB	field blank
GC/ECD	gas chromatography/electron capture detector

Acronym/ Abbreviation	Definition
GC/ELCD	gas chromatography/electrolytic conductivity detector (Hall detector)
GC/FID	gas chromatography/flame ionization detector
GC/PID	gas chromatography/photoionization detector
GC/MS	gas chromatography/mass spectrometry
GFAA	graphite furnace atomic absorption
GLP	good laboratory practices
GRO	gasoline range organics
GPC	gel permeation chromatography
HPLC	high-performance liquid chromatography
HRGC	high resolution gas chromatography
HRMS	high resolution mass spectrometry
ICB	initial calibration blank
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
IDL	instrument detection limit
IR	infrared spectroscopy
IS	internal standards
LCS	laboratory control standard
LCSD	laboratory control standard duplicate
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MS	matrix spike
MSA	method of standard addition
MSD	matrix spike duplicate
m/z	mass to charge ration
NIST	National Institute of Standards and Technology
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	performance evaluation
PEM	performance evaluation mixture
PPB	parts per billion
PPM	parts per million
PPT	parts per trillion
PNA	polynuclear aromatic hydrocarbon
PQL	practical quantitation limit
QA	quality assurance

Acronym/ Abbreviation	Definition
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RIC	reconstructed ion chromatograph
RPD	relative percent difference
RRF	relative response factor
RRT	relative retention time
RSD	relative standard deviation
RT	retention time
SDG	sample delivery group
SOP	standard operating procedure
SOW	statement of work
SVOC	semivolatile organic compound
SPCC	system performance check compound
SRM	standard reference material
TB	trip blank
TIC	tentatively identified compound
TPH	total petroleum hydrocarbons
TPH-G	total petroleum hydrocarbons - gasoline
TPH-D	total petroleum hydrocarbons - diesel
UV/VIS	ultraviolet/visible
VOA	volatile organic analysis

B. Introduction

Laboratory Sciences, Inc., d.b.a. *Quality by Design* (QBD), has completed an EPA Level 3 Data Validation on the submitted data packages in accordance with Purchase Order No. P0000715.

The reporting format and criteria for recommending data qualifying flags for this data set are described in the EPA *"Functional Guidelines for Evaluating Organics Analyses,"* as revised, 1999; the *Baseline Quality Assurance Project Plan, Holloman Air Force Base, New Mexico*, November, 2003; the *Quality Assurance Project Plan Addendum Supplemental RCRA Facility Investigation, Holloman Air Force Base, Alamogordo, New Mexico*, July 2005; or using criteria listed in the method referenced. Data may be qualified for any of the following reasons:

1. By the laboratory prior to receipt by the reviewer
2. Because of laboratory deviation from the designated method
3. Because the data may not meet the criteria listed in the reference above
4. By the professional judgment of the reviewer

This data validation report consists of several sections, each of which are formatted to follow *Functional Guidelines*, but which also include subsections discussing QBD contacts with the laboratory, other comments, and a summary table of data qualifiers.

The data set consists of an electronic data package of a 161-page laboratory report from Severn Trent Laboratory in Denver, Colorado, and contains data for the samples shown in Table 1. The data reviewers and senior reviewers are shown in Table 2.

Each data set includes an analytical data package for each sample, copies of the completed COC forms, and a QC data package. The analytical data package includes analytical results, blank sample results, both laboratory and client sample identifications, appropriate dates but not times, method reporting limits, method references, surrogate recoveries as appropriate, the laboratory's name and address, and the initials of the person releasing the data. The custody forms include the receipt of the sample but not the laboratory's internal tracking. The QC data package includes a tabular list of the laboratory's sample identification, spiking concentrations, recoveries, percentage calculations, and acceptance windows.

All results were acceptable. A discussion of the QC criteria and data usability is presented in this report.

Table 1. Sample Identification and Analysis

Sample Identification	Laboratory Identification	Matrix	Method 8321A	Method 8330
93242 (HGLSB29-K3-1416)	D6G270298-001	Water	X	X

Key:
Method 8321A = Perchlorate by LCMS
Method 8330 = Nitroaromatics and nitroamines by HPLC

Table 2. Data Package, Reviewer, and Senior Reviewer

Analysis	SDG Number	Reviewer	Senior Reviewer
Method 8321A	D6G270298	Lorraine Davis	Thomas Davis
Method 8330	D6G270298	Lorraine Davis	Thomas Davis

C. Laboratory Report and Supporting Documentation

The laboratory report and supporting documentation were reviewed to determine that the data package supported the level of validation requested. The data package was checked for pagination, appropriate signatures and approvals, an adequate case narrative, and possible subcontracting. The supporting data was checked for completeness and to determine that the information necessary for validation was present. The laboratory documentation was acceptable.

D. Chain-of-Custody

The COC documentation associated with this SDG was reviewed to determine that all samples listed on the COC form were reported in the laboratory deliverables, that a date and time of sampling was provided, and that the sample custody trail was complete. Sample condition upon receipt was reviewed to determine that the samples were not compromised during shipping. All custody and shipping documentation was reviewed to determine if GLP were employed when errors occurred. All data reviewed were acceptable, except as noted below.

Discussion: The date and time relinquished and the date and time received by the laboratory do not match on the COC form and the shipping waybill was not referenced. However, the laboratory noted that custody seals were present and unbroken, indicating that appropriate physical custody was maintained, so no data qualifier flags are recommended.

E. Review of Perchlorate Analyses by LC/MS

EPA Method 8321A

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Sample 93242 (HGLSB29-K3-1416) contained perchlorate that was reported at a level less than the reporting limit but greater than the MDL. This result has been flagged "J" to indicate an estimated value.

Table 3. Perchlorate Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
93242 (HGLSB29-K3-1416)	Perchlorate	Value < RL	Value=0.50	RL=1.0	0.5	J

8. Field Duplicates

No field duplicates were identified with this group of samples.

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data are acceptable for use. The analyses were generally within the requirements of the referenced method.

F. Review of Explosives Analyses by HPLC

EPA Method 8330

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable.

8. Field Duplicates

No field duplicates were identified with this group of samples.

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data are acceptable for use. The analyses were generally within the requirements of the referenced method.

Attachment 1 Data Qualifier Flag Definitions

Organics

U = The analyte was analyzed for but not detected above the numerical quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

N = The analysis indicates presumptive evidence of the presence of the analyte.

NJ = The analysis indicates presumptive evidence of the presence of the analyte, but the numerical value is an estimated quantity.

Inorganics

U = The analyte was analyzed for but not detected above the numerical quantitation limit. The numerical value may be either a detection limit or a quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

Attachment 2 Summary Table of Data Qualifier Flags

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Water
Dates of Sampling: July 14-15, 2006

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
Perchlorate Data Qualifiers						
93242 (HGLSB29-K3-1416)	Perchlorate	Value < RL	Value=0.50	RL=1.0	0.5	J
Explosives Chemistry Data Qualifiers						
	None					

Attachment 3 Reviewed/Revised Laboratory Forms

Trace Analysis Inc

Client Sample ID: 93242

HPLC

Lot-Sample #...:	D6F270298-001	**Work Order #...:**	H8A3X1AA	**Matrix.....:**	SOLID
Date Sampled...:	06/16/06	**Date Received..:**	06/27/06		
Prep Date.....:	07/03/06	**Analysis Date..:**	07/12/06		
Prep Batch #...:	6184166	**Analysis Time..:**	20:47		
Dilution Factor:	1				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Perchlorate	**0.50 J**	**1.0**	**ug/kg**	**0.14**	J

NOTE(S):

J Estimated result. Result is less than RL.

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Trace Analysis Inc

Client Sample ID: 93242

HPLC

Lot-Sample #...: D6F270298-001 **Work Order #...:** H8A3X1AC **Matrix.....:** SOLID
Date Sampled...: 06/16/06 **Date Received..:** 06/27/06
Prep Date.....: 06/29/06 **Analysis Date..:** 07/07/06
Prep Batch #...: 6180636 **Analysis Time..:** 13:22
Dilution Factor: 1

Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	0.046
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	0.039
1,3-Dinitrobenzene	ND	0.25	mg/kg	0.061
2,4-Dinitrotoluene	ND	0.25	mg/kg	0.050
2,6-Dinitrotoluene	ND	0.25	mg/kg	0.054
HMX	ND	0.25	mg/kg	0.078
Nitrobenzene	ND	0.25	mg/kg	0.061
2-Nitrotoluene	ND	0.25	mg/kg	0.084
3-Nitrotoluene	ND	0.25	mg/kg	0.042
4-Nitrotoluene	ND	4.0	mg/kg	0.11
RDX	ND	0.25	mg/kg	0.085
Tetryl	ND	0.50	mg/kg	0.055
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	0.071
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	0.058

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dinitrobenzene	98	(83 - 122)

Validated EPA Level 3 (Verification), Quality by Design, January 15, 2007

Quality by Design

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EPA Level 3
DATA VALIDATION REPORT

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Soils and Water
Dates of Sampling: June 15-17, 2006

Prepared for

HydroGeoLogic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, Virginia 20170

SDG No. 6061925
Purchase Order No. P0000715
QBD Job No. 1296E

Reviewed and approved,

Thomas S. Davis, Principal — Date 2/6/07

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Attachments

Attachment 1 Data Qualifier Flag Definitions
Attachment 2 Summary Table of Data Qualifier Flags
Attachment 3 Reviewed/Revised Laboratory Forms

A. Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
%D	percent difference
%R	percent recovery
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
AA	atomic absorption
BFB	bromofluorobenzene
BNA	base/neutral/acid compounds
BS	blank spike
BSD	blank spike duplicate
CCB	continuing calibration blank
CCC	calibration check compound
CCS	continuing calibration standard
CCV	continuing calibration verification
CF	calibration factor
CLP	Contract Laboratory Program
COC	chain of custody record
CRA	contract required standard at the CRDL for graphite furnace AA method
CRDL	contract required detection limit
CRI	contract required standard at the CRDL for ICP method
CRQL	contract required quantitation limit
CV	coefficient of variation
CVAA	cold vapor atomic absorption
4,4'-DDD	4,4'-dechlorodiphenyldichloroethane
4,4'-DDE	4,4'-dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
DHG	dissolved hydrogen gas
DRO	diesel range organics
DQO	data quality objective
EB	equipment blank
EICP	extracted ion current profile
EPA	U.S. Environmental Protection Agency
ER	equipment rinsate
FB	field blank
GC/ECD	gas chromatography/electron capture detector

Acronym/ Abbreviation	Definition
GC/ELCD	gas chromatography/electrolytic conductivity detector (Hall detector)
GC/FID	gas chromatography/flame ionization detector
GC/PID	gas chromatography/photoionization detector
GC/MS	gas chromatography/mass spectrometry
GFAA	graphite furnace atomic absorption
GLP	good laboratory practices
GRO	gasoline range organics
GPC	gel permeation chromatography
HPLC	high-performance liquid chromatography
HRGC	high resolution gas chromatography
HRMS	high resolution mass spectrometry
ICB	initial calibration blank
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
IDL	instrument detection limit
IR	infrared spectroscopy
IS	internal standards
LCS	laboratory control standard
LCSD	laboratory control standard duplicate
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MS	matrix spike
MSA	method of standard addition
MSD	matrix spike duplicate
m/z	mass to charge ration
NIST	National Institute of Standards and Technology
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	performance evaluation
PEM	performance evaluation mixture
PPB	parts per billion
PPM	parts per million
PPT	parts per trillion
PNA	polynuclear aromatic hydrocarbon
PQL	practical quantitation limit
QA	quality assurance

Acronym/ Abbreviation	Definition
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RIC	reconstructed ion chromatograph
RPD	relative percent difference
RRF	relative response factor
RRT	relative retention time
RSD	relative standard deviation
RT	retention time
SDG	sample delivery group
SOP	standard operating procedure
SOW	statement of work
SVOC	semivolatile organic compound
SPCC	system performance check compound
SRM	standard reference material
TB	trip blank
TIC	tentatively identified compound
TPH	total petroleum hydrocarbons
TPH-G	total petroleum hydrocarbons - gasoline
TPH-D	total petroleum hydrocarbons - diesel
UV/VIS	ultraviolet/visible
VOA	volatile organic analysis

B. Introduction

Laboratory Sciences, Inc., d.b.a. *Quality by Design* (QBD), has completed an EPA Level 3 Data Validation on the submitted data packages in accordance with Purchase Order No. P0000715.

The reporting format and criteria for recommending data qualifying flags for this data set are described in the EPA *"Functional Guidelines for Evaluating Organics Analyses,"* as revised, 1999; *"Functional Guidelines for Evaluating Inorganics Analyses,"* as revised, 2004; the *Baseline Quality Assurance Project Plan, Holloman Air Force Base, New Mexico*, November, 2003; the *Quality Assurance Project Plan Addendum Supplemental RCRA Facility Investigation, Holloman Air Force Base, Alamogordo, New Mexico*, July 2005; or using criteria listed in the method referenced. Data may be qualified for any of the following reasons:

1. By the laboratory prior to receipt by the reviewer
2. Because of laboratory deviation from the designated method
3. Because the data may not meet the criteria listed in the reference above
4. By the professional judgment of the reviewer

This data validation report consists of several sections, each of which are formatted to follow *Functional Guidelines*, but which also include subsections discussing QBD contacts with the laboratory, other comments, and a summary table of data qualifiers.

The data set consists of three electronic data packages, consisting of a 71-page laboratory report for soils, a 58-page laboratory report for waters, and a 623-page supporting data package from TraceAnalysis, Inc. in Lubbock, Texas, and contains data for the samples shown in Table 1. The data reviewers and senior reviewers are shown in Table 2.

Each data set includes an analytical data package for each sample, copies of the completed COC forms, and a QC data package. The analytical data package includes analytical results, blank sample results, both laboratory and client sample identifications, appropriate dates but not times, method reporting limits, method references, surrogate recoveries as appropriate, the laboratory's name and address, and the initials of the person releasing the data. The custody forms include the receipt of the sample but not the laboratory's internal tracking. The QC data package includes a tabular list of the laboratory's sample identification, spiking concentrations, recoveries, percentage calculations, and acceptance windows.

All results were acceptable, although some received qualification. A discussion of the QC criteria and data usability is presented in this report. A listing of all qualified results with the final qualifier flag is presented in tabular form in Attachment 2.

Table 1. Sample Identification and Analysis

Sample Identification	Laboratory Identification	Matrix	Method 8260B	Method 8270C	Method 8015M-GRO	Method 8015M-DRO
HGL GW27-07	93200	Water	X	X	X	X
HGL GW27-008	93201	Water	X	X	X	X
HGL RBGW061506	93204	Water	X	X	X	X
HGL SB29-L6-0103	93205	Soil	X	X	X	X
HGL SB DUP08	93206	Soil	X	X	X	X
HGLTB061606	93221	Water	X			
HGLSB29-L4-0204	03239	Soil	X	X	X	X
HGLSB29-K3-1416	93242	Soil	X	X	X	X
HGLSB29-I5-1417	93243	Soil	X	X	X	X
HGLSB29-F7-2022	93244	Soil	X	X	X	X
HGLSB29-F4-1820	93245	Soil	X	X	X	X
HGLSB29-D6-2426	93246	Soil	X	X	X	X
HGLRBSB-061706	93247	Water	X	X	X	X
HGLLTB-061706	93248	Water	X		X	

Sample Identification	Laboratory Identification	Matrix	Methods 6010B/7470	Method 8330	Method 8321A	
HGL GW27-07	93200	Water	X	NR	NR	
HGL GW27-008	93201	Water	X	NR	NR	
HGL RBGW061506	93204	Water	X	NR	NR	
HGL SB29-L6-0103	93205	Soil	X	NR	NR	
HGL SB DUP08	93206	Soil	X	NR	NR	
HGLTB061606	93221	Water		NR	NR	
HGLSB29-L4-0204	03239	Soil	X	NR	NR	
HGLSB29-K3-1416	93242	Soil	X	NR	NR	
HGLSB29-I5-1417	93243	Soil	X	NR	NR	
HGLSB29-F7-2022	93244	Soil	X	NR	NR	
HGLSB29-F4-1820	93245	Soil	X	NR	NR	
HGLSB29-D6-2426	93246	Soil	X	NR	NR	
HGLRBSB-061706	93247	Water	X	NR		
HGLLTB-061706	93248	Water				

Key:

Method 8260B	=	Volatile organics by GC/MS
Method 8270C	=	Semivolatile organics by GC/MS (Aniline only)
Method 8015M-GRO	=	Total Petroleum Hydrocarbons-Gasoline Range Organics by GC
Method 8015M-DRO	=	Total Petroleum Hydrocarbons-Diesel Range Organics by GC
Methods 6010B/7470	=	Metals by ICP/CVAA
Method 8321A	=	Perchlorate by LCMS
Method 8330	=	Nitroaromatics and nitroamines by HPLC
NR	=	Not reported – Requested on COC, lab reported and QBD validated under separate cover

Table 2. Data Package, Reviewer, and Senior Reviewer

Analysis	SDG Number	Reviewer	Senior Reviewer
All	6071813	Lorraine Davis	Thomas Davis

C. Laboratory Report and Supporting Documentation

The laboratory report and supporting documentation were reviewed to determine that the data package supported the level of validation requested. The data package was checked for pagination, appropriate signatures and approvals, an adequate case narrative, and possible subcontracting. The supporting data was checked for completeness and to determine that the information necessary for validation was present. The laboratory documentation was acceptable.

D. Chain-of-Custody

The COC documentation associated with this SDG was reviewed to determine that all samples listed on the COC form were reported in the laboratory deliverables, that a date and time of sampling was provided, and that the sample custody trail was complete. Sample condition upon receipt was reviewed to determine that the samples were not compromised during shipping. All custody and shipping documentation was reviewed to determine if GLP were employed when errors occurred. All data reviewed were acceptable, except as noted below.

Discussion: The date and time relinquished and the date and time received by the laboratory do not match on the COC form. However, the shipping waybill was referenced and appropriate physical custody could be documented by obtaining shipping information from the courier service, so no data qualifier flags are recommended.

E. Review of Volatile Organic Analyses by GC/MS

EPA Method 8260B

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment, field, and trip blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit, except as noted below.

Discussion: Nineteen target analytes were detected in the method blank associated with the water samples in QC Batch No. 27581, two of which were common laboratory contaminants. Twenty-three target analytes were detected in the method blank associated with the soil samples in QC Batch No. 27546, two of which were common laboratory contaminants, and 22 analytes were detected in the soil method blank in QC Batch No. 27694, three of which were common laboratory contaminants. Ten target analytes were detected in the Trip Blank from June 16, 2006, and seven were detected in the Trip Blank from June 17, 2006.

The analytes that were not common laboratory contaminants were evaluated in the samples in accordance with this decision tree, with any data qualifier flags listed in Table 3.

- If the sample result was less than five times (5X) the blank concentration and less than the reporting limit, then the sample result has been raised to the reporting limit.

- If the sample result was less than 5X the blank concentration and greater than the reporting limit, then the reporting limit of the sample has been raised to the observed value.
- If the sample result was greater than 5X the blank concentration or the compounds were not detected, then no data qualifier flag is recommended.

Toluene and methylene chloride, which are common laboratory contaminants, were evaluated in accordance with the following decision tree, with any data qualifier flags also listed in Table 3.

- If the sample result was less than ten times (10X) the blank concentration and less than the reporting limit, then the sample result has been raised to the reporting limit.
- If the sample result was less than 10X the blank concentration and greater than the reporting limit, then the reporting limit of the sample has been raised to the observed value.
- If the sample result was greater than 10X the blank concentration or the compounds were not detected, then no data qualifier flag is recommended.

