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Final
2010 Site Investigation Report

HAA-18, Boundary Investigation Site
Hunter Army Airfield
Savannah, Georgia

July 8, 2010

DOCUMENT 5

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Final
2010 Site Investigation Report

HAA-18, Boundary Investigation Site

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Acronyms

bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
DO	Dissolved Oxygen
DPT	Direct Push Technology
ft	Feet
GA EPD	Georgia Environmental Protection Division
GPR	Ground Penetrating Radar
HAAF	Hunter Army Airfield
HGL	HydroGeoLogic, Inc.
HSRA	Hazardous Site Response Act
I.D.	Inner Diameter
IDW	Investigation Derived Waste
IWQS	Instream Water Quality Standards
MCA	Military Construction Account
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/kg	milligrams per kilogram
mL/min	milliliters per minute
msl	mean sea level
µg/L	micrograms per Liter
MW	Monitor well
ORP	Oxidation Reduction Potential
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
PVC	Polyvinyl Chloride
RRS	Risk Reduction Standards
SESD	Science and Ecosystem Support Division
SVOC	Semivolatile Organic Compound
TCE	Trichloroethene
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USDOT	United State Department of Transportation
USEPA	U. S. Environmental Protection Agency

VOC	Volatile Organic Compound

1. Introduction

The U.S. Army Environmental Command (USAEC) has retained ARCADIS on behalf of Hunter Army Airfield (HAAF) to investigate the potential soil and groundwater impacts at the Boundary Investigation Site, also known as site HAA-18. During the March 2006 sampling event conducted to delineate the groundwater impacts at HAA-15 (Military Construction Account [MCA] Barracks Site) at HAAF, petroleum hydrocarbons were detected in a monitor well (MW) located along North Perimeter Road. The petroleum hydrocarbons were determined to be unrelated to the HAA-15 plume and the area was designated as HAA-18, Boundary Investigation Site (Figure 1-1). A soil and groundwater investigation was conducted by the U.S. Army Corps of Engineers (USACE) in 2007 to evaluate the extent and potential sources for the petroleum hydrocarbon impacts. Additional groundwater sampling and elevation data collection were conducted by ARCADIS in December 2008 and February 2009. A Site Investigation Data Summary Report presenting all data collected for the HAA-18 investigation through February 2009 was submitted in May 2009 (ARCADIS 2009b). A Site Investigation Work Plan for HAA-18 Boundary Investigation (ARCADIS 2009c) was submitted in November 2009. The work plan proposed additional investigation tasks for the site. This 2010 Site Investigation Report includes data previously submitted in the referenced documents and data collected from January through March 2010 during implementation of the scope presented in the Site Investigation Work Plan for HAA-18 Boundary Investigation.

2. Site Background

The following information was presented previously in the Site Investigation Work Plan for HAA-18 Boundary Investigation.

2.1 Regulatory Status

HAA-18 was defined as an area of concern when petroleum hydrocarbons were detected in groundwater during sampling at HAA-15. A subsequent environmental site assessment confirmed the presence of petroleum hydrocarbons (USACE 2008), unrelated to HAA-15 or any other proximate area of concern. Site HAA-18 is not currently regulated under a Georgia Environmental Protection Division (GA EPD) program. Georgia Hazardous Site Response Act (HSRA) program procedures are being utilized to guide investigation goals. HAAF has pursued delineation of contaminated soil and groundwater within the installation boundary on a voluntary basis.

2.2 Site Description and Setting

2.2.1 Site Description

HAAF is an active military installation located in Savannah, Georgia, encompassing areas of industrial, commercial, and temporary residential property occupied by a variety of administrative, maintenance, and barracks facilities as well as an active air field. HAA-18 is located in the northeastern portion of HAAF and is bound by Interstate Highway 516 to the north and northeast, HAAF property to the east and south, and by a CSX switching yard and rail lines to the west and northwest. Based on historical documents, an underground fuel pipeline that was constructed in 1958 and was reportedly abandoned in place in the 1960s enters HAAF from the north and runs along the western HAAF boundary to the Bulk Fuel Storage Facility (USACE 2005). A site map depicting the HAA-18 area and the approximate petroleum pipeline location is shown on Figure 2-1. A site layout with sampling locations is shown on Figure 2-2.

2.2.2 Topographic Setting of the Airfield

HAAF is located on a southwest-northeast trending ridge of about 20 feet (ft) to 40 ft elevation mean sea level (msl) and is surrounded on all sides by lower topography of about 10 to 15 ft msl elevation. The first runways were likely constructed on the highest part of the ridge when HAAF was first built in 1928. The HAA-18 site, located at the

northeastern boundary of HAAF is an area of lower topography at approximately 15 ft msl elevation.