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL GW27-07	Benzene	Trip blank	TB=0.160	TB=ND	1.57	U
HGL GW27-07	Toluene	Method blank Trip blank	MB=0.180 TB=0.250	MB=ND TB=ND	1.14	U
HGL GW27-07	Chlorobenzene	Method blank	MB=0.040	MB=ND	1.00	U
HGL GW27-07	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.180	MB=ND TB=ND	1.00	U
HGL GW27-07	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.180	MB=ND TB=ND	1.00	U
HGL GW27-07	o-Xylene	Method blank Trip blank	MB=0.130 TB=0.0800	MB=ND TB=ND	1.00	U
HGL GW27-07	Isopropylbenzene	Method blank	MB=0.200	MB=ND	1.00	U
HGL GW27-07	n-Propylbenzene	Method blank Trip blank	MB=0.280 TB=0.0900	MB=ND TB=ND	1.00	U
HGL GW27-07	1,3,5-Trimethylbenzene	Method blank Trip blank	MB=0.240 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-07	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.100	MB=ND TB=ND	1.00	U
HGL GW27-07	sec-Butylbenzene	Method blank Trip blank	MB=0.100 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-07	n-Butylbenzene	Method blank	MB=0.330	MB=ND	1.00	U

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL GW27-07	Naphthalene	Method blank	MB=0.620	MB=ND	5.00	U
HGL GW27-008	Benzene	Trip blank	TB=0.160	TB=ND	1.00	U
HGL GW27-008	Toluene	Method blank Trip blank	MB=0.180 TB=0.250	MB=ND TB=ND	1.00	U
HGL GW27-008	Chlorobenzene	Method blank	MB=0.040	MB=ND	1.00	U
HGL GW27-008	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.180	MB=ND TB=ND	1.00	U
HGL GW27-008	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.180	MB=ND TB=ND	1.00	U
HGL GW27-008	o-Xylene	Method blank Trip blank	MB=0.130 TB=0.0800	MB=ND TB=ND	1.00	U
HGL GW27-008	Isopropylbenzene	Method blank	MB=0.200	MB=ND	1.00	U
HGL GW27-008	n-Propylbenzene	Method blank Trip blank	MB=0.280 TB=0.0900	MB=ND TB=ND	1.00	U
HGL GW27-008	1,3,5-Trimethylbenzene	Method blank Trip blank	MB=0.240 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-008	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.100	MB=ND TB=ND	1.00	U
HGL GW27-008	sec-Butylbenzene	Method blank Trip blank	MB=0.100 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-008	p-Isopropylbenzene	Method blank	MB=0.270	MB=ND	1.00	U
HGL RBGW061506	Methylene chloride	Trip blank	TB=0.980	TB=ND	5.00	U
HGL RBGW061506	Benzene	Trip blank	TB=0.160	TB=ND	1.00	U
HGL RBGW061506	Toluene	Method blank Trip blank	MB=0.180 TB=0.250	MB=ND TB=ND	1.00	U
HGL RBGW061506	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.180	MB=ND TB=ND	1.00	U
HGL RBGW061506	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.180	MB=ND TB=ND	1.00	U
HGL RBGW061506	Isopropylbenzene	Method blank	MB=0.200	MB=ND	1.00	U
HGL RBGW061506	n-Propylbenzene	Method blank Trip blank	MB=0.280 TB=0.0900	MB=ND TB=ND	1.00	U
HGL RBGW061506	1,3,5-Trimethylbenzene	Method blank Trip blank	MB=0.240 TB=0.0600	MB=ND TB=ND	1.00	U
HGL RBGW061506	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.100	MB=ND TB=ND	1.00	U

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL RBGW061506	sec-Butylbenzene	Method blank Trip blank	MB=0.100 TB=0.0600	MB=ND TB=ND	1.00	U
HGL RBGW061506	p-Isopropylbenzene	Method blank	MB=0.270	MB=ND	1.00	U
HGL RBGW061506	n-Butylbenzene	Method blank	MB=0.330	MB=ND	1.00	U
HGLRBSB-061706	Benzene	Trip blank	TB=0.0700	TB=ND	1.00	U
HGLRBSB-061706	Toluene	Method blank Trip blank	MB=0.180 TB=0.120	MB=ND TB=ND	1.00	U
HGLRBSB-061706	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.0600	MB=ND TB=ND	1.00	U
HGLRBSB-061706	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.0500	MB=ND TB=ND	1.00	U
HGLRBSB-061706	n-Propylbenzene	Method blank	MB=0.280	MB=ND	1.00	U
HGLRBSB-061706	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.0400	MB=ND TB=ND	1.00	U
HGLRBSB-061706	sec-Butylbenzene	Method blank	MB=0.100	MB=ND	1.00	U
HGLRBSB-061706	p-Isopropylbenzene	Method blank	MB=0.270	MB=ND	1.00	U
HGLRBSB-061706	n-Butylbenzene	Method blank	MB=0.330	MB=ND	1.00	U
HGL SB29-L6-0103	Methylene chloride	Method blank Trip blank	MB=10.7 TB=0.980	MB=ND TB=ND	50.0	U
HGL SB29-L6-0103	Toluene	Method blank Trip blank	MB=1.90 TB=0.250	MB=ND TB=ND	10.0	U
HGL SB29-L6-0103	Tetrachloroethene	Method blank	MB=2.35	MB=ND	10.0	U
HGL SB29-L6-0103	Ethylbenzene	Method blank Trip blank	MB=1.52 TB=0.180	MB=ND TB=ND	10.0	U
HGL SB29-L6-0103	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGL SB29-L6-0103	o-Xylene	Method blank	MB=1.83	MB=ND	10.0	U
HGL SB29-L6-0103	Isopropylbenzene	Method blank	MB=2.51	MB=ND	10.0	U
HGL SB29-L6-0103	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGL SB29-L6-0103	1,3,5-Trimethylbenzene	Method blank	MB=2.99	MB=ND	10.0	U
HGL SB29-L6-0103	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGL SB29-L6-0103	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGL SB29-L6-0103	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGL SB29-L6-0103	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGL SB29-L6-0103	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGL SB29-L6-0103	4-Chlorotoluene	Method blank	MB=2.13	MB=ND	10.0	U
HGL SB29-L6-0103	1,2-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL SB29-L6-0103	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGL SB29-L6-0103	1,2,3-Trichlorobenzene	Method blank	MB=19.6	MB=ND	50.0	U
HGL SB29-L6-0103	1,2,4-Trichlorobenzene	Method blank	MB=9.37	MB=ND	50.0	U
HGL SB29-L6-0103	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGL SB29-L6-0103	Hexachlorobutadiene	Method blank	MB=15.6	MB=ND	50.0	U
HGL SB DUP08	Methylene chloride	Method blank Trip blank	MB=10.7 TB=0.980	MB=ND TB=ND	50.0	U
HGL SB DUP08	Toluene	Method blank Trip blank	MB=1.90 TB=0.250	MB=ND TB=ND	10.0	U
HGL SB DUP08	Ethylbenzene	Method blank Trip blank	MB=1.52 TB=0.180	MB=ND TB=ND	10.0	U
HGL SB DUP08	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGL SB DUP08	o-Xylene	Method blank	MB=1.83	MB=ND	10.0	U
HGL SB DUP08	Isopropylbenzene	Method blank	MB=2.51	MB=ND	10.0	U
HGL SB DUP08	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGL SB DUP08	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGL SB DUP08	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGL SB DUP08	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGL SB DUP08	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGL SB DUP08	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGL SB DUP08	4-Chlorotoluene	Method blank	MB=2.13	MB=ND	10.0	U
HGL SB DUP08	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGL SB DUP08	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGL SB DUP08	Hexachlorobutadiene	Method blank	MB=15.6	MB=ND	50.0	U
HGLSB29-L4-0204	Methylene chloride	Method blank Trip blank	MB=10.7 TB=0.980	MB=ND TB=ND	50.0	U
HGLSB29-L4-0204	Toluene	Method blank Trip blank	MB=1.90 TB=0.250	MB=ND TB=ND	10.0	U
HGLSB29-L4-0204	Ethylbenzene	Method blank Trip blank	MB=1.52 TB=0.180	MB=ND TB=ND	10.0	U
HGLSB29-L4-0204	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-L4-0204	o-Xylene	Method blank	MB=1.83	MB=ND	10.0	U
HGLSB29-L4-0204	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-L4-0204	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-L4-0204	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-L4-0204	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-L4-0204	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-L4-0204	1,2-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-L4-0204	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-L4-0204	1,2,3-Trichlorobenzene	Method blank	MB=19.6	MB=ND	50.0	U
HGLSB29-L4-0204	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-K3-1416	Methylene chloride	Method blank Trip blank	MB=5.36 TB=0.980	MB=ND TB=ND	50.0	U
HGLSB29-K3-1416	Toluene	Method blank Trip blank	MB=1.75 TB=0.250	MB=ND TB=ND	10.0	U
HGLSB29-K3-1416	Ethylbenzene	Method blank Trip blank	MB=1.20 TB=0.180	MB=ND TB=ND	10.0	U
HGLSB29-K3-1416	m,p-Xylene	Method blank	MB=2.62	MB=ND	10.0	U
HGLSB29-K3-1416	o-Xylene	Method blank	MB=1.07	MB=ND	10.0	U
HGLSB29-K3-1416	n-Propylbenzene	Method blank	MB=2.08	MB=ND	10.0	U
HGLSB29-K3-1416	tert-Butylbenzene	Method blank	MB=1.63	MB=ND	10.0	U
HGLSB29-K3-1416	1,2,4-Trimethylbenzene	Method blank	MB=2.06	MB=ND	10.0	U
HGLSB29-K3-1416	sec-Butylbenzene	Method blank	MB=2.50	MB=ND	10.0	U
HGLSB29-K3-1416	1,3-Dichlorobenzene	Method blank	MB=2.26	MB=ND	10.0	U
HGLSB29-K3-1416	p-Isopropylbenzene	Method blank	MB=2.61	MB=ND	10.0	U
HGLSB29-K3-1416	4-Chlorotoluene	Method blank	MB=1.49	MB=ND	10.0	U
HGLSB29-K3-1416	1,2-Dichlorobenzene	Method blank	MB=2.23	MB=ND	10.0	U
HGLSB29-K3-1416	n-Butylbenzene	Method blank	MB=3.38	MB=ND	10.0	U
HGLSB29-K3-1416	1,2,4-Trichlorobenzene	Method blank	MB=7.30	MB=ND	50.0	U
HGLSB29-K3-1416	Naphthalene	Method blank	MB=13.7	MB=ND	50.0	U
HGLSB29-K3-1416	Hexachlorobutadiene	Method blank	MB=15.1	MB=ND	50.0	U
HGLSB29-I5-1417	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-I5-1417	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLSB29-I5-1417	Ethylbenzene	Method blank	MB=1.52	MB=ND	10.0	U
HGLSB29-I5-1417	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-I5-1417	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-I5-1417	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-I5-1417	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-I5-1417	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-I5-1417	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-I5-1417	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-I5-1417	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-I5-1417	1,2,3-Trichlorobenzene	Method blank	MB=19.6	MB=ND	50.0	U
HGLSB29-I5-1417	1,2,4-Trichlorobenzene	Method blank	MB=9.37	MB=ND	50.0	U
HGLSB29-I5-1417	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-I5-1417	Hexachlorobutadiene	Method blank	MB=23.4	MB=ND	50.0	U
HGLSB29-F7-2022	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-F7-2022	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLSB29-F7-2022	Ethylbenzene	Method blank	MB=1.52	MB=ND	10.0	U
HGLSB29-F7-2022	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-F7-2022	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-F7-2022	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-F7-2022	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-F7-2022	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-F7-2022	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-F7-2022	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-F7-2022	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-F7-2022	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-F4-1820	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-F4-1820	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLSB29-F4-1820	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-F4-1820	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-F4-1820	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-F4-1820	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-F4-1820	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-F4-1820	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-F4-1820	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-F4-1820	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-F4-1820	Hexachlorobutadiene	Method blank	MB=23.4	MB=ND	50.0	U
HGLSB29-D6-2426	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-D6-2426	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLSB29-D6-2426	Ethylbenzene	Method blank	MB=1.52	MB=ND	10.0	U
HGLSB29-D6-2426	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-D6-2426	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U

Table 3. VOC Data Qualifiers Due to Blank Contamination

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-D6-2426	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-D6-2426	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-D6-2426	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-D6-2426	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-D6-2426	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-D6-2426	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 4, these results have been flagged "J" to indicate an estimated value.

Table 4. VOC Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL GW27-07	Trichloroethene	Value < RL	Value=0.220	RL=1.00	0.220	J
HGL GW27-008	Trichloroethene	Value < RL	Value=0.170	RL=1.00	0.170	J
HGLRBSB-061706	Chloroform	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLTB061606	Methylene chloride	Value < RL	Value=0.980	RL=5.00	0.980	J
HGLTB061606	Benzene	Value < RL	Value=0.160	RL=1.00	0.160	J
HGLTB061606	Toluene	Value < RL	Value=0.250	RL=1.00	0.250	J
HGLTB061606	Ethylbenzene	Value < RL	Value=0.180	RL=1.00	0.180	J
HGLTB061606	m,p-Xylene	Value < RL	Value=0.180	RL=1.00	0.180	J
HGLTB061606	o-Xylene	Value < RL	Value=0.0800	RL=1.00	0.0800	J
HGLTB061606	n-Propylbenzene	Value < RL	Value=0.0900	RL=1.00	0.0900	J
HGLTB061606	1,3,5-Trimethylbenzene	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLTB061606	1,2,4-Trimethylbenzene	Value < RL	Value=0.100	RL=1.00	0.100	J
HGLTB061606	sec-Butylbenzene	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLLTB-061706	Methylene chloride	Value < RL	Value=1.09	RL=5.00	1.09	J
HGLLTB-061706	Benzene	Value < RL	Value=0.0700	RL=1.00	0. 0700	J
HGLLTB-061706	Toluene	Value < RL	Value=0.120	RL=1.00	0. 120	J
HGLLTB-061706	Ethylbenzene	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLLTB-061706	m,p-Xylene	Value < RL	Value=0.0500	RL=1.00	0.0500	J
HGLLTB-061706	1,2,4-Trimethylbenzene	Value < RL	Value=0.0400	RL=1.00	0.0400	J
HGL SB29-L6-0103	Carbon disulfide	Value < RL	Value=0.520	RL=10.0	0.520	J
HGLSB29-I5-1417	Carbon disulfide	Value < RL	Value=0.440	RL=10.0	0.440	J
HGLSB29-F4-1820	1,4-Dichlorobenzene	Value < RL	Value=0.550	RL=10.0	0.550	J
HGLSB29-D6-2426	Carbon disulfide	Value < RL	Value=0.370	RL=10.0	0.370	J
HGLSB29-D6-2426	1,4-Dichlorobenzene	Value < RL	Value=0.640	RL=10.0	0.640	J

8. Field Duplicates

Field duplicates were collected and analyzed. Sample HGL SB DUP08 is a duplicate of Sample HGL SB29-L6-0103. Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 5, were reported as not detected.

Table 5. VOC Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGL SB29-L6-0103	HGL SB DUP08	
Carbon disulfide	0.520	All ND	NC

Key: ND = Not detected
NC = Not calculable

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

F. Review of Semivolatile Organic Analyses by GC/MS

EPA Method 8270C

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 6, these results have been flagged "J" to indicate an estimated value.

Table 6. SVOC Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL SB DUP08	Diethylphthalate	Value < RL	Value=0.236	RL=0.250	0.236	J

8. Field Duplicates

Field duplicates were collected and analyzed. Sample HGL SB DUP08 is a duplicate of Sample HGL SB29-L6-0103. Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 7, were reported as not detected.

Table 7. SVOC Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGL SB29-L6-0103	HGL SB DUP08	
Diethylphthalate	0.256	0.236	8.1

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

G. Review of TPH-GRO Analyses by GC

EPA Method 8015B-Modified

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit, except as noted below.

Discussion: Gasoline range organics were detected in all of the method blanks associated with all samples. Because the samples were all reported as not detected, no data qualifier flags are recommended.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable.

8. Field Duplicates

Field duplicates were collected and analyzed. Sample HGL SB DUP08 is a duplicate of Sample HGL SB29-L6-0103. All test results were reported as not detected.

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data are acceptable for use. The analyses were generally within the requirements of the referenced method.

H. Review of TPH-DRO Analyses by GC

EPA Method 8015B Modified

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have

been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 8, these results have been flagged "J" to indicate an estimated value.

Table 8. TPH-DRO Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL SB29-L6-0103	Diesel Range Organics	Value < RL	Value=21.9	RL=50.0	21.9	J
HGL SB DUP08	Diesel Range Organics	Value < RL	Value=11.7	RL=50.0	11.7	J

8. Field Duplicates

Field duplicates were collected and analyzed. Sample HGL SB DUP08 is a duplicate of Sample HGL SB29-L6-0103. Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 9, were reported as not detected.

Table 9. TPH-DRO Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGL SB29-L6-0103	HGL SB DUP08	
Diesel Range Organics	21.9	11.7	60.7

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

I. Review of Metals Analyses by ICP and AA

EPA Methods 1311/6000/7471

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that the proper number of standards were used and the correlation coefficient criteria was met All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable, except as noted in Table 10.

Table 10. Metals Data Qualifiers Due to MS/MSD Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL GW27-008	Cadmium	MS/MSD	%R=72, 74	%R=83.3-108	0.000595	UJ
HGL GW27-008	Lead	MS/MSD	%R=67, 65	%R=81.2-105	0.00180	UJ

Discussion: The recoveries for lead and cadmium were out of criteria at 72 and 74 percent for cadmium and 67 and 65 percent for lead in the MS/MSD pair for water samples associated with QC Batch No. 27629. Since the recoveries for the LCS/LCSD were acceptable, only the results for these analytes in the sample spiked, HGL GW27-008, have been flagged "UJ" to indicate an estimated reporting limit.

A single MS for water samples for silver was out of criteria at 126 percent. Since all other accuracy measurements (e.g., the other matrix spike, the LCS, and the calibration verifications) were acceptable, no data qualifier flags are recommended.

5. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

6. Sample Duplicates

Sample duplicates were analyzed as required by the referenced method and all RPDs were within acceptable criteria.

7. Cold Vapor Atomic Absorption Special Requirements

All special criteria for GFAA analysis were performed at a frequency required by the referenced method and were within acceptable criteria.

8. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and digestion procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. As listed in Table 11, these results have been flagged "J" to indicate an estimated value.

Table 11. Metals Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL GW27-07	Selenium	Value < RL	Value=0.0070	RL=0.0100	0.0070	J
HGL RBGW061506	Barium	Value < RL	Value=0.0040	RL=0.0100	0.0040	J
HGLRBSB-061706	Barium	Value < RL	Value=0.0050	RL=0.0100	0.0050	J
HGL SB DUP08	Chromium	Value < RL	Value=0.683	RL=1.00	0.683	J
HGLSB29-L4-0204	Cadmium	Value < RL	Value=0.384	RL=0.500	0.384	J
HGLSB29-L4-0204	Mercury	Value < RL	Value=0.0056	RL=0.040	0.0056	J
HGLSB29-I5-1417	Mercury	Value < RL	Value=0.0063	RL=0.040	0.0063	J

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-F4-1820	Cadmium	Value < RL	Value=0.238	RL=0.500	0.238	J
HGLSB29-D6-2426	Mercury	Value < RL	Value=0.0075	RL=0.0400	0.0075	J

9. Field Duplicates

Field duplicates were collected and analyzed. Sample HGL SB DUP08 is a duplicate of Sample HGL SB29-L6-0103. Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 12, were reported as not detected.

Table 12. Metals Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	HGL SB29-L6-0103	HGL SB DUP08	
Silver	1.38	1.33	3.7
Barium	24.1	19.0	23.7
Chromium	1.18	0.683	53.4
Mercury	0.0407	ND	NC

Key: ND = Not detected
NC = Not calculable

10. Laboratory Contact

There was no verbal or written communication with the laboratory.

11. Other Comments

None.

12. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

Attachment 1 Data Qualifier Flag Definitions

Organics

U = The analyte was analyzed for but not detected above the numerical quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

N = The analysis indicates presumptive evidence of the presence of the analyte.

NJ = The analysis indicates presumptive evidence of the presence of the analyte, but the numerical value is an estimated quantity.

Inorganics

U = The analyte was analyzed for but not detected above the numerical quantitation limit. The numerical value may be either a detection limit or a quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

Attachment 2 Summary Table of Data Qualifier Flags

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Soils and Water
Dates of Sampling: June 15-17, 2006