2.2.3 Regional Geology/Hydrogeology

HAAF is located on the Lower Coastal Plain physiographic province, which is typified by very low relief that slopes toward the Atlantic Ocean. The geology is composed of a seaward thickening sequence of unconsolidated sediments. Previous regional investigations suggest that there has been minor structural deformation in the Savannah, Georgia area during deposition of the sediments starting in the early Cretaceous Period. The sediments form a thickening wedge into the Atlantic Ocean deposited from sediment erosion of the Blue Ridge Mountains located to the west-northwest. The total thickness of the sediments in the Savannah, Georgia, area is over 2,000 ft. (Huddleston 1988)

HAAF is located on top of the relict Pamlico beach ridge that was formerly the shoreline during the late Pleistocene time. The shallow sediments at HAAF are comparable to sediments that form the nearby modern barrier islands along the Atlantic coast. The Pamlico Terrace is only slightly older (in geologic time) and is at a slightly higher elevation than the modern beach. Published investigations of modern barrier islands can be used to predict the shallow stratigraphy at HAAF. In a typical barrier system, the highest part of the ridge is the beach composed of fine to medium-grained well-sorted quartz sand. The beach itself consists of well sorted sand consisting of little clay and silt because it is reworked by the constant wave action and migration of tidal inlets. There should be only minor clay units unless the beach has prograded over a remnant of marsh clay. Deposited sediments east of the Pamlico Terrace and beach system should consist of finer sands resulting from increasing water depth and lower energy and wave action. Behind the barrier to the west were marshes and bays that deposited lower energy silts and silty clay units. Sand units observed in these low energy areas are the result of deposition from tidal inlets that migrated along the barrier and wash-over fans from storms. The individual units of sand will drape off of the central barrier massive sands onto these clays and silts.

The regional water supply aquifer in the lower coastal plain of Georgia and Florida is the Floridan Aquifer. The Floridan Aquifer is a regionally extensive aquifer that is approximately 800 feet thick at Savannah. The top of the Floridan Aquifer at HAAF is approximately 200 ft below ground surface (bgs). It is composed primarily of Oligocene age and Eocene age porous limestones. The Floridan Aquifer is the principal water supply aquifer throughout coastal Georgia and most of Florida. Overlying the Floridan

Aquifer at and surrounding Savannah, Georgia is two continuous clay units, which are effective confining units that preclude downward groundwater migration of shallow groundwater from uppermost aquifer system to the deeper Floridan water supply aquifer. These two clay units are named the Coosawhatchie Formation and Berryville Clay member of the Hawthorne Group (Huddleston 1988). Lithologic samples and fossils suggest that these two units were deposited during the Middle Miocene Period in a low-energy open marine environment over a wide area. The open ocean depositional environment resulted in the widespread and continuous nature of these clay units. A deep test well in Savannah (GGS-3139) shows that the clay units extend from a depth of 45 ft to 167 ft near HAAF (Huddleston 1988). Due to the thick confining unit that separates the uppermost aquifer system from the underlying Floridan Aquifer, there is minimal potential for groundwater found above the clay confining layer to affect deeper groundwater quality in the underlying Floridan Aquifer. A copy of the cross-section referenced from the Huddleston study, which shows deep test well GGS-3139 is provided in Appendix A (Huddleston 1988). After deposition of the Hawthorne Clays, there was no preserved deposition of sediments at the study area until the late Pleistocene Period. The sediments overlying the Hawthorne Group clays are composed of a sequence of near shore to shoreface (barrier island) sediments that prograde over the Hawthorne Group. Published investigations have identified nine sets of overlapping relict beach ridges of Pleistocene age to Holocene age on the Lower Coastal Plain that prograde towards the Atlantic Ocean. Each barrier sequence forms a ridge (also termed terrace) that is progressively lower and closer to the modern barrier island. The ancient beaches formed during higher sea levels and are approximately parallel to the modern beach. Each barrier system is at a consistent elevation above sea level with about 20 ft of relief above the surrounding land. HAAF is located on a relict beach ridge named the Pamlico Terrace, which has elevations ranging from about 20 ft msl to 40 ft msl. This abandoned beach ridge was formed during the late Pleistocene (>10,000 years) age. The Pamlico Terrace sediments are about 40 to 50 ft thick at HAAF and are the upper most aquifer at the site.