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
VOC Data Qualifiers						
HGL GW27-07	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.100	MB=ND TB=ND	1.00	U
HGL GW27-07	1,3,5-Trimethylbenzene	Method blank Trip blank	MB=0.240 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-07	Benzene	Trip blank	TB=0.160	TB=ND	1.57	U
HGL GW27-07	Chlorobenzene	Method blank	MB=0.040	MB=ND	1.00	U
HGL GW27-07	Ethylbenzene	Method blank Trip blank	MB=0.140 TB–0.180	MB=ND TB–ND	1.00	U
HGL GW27-07	Isopropylbenzene	Method blank	MB=0.200	MB=ND	1.00	U
HGL GW27-07	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.180	MB=ND TB=ND	1.00	U
HGL GW27-07	Naphthalene	Method blank	MB=0.620	MB=ND	5.00	U
HGL GW27-07	n-Butylbenzene	Method blank	MB=0.330	MB=ND	1.00	U
HGL GW27-07	n-Propylbenzene	Method blank Trip blank	MB=0.280 TB=0.0900	MB=ND TB=ND	1.00	U
HGL GW27-07	o-Xylene	Method blank Trip blank	MB=0.130 TB=0.0800	MB=ND TB=ND	1.00	U
HGL GW27-07	sec-Butylbenzene	Method blank Trip blank	MB=0.100 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-07	Toluene	Method blank Trip blank	MB=0.180 TB=0.250	MB=ND TB=ND	1.14	U
HGL GW27-07	Trichloroethene	Value < RL	Value=0.220	RL=1.00	0.220	J
HGL GW27-008	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.100	MB=ND TB=ND	1.00	U
HGL GW27-008	1,3,5-Trimethylbenzene	Method blank Trip blank	MB=0.240 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-008	Benzene	Trip blank	TB=0.160	TB=ND	1.00	U
HGL GW27-008	Chlorobenzene	Method blank	MB=0.040	MB=ND	1.00	U
HGL GW27-008	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.180	MB=ND TB=ND	1.00	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL GW27-008	Isopropylbenzene	Method blank	MB=0.200	MB=ND	1.00	U
HGL GW27-008	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.180	MB=ND TB=ND	1.00	U
HGL GW27-008	n-Propylbenzene	Method blank Trip blank	MB=0.280 TB=0.0900	MB=ND TB=ND	1.00	U
HGL GW27-008	o-Xylene	Method blank Trip blank	MB=0.130 TB=0.0800	MB=ND TB=ND	1.00	U
HGL GW27-008	p-Isopropylbenzene	Method blank	MB=0.270	MB=ND	1.00	U
HGL GW27-008	sec-Butylbenzene	Method blank Trip blank	MB=0.100 TB=0.0600	MB=ND TB=ND	1.00	U
HGL GW27-008	Toluene	Method blank Trip blank	MB=0.180 TB=0.250	MB=ND TB=ND	1.00	U
HGL GW27-008	Trichloroethene	Value < RL	Value=0.170	RL=1.00	0.170	J
HGL RBGW061506	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.100	MB=ND TB=ND	1.00	U
HGL RBGW061506	1,3,5-Trimethylbenzene	Method blank Trip blank	MB=0.240 TB=0.0600	MB=ND TB=ND	1.00	U
HGL RBGW061506	Benzene	Trip blank	TB=0.160	TB=ND	1.00	U
HGL RBGW061506	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.180	MB=ND TB=ND	1.00	U
HGL RBGW061506	Isopropylbenzene	Method blank	MB=0.200	MB=ND	1.00	U
HGL RBGW061506	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.180	MB=ND TB=ND	1.00	U
HGL RBGW061506	Methylene chloride	Trip blank	TB=0.980	TB=ND	5.00	U
HGL RBGW061506	n-Butylbenzene	Method blank	MB=0.330	MB=ND	1.00	U
HGL RBGW061506	n-Propylbenzene	Method blank Trip blank	MB=0.280 TB=0.0900	MB=ND TB=ND	1.00	U
HGL RBGW061506	p-Isopropylbenzene	Method blank	MB=0.270	MB=ND	1.00	U
HGL RBGW061506	sec-Butylbenzene	Method blank Trip blank	MB=0.100 TB=0.0600	MB=ND TB=ND	1.00	U
HGL RBGW061506	Toluene	Method blank Trip blank	MB=0.180 TB=0.250	MB=ND TB=ND	1.00	U
HGL SB29-L6-0103	1,2,3-Trichlorobenzene	Method blank	MB=19.6	MB=ND	50.0	U
HGL SB29-L6-0103	1,2,4-Trichlorobenzene	Method blank	MB=9.37	MB=ND	50.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL SB29-L6-0103	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGL SB29-L6-0103	1,2-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGL SB29-L6-0103	1,3,5-Trimethylbenzene	Method blank	MB=2.99	MB=ND	10.0	U
HGL SB29-L6-0103	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGL SB29-L6-0103	4-Chlorotoluene	Method blank	MB=2.13	MB=ND	10.0	U
HGL SB29-L6-0103	Carbon disulfide	Value < RL	Value=0.520	RL=10.0	0.520	J
HGL SB29-L6-0103	Ethylbenzene	Method blank Trip blank	MB=1.52 TB=0.180	MB=ND TB=ND	10.0	U
HGL SB29-L6-0103	Hexachlorobutadiene	Method blank	MB=15.6	MB=ND	50.0	U
HGL SB29-L6-0103	Isopropylbenzene	Method blank	MB=2.51	MB=ND	10.0	U
HGL SB29-L6-0103	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGL SB29-L6-0103	Methylene chloride	Method blank Trip blank	MB=10.7 TB=0.980	MB=ND TB=ND	50.0	U
HGL SB29-L6-0103	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGL SB29-L6-0103	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGL SB29-L6-0103	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGL SB29-L6-0103	o-Xylene	Method blank	MB=1.83	MB=ND	10.0	U
HGL SB29-L6-0103	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGL SB29-L6-0103	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGL SB29-L6-0103	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGL SB29-L6-0103	Tetrachloroethene	Method blank	MB=2.35	MB=ND	10.0	U
HGL SB29-L6-0103	Toluene	Method blank Trip blank	MB=1.90 TB=0.250	MB=ND TB=ND	10.0	U
HGL SB DUP08	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGL SB DUP08	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGL SB DUP08	4-Chlorotoluene	Method blank	MB=2.13	MB=ND	10.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGL SB DUP08	Ethylbenzene	Method blank Trip blank	MB=1.52 TB=0.180	MB=ND TB=ND	10.0	U
HGL SB DUP08	Hexachlorobutadiene	Method blank	MB=15.6	MB=ND	50.0	U
HGL SB DUP08	Isopropylbenzene	Method blank	MB=2.51	MB=ND	10.0	U
HGL SB DUP08	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGL SB DUP08	Methylene chloride	Method blank Trip blank	MB=10.7 TB=0.980	MB=ND TB=ND	50.0	U
HGL SB DUP08	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGL SB DUP08	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGL SB DUP08	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGL SB DUP08	o-Xylene	Method blank	MB=1.83	MB=ND	10.0	U
HGL SB DUP08	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGL SB DUP08	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGL SB DUP08	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGL SB DUP08	Toluene	Method blank Trip blank	MB=1.90 TB=0.250	MB=ND TB=ND	10.0	U
HGLTB061606	1,2,4-Trimethylbenzene	Value < RL	Value=0.100	RL=1.00	0.100	J
HGLTB061606	1,3,5-Trimethylbenzene	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLTB061606	Benzene	Value < RL	Value=0.160	RL=1.00	0.160	J
HGLTB061606	Ethylbenzene	Value < RL	Value=0.180	RL=1.00	0.180	J
HGLTB061606	m,p-Xylene	Value < RL	Value=0.180	RL=1.00	0.180	J
HGLTB061606	Methylene chloride	Value < RL	Value=0.980	RL=5.00	0.980	J
HGLTB061606	n-Propylbenzene	Value < RL	Value=0.0900	RL=1.00	0.0900	J
HGLTB061606	o-Xylene	Value < RL	Value=0.0800	RL=1.00	0.0800	J
HGLTB061606	sec-Butylbenzene	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLTB061606	Toluene	Value < RL	Value=0.250	RL=1.00	0.250	J
HGLSB29-L4-0204	1,2,3-Trichlorobenzene	Method blank	MB=19.6	MB=ND	50.0	U
HGLSB29-L4-0204	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-L4-0204	1,2-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-L4-0204	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-L4-0204	Ethylbenzene	Method blank Trip blank	MB=1.52 TB=0.180	MB=ND TB=ND	10.0	U
HGLSB29-L4-0204	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-L4-0204	Methylene chloride	Method blank Trip blank	MB=10.7 TB=0.980	MB=ND TB=ND	50.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-L4-0204	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-L4-0204	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-L4-0204	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-L4-0204	o-Xylene	Method blank	MB=1.83	MB=ND	10.0	U
HGLSB29-L4-0204	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-L4-0204	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-L4-0204	Toluene	Method blank Trip blank	MB=1.90 TB=0.250	MB=ND TB=ND	10.0	U
HGLSB29-K3-1416	1,2,4-Trichlorobenzene	Method blank	MB=7.30	MB=ND	50.0	U
HGLSB29-K3-1416	1,2,4-Trimethylbenzene	Method blank	MB=2.06	MB=ND	10.0	U
HGLSB29-K3-1416	1,2-Dichlorobenzene	Method blank	MB=2.23	MB=ND	10.0	U
HGLSB29-K3-1416	1,3-Dichlorobenzene	Method blank	MB=2.26	MB=ND	10.0	U
HGLSB29-K3-1416	4-Chlorotoluene	Method blank	MB=1.49	MB=ND	10.0	U
HGLSB29-K3-1416	Ethylbenzene	Method blank Trip blank	MB=1.20 TB=0.180	MB=ND TB=ND	10.0	U
HGLSB29-K3-1416	Hexachlorobutadiene	Method blank	MB=15.1	MB=ND	50.0	U
HGLSB29-K3-1416	m,p-Xylene	Method blank	MB=2.62	MB=ND	10.0	U
HGLSB29-K3-1416	Methylene chloride	Method blank Trip blank	MB=5.36 TB=0.980	MB=ND TB=ND	50.0	U
HGLSB29-K3-1416	Naphthalene	Method blank	MB=13.7	MB=ND	50.0	U
HGLSB29-K3-1416	n-Butylbenzene	Method blank	MB=3.38	MB=ND	10.0	U
HGLSB29-K3-1416	n-Propylbenzene	Method blank	MB=2.08	MB=ND	10.0	U
HGLSB29-K3-1416	o-Xylene	Method blank	MB=1.07	MB=ND	10.0	U
HGLSB29-K3-1416	p-Isopropylbenzene	Method blank	MB=2.61	MB=ND	10.0	U
HGLSB29-K3-1416	sec-Butylbenzene	Method blank	MB=2.50	MB=ND	10.0	U
HGLSB29-K3-1416	tert-Butylbenzene	Method blank	MB=1.63	MB=ND	10.0	U
HGLSB29-K3-1416	Toluene	Method blank Trip blank	MB=1.75 TB=0.250	MB=ND TB=ND	10.0	U
HGLSB29-I5-1417	1,2,3-Trichlorobenzene	Method blank	MB=19.6	MB=ND	50.0	U
HGLSB29-I5-1417	1,2,4-Trichlorobenzene	Method blank	MB=9.37	MB=ND	50.0	U
HGLSB29-I5-1417	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-I5-1417	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-I5-1417	Carbon disulfide	Value < RL	Value=0.440	RL=10.0	0.440	J
HGLSB29-I5-1417	Ethylbenzene	Method blank	MB=1.52	MB=ND	10.0	U
HGLSB29-I5-1417	Hexachlorobutadiene	Method blank	MB=23.4	MB=ND	50.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-I5-1417	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-I5-1417	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-I5-1417	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-I5-1417	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-I5-1417	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-I5-1417	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-I5-1417	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-I5-1417	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-I5-1417	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLSB29-F7-2022	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-F7-2022	1,3-Dichlorobenzene	Method blank	MB=2.57	MB=ND	10.0	U
HGLSB29-F7-2022	Ethylbenzene	Method blank	MB=1.52	MB=ND	10.0	U
HGLSB29-F7-2022	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-F7-2022	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-F7-2022	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-F7-2022	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-F7-2022	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-F7-2022	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-F7-2022	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-F7-2022	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-F7-2022	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLSB29-F4-1820	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-F4-1820	1,4-Dichlorobenzene	Value < RL	Value=0.550	RL=10.0	0.550	J
HGLSB29-F4-1820	Hexachlorobutadiene	Method blank	MB=23.4	MB=ND	50.0	U
HGLSB29-F4-1820	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-F4-1820	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-F4-1820	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-F4-1820	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-F4-1820	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-F4-1820	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-F4-1820	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-F4-1820	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-F4-1820	Toluene	Method blank	MB=1.90	MB=ND	10.0	U

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
HGLSB29-D6-2426	1,2,4-Trimethylbenzene	Method blank	MB=3.43	MB=ND	10.0	U
HGLSB29-D6-2426	1,4-Dichlorobenzene	Value < RL	Value=0.640	RL=10.0	0.640	J
HGLSB29-D6-2426	Carbon disulfide	Value < RL	Value=0.370	RL=10.0	0.370	J
HGLSB29-D6-2426	Ethylbenzene	Method blank	MB=1.52	MB=ND	10.0	U
HGLSB29-D6-2426	m,p-Xylene	Method blank	MB=3.56	MB=ND	10.0	U
HGLSB29-D6-2426	Methylene chloride	Method blank Trip blank	MB=10.7 TB=1.09	MB=ND TB=ND	50.0	U
HGLSB29-D6-2426	Naphthalene	Method blank	MB=19.5	MB=ND	50.0	U
HGLSB29-D6-2426	n-Butylbenzene	Method blank	MB=5.77	MB=ND	10.0	U
HGLSB29-D6-2426	n-Propylbenzene	Method blank	MB=3.05	MB=ND	10.0	U
HGLSB29-D6-2426	p-Isopropylbenzene	Method blank	MB=3.83	MB=ND	10.0	U
HGLSB29-D6-2426	sec-Butylbenzene	Method blank	MB=3.94	MB=ND	10.0	U
HGLSB29-D6-2426	tert-Butylbenzene	Method blank	MB=3.20	MB=ND	10.0	U
HGLSB29-D6-2426	Toluene	Method blank	MB=1.90	MB=ND	10.0	U
HGLRBSB-061706	1,2,4-Trimethylbenzene	Method blank Trip blank	MB=0.260 TB=0.0400	MB=ND TB=ND	1.00	U
HGLRBSB-061706	Benzene	Trip blank	TB=0.0700	TB=ND	1.00	U
HGLRBSB-061706	Chloroform	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLRBSB-061706	Ethylbenzene	Method blank Trip blank	MB=0.140 TB=0.0600	MB=ND TB=ND	1.00	U
HGLRBSB-061706	m,p-Xylene	Method blank Trip blank	MB=0.310 TB=0.0500	MB=ND TB=ND	1.00	U
HGLRBSB-061706	n-Butylbenzene	Method blank	MB=0.330	MB=ND	1.00	U
HGLRBSB-061706	n-Propylbenzene	Method blank	MB=0.280	MB=ND	1.00	U
HGLRBSB-061706	p-Isopropylbenzene	Method blank	MB=0.270	MB=ND	1.00	U
HGLRBSB-061706	sec-Butylbenzene	Method blank	MB=0.100	MB=ND	1.00	U
HGLRBSB-061706	Toluene	Method blank Trip blank	MB=0.180 TB=0.120	MB=ND TB=ND	1.00	U
HGLLTB-061706	1,2,4-Trimethylbenzene	Value < RL	Value=0.0400	RL=1.00	0.0400	J
HGLLTB-061706	Benzene	Value < RL	Value=0.0700	RL=1.00	0. 0700	J
HGLLTB-061706	Ethylbenzene	Value < RL	Value=0.0600	RL=1.00	0.0600	J
HGLLTB-061706	m,p-Xylene	Value < RL	Value=0.0500	RL=1.00	0.0500	J
HGLLTB-061706	Methylene chloride	Value < RL	Value=1.09	RL=5.00	1.09	J
HGLLTB-061706	Toluene	Value < RL	Value=0.120	RL=1.00	0. 120	J
SVOC Data Qualifiers						
HGL SB DUP08	Diethylphthalate	Value < RL	Value=0.236	RL=0.250	0.236	J

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
TPH-GRO Data Qualifiers						
	None					
TPH-DRO Data Qualifiers						
HGL SB29-L6-0103	Diesel Range Organics	Value < RL	Value=21.9	RL=50.0	21.9	J
HGL SB DUP08	Diesel Range Organics	Value < RL	Value=11.7	RL=50.0	11.7	J
Metals Data Qualifiers						
HGL GW27-07	Selenium	Value < RL	Value=0.0070	RL=0.0100	0.0070	J
HGL GW27-008	Cadmium	MS/MSD	%R=72, 74	%R=83.3-108	0.000595	UJ
HGL GW27-008	Lead	MS/MSD	%R=67, 65	%R=81.2-105	0.00180	UJ
HGL RBGW061506	Barium	Value < RL	Value=0.0040	RL=0.0100	0.0040	J
HGL SB DUP08	Chromium	Value < RL	Value=0.683	RL=1.00	0.683	J
HGLSB29-L4-0204	Cadmium	Value < RL	Value=0.384	RL=0.500	0.384	J
HGLSB29-L4-0204	Mercury	Value < RL	Value=0.0056	RL=0.040	0.0056	J
HGLSB29-I5-1417	Mercury	Value < RL	Value=0.0063	RL=0.040	0.0063	J
HGLSB29-F4-1820	Cadmium	Value < RL	Value=0.238	RL=0.500	0.238	J
HGLSB29-D6-2426	Mercury	Value < RL	Value=0.0075	RL=0.0400	0.0075	J
HGLRBSB-061706	Barium	Value < RL	Value=0.0050	RL=0.0100	0.0050	J

Attachment 3 Reviewed/Revised Laboratory Forms

Analytical Report

Sample: 93205 - GHL SB29-L6-010

Analysis: Semivolatiles
QC Batch: 27765
Prep Batch: 24220

Analytical Method: S 8270C
Date Analyzed: 2006-06-29
Sample Preparation: 2006-06-23

Prep Method: S 3550
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531

continued ...

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sample 93205 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate		**0.256**	**0.256**	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.10	mg/Kg	1	2.67	41	10 - 98.8
Phenol-d5		1.30	mg/Kg	1	2.67	49	10 - 105
Nitrobenzene-d5		1.21	mg/Kg	1	2.67	45	10 - 114
2-Fluorobiphenyl		1.51	mg/Kg	1	2.67	56	10 - 122
2,4,6-Tribromophenol		1.81	mg/Kg	1	2.67	68	10 - 117
Terphenyl-d14		1.42	mg/Kg	1	2.67	53	10 - 116

Sample: 93205 - GHL SB29-L6-010

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27975	Date Analyzed:	2006-06-22	Analyzed By:	RR
Prep Batch:	24099	Sample Preparation:	2006-06-20	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**1.38**	**1.38**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**24.1**	**24.1**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**1.18**	**1.18**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury		**0.0407**	**0.0407**	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead	U	<0.650	<1.00	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93205 - GHL SB29-L6-010

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	27441	Date Analyzed:	2006-06-19	Analyzed By:	JL
Prep Batch:	24066	Sample Preparation:	2006-06-19	Prepared By:	SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	J	**21.9**	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		172	mg/Kg	1	150	115	50 - 150

Sample: 93205 - GHL SB29-L6-010

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	27447	Date Analyzed:	2006-06-19	Analyzed By:	KB
Prep Batch:	24069	Sample Preparation:	2006-06-19	Prepared By:	KB

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.959	mg/Kg	10	0.100	96	68 - 129.6
4-Bromofluorobenzene (4-BFB)		1.09	mg/Kg	10	0.100	109	71.9 - 123.7

Sample: 93205 - GHL SB29-L6-010

Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	J	**0.520**	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	J
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~9.71~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	50 U
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.82~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10.0 U

continued . . .

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sample 93205 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	JB	~~1.59~~	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	10 U
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	JB	~~1.05~~	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	10 U
m,p-Xylene	JB	~~2.31~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	
o-Xylene	JB	~~1.35~~	<10.0	1.83	µg/Kg	10	0.679	1	0.0679	10 U
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703	
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126	
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504	
Isopropylbenzene	JB	~~1.85~~	<10.0	2.51	µg/Kg	10	1.30	1	0.13	10 U
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048	
n-Propylbenzene	JB	~~2.55~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421	10 U
1,3,5-Trimethylbenzene	JB	~~2.66~~	<10.0	2.99	µg/Kg	10	2.10	1	0.21	
tert-Butylbenzene	JB	~~2.46~~	<10.0	3.20	µg/Kg	10	0.410	1	0.041	
1,2,4-Trimethylbenzene	JB	~~2.93~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535	
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387	
sec-Butylbenzene	JB	~~3.39~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632	10 U
1,3-Dichlorobenzene (meta)	JB	~~1.93~~	<10.0	2.57	µg/Kg	10	0.534	1	0.0534	
p-Isopropyltoluene	JB	~~3.60~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679	
4-Chlorotoluene	JB	~~1.44~~	<10.0	2.13	µg/Kg	10	0.675	1	0.0675	
1,2-Dichlorobenzene (ortho)	JB	~~1.46~~	<10.0	2.57	µg/Kg	10	0.475	1	0.0475	
n-Butylbenzene	JB	~~4.86~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979	
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915	
1,2,3-Trichlorobenzene	JB	~~9.72~~	<50.0	19.6	µg/Kg	10	3.64	5	0.364	10 U
1,2,4-Trichlorobenzene	JB	~~5.45~~	<50.0	9.37	µg/Kg	10	2.28	5	0.228	
Naphthalene	JB	~~11.4~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441	
Hexachlorobutadiene	JB	~~15.6~~	<50.0	23.4	µg/Kg	10	3.24	5	0.324	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		469	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		500	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		492	µg/Kg	10	50.0	98	78 - 120

Sample: 93206 - HGL SB DUP08

Analysis: Semivolatiles
QC Batch: 27765
Prep Batch: 24220

Analytical Method: S 8270C
Date Analyzed: 2006-06-29
Sample Preparation: 2006-06-23

Prep Method: S 3550
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517

continued ...

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sample 93206 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431

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Sample: 93206 - HGL SB DUP08

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27975	Date Analyzed:	2006-06-22	Analyzed By:	RR
Prep Batch:	24099	Sample Preparation:	2006-06-20	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**1.33**	**1.33**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**19.0**	**19.0**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium	J	**0.683**	<1.00	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	U	<0.00299	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead	U	<0.650	<1.00	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93206 - HGL SB DUP08

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	27441	Date Analyzed:	2006-06-19	Analyzed By:	JL
Prep Batch:	24066	Sample Preparation:	2006-06-19	Prepared By:	SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	J	**11.7**	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		150	mg/Kg	1	150	100	50 - 150

Sample: 93206 - HGL SB DUP08

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	27447	Date Analyzed:	2006-06-19	Analyzed By:	KB
Prep Batch:	24069	Sample Preparation:	2006-06-19	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.06	mg/Kg	10	0.100	106	68 - 129.6
4-Bromofluorobenzene (4-BFB)		1.20	mg/Kg	10	0.100	120	71.9 - 123.7

Sample: 93206 - HGL SB DUP08

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Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	U	<0.346	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	~~JB~~	~~10.5~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	50 U
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	~~JB~~	~~1.72~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	~~JB~~	~~0.760~~	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	10 U
m,p-Xylene	~~JB~~	~~1.50~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	
o-Xylene	~~JB~~	~~0.940~~	<10.0	1.83	µg/Kg	10	0.679	1	0.0679	10 U
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703	

continued . . .

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sample 93206 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504
Isopropylbenzene	JB	**1.32**	<10.0	2.51	µg/Kg	10	1.30	1	0.13
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048
n-Propylbenzene	JB	**1.79**	<10.0	3.05	µg/Kg	10	0.421	1	0.0421
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21
tert-Butylbenzene	JB	**1.92**	<10.0	3.20	µg/Kg	10	0.410	1	0.041
1,2,4-Trimethylbenzene	JB	**2.00**	<10.0	3.43	µg/Kg	10	0.535	1	0.0535
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387
sec-Butylbenzene	JB	**2.34**	<10.0	3.94	µg/Kg	10	0.632	1	0.0632
1,3-Dichlorobenzene (meta)	JB	**1.24**	<10.0	2.57	µg/Kg	10	0.534	1	0.0534
p-Isopropyltoluene	JB	**2.34**	<10.0	3.83	µg/Kg	10	0.679	1	0.0679
4-Chlorotoluene	JB	**1.02**	<10.0	2.13	µg/Kg	10	0.675	1	0.0675
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	2.57	µg/Kg	10	0.475	1	0.0475
n-Butylbenzene	JB	**3.74**	<10.0	5.77	µg/Kg	10	0.979	1	0.0979
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915
1,2,3-Trichlorobenzene	U	<3.64	<50.0	19.6	µg/Kg	10	3.64	5	0.364
1,2,4-Trichlorobenzene	U	<2.28	<50.0	9.37	µg/Kg	10	2.28	5	0.228
Naphthalene	JB	**8.34**	<50.0	19.5	µg/Kg	10	4.41	5	0.441
Hexachlorobutadiene	JB	**10.7**	<50.0	23.4	µg/Kg	10	3.24	5	0.324

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		468	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		496	µg/Kg	10	50.0	99	93 - 107
4-Bromofluorobenzene (4-BFB)		492	µg/Kg	10	50.0	98	78 - 120

Supplemental Qualifiers
KFR 3.21.07

Sample: 93239 - HGLSB29-L4-0204

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27765	Date Analyzed:	2006-06-29	Analyzed By:	AG
Prep Batch:	24220	Sample Preparation:	2006-06-23	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034

continued . . .

sample 93239 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.04	mg/Kg	1	2.67	39	10 - 98.8
Phenol-d5		0.830	mg/Kg	1	2.67	31	10 - 105
Nitrobenzene-d5		1.38	mg/Kg	1	2.67	52	10 - 114
2-Fluorobiphenyl		1.03	mg/Kg	1	2.67	38	10 - 122
2,4,6-Tribromophenol		1.39	mg/Kg	1	2.67	52	10 - 117
Terphenyl-d14		2.63	mg/Kg	1	2.67	98	10 - 116

Sample: 93239 - HGLSB29-L4-0204

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27570	Date Analyzed:	2006-06-23	Analyzed By:	RR
Prep Batch:	24126	Sample Preparation:	2006-06-21	Prepared By:	TS

sample 93206 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126	
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504	
Isopropylbenzene	~~JB~~	~~1.32~~	<10.0	2.51	µg/Kg	10	1.30	1	0.13	10 U
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048	
n-Propylbenzene	~~JB~~	~~1.79~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421	10 U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21	
tert-Butylbenzene	~~JB~~	~~1.92~~	<10.0	3.20	µg/Kg	10	0.410	1	0.041	10 U
1,2,4-Trimethylbenzene	~~JB~~	~~2.00~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535	10 U
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387	
sec-Butylbenzene	~~JB~~	~~2.34~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632	10 U
1,3-Dichlorobenzene (meta)	~~JB~~	~~1.24~~	<10.0	2.57	µg/Kg	10	0.534	1	0.0534	10 U
p-Isopropyltoluene	~~JB~~	~~2.34~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679	10 U
4-Chlorotoluene	~~JB~~	~~1.02~~	<10.0	2.13	µg/Kg	10	0.675	1	0.0675	10 U
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	2.57	µg/Kg	10	0.475	1	0.0475	
n-Butylbenzene	~~JB~~	~~3.74~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979	10 U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915	
1,2,3-Trichlorobenzene	U	<3.64	<50.0	19.6	µg/Kg	10	3.64	5	0.364	
1,2,4-Trichlorobenzene	U	<2.28	<50.0	9.37	µg/Kg	10	2.28	5	0.228	
Naphthalene	~~JB~~	~~8.34~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441	50 U
Hexachlorobutadiene	~~JB~~	~~10.7~~	<50.0	23.4	µg/Kg	10	3.24	5	0.324	50 U

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		468	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		496	µg/Kg	10	50.0	99	93 - 107
4-Bromofluorobenzene (4-BFB)		492	µg/Kg	10	50.0	98	78 - 120

Sample: 93239 - HGLSB29-L4-0204

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27765	Date Analyzed:	2006-06-29	Analyzed By:	AG
Prep Batch:	24220	Sample Preparation:	2006-06-23	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034

continued . . .