2.3 Previous Investigations

2.3.1 MCA Barracks Site Investigation: 2005 and 2006 Site Investigations

The volatile organic compounds (VOCs) in groundwater near North Perimeter Road were first discovered in 2006 by HydroGeoLogic, Inc. (HGL) during a site investigation for the MCA Barracks Site (i.e. the HAA-15 site), where chlorinated VOCs (primarily

trichloroethene [TCE]) are the constituents of concern (HydroGeoLogic 2007). The monitor well network installed for site HAA-15 extends north of the HAA-15 plume to near the North Perimeter Road and the HAAF property boundary. In 2006, monitor well HGL-3C, which is screened from 29.4 to 39.4 ft bgs, was sampled as part of HAA-15 investigation activities to delineate the horizontal extent of chlorinated VOCs. However, petroleum VOCs, not chlorinated VOCs, were detected in samples from the well (including benzene at 14 micrograms per liter [• g/L]). Adjacent monitor well HGL-3B, which is screened from 14.7 to 24.7 ft bgs, was also sampled as part of the investigation and no impacts were detected. The detection of benzene, toluene, ethylbenzene and xylenes (BTEX) was inconsistent with the chlorinated VOCs found at the HAA-15 site. Therefore, a separate investigation was initiated to assess the area near monitor well HGL-3C. The area was designated as the Boundary Investigation Site, HAA-18.

2.3.2 **North Perimeter Road: 2007 Preliminary Investigation**

In 2007 the USACE (Savannah District) conducted a site assessment to investigate the petroleum hydrocarbons detected in monitor well HGL-3C. The investigation included soil and groundwater sampling using direct push technology (DPT) and installation and sampling of five permanent groundwater monitor wells. At 10 DPT boring locations along the boundary, unsaturated soils were collected in 5 foot intervals using macro core sleeves and screened for VOC vapors using a photo ionization detector (PID). Samples from each location were collected for laboratory analysis. Groundwater samples were collected with DPT from 25 locations oriented in a grid pattern on approximately 175 foot centers. At each location, groundwater samples were collected from two discrete intervals (at approximately 10 ft bgs and at approximately 25 ft bgs). Based on the results from the DPT investigation, five permanent monitor wells (MW-1 through MW-5) were installed to depths ranging from 25.5 to 30.5 ft bgs and sampled. Each of the soil and groundwater samples was submitted for laboratory analysis of VOCs and naphthalene in accordance with U.S. Environmental Protection Agency (USEPA) Method 8260B. The results of the investigation were presented in the *Internal Draft North Perimeter Road Preliminary Investigation* (USACE 2008). Results from this investigation are summarized in the following sections.

2.3.2.1 Groundwater Sampling Results

The results from the USACE investigation confirmed the presence of VOCs in groundwater in the area proximate to monitor well HGL-3C. Naphthalene and BTEX were the primary VOCs detected. The results indicated the impacts were

predominantly in the deeper groundwater zone of the upper aquifer (defined within this USACE report as being from 25 to 39 ft bgs) near well HGL-3C. Monitor well construction data are provided in Table 2-1 and groundwater elevation data are provided in Table 2-2. DPT groundwater results from 2007 are provided in Table 2-3.

During the DPT investigation, groundwater samples were taken at 10 ft bgs. Naphthalene was detected in four DPT groundwater samples taken at 10 ft bgs. BTEX compounds were not detected in groundwater samples taken at 10 ft bgs. Two of the naphthalene-impacted samples were collected from locations near well HGL-3C (DPT-2S and DPT-14S). The remaining two naphthalene-impacted samples were collected from locations further south (DPT-3S and DPT-4S) along the western HAAF boundary. The highest concentration of naphthalene was detected in sample DPT-2S (42 µg/L). Groundwater data from vertical profile samples taken at 10 ft bgs during the 2007 Preliminary Investigation are illustrated on Figure 2-3.

During the DPT investigation, groundwater samples were also taken at 25 ft bgs. DPT samples collected from 25 ft bgs in close proximity to deep well HGL-3C (DPT-1D, DPT-2D, DPT-6D) had the highest detections of petroleum hydrocarbons. The highest concentrations were in sample DPT-1D, where naphthalene was detected at a concentration of 950 µg/L. These DPT sample locations as well as monitor well HGL-3C are located along the northwest facility boundary. Groundwater data from samples taken at 25 ft bgs during the 2007 Preliminary Investigation are illustrated on Figure 2-4.

Based on the results from the DPT investigation, five permanent monitor wells (MW-1 through MW-5) were installed with 10-ft screens to depths ranging from 25 to 30 ft bgs. The new monitor wells and existing monitor well HGL-3C were sampled in September 2007. Monitor well HGL-3C and nearby monitor well MW-2 had detections of petroleum hydrocarbons consisting predominantly of naphthalene and benzene. Groundwater data from sampling of monitor wells as part of the 2007 Preliminary Investigation is included on Figure 2-5.