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sample 93239 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536

continued ...

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sample 93239 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.04	mg/Kg	1	2.67	39	10 - 98.8
Phenol-d5		0.830	mg/Kg	1	2.67	31	10 - 105
Nitrobenzene-d5		1.38	mg/Kg	1	2.67	52	10 - 114
2-Fluorobiphenyl		1.03	mg/Kg	1	2.67	38	10 - 122
2,4,6-Tribromophenol		1.39	mg/Kg	1	2.67	52	10 - 117
Terphenyl-d14		2.63	mg/Kg	1	2.67	98	10 - 116

Sample: 93239 - HGLSB29-L4-0204

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27570	Date Analyzed:	2006-06-23	Analyzed By:	RR
Prep Batch:	24126	Sample Preparation:	2006-06-21	Prepared By:	TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.911**	**0.911**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**50.2**	**50.2**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	J	**0.384**	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**2.57**	**2.57**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	J	**0.00561**	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead	U	<0.650	<1.00	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93239 - HGLSB29-L4-0204

Analysis: TPH DRO
QC Batch: 27515
Prep Batch: 24129

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: N/A
Analyzed By: JL
Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<10.7	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		136	mg/Kg	1	150	91	50 - 150

Sample: 93239 - HGLSB29-L4-0204

Analysis: TPH GRO
QC Batch: 27487
Prep Batch: 24103

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.824	mg/Kg	10	0.100	82	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.925	mg/Kg	10	0.100	92	71.9 - 123.7

Sample: 93239 - HGLSB29-L4-0204

Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

continued ...

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sample 93239 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	U	<0.346	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~10.4~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	SOU
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.61~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	JB	~~0.580~~	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	10 U
m,p-Xylene	JB	~~1.43~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	

continued...

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sample 93239 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene	JB	~~0.820~~	<10.0	1.83	µg/Kg	10	0.679	1	0.0679	10 U
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703	
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126	
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504	
Isopropylbenzene	U	<1.30	<10.0	2.51	µg/Kg	10	1.30	1	0.13	
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048	
n-Propylbenzene	JB	~~1.48~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421	10 U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21	
tert-Butylbenzene	U	<0.410	<10.0	3.20	µg/Kg	10	0.410	1	0.041	
1,2,4-Trimethylbenzene	JB	~~1.87~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535	10 U
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387	
sec-Butylbenzene	JB	~~2.02~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632	10 U
1,3-Dichlorobenzene (meta)	JB	~~1.13~~	<10.0	2.57	µg/Kg	10	0.534	1	0.0534	
p-Isopropyltoluene	JB	~~2.17~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679	
4-Chlorotoluene	U	<0.675	<10.0	2.13	µg/Kg	10	0.675	1	0.0675	
1,2-Dichlorobenzene (ortho)	JB	~~0.730~~	<10.0	2.57	µg/Kg	10	0.475	1	0.0475	10 U
n-Butylbenzene	JB	~~3.59~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979	10 U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915	
1,2,3-Trichlorobenzene	JB	~~4.89~~	<50.0	19.6	µg/Kg	10	3.64	5	0.364	50 U
1,2,4-Trichlorobenzene	U	<2.28	<50.0	9.37	µg/Kg	10	2.28	5	0.228	
Naphthalene	JB	~~7.33~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441	50 U
Hexachlorobutadiene	U	<3.24	<50.0	23.4	µg/Kg	10	3.24	5	0.324	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		468	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		503	µg/Kg	10	50.0	101	93 - 107
4-Bromofluorobenzene (4-BFB)		491	µg/Kg	10	50.0	98	78 - 120

Sample: 93242 - HGLSB29-K3-1416

Analysis: Semivolatiles
QC Batch: 27719
Prep Batch: 24292

Analytical Method: S 8270C
Date Analyzed: 2006-06-28
Sample Preparation: 2006-06-28

Prep Method: S 3550
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued ...

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sample 93242 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued . . .

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sample 93242 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.750	mg/Kg	1	2.67	28	10 - 98.8
Phenol-d5		0.770	mg/Kg	1	2.67	29	10 - 105
Nitrobenzene-d5		0.830	mg/Kg	1	2.67	31	10 - 114
2-Fluorobiphenyl		1.01	mg/Kg	1	2.67	38	10 - 122
2,4,6-Tribromophenol		1.33	mg/Kg	1	2.67	50	10 - 117
Terphenyl-d14		1.86	mg/Kg	1	2.67	70	10 - 116

Sample: 93242 - HGLSB29-K3-1416

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27658	Date Analyzed:	2006-06-27	Analyzed By:	RR
Prep Batch:	24232	Sample Preparation:	2006-06-26	Prepared By:	TS
Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27716	Date Analyzed:	2006-06-28	Analyzed By:	TP
Prep Batch:	24273	Sample Preparation:	2006-06-28	Prepared By:	TP

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.0444	<0.200	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**26.0**	**26.0**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	U	<0.0795	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**7.11**	**7.11**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	U	<0.00299	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead	U	<0.650	<1.00	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93242 - HGLSB29-K3-1416

Analysis: TPH DRO
QC Batch: 27649
Prep Batch: 24248

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-27
Sample Preparation: 2006-06-26

Prep Method: N/A
Analyzed By: JL
Prepared By: JL

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<10.7	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		159	mg/Kg	1	150	106	50 - 150

Sample: 93242 - HGLSB29-K3-1416

Analysis: TPH GRO
QC Batch: 27608
Prep Batch: 24212

Analytical Method: S 8015B
Date Analyzed: 2006-06-24
Sample Preparation: 2006-06-24

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.742	mg/Kg	10	0.100	74	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.849	mg/Kg	10	0.100	85	71.9 - 123.7

Sample: 93242 - HGLSB29-K3-1416

Analysis: Volatiles
QC Batch: 27694
Prep Batch: 24282

Analytical Method: S 8260B
Date Analyzed: 2006-06-27
Sample Preparation: 2006-06-27

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

continued . . .

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sample 93242 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	U	<0.346	<10.0	0.540	µg/Kg	10	0.346	1	0.0346	
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~6.06~~	<50.0	5.36	µg/Kg	10	1.19	5	0.119	50.0 U FQ
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.52~~	<10.0	1.75	µg/Kg	10	1.12	1	0.112	10.0 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.20	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	JB	~~0.870~~	<10.0	1.20	µg/Kg	10	0.376	1	0.0376	10.0 U
m,p-Xylene	JB	~~1.78~~	<10.0	2.62	µg/Kg	10	0.714	1	0.0714	10.0 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	<0.796	µg/Kg	10	0.796	1	0.0796	

continued ...

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sample 93242 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene	JB	~~0.850~~	<10.0	1.07	µg/Kg	10	0.679	1	0.0679	10.0 U
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703	
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126	
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504	
Isopropylbenzene	U	<1.30	<10.0	1.74	µg/Kg	10	1.30	1	0.13	
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048	
n-Propylbenzene	JB	~~1.58~~	<10.0	2.08	µg/Kg	10	0.421	1	0.0421	10.0 U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.12	µg/Kg	10	2.10	1	0.21	
tert-Butylbenzene	JB	~~1.63~~	<10.0	2.07	µg/Kg	10	0.410	1	0.041	10.0 U
1,2,4-Trimethylbenzene	JB	~~1.98~~	<10.0	2.06	µg/Kg	10	0.535	1	0.0535	10.0 U
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387	
sec-Butylbenzene	JB	~~1.89~~	<10.0	2.50	µg/Kg	10	0.632	1	0.0632	10.0 U
1,3-Dichlorobenzene (meta)	JB	~~1.53~~	<10.0	2.26	µg/Kg	10	0.534	1	0.0534	
p-Isopropyltoluene	JB	~~2.20~~	<10.0	2.61	µg/Kg	10	0.679	1	0.0679	
4-Chlorotoluene	JB	~~1.06~~	<10.0	1.49	µg/Kg	10	0.675	1	0.0675	
1,2-Dichlorobenzene (ortho)	JB	~~1.20~~	<10.0	2.23	µg/Kg	10	0.475	1	0.0475	
n-Butylbenzene	JB	~~2.87~~	<10.0	3.38	µg/Kg	10	0.979	1	0.0979	
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915	
1,2,3-Trichlorobenzene	U	<3.64	<50.0	14.8	µg/Kg	10	3.64	5	0.364	
1,2,4-Trichlorobenzene	JB	~~4.65~~	<50.0	7.30	µg/Kg	10	2.28	5	0.228	50.0 U
Naphthalene	JB	~~9.31~~	<50.0	13.7	µg/Kg	10	4.41	5	0.441	
Hexachlorobutadiene	JB	~~9.18~~	<50.0	15.1	µg/Kg	10	3.24	5	0.324	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		497	µg/Kg	10	50.0	99	42 - 129
Toluene-d8		510	µg/Kg	10	50.0	102	93 - 107
4-Bromofluorobenzene (4-BFB)		512	µg/Kg	10	50.0	102	78 - 120

Sample: 93243 - HGLSB29-I5-1417

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27765	Date Analyzed:	2006-06-29	Analyzed By:	AG
Prep Batch:	24220	Sample Preparation:	2006-06-23	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

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sample 93243 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued...

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sample 93243 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.28	mg/Kg	1	2.67	48	10 - 98.8
Phenol-d5		1.57	mg/Kg	1	2.67	59	10 - 105
Nitrobenzene-d5		1.41	mg/Kg	1	2.67	53	10 - 114
2-Fluorobiphenyl		1.89	mg/Kg	1	2.67	71	10 - 122
2,4,6-Tribromophenol		2.12	mg/Kg	1	2.67	79	10 - 117
Terphenyl-d14		1.43	mg/Kg	1	2.67	54	10 - 116

Sample: 93243 - HGLSB29-I5-1417

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27570	Date Analyzed:	2006-06-23	Analyzed By:	RR
Prep Batch:	24126	Sample Preparation:	2006-06-21	Prepared By:	TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.359**	**0.359**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**18.5**	**18.5**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium		**0.704**	**0.704**	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**7.19**	**7.19**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	J	**0.00632**	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead		**4.71**	**4.71**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93243 - HGLSB29-I5-1417

Analysis: TPH DRO
QC Batch: 27515
Prep Batch: 24129

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: N/A
Analyzed By: JL
Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<10.7	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		130	mg/Kg	1	150	87	50 - 150

Sample: 93243 - HGLSB29-I5-1417

Analysis: TPH GRO
QC Batch: 27487
Prep Batch: 24103

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.778	mg/Kg	10	0.100	78	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.839	mg/Kg	10	0.100	84	71.9 - 123.7

Sample: 93243 - HGLSB29-I5-1417

Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

continued . . .

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sample 93243 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	J	**0.440**	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	J
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~12.4~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	50.0 U FD
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.65~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10.0 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	JB	~~0.470~~	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	10.0 U
m,p-Xylene	JB	~~1.09~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10.0 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	

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sample 93243 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
o-Xylene	U	<0.679	<10.0	1.83	µg/Kg	10	0.679	1	0.0679
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504
Isopropylbenzene	U	<1.30	<10.0	2.51	µg/Kg	10	1.30	1	0.13
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048
n-Propylbenzene	JB	~~1.08~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421 10.0 U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21
tert-Butylbenzene	JB	~~1.35~~	<10.0	3.20	µg/Kg	10	0.410	1	0.041 10.0 U
1,2,4-Trimethylbenzene	JB	~~1.42~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535 10.0 U
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387
sec-Butylbenzene	JB	~~1.85~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632 10.0 U
1,3-Dichlorobenzene (meta)	JB	~~0.800~~	<10.0	2.57	µg/Kg	10	0.534	1	0.0534 ↓
p-Isopropyltoluene	JB	~~1.77~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679
4-Chlorotoluene	U	<0.675	<10.0	2.13	µg/Kg	10	0.675	1	0.0675
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	2.57	µg/Kg	10	0.475	1	0.0475
n-Butylbenzene	JB	~~2.80~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979 10.0 U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915
1,2,3-Trichlorobenzene	JB	~~4.58~~	<50.0	19.6	µg/Kg	10	3.64	5	0.364 50.0 U
1,2,4-Trichlorobenzene	JB	~~2.80~~	<50.0	9.37	µg/Kg	10	2.28	5	0.228 50.0 U
Naphthalene	JB	~~9.46~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441 50.0 U
Hexachlorobutadiene	JB	~~7.31~~	<50.0	23.4	µg/Kg	10	3.24	5	0.324 50.0 U

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		466	µg/Kg	10	50.0	93	42 - 129
Toluene-d8		498	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		500	µg/Kg	10	50.0	100	78 - 120

Sample: 93244 - HGLSB29-F7-2022

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27765	Date Analyzed:	2006-06-29	Analyzed By:	AG
Prep Batch:	24220	Sample Preparation:	2006-06-23	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued . . .

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sample 93244 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued...

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sample 93244 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.11	mg/Kg	1	2.67	42	10 - 98.8
Phenol-d5		1.29	mg/Kg	1	2.67	48	10 - 105
Nitrobenzene-d5		1.24	mg/Kg	1	2.67	46	10 - 114
2-Fluorobiphenyl		1.52	mg/Kg	1	2.67	57	10 - 122
2,4,6-Tribromophenol		2.28	mg/Kg	1	2.67	85	10 - 117
Terphenyl-d14		1.55	mg/Kg	1	2.67	58	10 - 116

Sample: 93244 - HGLSB29-F7-2022

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27570	Date Analyzed:	2006-06-23	Analyzed By:	RR
Prep Batch:	24126	Sample Preparation:	2006-06-21	Prepared By:	TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.653**	**0.653**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**45.2**	**45.2**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium		**0.757**	**0.757**	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**7.33**	**7.33**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	U	<0.00299	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead		**3.80**	**3.80**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93244 - HGLSB29-F7-2022

Analysis: TPH DRO
QC Batch: 27515
Prep Batch: 24129

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: N/A
Analyzed By: JL
Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<10.7	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		139	mg/Kg	1	150	93	50 - 150

Sample: 93244 - HGLSB29-F7-2022

Analysis: TPH GRO
QC Batch: 27487
Prep Batch: 24103

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.15	mg/Kg	10	0.100	115	68 - 129.6
4-Bromofluorobenzene (4-BFB)		1.21	mg/Kg	10	0.100	121	71.9 - 123.7

Sample: 93244 - HGLSB29-F7-2022

Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

continued . . .

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sample 93244 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	U	<0.346	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~11.1~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	50.0 U
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.59~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10.0 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	JB	~~0.610~~	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	10.0 U
m,p-Xylene	JB	~~1.23~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10.0 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	

continued . . .

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sample 93244 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
o-Xylene	U	<0.679	<10.0	1.83	µg/Kg	10	0.679	1	0.0679	
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703	
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126	
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504	
Isopropylbenzene	U	<1.30	<10.0	2.51	µg/Kg	10	1.30	1	0.13	
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048	
n-Propylbenzene	JB	~~0.890~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421	10.0 U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21	
tert-Butylbenzene	JB	~~1.04~~	<10.0	3.20	µg/Kg	10	0.410	1	0.041	10.0 U
1,2,4-Trimethylbenzene	JB	~~1.21~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535	10.0 U
1,4-Dichlorobenzene (para)	U	<0.387	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387	
sec-Butylbenzene	JB	~~1.50~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632	10.0 U
1,3-Dichlorobenzene (meta)	JB	~~0.640~~	<10.0	2.57	µg/Kg	10	0.534	1	0.0534	↓
p-Isopropyltoluene	JB	~~1.78~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679	
4-Chlorotoluene	U	<0.675	<10.0	2.13	µg/Kg	10	0.675	1	0.0675	
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	2.57	µg/Kg	10	0.475	1	0.0475	
n-Butylbenzene	JB	~~2.30~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979	10.0 U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915	
1,2,3-Trichlorobenzene	U	<3.64	<50.0	19.6	µg/Kg	10	3.64	5	0.364	
1,2,4-Trichlorobenzene	U	<2.28	<50.0	9.37	µg/Kg	10	2.28	5	0.228	
Naphthalene	JB	~~7.20~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441	50.0 U
Hexachlorobutadiene	U	<3.24	<50.0	23.4	µg/Kg	10	3.24	5	0.324	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		472	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		502	µg/Kg	10	50.0	100	93 - 107
4-Bromofluorobenzene (4-BFB)		492	µg/Kg	10	50.0	98	78 - 120

Sample: 93245 - HGLSB29-F4-1820

Analysis:	Semivolatiles	Analytical Method:	S 8270C	Prep Method:	S 3550
QC Batch:	27765	Date Analyzed:	2006-06-29	Analyzed By:	AG
Prep Batch:	24220	Sample Preparation:	2006-06-23	Prepared By:	AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued...

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sample 93245 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

continued . . .

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sample 93245 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.33	mg/Kg	1	2.67	50	10 - 98.8
Phenol-d5		1.60	mg/Kg	1	2.67	60	10 - 105
Nitrobenzene-d5		1.52	mg/Kg	1	2.67	57	10 - 114
2-Fluorobiphenyl		1.99	mg/Kg	1	2.67	74	10 - 122
2,4,6-Tribromophenol		2.59	mg/Kg	1	2.67	97	10 - 117
Terphenyl-d14		1.84	mg/Kg	1	2.67	69	10 - 116

Sample: 93245 - HGLSB29-F4-1820

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27570	Date Analyzed:	2006-06-23	Analyzed By:	RR
Prep Batch:	24126	Sample Preparation:	2006-06-21	Prepared By:	TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.860**	**0.860**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**42.0**	**42.0**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium	J	**0.238**	<0.500	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**1.74**	**1.74**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	U	<0.00299	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead	U	<0.650	<1.00	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93245 - HGLSB29-F4-1820

Analysis: TPH DRO
QC Batch: 27515
Prep Batch: 24129

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: N/A
Analyzed By: JL
Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<10.7	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		144	mg/Kg	1	150	96	50 - 150

Sample: 93245 - HGLSB29-F4-1820

Analysis: TPH GRO
QC Batch: 27487
Prep Batch: 24103

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.736	mg/Kg	10	0.100	74	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.798	mg/Kg	10	0.100	80	71.9 - 123.7

Sample: 93245 - HGLSB29-F4-1820

Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

continued...

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sample 93245 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	U	<0.346	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~11.2~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	50,0 U FQ
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.51~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10,0 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	U	<0.376	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	
m,p-Xylene	JB	~~0.810~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10,0 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	

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sample 93245 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
o-Xylene	U	<0.679	<10.0	1.83	µg/Kg	10	0.679	1	0.0679
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504
Isopropylbenzene	U	<1.30	<10.0	2.51	µg/Kg	10	1.30	1	0.13
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048
n-Propylbenzene	JB	~~0.770~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421 10.0U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21
tert-Butylbenzene	JB	~~1.01~~	<10.0	3.20	µg/Kg	10	0.410	1	0.041 10.0U
1,2,4-Trimethylbenzene	JB	~~1.11~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535 10.0U
1,4-Dichlorobenzene (para)	J	0.550	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387 J
sec-Butylbenzene	JB	~~1.46~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632
1,3-Dichlorobenzene (meta)	U	<0.534	<10.0	2.57	µg/Kg	10	0.534	1	0.0534
p-Isopropyltoluene	JB	~~1.25~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679 10.0U
4-Chlorotoluene	U	<0.675	<10.0	2.13	µg/Kg	10	0.675	1	0.0675
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	2.57	µg/Kg	10	0.475	1	0.0475
n-Butylbenzene	JB	~~2.19~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979 10.0U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915
1,2,3-Trichlorobenzene	U	<3.64	<50.0	19.6	µg/Kg	10	3.64	5	0.364
1,2,4-Trichlorobenzene	U	<2.28	<50.0	9.37	µg/Kg	10	2.28	5	0.228
Naphthalene	JB	~~7.05~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441 50.0U
Hexachlorobutadiene	JB	~~4.47~~	<50.0	23.4	µg/Kg	10	3.24	5	0.324 50.0U

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		469	µg/Kg	10	50.0	94	42 - 129
Toluene-d8		494	µg/Kg	10	50.0	99	93 - 107
4-Bromofluorobenzene (4-BFB)		496	µg/Kg	10	50.0	99	78 - 120

Sample: 93246 - HGLSB29-D6-2426

Analysis: Semivolatiles
QC Batch: 27765
Prep Batch: 24220

Analytical Method: S 8270C
Date Analyzed: 2006-06-29
Sample Preparation: 2006-06-23

Prep Method: S 3550
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.0517	<0.250	<0.0517	mg/Kg	1	0.0517	0.25	0.0517
n-Nitrosodimethylamine	U	<0.0321	<0.250	<0.0321	mg/Kg	1	0.0321	0.25	0.0321
2-Picoline	U	<0.0182	<0.250	<0.0182	mg/Kg	1	0.0182	0.25	0.0182
Methyl methanesulfonate	U	<0.0199	<0.250	<0.0199	mg/Kg	1	0.0199	0.25	0.0199
Ethyl methanesulfonate	U	<0.0353	<0.250	<0.0353	mg/Kg	1	0.0353	0.25	0.0353
Phenol	U	<0.0308	<0.250	<0.0308	mg/Kg	1	0.0308	0.25	0.0308
Aniline	U	<0.0484	<0.250	<0.0484	mg/Kg	1	0.0484	0.25	0.0484
bis(2-chloroethyl)ether	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
2-Chlorophenol	U	<0.0329	<0.250	<0.0329	mg/Kg	1	0.0329	0.25	0.0329
1,3-Dichlorobenzene (meta)	U	<0.0429	<0.250	<0.0429	mg/Kg	1	0.0429	0.25	0.0429
1,4-Dichlorobenzene (para)	U	<0.0378	<0.250	<0.0378	mg/Kg	1	0.0378	0.25	0.0378
Benzyl alcohol	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364

continued...

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sample 93246 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1,2-Dichlorobenzene (ortho)	U	<0.0364	<0.250	<0.0364	mg/Kg	1	0.0364	0.25	0.0364
2-Methylphenol	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
bis(2-chloroisopropyl)ether	U	<0.0344	<0.250	<0.0344	mg/Kg	1	0.0344	0.25	0.0344
4-Methylphenol / 3-Methylphenol	U	<0.0392	<0.250	<0.0392	mg/Kg	1	0.0392	0.25	0.0392
Acetophenone	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
n-Nitrosodi-n-propylamine	U	<0.0444	<0.250	<0.0444	mg/Kg	1	0.0444	0.25	0.0444
Hexachloroethane	U	<0.0372	<0.250	<0.0372	mg/Kg	1	0.0372	0.25	0.0372
Nitrobenzene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
n-Nitrosopiperidine	U	<0.0316	<0.250	<0.0316	mg/Kg	1	0.0316	0.25	0.0316
Isophorone	U	<0.0552	<0.250	<0.0552	mg/Kg	1	0.0552	0.25	0.0552
2-Nitrophenol	U	<0.0252	<0.250	<0.0252	mg/Kg	1	0.0252	0.25	0.0252
2,4-Dimethylphenol	U	<0.0564	<0.250	<0.0564	mg/Kg	1	0.0564	0.25	0.0564
bis(2-chloroethoxy)methane	U	<0.0381	<0.250	<0.0381	mg/Kg	1	0.0381	0.25	0.0381
Benzoic acid	U	<0.121	<0.250	<0.121	mg/Kg	1	0.121	0.25	0.121
2,4-Dichlorophenol	U	<0.0374	<0.250	<0.0374	mg/Kg	1	0.0374	0.25	0.0374
1,2,4-Trichlorobenzene	U	<0.0338	<0.250	<0.0338	mg/Kg	1	0.0338	0.25	0.0338
a,a-Dimethylphenethylamine	U	<0.0115	<0.250	<0.0115	mg/Kg	1	0.0115	0.25	0.0115
Naphthalene	U	<0.0377	<0.250	<0.0377	mg/Kg	1	0.0377	0.25	0.0377
4-Chloroaniline	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,6-Dichlorophenol	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobutadiene	U	<0.0373	<0.250	<0.0373	mg/Kg	1	0.0373	0.25	0.0373
n-Nitroso-di-n-butylamine	U	<0.0402	<0.250	<0.0402	mg/Kg	1	0.0402	0.25	0.0402
4-Chloro-3-methylphenol	U	<0.0460	<0.250	<0.0460	mg/Kg	1	0.0460	0.25	0.046
1-Methylnaphthalene	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
2-Methylnaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1,2,4,5-Tetrachlorobenzene	U	<0.0340	<0.250	<0.0340	mg/Kg	1	0.0340	0.25	0.034
Hexachlorocyclopentadiene	U	<0.0209	<0.250	<0.0209	mg/Kg	1	0.0209	0.25	0.0209
2,4,6-Trichlorophenol	U	<0.0403	<0.250	<0.0403	mg/Kg	1	0.0403	0.25	0.0403
2,4,5-Trichlorophenol	U	<0.0442	<0.250	<0.0442	mg/Kg	1	0.0442	0.25	0.0442
2-Chloronaphthalene	U	<0.0410	<0.250	<0.0410	mg/Kg	1	0.0410	0.25	0.041
1-Chloronaphthalene	U	<0.0417	<0.250	<0.0417	mg/Kg	1	0.0417	0.25	0.0417
2-Nitroaniline	U	<0.0411	<0.250	<0.0411	mg/Kg	1	0.0411	0.25	0.0411
Dimethylphthalate	U	<0.0531	<0.250	<0.0531	mg/Kg	1	0.0531	0.25	0.0531
Acenaphthylene	U	<0.0465	<0.250	<0.0465	mg/Kg	1	0.0465	0.25	0.0465
2,6-Dinitrotoluene	U	<0.0454	<0.250	<0.0454	mg/Kg	1	0.0454	0.25	0.0454
3-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
Acenaphthene	U	<0.0461	<0.250	<0.0461	mg/Kg	1	0.0461	0.25	0.0461
2,4-Dinitrophenol	U	<0.0113	<0.250	<0.0113	mg/Kg	1	0.0113	0.25	0.0113
Dibenzofuran	U	<0.0480	<0.250	<0.0480	mg/Kg	1	0.0480	0.25	0.048
Pentachlorobenzene	U	<0.0431	<0.250	<0.0431	mg/Kg	1	0.0431	0.25	0.0431
4-Nitrophenol	U	<0.0166	<0.250	<0.0166	mg/Kg	1	0.0166	0.25	0.0166
1-Naphthylamine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
2,4-Dinitrotoluene	U	<0.0471	<0.250	<0.0471	mg/Kg	1	0.0471	0.25	0.0471
2-Naphthylamine	U	<0.0361	<0.250	<0.0361	mg/Kg	1	0.0361	0.25	0.0361
2,3,4,6-Tetrachlorophenol	U	<0.0523	<0.250	<0.0523	mg/Kg	1	0.0523	0.25	0.0523
Fluorene	U	<0.0435	<0.250	<0.0435	mg/Kg	1	0.0435	0.25	0.0435
Diethylphthalate	U	<0.0643	<0.250	<0.0643	mg/Kg	1	0.0643	0.25	0.0643
4-Chlorophenyl-phenylether	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
4-Nitroaniline	U	<0.0278	<0.250	<0.0278	mg/Kg	1	0.0278	0.25	0.0278
4,6-Dinitro-2-methylphenol	U	<0.0670	<0.250	<0.0670	mg/Kg	1	0.0670	0.25	0.067
Diphenylamine	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368

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sample 93246 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Diphenylhydrazine	U	<0.0555	<0.250	<0.0555	mg/Kg	1	0.0555	0.25	0.0555
4-Bromophenyl-phenylether	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Phenacetin	U	<0.0352	<0.250	<0.0352	mg/Kg	1	0.0352	0.25	0.0352
Hexachlorobenzene	U	<0.0584	<0.250	<0.0584	mg/Kg	1	0.0584	0.25	0.0584
4-Aminobiphenyl	U	<0.0349	<0.250	<0.0349	mg/Kg	1	0.0349	0.25	0.0349
Pentachlorophenol	U	<0.0400	<0.250	<0.0400	mg/Kg	1	0.0400	0.25	0.04
Pentachloronitrobenzene	U	<0.0532	<0.250	<0.0532	mg/Kg	1	0.0532	0.25	0.0532
Pronamide	U	<0.0368	<0.250	<0.0368	mg/Kg	1	0.0368	0.25	0.0368
Phenanthrene	U	<0.0438	<0.250	<0.0438	mg/Kg	1	0.0438	0.25	0.0438
Anthracene	U	<0.0565	<0.250	<0.0565	mg/Kg	1	0.0565	0.25	0.0565
Di-n-butylphthalate	U	<0.0475	<0.250	<0.0475	mg/Kg	1	0.0475	0.25	0.0475
Fluoranthene	U	<0.0456	<0.250	<0.0456	mg/Kg	1	0.0456	0.25	0.0456
Benzidine	U	<0.0178	<0.250	<0.0178	mg/Kg	1	0.0178	0.25	0.0178
Pyrene	U	<0.124	<0.250	<0.124	mg/Kg	1	0.124	0.25	0.124
p-Dimethylaminoazobenzene	U	<0.0407	<0.250	<0.0407	mg/Kg	1	0.0407	0.25	0.0407
Butylbenzylphthalate	U	<0.150	<0.250	<0.150	mg/Kg	1	0.150	0.25	0.15
Benzo(a)anthracene	U	<0.0538	<0.250	<0.0538	mg/Kg	1	0.0538	0.25	0.0538
3,3-Dichlorobenzidine	U	<0.0427	<0.250	<0.0427	mg/Kg	1	0.0427	0.25	0.0427
Chrysene	U	<0.0609	<0.250	<0.0609	mg/Kg	1	0.0609	0.25	0.0609
bis(2-ethylhexyl)phthalate	U	<0.191	<0.250	<0.191	mg/Kg	1	0.191	0.25	0.191
Di-n-octylphthalate	U	<0.182	<0.250	<0.182	mg/Kg	1	0.182	0.25	0.182
Benzo(b)fluoranthene	U	<0.0712	<0.250	<0.0712	mg/Kg	1	0.0712	0.25	0.0712
7,12-Dimethylbenz(a)anthracene	U	<0.0371	<0.250	<0.0371	mg/Kg	1	0.0371	0.25	0.0371
Benzo(k)fluoranthene	U	<0.0536	<0.250	<0.0536	mg/Kg	1	0.0536	0.25	0.0536
Benzo(a)pyrene	U	<0.0525	<0.250	<0.0525	mg/Kg	1	0.0525	0.25	0.0525
3-Methylcholanthrene	U	<0.0466	<0.250	<0.0466	mg/Kg	1	0.0466	0.25	0.0466
Dibenzo(a,j)acridine	U	<0.0399	<0.250	<0.0399	mg/Kg	1	0.0399	0.25	0.0399
Indeno(1,2,3-cd)pyrene	U	<0.0490	<0.250	<0.0490	mg/Kg	1	0.0490	0.25	0.049
Dibenzo(a,h)anthracene	U	<0.0533	<0.250	<0.0533	mg/Kg	1	0.0533	0.25	0.0533
Benzo(g,h,i)perylene	U	<0.0610	<0.250	<0.0610	mg/Kg	1	0.0610	0.25	0.061

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		1.30	mg/Kg	1	2.67	49	10 - 98.8
Phenol-d5		1.61	mg/Kg	1	2.67	60	10 - 105
Nitrobenzene-d5		1.46	mg/Kg	1	2.67	55	10 - 114
2-Fluorobiphenyl		1.93	mg/Kg	1	2.67	72	10 - 122
2,4,6-Tribromophenol		2.50	mg/Kg	1	2.67	94	10 - 117
Terphenyl-d14		1.78	mg/Kg	1	2.67	67	10 - 116

Sample: 93246 - HGLSB29-D6-2426

Analysis:	Total 8 Metals	Analytical Method:	S 7471A	Prep Method:	N/A
QC Batch:	27506	Date Analyzed:	2006-06-21	Analyzed By:	TP
Prep Batch:	24116	Sample Preparation:	2006-06-20	Prepared By:	TP
Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3050B
QC Batch:	27570	Date Analyzed:	2006-06-23	Analyzed By:	RR
Prep Batch:	24126	Sample Preparation:	2006-06-21	Prepared By:	TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.476**	**0.476**	<0.0444	mg/Kg	1	0.0444	0.2	0.044386
Total Arsenic	U	<0.228	<1.00	<0.228	mg/Kg	1	0.228	1	0.227774
Total Barium		**66.0**	**66.0**	<0.601	mg/Kg	1	0.601	1	0.600628
Total Cadmium		**0.692**	**0.692**	<0.0795	mg/Kg	1	0.0795	0.5	0.079491
Total Chromium		**5.68**	**5.68**	<0.125	mg/Kg	1	0.125	1	0.125172
Total Mercury	J	**0.00757**	<0.0400	<0.00299	mg/Kg	1	0.00299	0.04	0.00299
Total Lead		**3.05**	**3.05**	<0.650	mg/Kg	1	0.650	1	0.650424
Total Selenium	U	<0.767	<1.00	<0.767	mg/Kg	1	0.767	1	0.767141

Sample: 93246 - HGLSB29-D6-2426

Analysis: TPH DRO
QC Batch: 27515
Prep Batch: 24129

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: N/A
Analyzed By: JL
Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<10.7	<50.0	<10.7	mg/Kg	1	10.7	50	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		128	mg/Kg	1	150	85	50 - 150

Sample: 93246 - HGLSB29-D6-2426

Analysis: TPH GRO
QC Batch: 27487
Prep Batch: 24103

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5035
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<1.21	<1.00	<1.21	mg/Kg	10	1.21	0.1	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1]	0.643	mg/Kg	10	0.100	64	68 - 129.6
4-Bromofluorobenzene (4-BFB)		0.746	mg/Kg	10	0.100	75	71.9 - 123.7

Sample: 93246 - HGLSB29-D6-2426

Analysis: Volatiles
QC Batch: 27546
Prep Batch: 24149

Analytical Method: S 8260B
Date Analyzed: 2006-06-21
Sample Preparation: 2006-06-21

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

[1]TFT surrogate recovery outside normal limits. ICV/CCV and BFB surrogate recovery show the method to be in control.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.825	<10.0	<0.825	µg/Kg	10	0.825	1	0.0825	
Dichlorodifluoromethane	U	<0.889	<10.0	<0.889	µg/Kg	10	0.889	1	0.0889	
Chloromethane (methyl chloride)	U	<0.929	<10.0	<0.929	µg/Kg	10	0.929	1	0.0929	
Vinyl Chloride	U	<0.463	<10.0	<0.463	µg/Kg	10	0.463	1	0.0463	
Bromomethane (methyl bromide)	U	<1.71	<50.0	<1.71	µg/Kg	10	1.71	5	0.171	
Chloroethane	U	<3.68	<10.0	<3.68	µg/Kg	10	3.68	1	0.368	
Trichlorofluoromethane	U	<0.306	<10.0	<0.306	µg/Kg	10	0.306	1	0.0306	
Acetone	U	<17.0	<100	<17.0	µg/Kg	10	17.0	10	1.7044	
Iodomethane (methyl iodide)	U	<0.640	<50.0	<0.640	µg/Kg	10	0.640	5	0.064	
Carbon Disulfide	J	**0.370**	<10.0	<0.346	µg/Kg	10	0.346	1	0.0346	J
Acrylonitrile	U	<1.51	<10.0	<1.51	µg/Kg	10	1.51	1	0.151	
2-Butanone (MEK)	U	<3.78	<50.0	<3.78	µg/Kg	10	3.78	5	0.378	
4-Methyl-2-pentanone (MIBK)	U	<7.86	<50.0	<7.86	µg/Kg	10	7.86	5	0.786	
2-Hexanone	U	<5.70	<50.0	<5.70	µg/Kg	10	5.70	5	0.57	
trans 1,4-Dichloro-2-butene	U	<1.33	<100	<1.33	µg/Kg	10	1.33	10	0.1331	
1,1-Dichloroethene	U	<0.639	<10.0	<0.639	µg/Kg	10	0.639	1	0.0639	
Methylene chloride	JB	~~11.9~~	<50.0	10.7	µg/Kg	10	1.19	5	0.119	50.0 U
MTBE	U	<0.362	<10.0	<0.362	µg/Kg	10	0.362	1	0.0362	
trans-1,2-Dichloroethene	U	<0.419	<10.0	<0.419	µg/Kg	10	0.419	1	0.0419	
1,1-Dichloroethane	U	<0.257	<10.0	<0.257	µg/Kg	10	0.257	1	0.0257	
cis-1,2-Dichloroethene	U	<0.627	<10.0	<0.627	µg/Kg	10	0.627	1	0.0627	
2,2-Dichloropropane	U	<0.593	<10.0	<0.593	µg/Kg	10	0.593	1	0.0593	
1,2-Dichloroethane (EDC)	U	<0.524	<10.0	<0.524	µg/Kg	10	0.524	1	0.0524	
Chloroform	U	<0.440	<10.0	<0.440	µg/Kg	10	0.440	1	0.044	
1,1,1-Trichloroethane	U	<0.750	<10.0	<0.750	µg/Kg	10	0.750	1	0.075	
1,1-Dichloropropene	U	<0.622	<10.0	<0.622	µg/Kg	10	0.622	1	0.0622	
Benzene	U	<0.644	<10.0	<0.644	µg/Kg	10	0.644	1	0.0644	
Carbon Tetrachloride	U	<0.485	<10.0	<0.485	µg/Kg	10	0.485	1	0.0485	
1,2-Dichloropropane	U	<0.547	<10.0	<0.547	µg/Kg	10	0.547	1	0.0547	
Trichloroethene (TCE)	U	<0.836	<10.0	<0.836	µg/Kg	10	0.836	1	0.0836	
Dibromomethane (methylene bromide)	U	<0.435	<10.0	<0.435	µg/Kg	10	0.435	1	0.0435	
Bromodichloromethane	U	<0.457	<10.0	<0.457	µg/Kg	10	0.457	1	0.0457	
2-Chloroethyl vinyl ether	U	<0.547	<50.0	<0.547	µg/Kg	10	0.547	5	0.0547	
cis-1,3-Dichloropropene	U	<0.596	<10.0	<0.596	µg/Kg	10	0.596	1	0.0596	
trans-1,3-Dichloropropene	U	<0.561	<10.0	<0.561	µg/Kg	10	0.561	1	0.0561	
Toluene	JB	~~1.59~~	<10.0	1.90	µg/Kg	10	1.12	1	0.112	10.0 U
1,1,2-Trichloroethane	U	<3.25	<10.0	<3.25	µg/Kg	10	3.25	1	0.325	
1,3-Dichloropropane	U	<0.505	<10.0	<0.505	µg/Kg	10	0.505	1	0.0505	
Dibromochloromethane	U	<0.552	<10.0	<0.552	µg/Kg	10	0.552	1	0.0552	
1,2-Dibromoethane (EDB)	U	<0.688	<10.0	<0.688	µg/Kg	10	0.688	1	0.0688	
Tetrachloroethene (PCE)	U	<0.826	<10.0	2.35	µg/Kg	10	0.826	1	0.0826	
Chlorobenzene	U	<0.426	<10.0	0.490	µg/Kg	10	0.426	1	0.0426	
1,1,1,2-Tetrachloroethane	U	<0.289	<10.0	<0.289	µg/Kg	10	0.289	1	0.0289	
Ethylbenzene	JB	~~0.390~~	<10.0	1.52	µg/Kg	10	0.376	1	0.0376	10.0 U
m,p-Xylene	JB	~~0.940~~	<10.0	3.56	µg/Kg	10	0.714	1	0.0714	10.0 U
Bromoform	U	<0.426	<10.0	<0.426	µg/Kg	10	0.426	1	0.0426	
Styrene	U	<0.796	<10.0	1.05	µg/Kg	10	0.796	1	0.0796	
o-Xylene	U	<0.679	<10.0	1.83	µg/Kg	10	0.679	1	0.0679	
1,1,2,2-Tetrachloroethane	U	<0.703	<10.0	<0.703	µg/Kg	10	0.703	1	0.0703	
2-Chlorotoluene	U	<1.26	<10.0	<1.26	µg/Kg	10	1.26	1	0.126	
1,2,3-Trichloropropane	U	<0.504	<10.0	<0.504	µg/Kg	10	0.504	1	0.0504	
Isopropylbenzene	U	<1.30	<10.0	2.51	µg/Kg	10	1.30	1	0.13	
Bromobenzene	U	<0.480	<10.0	<0.480	µg/Kg	10	0.480	1	0.048	

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sample 93246 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Propylbenzene	JB	~~0.630~~	<10.0	3.05	µg/Kg	10	0.421	1	0.0421 10.0 U
1,3,5-Trimethylbenzene	U	<2.10	<10.0	2.99	µg/Kg	10	2.10	1	0.21
tert-Butylbenzene	JB	~~0.750~~	<10.0	3.20	µg/Kg	10	0.410	1	0.041 10.0 U
1,2,4-Trimethylbenzene	JB	~~0.960~~	<10.0	3.43	µg/Kg	10	0.535	1	0.0535 10.0 U
1,4-Dichlorobenzene (para)	J	**0.640**	<10.0	<0.387	µg/Kg	10	0.387	1	0.0387 J
sec-Butylbenzene	JB	~~1.11~~	<10.0	3.94	µg/Kg	10	0.632	1	0.0632
1,3-Dichlorobenzene (meta)	U	<0.534	<10.0	2.57	µg/Kg	10	0.534	1	0.0534
p-Isopropyltoluene	JB	~~1.11~~	<10.0	3.83	µg/Kg	10	0.679	1	0.0679 10.0 U
4-Chlorotoluene	U	<0.675	<10.0	2.13	µg/Kg	10	0.675	1	0.0675
1,2-Dichlorobenzene (ortho)	U	<0.475	<10.0	2.57	µg/Kg	10	0.475	1	0.0475
n-Butylbenzene	JB	~~2.12~~	<10.0	5.77	µg/Kg	10	0.979	1	0.0979 10.0 U
1,2-Dibromo-3-chloropropane	U	<1.92	<50.0	<1.92	µg/Kg	10	1.92	5	0.1915
1,2,3-Trichlorobenzene	U	<3.64	<50.0	19.6	µg/Kg	10	3.64	5	0.364
1,2,4-Trichlorobenzene	U	<2.28	<50.0	9.37	µg/Kg	10	2.28	5	0.228
Naphthalene	JB	~~6.37~~	<50.0	19.5	µg/Kg	10	4.41	5	0.441 50.0 U
Hexachlorobutadiene	U	<3.24	<50.0	23.4	µg/Kg	10	3.24	5	0.324

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		460	µg/Kg	10	50.0	92	42 - 129
Toluene-d8		493	µg/Kg	10	50.0	99	93 - 107
4-Bromofluorobenzene (4-BFB)		496	µg/Kg	10	50.0	99	78 - 120

Method Blank (1)

QC Batch: 27441
Prep Batch: 24066

Date Analyzed: 2006-06-19
QC Preparation: 2006-06-19

Analyzed By: JL
Prepared By: JL

Parameter	Flag	Result	Units	Reporting Limits
DRO		<10.7	mg/Kg	10.7

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		146	mg/Kg	1	150	97	50 - 150

Method Blank (1)

QC Batch: 27447
Prep Batch: 24069

Date Analyzed: 2006-06-19
QC Preparation: 2006-06-19

Analyzed By: KB
Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
GRO		2.59	mg/Kg	0.121

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.07	mg/Kg	10	0.100	107	81.7 - 119
4-Bromofluorobenzene (4-BFB)		0.923	mg/Kg	10	0.100	92	60.1 - 102

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Analytical Report

Sample: 93200 - HGL GW27-07

Analysis: Ag, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Silver		**0.0110**	**0.0110**	<0.000297	mg/L	1	0.000297	0.002	0.000297

Sample: 93200 - HGL GW27-07

Analysis: As, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Arsenic	U	<0.00255	<0.00500	<0.00255	mg/L	1	0.00255	0.005	0.002551

Sample: 93200 - HGL GW27-07

Analysis: Ba, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Barium		**0.0390**	**0.0390**	<0.00148	mg/L	1	0.00148	0.01	0.001475

Sample: 93200 - HGL GW27-07

Analysis: Cd, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Cadmium	U	<0.000595	<0.00100	<0.000595	mg/L	1	0.000595	0.001	0.000595

Sample: 93200 - HGL GW27-07

Analysis: Cr, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Chromium	U	<0.000238	<0.00500	<0.000238	mg/L	1	0.000238	0.005	0.000238

Sample: 93200 - HGL GW27-07

Analysis: Hg, Dissolved
QC Batch: 27646
Prep Batch: 24173

Analytical Method: S 7470A
Date Analyzed: 2006-06-23
Sample Preparation: 2006-06-22

Prep Method: N/A
Analyzed By: TP
Prepared By: TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Mercury	U	<0.0000329	<0.000200	<0.0000329	mg/L	1	0.0000329	0.0002	3.29e-05

Sample: 93200 - HGL GW27-07

Analysis: Pb, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Lead	U	<0.00180	<0.00500	<0.00180	mg/L	1	0.00180	0.005	0.001796

Sample: 93200 - HGL GW27-07

Analysis: Se, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Selenium	J	**0.00700**	<0.0100	<0.00232	mg/L	1	0.00232	0.01	0.002318

Sample: 93200 - HGL GW27-07

Analysis: Semivolatiles
QC Batch: 27651
Prep Batch: 24152

Analytical Method: S 8270C
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-22

Prep Method: S 3510C
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121

continued . . .

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sample 93200 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone	U	<0.000684	<0.00500	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene	U	<0.000480	<0.00500	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene	U	<0.000416	<0.00500	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803

continued . . .

Validated EPA Level 3 (Verification), Quality by Design, February 3, 2007

sample 93200 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0153	mg/L	1	0.0800	19	10 - 84.7
Phenol-d5		0.00940	mg/L	1	0.0800	12	10 - 54.9
Nitrobenzene-d5		0.0370	mg/L	1	0.0800	46	10 - 202
2-Fluorobiphenyl		0.0421	mg/L	1	0.0800	53	10 - 199
2,4,6-Tribromophenol		0.0532	mg/L	1	0.0800	66	10 - 141
Terphenyl-d14		0.0590	mg/L	1	0.0800	74	10 - 160

Sample: 93200 - HGL GW27-07

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Analysis: Total 8 Metals
QC Batch: 27611
Prep Batch: 24164
Analysis: Total 8 Metals
QC Batch: 27647
Prep Batch: 24174

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-22
Analytical Method: S 7470A
Date Analyzed: 2006-06-23
Sample Preparation: 2006-06-22

Prep Method: S 3010A
Analyzed By: RR
Prepared By: TS
Prep Method: N/A
Analyzed By: TP
Prepared By: TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.0130**	**0.0130**	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium		**0.345**	**0.345**	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium		**0.0480**	**0.0480**	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000217	<0.000200	<0.0000217	mg/L	1	0.0000217	0.0002	2.17e-05
Total Lead		**0.0170**	**0.0170**	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 93200 - HGL GW27-07

Analysis: TPH DRO
QC Batch: 27477
Prep Batch: 24097

Analytical Method: Mod. 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: N/A
Analyzed By: JL
Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<0.106	<5.00	<0.106	mg/L	0.1	0.106	50	1.06

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		22.4	mg/L	0.1	150	149	50 - 150

Sample: 93200 - HGL GW27-07

Analysis: TPH GRO
QC Batch: 27486
Prep Batch: 24102

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5030B
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.0272	<0.100	<0.0272	mg/L	1	0.0272	0.1	0.0272

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0927	mg/L	1	0.100	93	80 - 120
4-Bromofluorobenzene (4-BFB)		0.0944	mg/L	1	0.100	94	80 - 120

Sample: 93200 - HGL GW27-07

Analysis: Volatiles

Analytical Method: S 8260B

Prep Method: S 5030B

Validated EPA Level 3 (Verification), Quality by Design, February 3, 2007

QC Batch: 27581
Prep Batch: 24185

Date Analyzed: 2006-06-22
Sample Preparation: 2006-06-22

Analyzed By: JG
Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699	
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298	
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902	
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402	
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952	
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16	
Acetone	U	<0.854	<10.0	2.30	µg/L	1	0.854	10	0.8536	
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119	
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764	
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837	
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941	
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484	
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975	
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207	
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736	
Methylene chloride	U	<0.689	<5.00	<0.689	µg/L	1	0.689	5	0.6888	
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	U	<0.0475	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene		~~1.57~~	1.57	<0.0495	µg/L	1	0.0495	1	0.0495	1.57 U
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	J	0.220	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	J
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	B	~~1.14~~	1.14	0.180	µg/L	1	0.0736	1	0.0736	1.14 U
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	0.220	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	JB	~~0.0500~~	<1.00	0.0400	µg/L	1	0.0217	1	0.0217	1.0 U
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	JB	~~0.770~~	<1.00	0.140	µg/L	1	0.0566	1	0.0566	1.0 U
m,p-Xylene	JB	~~0.680~~	<1.00	0.310	µg/L	1	0.0363	1	0.0363	1.0 U
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	JB	~~0.240~~	<1.00	0.130	µg/L	1	0.0504	1	0.0504	1.0 U
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	

continued . . .

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sample 93200 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	JB	~~0.110~~	<1.00	0.200	µg/L	1	0.0406	1	0.0406	1.0 U
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	
n-Propylbenzene	JB	~~0.190~~	<1.00	0.280	µg/L	1	0.0423	1	0.0423	1.0 U
1,3,5-Trimethylbenzene	JB	~~0.140~~	<1.00	0.240	µg/L	1	0.0557	1	0.0557	1.0 U
tert-Butylbenzene	U	<0.0770	<1.00	0.250	µg/L	1	0.0770	1	0.077	
1,2,4-Trimethylbenzene	JB	~~0.260~~	<1.00	0.220	µg/L	1	0.0336	1	0.0336	1.0 U
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
sec-Butylbenzene	JB	~~0.100~~	<1.00	0.280	µg/L	1	0.0439	1	0.0439	1.0 U
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	0.270	µg/L	1	0.0672	1	0.0672	
p-Isopropyltoluene	U	<0.0513	<1.00	0.270	µg/L	1	0.0513	1	0.0513	
4-Chlorotoluene	U	<0.0460	<1.00	0.190	µg/L	1	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	0.270	µg/L	1	0.0629	1	0.0629	
n-Butylbenzene	JB	~~0.140~~	<1.00	0.330	µg/L	1	0.0400	1	0.04	1.0 U
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663	
Naphthalene	JB	~~1.01~~	<5.00	0.620	µg/L	1	0.417	5	0.4166	5.0 U
Hexachlorobutadiene	U	<0.176	<5.00	1.94	µg/L	1	0.176	5	0.1758	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.5	µg/L	1	50.0	103	70 - 130
Toluene-d8		50.1	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		49.1	µg/L	1	50.0	98	70 - 130

Sample: 93201 - HGL GW27-008

Analysis:	Ag, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	27629	Date Analyzed:	2006-06-26	Analyzed By:	RR
Prep Batch:	24183	Sample Preparation:	2006-06-23	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Silver	U	<0.000297	<0.00200	<0.000297	mg/L	1	0.000297	0.002	0.000297

Sample: 93201 - HGL GW27-008

Analysis:	As, Dissolved	Analytical Method:	S 6010B	Prep Method:	S 3005A
QC Batch:	27629	Date Analyzed:	2006-06-26	Analyzed By:	RR
Prep Batch:	24183	Sample Preparation:	2006-06-23	Prepared By:	TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Arsenic	U	<0.00255	<0.00500	<0.00255	mg/L	1	0.00255	0.005	0.002551

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Sample: 93201 - HGL GW27-008

Analysis: Ba, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Barium		**0.0290**	**0.0290**	<0.00148	mg/L	1	0.00148	0.01	0.001475

Sample: 93201 - HGL GW27-008

Analysis: Cd, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Cadmium	U	<0.000595	<0.00100	<0.000595	mg/L	1	0.000595	0.001	0.000595

Sample: 93201 - HGL GW27-008

Analysis: Cr, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Chromium	U	<0.000238	<0.00500	<0.000238	mg/L	1	0.000238	0.005	0.000238

Sample: 93201 - HGL GW27-008

Analysis: Hg, Dissolved
QC Batch: 27646
Prep Batch: 24173

Analytical Method: S 7470A
Date Analyzed: 2006-06-23
Sample Preparation: 2006-06-22

Prep Method: N/A
Analyzed By: TP
Prepared By: TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Mercury	U	<0.0000329	<0.000200	<0.0000329	mg/L	1	0.0000329	0.0002	3.29e-05

Sample: 93201 - HGL GW27-008

Analysis: Pb, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Lead	U	<0.00180	<0.00500	<0.00180	mg/L	1	0.00180	0.005	0.001796

Sample: 93201 - HGL GW27-008

Analysis: Se, Dissolved
QC Batch: 27629
Prep Batch: 24183

Analytical Method: S 6010B
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-23

Prep Method: S 3005A
Analyzed By: RR
Prepared By: TS

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dissolved Selenium		**0.0100**	**0.0100**	<0.00232	mg/L	1	0.00232	0.01	0.002318

Sample: 93201 - HGL GW27-008

Analysis: Semivolatiles
QC Batch: 27651
Prep Batch: 24152

Analytical Method: S 8270C
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-22

Prep Method: S 3510C
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone	U	<0.000684	<0.00500	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719

continued . . .

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sample 93201 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Naphthalene	U	<0.000480	<0.00500	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene	U	<0.000416	<0.00500	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997

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sample 93201 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0154	mg/L	1	0.0800	19	10 - 84.7
Phenol-d5		0.0109	mg/L	1	0.0800	14	10 - 54.9
Nitrobenzene-d5		0.0378	mg/L	1	0.0800	47	10 - 202
2-Fluorobiphenyl		0.0438	mg/L	1	0.0800	55	10 - 199
2,4,6-Tribromophenol		0.0465	mg/L	1	0.0800	58	10 - 141
Terphenyl-d14		0.0548	mg/L	1	0.0800	68	10 - 160

Sample: 93201 - HGL GW27-008

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	27611	Date Analyzed:	2006-06-26	Analyzed By:	RR
Prep Batch:	24164	Sample Preparation:	2006-06-22	Prepared By:	TS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27647	Date Analyzed:	2006-06-23	Analyzed By:	TP
Prep Batch:	24174	Sample Preparation:	2006-06-22	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver		**0.0110**	**0.0110**	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium		**0.0520**	**0.0520**	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000217	<0.000200	<0.0000217	mg/L	1	0.0000217	0.0002	2.17e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 93201 - HGL GW27-008

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	27477	Date Analyzed:	2006-06-20	Analyzed By:	JL

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Prep Batch: 24097 Sample Preparation: 2006-06-20 Prepared By: SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<0.106	<5.00	<0.106	mg/L	0.1	0.106	50	1.06

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		16.0	mg/L	0.1	150	107	50 - 150

Sample: 93201 - HGL GW27-008

Analysis: TPH GRO
QC Batch: 27486
Prep Batch: 24102

Analytical Method: S 8015B
Date Analyzed: 2006-06-20
Sample Preparation: 2006-06-20

Prep Method: S 5030B
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.0272	<0.100	<0.0272	mg/L	1	0.0272	0.1	0.0272

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0925	mg/L	1	0.100	92	80 - 120
4-Bromofluorobenzene (4-BFB)		0.0867	mg/L	1	0.100	87	80 - 120

Sample: 93201 - HGL GW27-008

Analysis: Volatiles
QC Batch: 27581
Prep Batch: 24185

Analytical Method: S 8260B
Date Analyzed: 2006-06-22
Sample Preparation: 2006-06-22

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16
Acetone	U	<0.854	<10.0	2.30	µg/L	1	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736
Methylene chloride	U	<0.689	<5.00	<0.689	µg/L	1	0.689	5	0.6888

continued . . .

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sample 93201 continued ...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	U	<0.0475	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene	J	~~0.750~~	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	1.0 U
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	J	**0.170**	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	J
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	JB	~~0.420~~	<1.00	0.180	µg/L	1	0.0736	1	0.0736	1.0 U
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	0.220	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	JB	~~0.0400~~	<1.00	0.0400	µg/L	1	0.0217	1	0.0217	1.0 U
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	JB	~~0.400~~	<1.00	0.140	µg/L	1	0.0566	1	0.0566	1.0 U
m,p-Xylene	JB	~~0.290~~	<1.00	0.310	µg/L	1	0.0363	1	0.0363	1.0 U
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	JB	~~0.100~~	<1.00	0.130	µg/L	1	0.0504	1	0.0504	1.0 U
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	JB	~~0.0700~~	<1.00	0.200	µg/L	1	0.0406	1	0.0406	1.0 U
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	
n-Propylbenzene	JB	~~0.130~~	<1.00	0.280	µg/L	1	0.0423	1	0.0423	1.0 U
1,3,5-Trimethylbenzene	JB	~~0.0700~~	<1.00	0.240	µg/L	1	0.0557	1	0.0557	1.0 U
tert-Butylbenzene	U	<0.0770	<1.00	0.250	µg/L	1	0.0770	1	0.077	
1,2,4-Trimethylbenzene	JB	~~0.100~~	<1.00	0.220	µg/L	1	0.0336	1	0.0336	1.0 U
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
sec-Butylbenzene	JB	~~0.0700~~	<1.00	0.280	µg/L	1	0.0439	1	0.0439	1.0 U
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	0.270	µg/L	1	0.0672	1	0.0672	
p-Isopropyltoluene	JB	~~0.0600~~	<1.00	0.270	µg/L	1	0.0513	1	0.0513	1.0 U
4-Chlorotoluene	U	<0.0460	<1.00	0.190	µg/L	1	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	0.270	µg/L	1	0.0629	1	0.0629	
n-Butylbenzene	U	<0.0400	<1.00	0.330	µg/L	1	0.0400	1	0.04	
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663	
Naphthalene	U	<0.417	<5.00	0.620	µg/L	1	0.417	5	0.4166	

continued ...

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sample 93201 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Hexachlorobutadiene	U	<0.176	<5.00	1.94	µg/L	1	0.176	5	0.1758

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.7	µg/L	1	50.0	103	70 - 130
Toluene-d8		49.1	µg/L	1	50.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)		46.2	µg/L	1	50.0	92	70 - 130

Sample: 93204 - HGL RBGW061506

Analysis: Semivolatiles
QC Batch: 27651
Prep Batch: 24152

Analytical Method: S 8270C
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-22

Prep Method: S 3510C
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone	U	<0.000684	<0.00500	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene	U	<0.000480	<0.00500	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476

continued...

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sample 93204 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene	U	<0.000416	<0.00500	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529

continued . . .

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sample 93204 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol	[1]	0.00580	mg/L	1	0.0800	7	10 - 84.7
Phenol-d5		0.00820	mg/L	1	0.0800	10	10 - 54.9
Nitrobenzene-d5		0.0568	mg/L	1	0.0800	71	10 - 202
2-Fluorobiphenyl		0.0661	mg/L	1	0.0800	83	10 - 199
2,4,6-Tribromophenol		0.0205	mg/L	1	0.0800	26	10 - 141
Terphenyl-d14		0.0661	mg/L	1	0.0800	83	10 - 160

Sample: 93204 - HGL RBGW061506

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	27611	Date Analyzed:	2006-06-26	Analyzed By:	RR
Prep Batch:	24164	Sample Preparation:	2006-06-22	Prepared By:	TS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27647	Date Analyzed:	2006-06-23	Analyzed By:	TP
Prep Batch:	24174	Sample Preparation:	2006-06-22	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.000200	<0.00200	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium	J	**0.00400**	<0.0100	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000217	<0.000200	<0.0000217	mg/L	1	0.0000217	0.0002	2.17e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 93204 - HGL RBGW061506

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	27477	Date Analyzed:	2006-06-20	Analyzed By:	JL
Prep Batch:	24097	Sample Preparation:	2006-06-20	Prepared By:	SP

[1] 8270 Only - One acidic surrogate is out of control limits. The other two acidic surrogates show extraction was performed properly.

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Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<0.106	<5.00	<0.106	mg/L	0.1	0.106	50	1.06

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		15.8	mg/L	0.1	150	105	50 - 150

Sample: 93204 - HGL RBGW061506

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	27486	Date Analyzed:	2006-06-20	Analyzed By:	KB
Prep Batch:	24102	Sample Preparation:	2006-06-20	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.0272	<0.100	<0.0272	mg/L	1	0.0272	0.1	0.0272

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0996	mg/L	1	0.100	100	80 - 120
4-Bromofluorobenzene (4-BFB)		0.0898	mg/L	1	0.100	90	80 - 120

Sample: 93204 - HGL RBGW061506

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	27581	Date Analyzed:	2006-06-22	Analyzed By:	JG
Prep Batch:	24185	Sample Preparation:	2006-06-22	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16
Acetone	U	<0.854	<10.0	2.30	µg/L	1	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736
Methylene chloride	J	~~0.850~~	<5.00	<0.689	µg/L	1	0.689	5	0.6888 5.0 U
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598

continued ...

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sample 93204 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	U	<0.0475	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene	J	~~0.200~~	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	1.0 U
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	JB	~~0.410~~	<1.00	0.180	µg/L	1	0.0736	1	0.0736	1.0 U
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	0.220	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	U	<0.0217	<1.00	0.0400	µg/L	1	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	JB	~~0.250~~	<1.00	0.140	µg/L	1	0.0566	1	0.0566	1.0 U
m,p-Xylene	JB	~~0.230~~	<1.00	0.310	µg/L	1	0.0363	1	0.0363	1.0 U
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	U	<0.0504	<1.00	0.130	µg/L	1	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	JB	~~0.0600~~	<1.00	0.200	µg/L	1	0.0406	1	0.0406	1.0 U
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	
n-Propylbenzene	JB	~~0.100~~	<1.00	0.280	µg/L	1	0.0423	1	0.0423	1.0 U
1,3,5-Trimethylbenzene	JB	~~0.0600~~	<1.00	0.240	µg/L	1	0.0557	1	0.0557	1.0 U
tert-Butylbenzene	U	<0.0770	<1.00	0.250	µg/L	1	0.0770	1	0.077	
1,2,4-Trimethylbenzene	JB	~~0.130~~	<1.00	0.220	µg/L	1	0.0336	1	0.0336	1.0 U
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
sec-Butylbenzene	JB	~~0.0600~~	<1.00	0.280	µg/L	1	0.0439	1	0.0439	1.0 U
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	0.270	µg/L	1	0.0672	1	0.0672	
p-Isopropyltoluene	JB	~~0.0700~~	<1.00	0.270	µg/L	1	0.0513	1	0.0513	1.0 U
4-Chlorotoluene	U	<0.0460	<1.00	0.190	µg/L	1	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	0.270	µg/L	1	0.0629	1	0.0629	
n-Butylbenzene	JB	~~0.100~~	<1.00	0.330	µg/L	1	0.0400	1	0.04	1.0 U
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663	
Naphthalene	U	<0.417	<5.00	0.620	µg/L	1	0.417	5	0.4166	
Hexachlorobutadiene	U	<0.176	<5.00	1.94	µg/L	1	0.176	5	0.1758	

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.2	µg/L	1	50.0	106	70 - 130
Toluene-d8		50.0	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		48.1	µg/L	1	50.0	96	70 - 130

Sample: 93221 - HGLTB061606

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	27486	Date Analyzed:	2006-06-20	Analyzed By:	KB
Prep Batch:	24102	Sample Preparation:	2006-06-20	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.0272	<0.100	<0.0272	mg/L	1	0.0272	0.1	0.0272

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0946	mg/L	1	0.100	95	80 - 120
4-Bromofluorobenzene (4-BFB)		0.0873	mg/L	1	0.100	87	80 - 120

Sample: 93221 - HGLTB061606

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	27581	Date Analyzed:	2006-06-22	Analyzed By:	JG
Prep Batch:	24185	Sample Preparation:	2006-06-22	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16
Acetone	U	<0.854	<10.0	2.30	µg/L	1	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736
Methylene chloride	J	**0.980**	<5.00	<0.689	µg/L	1	0.689	5	0.6888
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665

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sample 93221 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	U	<0.0475	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene	J	**0.160**	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	J
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	JB	**0.250**	<1.00	0.180	µg/L	1	0.0736	1	0.0736	J
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	0.220	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	U	<0.0217	<1.00	0.0400	µg/L	1	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	JB	**0.180**	<1.00	0.140	µg/L	1	0.0566	1	0.0566	J
m,p-Xylene	JB	**0.180**	<1.00	0.310	µg/L	1	0.0363	1	0.0363	J
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	JB	**0.0800**	<1.00	0.130	µg/L	1	0.0504	1	0.0504	J
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	U	<0.0406	<1.00	0.200	µg/L	1	0.0406	1	0.0406	
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	
n-Propylbenzene	JB	**0.0900**	<1.00	0.280	µg/L	1	0.0423	1	0.0423	J
1,3,5-Trimethylbenzene	JB	**0.0600**	<1.00	0.240	µg/L	1	0.0557	1	0.0557	J
tert-Butylbenzene	U	<0.0770	<1.00	0.250	µg/L	1	0.0770	1	0.077	
1,2,4-Trimethylbenzene	JB	**0.100**	<1.00	0.220	µg/L	1	0.0336	1	0.0336	J
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
sec-Butylbenzene	JB	**0.0600**	<1.00	0.280	µg/L	1	0.0439	1	0.0439	J
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	0.270	µg/L	1	0.0672	1	0.0672	
p-Isopropyltoluene	U	<0.0513	<1.00	0.270	µg/L	1	0.0513	1	0.0513	
4-Chlorotoluene	U	<0.0460	<1.00	0.190	µg/L	1	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	0.270	µg/L	1	0.0629	1	0.0629	
n-Butylbenzene	U	<0.0400	<1.00	0.330	µg/L	1	0.0400	1	0.04	
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663	
Naphthalene	U	<0.417	<5.00	0.620	µg/L	1	0.417	5	0.4166	
Hexachlorobutadiene	U	<0.176	<5.00	1.94	µg/L	1	0.176	5	0.1758	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.8	µg/L	1	50.0	106	70 - 130

continued...

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sample continued . . .

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Toluene-d8		49.2	µg/L	1	50.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)		48.0	µg/L	1	50.0	96	70 - 130

Sample: 93247 - HGLRBSB-061706

Analysis: Semivolatiles
QC Batch: 27651
Prep Batch: 24152

Analytical Method: S 8270C
Date Analyzed: 2006-06-26
Sample Preparation: 2006-06-22

Prep Method: S 3510C
Analyzed By: AG
Prepared By: AG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Pyridine	U	<0.000890	<0.00500	<0.000890	mg/L	1	0.000890	0.005	0.00089
n-Nitrosodimethylamine	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
2-Picoline	U	<0.00121	<0.00500	<0.00121	mg/L	1	0.00121	0.005	0.00121
Methyl methanesulfonate	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Ethyl methanesulfonate	U	<0.000552	<0.00500	<0.000552	mg/L	1	0.000552	0.005	0.000552
Phenol	U	<0.000495	<0.00500	<0.000495	mg/L	1	0.000495	0.005	0.000495
Aniline	U	<0.00287	<0.00500	<0.00287	mg/L	1	0.00287	0.005	0.00287
bis(2-chloroethyl)ether	U	<0.000535	<0.00500	<0.000535	mg/L	1	0.000535	0.005	0.000535
2-Chlorophenol	U	<0.000923	<0.00500	<0.000923	mg/L	1	0.000923	0.005	0.000923
1,3-Dichlorobenzene (meta)	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
1,4-Dichlorobenzene (para)	U	<0.000516	<0.00500	<0.000516	mg/L	1	0.000516	0.005	0.000516
Benzyl alcohol	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
1,2-Dichlorobenzene (ortho)	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
2-Methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
bis(2-chloroisopropyl)ether	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
4-Methylphenol / 3-Methylphenol	U	<0.000488	<0.00500	<0.000488	mg/L	1	0.000488	0.005	0.000488
n-Nitrosodi-n-propylamine	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
Hexachloroethane	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Acetophenone	U	<0.000684	<0.00500	<0.000684	mg/L	1	0.000684	0.005	0.000684
Nitrobenzene	U	<0.000651	<0.00500	<0.000651	mg/L	1	0.000651	0.005	0.000651
n-Nitrosopiperidine	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Isophorone	U	<0.000743	<0.00500	<0.000743	mg/L	1	0.000743	0.005	0.000743
2-Nitrophenol	U	<0.000833	<0.00500	<0.000833	mg/L	1	0.000833	0.005	0.000833
2,4-Dimethylphenol	U	<0.000945	<0.00500	<0.000945	mg/L	1	0.000945	0.005	0.000945
bis(2-chloroethoxy)methane	U	<0.000580	<0.00500	<0.000580	mg/L	1	0.000580	0.005	0.00058
2,4-Dichlorophenol	U	<0.000902	<0.00500	<0.000902	mg/L	1	0.000902	0.005	0.000902
1,2,4-Trichlorobenzene	U	<0.000484	<0.00500	<0.000484	mg/L	1	0.000484	0.005	0.000484
Benzoic acid	U	<0.000719	<0.00500	<0.000719	mg/L	1	0.000719	0.005	0.000719
Naphthalene	U	<0.000480	<0.00500	<0.000480	mg/L	1	0.000480	0.005	0.00048
a,a-Dimethylphenethylamine	U	<0.00199	<0.00500	<0.00199	mg/L	1	0.00199	0.005	0.00199
4-Chloroaniline	U	<0.000978	<0.00500	<0.000978	mg/L	1	0.000978	0.005	0.000978
2,6-Dichlorophenol	U	<0.00132	<0.0100	<0.00132	mg/L	1	0.00132	0.01	0.00132
Hexachlorobutadiene	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
n-Nitroso-di-n-butylamine	U	<0.000704	<0.00500	<0.000704	mg/L	1	0.000704	0.005	0.000704
4-Chloro-3-methylphenol	U	<0.000662	<0.00500	<0.000662	mg/L	1	0.000662	0.005	0.000662
2-Methylnaphthalene	U	<0.000416	<0.00500	<0.000416	mg/L	1	0.000416	0.005	0.000416
1-Methylnaphthalene	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
1,2,4,5-Tetrachlorobenzene	U	<0.000445	<0.00500	<0.000445	mg/L	1	0.000445	0.005	0.000445
Hexachlorocyclopentadiene	U	<0.000387	<0.00500	<0.000387	mg/L	1	0.000387	0.005	0.000387
2,4,6-Trichlorophenol	U	<0.00143	<0.0100	<0.00143	mg/L	1	0.00143	0.01	0.00143

continued . . .

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sample 93247 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
2,4,5-Trichlorophenol	U	<0.00143	<0.00500	<0.00143	mg/L	1	0.00143	0.005	0.00143
2-Chloronaphthalene	U	<0.000327	<0.00500	<0.000327	mg/L	1	0.000327	0.005	0.000327
1-Chloronaphthalene	U	<0.000450	<0.00500	<0.000450	mg/L	1	0.000450	0.005	0.00045
2-Nitroaniline	U	<0.00102	<0.00500	<0.00102	mg/L	1	0.00102	0.005	0.00102
Dimethylphthalate	U	<0.000752	<0.00500	<0.000752	mg/L	1	0.000752	0.005	0.000752
Acenaphthylene	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
2,6-Dinitrotoluene	U	<0.000738	<0.00500	<0.000738	mg/L	1	0.000738	0.005	0.000738
3-Nitroaniline	U	<0.000694	<0.00500	<0.000694	mg/L	1	0.000694	0.005	0.000694
Acenaphthene	U	<0.000601	<0.00500	<0.000601	mg/L	1	0.000601	0.005	0.000601
2,4-Dinitrophenol	U	<0.000476	<0.00500	<0.000476	mg/L	1	0.000476	0.005	0.000476
Dibenzofuran	U	<0.000556	<0.00500	<0.000556	mg/L	1	0.000556	0.005	0.000556
Pentachlorobenzene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
4-Nitrophenol	U	<0.000924	<0.0250	<0.000924	mg/L	1	0.000924	0.025	0.000924
2,4-Dinitrotoluene	U	<0.000803	<0.00500	<0.000803	mg/L	1	0.000803	0.005	0.000803
1-Naphthylamine	U	<0.00122	<0.00500	<0.00122	mg/L	1	0.00122	0.005	0.00122
2,3,4,6-Tetrachlorophenol	U	<0.00225	<0.0100	<0.00225	mg/L	1	0.00225	0.01	0.00225
2-Naphthylamine	U	<0.00147	<0.00500	<0.00147	mg/L	1	0.00147	0.005	0.00147
Fluorene	U	<0.000675	<0.00500	<0.000675	mg/L	1	0.000675	0.005	0.000675
4-Chlorophenyl-phenylether	U	<0.000679	<0.00500	<0.000679	mg/L	1	0.000679	0.005	0.000679
Diethylphthalate	U	<0.000843	<0.00500	<0.000843	mg/L	1	0.000843	0.005	0.000843
4-Nitroaniline	U	<0.000740	<0.00500	<0.000740	mg/L	1	0.000740	0.005	0.00074
Diphenylhydrazine	U	<0.000897	<0.00500	<0.000897	mg/L	1	0.000897	0.005	0.000897
4,6-Dinitro-2-methylphenol	U	<0.000630	<0.00500	<0.000630	mg/L	1	0.000630	0.005	0.00063
Diphenylamine	U	<0.000598	<0.00500	<0.000598	mg/L	1	0.000598	0.005	0.000598
4-Bromophenyl-phenylether	U	<0.000741	<0.00500	<0.000741	mg/L	1	0.000741	0.005	0.000741
Phenacetin	U	<0.000494	<0.00500	<0.000494	mg/L	1	0.000494	0.005	0.000494
Hexachlorobenzene	U	<0.000571	<0.00500	<0.000571	mg/L	1	0.000571	0.005	0.000571
4-Aminobiphenyl	U	<0.00157	<0.00500	<0.00157	mg/L	1	0.00157	0.005	0.00157
Pentachlorophenol	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Anthracene	U	<0.000641	<0.00500	<0.000641	mg/L	1	0.000641	0.005	0.000641
Pentachloronitrobenzene	U	<0.000609	<0.00500	<0.000609	mg/L	1	0.000609	0.005	0.000609
Pronamide	U	<0.000441	<0.00500	<0.000441	mg/L	1	0.000441	0.005	0.000441
Phenanthrene	U	<0.000523	<0.00500	<0.000523	mg/L	1	0.000523	0.005	0.000523
Di-n-butylphthalate	U	<0.000564	<0.00500	<0.000564	mg/L	1	0.000564	0.005	0.000564
Fluoranthene	U	<0.000399	<0.00500	<0.000399	mg/L	1	0.000399	0.005	0.000399
Benzidine	U	<0.00133	<0.0250	<0.00133	mg/L	1	0.00133	0.025	0.00133
Pyrene	U	<0.00146	<0.00500	<0.00146	mg/L	1	0.00146	0.005	0.00146
p-Dimethylaminoazobenzene	U	<0.00247	<0.00500	<0.00247	mg/L	1	0.00247	0.005	0.00247
Butylbenzylphthalate	U	<0.000997	<0.00500	<0.000997	mg/L	1	0.000997	0.005	0.000997
Benzo(a)anthracene	U	<0.000734	<0.00500	<0.000734	mg/L	1	0.000734	0.005	0.000734
3,3-Dichlorobenzidine	U	<0.00153	<0.00500	<0.00153	mg/L	1	0.00153	0.005	0.00153
Chrysene	U	<0.000814	<0.00500	<0.000814	mg/L	1	0.000814	0.005	0.000814
bis(2-ethylhexyl)phthalate	U	<0.00209	<0.00500	<0.00209	mg/L	1	0.00209	0.005	0.00209
Di-n-octylphthalate	U	<0.000529	<0.00500	<0.000529	mg/L	1	0.000529	0.005	0.000529
Benzo(b)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
Benzo(k)fluoranthene	U	<0.000501	<0.00500	<0.000501	mg/L	1	0.000501	0.005	0.000501
7,12-Dimethylbenz(a)anthracene	U	<0.000320	<0.00500	<0.000320	mg/L	1	0.000320	0.005	0.00032
Benzo(a)pyrene	U	<0.000515	<0.00500	<0.000515	mg/L	1	0.000515	0.005	0.000515
3-Methylcholanthrene	U	<0.000457	<0.00500	<0.000457	mg/L	1	0.000457	0.005	0.000457
Dibenzo(a,j)acridine	U	<0.000846	<0.00500	<0.000846	mg/L	1	0.000846	0.005	0.000846
Indeno(1,2,3-cd)pyrene	U	<0.000548	<0.00500	<0.000548	mg/L	1	0.000548	0.005	0.000548

continued...

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sample 93247 continued . . .

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Dibenzo(a,h)anthracene	U	<0.000498	<0.00500	<0.000498	mg/L	1	0.000498	0.005	0.000498
Benzo(g,h,i)perylene	U	<0.000462	<0.00500	<0.000462	mg/L	1	0.000462	0.005	0.000462

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		0.0208	mg/L	1	0.0800	26	10 - 84.7
Phenol-d5		0.0120	mg/L	1	0.0800	15	10 - 54.9
Nitrobenzene-d5		0.0506	mg/L	1	0.0800	63	10 - 202
2-Fluorobiphenyl		0.0575	mg/L	1	0.0800	72	10 - 199
2,4,6-Tribromophenol		0.0635	mg/L	1	0.0800	79	10 - 141
Terphenyl-d14		0.0614	mg/L	1	0.0800	77	10 - 160

Sample: 93247 - HGLRBSB-061706

Analysis:	Total 8 Metals	Analytical Method:	S 6010B	Prep Method:	S 3010A
QC Batch:	27611	Date Analyzed:	2006-06-26	Analyzed By:	RR
Prep Batch:	24164	Sample Preparation:	2006-06-22	Prepared By:	TS
Analysis:	Total 8 Metals	Analytical Method:	S 7470A	Prep Method:	N/A
QC Batch:	27647	Date Analyzed:	2006-06-23	Analyzed By:	TP
Prep Batch:	24174	Sample Preparation:	2006-06-22	Prepared By:	TP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Total Silver	U	<0.000200	<0.00200	<0.000200	mg/L	1	0.000200	0.002	0.0002
Total Arsenic	U	<0.00500	<0.00500	<0.00500	mg/L	1	0.00500	0.005	0.005
Total Barium	J	**0.00500**	<0.0100	<0.00200	mg/L	1	0.00200	0.01	0.002
Total Cadmium	U	<0.000400	<0.00100	<0.000400	mg/L	1	0.000400	0.001	0.0004
Total Chromium	U	<0.00140	<0.0100	<0.00140	mg/L	1	0.00140	0.01	0.0014
Total Mercury	U	<0.0000217	<0.000200	<0.0000217	mg/L	1	0.0000217	0.0002	2.17e-05
Total Lead	U	<0.00167	<0.00500	<0.00167	mg/L	1	0.00167	0.005	0.001671
Total Selenium	U	<0.00163	<0.0100	<0.00163	mg/L	1	0.00163	0.01	0.001634

Sample: 93247 - HGLRBSB-061706

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	27477	Date Analyzed:	2006-06-20	Analyzed By:	JL
Prep Batch:	24097	Sample Preparation:	2006-06-20	Prepared By:	SP

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
DRO	U	<0.106	<5.00	<0.106	mg/L	0.1	0.106	50	1.06

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		16.0	mg/L	0.1	150	107	50 - 150

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Sample: 93247 - HGLRBSB-061706

Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	27486	Date Analyzed:	2006-06-20	Analyzed By:	KB
Prep Batch:	24102	Sample Preparation:	2006-06-20	Prepared By:	KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.0272	<0.100	<0.0272	mg/L	1	0.0272	0.1	0.0272

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0963	mg/L	1	0.100	96	80 - 120
4-Bromofluorobenzene (4-BFB)		0.0877	mg/L	1	0.100	88	80 - 120

Sample: 93247 - HGLRBSB-061706

Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	27581	Date Analyzed:	2006-06-22	Analyzed By:	JG
Prep Batch:	24185	Sample Preparation:	2006-06-22	Prepared By:	JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16
Acetone	U	<0.854	<10.0	2.30	µg/L	1	0.854	10	0.8536
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736
Methylene chloride	U	<0.689	<5.00	<0.689	µg/L	1	0.689	5	0.6888
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557
Chloroform	J	**0.0600**	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423
Benzene	J	**0.110**	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933
Trichloroethene (TCE)	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495

continued . . .

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sample 93247 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
Toluene	JB	~~0.230~~	<1.00	0.180	µg/L	1	0.0736	1	0.0736	1.0 U
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056	
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625	
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791	
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046	
Tetrachloroethene (PCE)	U	<0.0696	<1.00	0.220	µg/L	1	0.0696	1	0.0696	
Chlorobenzene	U	<0.0217	<1.00	0.0400	µg/L	1	0.0217	1	0.0217	
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253	
Ethylbenzene	JB	~~0.120~~	<1.00	0.140	µg/L	1	0.0566	1	0.0566	1.0 U
m,p-Xylene	JB	~~0.120~~	<1.00	0.310	µg/L	1	0.0363	1	0.0363	1.0 U
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859	
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394	
o-Xylene	U	<0.0504	<1.00	0.130	µg/L	1	0.0504	1	0.0504	
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283	
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679	
Isopropylbenzene	U	<0.0406	<1.00	0.200	µg/L	1	0.0406	1	0.0406	
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033	
n-Propylbenzene	JB	~~0.0700~~	<1.00	0.280	µg/L	1	0.0423	1	0.0423	1.0 U
1,3,5-Trimethylbenzene	U	<0.0557	<1.00	0.240	µg/L	1	0.0557	1	0.0557	
tert-Butylbenzene	U	<0.0770	<1.00	0.250	µg/L	1	0.0770	1	0.077	
1,2,4-Trimethylbenzene	JB	~~0.0800~~	<1.00	0.220	µg/L	1	0.0336	1	0.0336	1.0 U
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672	
sec-Butylbenzene	JB	~~0.0500~~	<1.00	0.280	µg/L	1	0.0439	1	0.0439	1.0 U
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	0.270	µg/L	1	0.0672	1	0.0672	
p-Isopropyltoluene	JB	~~0.0600~~	<1.00	0.270	µg/L	1	0.0513	1	0.0513	1.0 U
4-Chlorotoluene	U	<0.0460	<1.00	0.190	µg/L	1	0.0460	1	0.046	
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	0.270	µg/L	1	0.0629	1	0.0629	
n-Butylbenzene	JB	~~0.0700~~	<1.00	0.330	µg/L	1	0.0400	1	0.04	1.0 U
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379	
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035	
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663	
Naphthalene	U	<0.417	<5.00	0.620	µg/L	1	0.417	5	0.4166	
Hexachlorobutadiene	U	<0.176	<5.00	1.94	µg/L	1	0.176	5	0.1758	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.0	µg/L	1	50.0	106	70 - 130
Toluene-d8		49.3	µg/L	1	50.0	99	70 - 130
4-Bromofluorobenzene (4-BFB)		48.4	µg/L	1	50.0	97	70 - 130

Sample: 93248 - HGLLTB-061706

Analysis: TPH GRO
QC Batch: 27486

Analytical Method: S 8015B
Date Analyzed: 2006-06-20

Prep Method: S 5030B
Analyzed By: KB

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sample 93248 continued...

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
trans-1,3-Dichloropropene	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504
Toluene	JB	**0.120**	<1.00	0.180	µg/L	1	0.0736	1	0.0736
1,1,2-Trichloroethane	U	<0.106	<1.00	<0.106	µg/L	1	0.106	1	0.1056
1,3-Dichloropropane	U	<0.0625	<1.00	<0.0625	µg/L	1	0.0625	1	0.0625
Dibromochloromethane	U	<0.0791	<1.00	<0.0791	µg/L	1	0.0791	1	0.0791
1,2-Dibromoethane (EDB)	U	<0.0460	<1.00	<0.0460	µg/L	1	0.0460	1	0.046
Tetrachloroethene (PCE)	U	<0.0696	<1.00	0.220	µg/L	1	0.0696	1	0.0696
Chlorobenzene	U	<0.0217	<1.00	0.0400	µg/L	1	0.0217	1	0.0217
1,1,1,2-Tetrachloroethane	U	<0.125	<1.00	<0.125	µg/L	1	0.125	1	0.1253
Ethylbenzene	JB	**0.0600**	<1.00	0.140	µg/L	1	0.0566	1	0.0566
m,p-Xylene	JB	**0.0500**	<1.00	0.310	µg/L	1	0.0363	1	0.0363
Bromoform	U	<0.0859	<1.00	<0.0859	µg/L	1	0.0859	1	0.0859
Styrene	U	<0.0394	<1.00	<0.0394	µg/L	1	0.0394	1	0.0394
o-Xylene	U	<0.0504	<1.00	0.130	µg/L	1	0.0504	1	0.0504
1,1,2,2-Tetrachloroethane	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672
2-Chlorotoluene	U	<0.0283	<1.00	<0.0283	µg/L	1	0.0283	1	0.0283
1,2,3-Trichloropropane	U	<0.0679	<1.00	<0.0679	µg/L	1	0.0679	1	0.0679
Isopropylbenzene	U	<0.0406	<1.00	0.200	µg/L	1	0.0406	1	0.0406
Bromobenzene	U	<0.103	<1.00	<0.103	µg/L	1	0.103	1	0.1033
n-Propylbenzene	U	<0.0423	<1.00	0.280	µg/L	1	0.0423	1	0.0423
1,3,5-Trimethylbenzene	U	<0.0557	<1.00	0.240	µg/L	1	0.0557	1	0.0557
tert-Butylbenzene	U	<0.0770	<1.00	0.250	µg/L	1	0.0770	1	0.077
1,2,4-Trimethylbenzene	JB	**0.0400**	<1.00	0.220	µg/L	1	0.0336	1	0.0336
1,4-Dichlorobenzene (para)	U	<0.0672	<1.00	<0.0672	µg/L	1	0.0672	1	0.0672
sec-Butylbenzene	U	<0.0439	<1.00	0.280	µg/L	1	0.0439	1	0.0439
1,3-Dichlorobenzene (meta)	U	<0.0672	<1.00	0.270	µg/L	1	0.0672	1	0.0672
p-Isopropyltoluene	U	<0.0513	<1.00	0.270	µg/L	1	0.0513	1	0.0513
4-Chlorotoluene	U	<0.0460	<1.00	0.190	µg/L	1	0.0460	1	0.046
1,2-Dichlorobenzene (ortho)	U	<0.0629	<1.00	0.270	µg/L	1	0.0629	1	0.0629
n-Butylbenzene	U	<0.0400	<1.00	0.330	µg/L	1	0.0400	1	0.04
1,2-Dibromo-3-chloropropane	U	<0.538	<2.00	<0.538	µg/L	1	0.538	2	0.5379
1,2,3-Trichlorobenzene	U	<0.504	<5.00	<0.504	µg/L	1	0.504	5	0.5035
1,2,4-Trichlorobenzene	U	<0.166	<5.00	<0.166	µg/L	1	0.166	5	0.1663
Naphthalene	U	<0.417	<5.00	0.620	µg/L	1	0.417	5	0.4166
Hexachlorobutadiene	U	<0.176	<5.00	1.94	µg/L	1	0.176	5	0.1758

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.9	µg/L	1	50.0	108	70 - 130
Toluene-d8		49.4	µg/L	1	50.0	99	70 - 130
4-Bromofluorobenzene (4-BFB)		48.4	µg/L	1	50.0	97	70 - 130

Method Blank (1)

QC Batch: 27477
Prep Batch: 24097

Date Analyzed: 2006-06-20
QC Preparation: 2006-06-20

Analyzed By: JL
Prepared By: JL

Parameter	Flag	Result	Units	Reporting Limits
DRO		<0.106	mg/L	1.06

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Prep Batch: 24102 Sample Preparation: 2006-06-20 Prepared By: KB

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.136	<0.500	<0.136	mg/L	5	0.136	0.1	0.0272

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.487	mg/L	5	0.100	97	80 - 120
4-Bromofluorobenzene (4-BFB)		0.441	mg/L	5	0.100	88	80 - 120

Sample: 93248 - HGLLTB-061706

Analysis: Volatiles
QC Batch: 27581
Prep Batch: 24185

Analytical Method: S 8260B
Date Analyzed: 2006-06-22
Sample Preparation: 2006-06-22

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

Parameter	Flag	SQL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SQL	MQL (Unadjusted)	MDL (Unadjusted)	
Bromochloromethane	U	<0.0699	<1.00	<0.0699	µg/L	1	0.0699	1	0.0699	
Dichlorodifluoromethane	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
Chloromethane (methyl chloride)	U	<0.230	<1.00	<0.230	µg/L	1	0.230	1	0.2298	
Vinyl Chloride	U	<0.0902	<1.00	<0.0902	µg/L	1	0.0902	1	0.0902	
Bromomethane (methyl bromide)	U	<0.740	<1.00	<0.740	µg/L	1	0.740	1	0.7402	
Chloroethane	U	<0.195	<1.00	<0.195	µg/L	1	0.195	1	0.1952	
Trichlorofluoromethane	U	<0.160	<1.00	<0.160	µg/L	1	0.160	1	0.16	
Acetone	U	<0.854	<10.0	2.30	µg/L	1	0.854	10	0.8536	
Iodomethane (methyl iodide)	U	<0.112	<5.00	<0.112	µg/L	1	0.112	5	0.1119	
Carbon Disulfide	U	<0.0764	<1.00	<0.0764	µg/L	1	0.0764	1	0.0764	
Acrylonitrile	U	<0.184	<1.00	<0.184	µg/L	1	0.184	1	0.1837	
2-Butanone (MEK)	U	<0.394	<5.00	<0.394	µg/L	1	0.394	5	0.3941	
4-Methyl-2-pentanone (MIBK)	U	<0.484	<5.00	<0.484	µg/L	1	0.484	5	0.484	
2-Hexanone	U	<0.0975	<1.00	<0.0975	µg/L	1	0.0975	1	0.0975	
trans 1,4-Dichloro-2-butene	U	<0.421	<10.0	<0.421	µg/L	1	0.421	10	0.4207	
1,1-Dichloroethene	U	<0.0736	<1.00	<0.0736	µg/L	1	0.0736	1	0.0736	
Methylene chloride	J	**1.09**	<5.00	<0.689	µg/L	1	0.689	5	0.6888	4
MTBE	U	<0.0504	<1.00	<0.0504	µg/L	1	0.0504	1	0.0504	
trans-1,2-Dichloroethene	U	<0.0598	<1.00	<0.0598	µg/L	1	0.0598	1	0.0598	
1,1-Dichloroethane	U	<0.0299	<1.00	<0.0299	µg/L	1	0.0299	1	0.0299	
cis-1,2-Dichloroethene	U	<0.101	<1.00	<0.101	µg/L	1	0.101	1	0.1006	
2,2-Dichloropropane	U	<0.0665	<1.00	<0.0665	µg/L	1	0.0665	1	0.0665	
1,2-Dichloroethane (EDC)	U	<0.0557	<1.00	<0.0557	µg/L	1	0.0557	1	0.0557	
Chloroform	U	<0.0475	<1.00	<0.0475	µg/L	1	0.0475	1	0.0475	
1,1,1-Trichloroethane	U	<0.0846	<1.00	<0.0846	µg/L	1	0.0846	1	0.0846	
1,1-Dichloropropene	U	<0.0423	<1.00	<0.0423	µg/L	1	0.0423	1	0.0423	
Benzene	J	**0.0700**	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	4
Carbon Tetrachloride	U	<0.121	<1.00	<0.121	µg/L	1	0.121	1	0.1213	
1,2-Dichloropropane	U	<0.0933	<1.00	<0.0933	µg/L	1	0.0933	1	0.0933	
Trichloroethene (TCE)	U	<0.0495	<1.00	<0.0495	µg/L	1	0.0495	1	0.0495	
Dibromomethane (methylene bromide)	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	
Bromodichloromethane	U	<0.0651	<1.00	<0.0651	µg/L	1	0.0651	1	0.0651	
2-Chloroethyl vinyl ether	U	<0.0905	<5.00	<0.0905	µg/L	1	0.0905	5	0.0905	
cis-1,3-Dichloropropene	U	<0.0640	<1.00	<0.0640	µg/L	1	0.0640	1	0.064	

continued ...

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EPA Level 3
DATA VALIDATION REPORT

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Water
Dates of Sampling: July 11-12, 2006

Prepared for

HydroGeoLogic, Inc.
1155 Herndon Parkway, Suite 900
Herndon, Virginia 20170

SDG No. D6G180345
Purchase Order No. P0000715
QBD Job No. 1296X

Reviewed and approved,

T Thomas Davis 1/17/07

Thomas S. Davis, Principal Date

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Attachments

Attachment 1 Data Qualifier Flag Definitions
Attachment 2 Summary Table of Data Qualifier Flags
Attachment 3 Reviewed/Revised Laboratory Forms

A. Abbreviations and Acronyms

Acronym/ Abbreviation	Definition
%D	percent difference
%R	percent recovery
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
AA	atomic absorption
BFB	bromofluorobenzene
BNA	base/neutral/acid compounds
BS	blank spike
BSD	blank spike duplicate
CCB	continuing calibration blank
CCC	calibration check compound
CCS	continuing calibration standard
CCV	continuing calibration verification
CF	calibration factor
CLP	Contract Laboratory Program
COC	chain of custody record
CRA	contract required standard at the CRDL for graphite furnace AA method
CRDL	contract required detection limit
CRI	contract required standard at the CRDL for ICP method
CRQL	contract required quantitation limit
CV	coefficient of variation
CVAA	cold vapor atomic absorption
4,4'-DDD	4,4'-dechlorodiphenyldichloroethane
4,4'-DDE	4,4'-dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
DFTPP	decafluorotriphenylphosphine
DHG	dissolved hydrogen gas
DRO	diesel range organics
DQO	data quality objective
EB	equipment blank
EICP	extracted ion current profile
EPA	U.S. Environmental Protection Agency
ER	equipment rinsate
FB	field blank
GC/ECD	gas chromatography/electron capture detector

Acronym/ Abbreviation	Definition
GC/ELCD	gas chromatography/electrolytic conductivity detector (Hall detector)
GC/FID	gas chromatography/flame ionization detector
GC/PID	gas chromatography/photoionization detector
GC/MS	gas chromatography/mass spectrometry
GFAA	graphite furnace atomic absorption
GLP	good laboratory practices
GRO	gasoline range organics
GPC	gel permeation chromatography
HPLC	high-performance liquid chromatography
HRGC	high resolution gas chromatography
HRMS	high resolution mass spectrometry
ICB	initial calibration blank
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
IDL	instrument detection limit
IR	infrared spectroscopy
IS	internal standards
LCS	laboratory control standard
LCSD	laboratory control standard duplicate
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
MS	matrix spike
MSA	method of standard addition
MSD	matrix spike duplicate
m/z	mass to charge ration
NIST	National Institute of Standards and Technology
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PE	performance evaluation
PEM	performance evaluation mixture
PPB	parts per billion
PPM	parts per million
PPT	parts per trillion
PNA	polynuclear aromatic hydrocarbon
PQL	practical quantitation limit
QA	quality assurance

Acronym/ Abbreviation	Definition
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RIC	reconstructed ion chromatograph
RPD	relative percent difference
RRF	relative response factor
RRT	relative retention time
RSD	relative standard deviation
RT	retention time
SDG	sample delivery group
SOP	standard operating procedure
SOW	statement of work
SVOC	semivolatile organic compound
SPCC	system performance check compound
SRM	standard reference material
TB	trip blank
TIC	tentatively identified compound
TPH	total petroleum hydrocarbons
TPH-G	total petroleum hydrocarbons - gasoline
TPH-D	total petroleum hydrocarbons - diesel
UV/VIS	ultraviolet/visible
VOA	volatile organic analysis

B. Introduction

Laboratory Sciences, Inc., d.b.a. *Quality by Design* (QBD), has completed an EPA Level 3 Data Validation on the submitted data packages in accordance with Purchase Order No. P0000715.

The reporting format and criteria for recommending data qualifying flags for this data set are described in the EPA *"Functional Guidelines for Evaluating Organics Analyses,"* as revised, 1999; the *Baseline Quality Assurance Project Plan, Holloman Air Force Base, New Mexico*, November, 2003; the *Quality Assurance Project Plan Addendum Supplemental RCRA Facility Investigation, Holloman Air Force Base, Alamogordo, New Mexico*, July 2005; or using criteria listed in the method referenced. Data may be qualified for any of the following reasons:

1. By the laboratory prior to receipt by the reviewer
2. Because of laboratory deviation from the designated method
3. Because the data may not meet the criteria listed in the reference above
4. By the professional judgment of the reviewer

This data validation report consists of several sections, each of which are formatted to follow *Functional Guidelines*, but which also include subsections discussing QBD contacts with the laboratory, other comments, and a summary table of data qualifiers.

The data set consists of an electronic data package of a 70-page laboratory report from Severn Trent Laboratory in Denver, Colorado, and contains data for the samples shown in Table 1. The data reviewers and senior reviewers are shown in Table 2.

Each data set includes an analytical data package for each sample, copies of the completed COC forms, and a QC data package. The analytical data package includes analytical results, blank sample results, both laboratory and client sample identifications, appropriate dates but not times, method reporting limits, method references, surrogate recoveries as appropriate, the laboratory's name and address, and the initials of the person releasing the data. The custody forms include the receipt of the sample but not the laboratory's internal tracking. The QC data package includes a tabular list of the laboratory's sample identification, spiking concentrations, recoveries, percentage calculations, and acceptance windows.

All results were acceptable, although some received qualification. A discussion of the QC criteria and data usability is presented in this report. A listing of all qualified results with the final qualifier flag is presented in tabular form in Attachment 2.

Table 1. Sample Identification and Analysis

Sample Identification	Laboratory Identification	Matrix	Method 8321A
95019 (HGLMW29-07)	D6G180345-001	Water	X
95020 (HGLMW29-02)	D6G180345-002	Water	X
95021 (HGLMW29-05)	D6G180345-003	Water	X
95022 (HGLMW29-01)	D6G180345-004	Water	X
95023 (HGLMW29-06)	D6G180345-005	Water	X
95024 (HGLMW29-08)	D6G180345-006	Water	X
95025 (HGLGWDUP-09)	D6G180345-007	Water	X
95026 (HGLMW29-04)	D6G180345-008	Water	X
95027 (HGLMW29-03)	D6G180345-009	Water	X
95029 (HGLMW39-07)	D6G180345-010	Water	X

Key:

Method 8321A = Perchlorate by LCMS

Table 2. Data Package, Reviewer, and Senior Reviewer

Analysis	SDG Number	Reviewer	Senior Reviewer
8321A	D6G180345	Debbie Copsey	Thomas Davis

C. Laboratory Report and Supporting Documentation

The laboratory report and supporting documentation were reviewed to determine that the data package supported the level of validation requested. The data package was checked for pagination, appropriate signatures and approvals, an adequate case narrative, and possible subcontracting. The supporting data was checked for completeness and to determine that the information necessary for validation was present. The laboratory documentation was acceptable.

D. Chain-of-Custody

The COC documentation associated with this SDG was reviewed to determine that all samples listed on the COC form were reported in the laboratory deliverables, that a date and time of sampling was provided, and that the sample custody trail was complete. Sample condition upon receipt was reviewed to determine that the samples were not compromised during shipping. All custody and shipping documentation was reviewed to determine if GLP were employed when errors occurred. All data reviewed were acceptable, except as noted below.

Discussion: The date and time relinquished and the date and time received by the laboratory do not match on the COC form and the shipping waybill was not referenced. However, the laboratory noted that custody seals were present and unbroken, indicating that appropriate physical custody was maintained, so no data qualifier flags are recommended.

E. Review of Perchlorate Analyses by LC/MS

EPA Method 8321A

1. Timeliness and a Check for Errors

The laboratory data packages were reviewed and compared against the COC and supporting documentation to determine that samples were properly preserved and analyzed within the technical holding times, and that no deviations from proper handling and identification occurred. All data reviewed were acceptable.

2. Initial and Continuing Calibration

All initial and continuing calibration quality control criteria were reviewed to determine that no TCL analytes had initial calibration percent RSDs or continuing calibration percent differences greater than allowed by the method. All RF, SPCC, and CCC criteria were reviewed for method acceptance. All data reviewed were acceptable.

3. Blanks and Checks for Contamination

The frequency of analysis and the results for instrument and method blank analyses were reviewed. Equipment and field blanks were also evaluated if identified in the group of samples. Either no analytes were detected or, if detected, levels were below the reporting limit.

4. Surrogate Recovery

Surrogate spikes were added to all samples, QC checks, and blanks as required by the referenced method. All data reviewed were acceptable.

5. Precision and Accuracy

Results for precision (RPD) and accuracy (percent recovery) were reviewed for spikes and duplicate spikes (MS/MSDs, BS/BSDs and/or LCS/LCSDs) to determine that the checks were analyzed at the frequency required by the referenced method and the results met the requirements of the project. All data reviewed were acceptable.

6. Second Source Calibration Checks

The frequency of analysis and percent recoveries of the second source calibration verifications were reviewed. All data reviewed were acceptable.

7. Compound Quantitation and Reported Detection Limits

Using judgment based upon the information provided and typical calibration and extraction procedures, it appears as if no quantitation exceeded the typical highest calibration standard for the test, that dilutions were reported for samples with high values, and that reporting limits have been correctly adjusted for dilutions and extraction amounts. The reporting limits met method or contractual requirements. All data reviewed were acceptable, except as noted below.

Discussion: Several samples contained target analytes that were reported at levels less than the reporting limit but greater than the MDL. These results have been flagged "J" to indicate an estimated value as listed in Table 3.

Table 3. Perchlorate Data Qualifiers Due to Quantitation Deviations

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
95020 (HGLMW29-02)	Perchlorate	Value < RL	Value=1.9	RL=2.0	1.9	J
95021 (HGLMW29-05)	Perchlorate	Value < RL	Value=0.29	RL=2.0	0.29	J
95023 (HGLMW29-06)	Perchlorate	Value < RL	Value=1.1	RL=2.0	1.1	J
95024 (HGLMW29-08)	Perchlorate	Value < RL	Value=1.1	RL=2.0	1.1	J
95025 (HGLGWDUP-09)	Perchlorate	Value < RL	Value=1.3	RL=2.0	1.3	J

8. Field Duplicates

Field duplicates were collected and analyzed. Sample 95025 (HGLGWDUP-09) is a duplicate of Sample 95024 (HGLMW29-08). Test results were reviewed, and where positive results were found, the RPD was calculated. All analytes, except those listed in Table 4, were reported as non-detect.

Table 4. Perchlorate Field Duplicates and RPD

Compound	Sample Result	Duplicate Result	RPD
	95024 (HGLMW29-08)	95025 (HGLGWDUP-09)	
Perchlorate	1.1	1.3	16.7

9. Laboratory Contact

There was no verbal or written communication with the laboratory.

10. Other Comments

None.

11. Data Use and Overall Assessment

The data, as qualified, are acceptable for use. The analyses were generally within the requirements of the referenced method.

Attachment 1 Data Qualifier Flag Definitions

Organics

U = The analyte was analyzed for but not detected above the numerical quantitation limit.

J = The analyte was analyzed for and was positively identified, but the associated numerical value is an estimated quantity.

UJ = The analyte was analyzed for but was not detected above the reporting level, but the reporting level is an estimated level.

R = The data are unusable for all purposes. The analyte was analyzed for, but the target analyte might not be present.

X = The data should not be used because more technically sound data are available.

N = The analysis indicates presumptive evidence of the presence of the analyte.

NJ = The analysis indicates presumptive evidence of the presence of the analyte, but the numerical value is an estimated quantity.

Attachment 2 Summary Table of Data Qualifier Flags

Project Name: Holloman Air Force Base RCRA Facility Investigation
Project No. AFC002-037-VAL
Type of Samples: Water
Dates of Sampling: July 11-12, 2006

Sample Identification	Parameter	Type of Deviation	Anomaly	Criteria	Result	Flag
95020 (HGLMW29-02)	Perchlorate	Value < RL	Value=1.9	RL=2.0	1.9	J
95021 (HGLMW29-05)	Perchlorate	Value < RL	Value=0.29	RL=2.0	0.29	J
95023 (HGLMW29-06)	Perchlorate	Value < RL	Value=1.1	RL=2.0	1.1	J
95024 (HGLMW29-08)	Perchlorate	Value < RL	Value=1.1	RL=2.0	1.1	J
95025 (HGLGWDUP-09)	Perchlorate	Value < RL	Value=1.3	RL=2.0	1.3	J

Attachment 3 Reviewed/Revised Laboratory Forms

Trace Analysis Inc

Client Sample ID: 95019

HPLC

Lot-Sample #...: D6G180345-001	Work Order #...: H9HG11AA	Matrix.....: WATER	
Date Sampled...: 07/11/06	Date Received..: 07/18/06		
Prep Date.....: 07/24/06	Analysis Date..: 07/25/06		
Prep Batch #...: 6205322	Analysis Time..: 13:52		
Dilution Factor: 10			
	Method.....: SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	2.1	2.0	ug/L	0.27

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Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95020

HPLC

Lot-Sample #...:	D6G180345-002	**Work Order #...:**	H9HG21AA	**Matrix.....:**	WATER
Date Sampled...:	07/11/06	**Date Received..:**	07/18/06		
Prep Date.....:	07/24/06	**Analysis Date..:**	07/25/06		
Prep Batch #...:	6205322	**Analysis Time..:**	14:55		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**1.9 J**	**2.0**	**ug/L**	**0.27**

NOTE(S):

J Estimated result. Result is less than RL.

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Trace Analysis Inc

Client Sample ID: 95021

HPLC

Lot-Sample #...:	D6G180345-003	Work Order #...:	H9HG5iAA	Matrix.....:	WATER
Date Sampled...:	07/11/06	Date Received..:	07/18/06		
Prep Date.....:	07/24/06	Analysis Date..:	07/25/06		
Prep Batch #...:	6205322	Analysis Time..:	15:11		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Perchlorate	0.29 J	2.0	ug/L	0.27	J

NOTE(S):

J Estimated result. Result is less than RL.

VALIDATED Level 3

FO

Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95022

HPLC

Lot-Sample #...:	D6G180345-004	**Work Order #...:**	H9HG61AA	**Matrix.....:**	WATER
Date Sampled...:	07/11/06	**Date Received..:**	07/18/06		
Prep Date.....:	07/24/06	**Analysis Date..:**	07/25/06		
Prep Batch #...:	6205322	**Analysis Time..:**	15:43		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**4.9**	**2.0**	**ug/L**	**0.27**

VALIDATED Level 3

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Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95023

HPLC

Lot-Sample #...:	D6G180345-005	Work Order #...:	H9HG81AA	Matrix.....:	WATER
Date Sampled...:	07/11/06	Date Received..:	07/18/06		
Prep Date.....:	07/24/06	Analysis Date..:	07/25/06		
Prep Batch #...:	6205322	Analysis Time..:	15:59		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Perchlorate	1.1 J	2.0	ug/L	0.27	J

NOTE(S):

J Estimated result. Result is less than RL.

VALIDATED Level 3

FD

Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95024

HPLC

Lot-Sample #...: D6G180345-006	**Work Order #...:** H9HHA1AA	**Matrix.....:** WATER
Date Sampled...: 07/11/06	**Date Received..:** 07/18/06	
Prep Date.....: 07/24/06	**Analysis Date..:** 07/25/06	
Prep Batch #...: 6205322	**Analysis Time..:** 16:15	
Dilution Factor: 10		
	Method.....: SW846 8321A	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Perchlorate	**1.1 J**	**2.0**	**ug/L**	**0.27**	J

NOTE(S):

J Estimated result. Result is less than RL.

VALIDATED Level 3

FO

Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95025

HPLC

Lot-Sample #...:	D6G180345-007	Work Order #...:	H9HHD1AA	Matrix.....:	WATER
Date Sampled...:	07/11/06	Date Received..:	07/18/06		
Prep Date.....:	07/24/06	Analysis Date..:	07/25/06		
Prep Batch #...:	6205322	Analysis Time..:	16:31		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL	
Perchlorate	1.3 J	2.0	ug/L	0.27	J

NOTE(S):

J Estimated result. Result is less than RL.

VALIDATED Level 3

FD

Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95026

HPLC

Lot-Sample #...:	D6G180345-008	**Work Order #...:**	H9HHE1AA	**Matrix.....:**	WATER
Date Sampled...:	07/11/06	**Date Received..:**	07/18/06		
Prep Date.....:	07/24/06	**Analysis Date..:**	07/25/06		
Prep Batch #...:	6205322	**Analysis Time..:**	16:47		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	ND	2.0	ug/L	0.27

VALIDATED Level 3

FO

Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95027

HPLC

Lot-Sample #...:	D6G180345-009	**Work Order #...:**	H9HHG1AA	**Matrix.....:**	WATER
Date Sampled...:	07/11/06	**Date Received..:**	07/18/06		
Prep Date.....:	07/24/06	**Analysis Date..:**	07/25/06		
Prep Batch #...:	6205322	**Analysis Time..:**	17:04		
Dilution Factor:	10				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	ND	2.0	ug/L	0.27

VALIDATED Level 3

FO

Quality by Design
January 17, 2007

Trace Analysis Inc

Client Sample ID: 95029

HPLC

Lot-Sample #...:	D6G180345-010	**Work Order #...:**	H9HHJ1AA	**Matrix.....:**	WATER
Date Sampled...:	07/12/06	**Date Received..:**	07/18/06		
Prep Date.....:	07/24/06	**Analysis Date..:**	07/26/06		
Prep Batch #...:	6205322	**Analysis Time..:**	10:48		
Dilution Factor:	20				
		Method.....:	SW846 8321A		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Perchlorate	**100**	**4.0**	**ug/L**	**0.54**

VALIDATED Level 3

FD

Quality by Design
January 17, 2007