2.3.2.2 Soil Sampling Results

Sampling of unsaturated soil (1.2-4.0 ft bgs) was conducted along the northwest boundary. Benzene or naphthalene was not detected in the samples. One or more VOCs were detected in 8 of the 10 soil samples. Acetone, potentially attributable to laboratory contamination, was detected most frequently and at the highest concentrations. Acetone concentrations ranged from 0.0072 to 0.078 mg/kg (milligrams

per kilogram), well below the HSRA notification concentration value of 2.47 mg/kg. Other organic constituents detected in soil included 1,2,3-trichloropropane (0.029 mg/kg), 1,1-dichloropropene (0.0094 mg/kg), 2-hexanone (0.0096 mg/kg), p-Isopropyltoluene (0.0021 mg/kg), toluene (0.0012 mg/kg in 2 samples) and methylene chloride (maximum of 0.0042 mg/kg). Toluene, acetone, and methylene chloride were the only constituents detected in both soil and groundwater samples collected as part of the 2007 Preliminary Investigation. All of the constituents detected in unsaturated soil were below the HSRA Notification Concentrations. Soil analytical data from the 2007 investigation are provided in Table 2-4 and illustrated on Figure 2-6.

2.3.3 **December 2008 Groundwater Sampling and Surveying**

2.3.3.1 Top-of-Casing Survey

In December 2008, a survey of location and top-of-casing elevation for all monitor wells installed by USACE was performed by Chatham Surveying Services, Inc., a Georgia-licensed surveyor. These data were used to calculate relative groundwater elevations and groundwater flow direction at the site. The survey was completed for each of the five monitor wells installed in 2007 (MW-1 through MW-5) and monitor well HGL-3C.

2.3.3.2 Water Level Measurements

A comprehensive set of water level data was collected prior to sampling in December 2008. The data were used to generate a potentiometric surface map of overall groundwater flow direction (Figure 2-7). All of the monitor wells on the HAA-18 site at that time except HGL-3C were screened at 30.5 ft bgs or above. Monitor well HGL-3C was screened to a depth of 39 ft bgs. The data indicated groundwater flows south-southeast from offsite onto HAAF property. Water level data are provided in Table 2-2.

2.3.3.3 Groundwater Sampling Results

Following water level measurement collection in December 2008, ARCADIS collected groundwater samples from six (6) existing monitor wells at HAA-18 (MW-1 through MW-5 and HGL-3C). The wells were sampled using peristaltic pumps and low-flow sampling methodology. VOCs were detected in samples from all wells except for HGL-3C. Benzene was detected in samples from four monitor wells at concentrations ranging from 1.1 to 82 µg/L, with the highest benzene concentration being detected in MW-1. The highest concentration of a single constituent was 100 µg/L of toluene in the

sample from MW-4. Data from monitor well samples are provided in Table 2-5 and illustrated on Figure 2-5.

The December 2008 groundwater data and the September 2007 data showed some significant differences. In September 2007, wells HGL-3C and MW-2 were the only wells which exhibited signs of groundwater impact. In December 2008, all of the monitor wells except for HGL-3C showed impacts.

2.3.4 **February 2009 Water Level Gauging**

Water levels were collected again in February 2009 to confirm the groundwater flow direction at HAA-18. Overall, the water levels increased approximately a foot compared to the previous water elevations. The data confirmed that groundwater flows south-southeast from offsite onto the HAAF facility property. Water level data are provided in Table 2-2. Water elevations from the February 2009 water level gauging event are illustrated on Figure 2-8.

3. Investigation Activities conducted January through March 2010

In accordance with the Site Investigation Work Plan submitted by ARCADIS in November 2009, the scope of the investigation conducted in 2010 was to delineate the extent of the groundwater impacts within the shallow and deep groundwater zones in the upper aquifer. In addition, soil sampling was planned along the route of the reportedly abandoned petroleum pipeline.

All procedures and techniques utilized for this investigation conformed to USEPA Region 4 Science and Ecosystem Support Division (SESD) guidance and the approved Sampling and Analysis Plan and Quality Assurance Project Plan (ARCADIS 2009a). All soil and groundwater samples collected by ARCADIS field personnel were analyzed by Shealy Environmental Services, Inc. All laboratory practical quantitation limits (PQLs) were below applicable screening levels.

The activities comprising the site investigation at HAA-18 included the following:

- Installation and development of three monitor well pairs to determine the down-gradient extent of VOC-impacted groundwater on-site;
- Installation of two piezometers to evaluate the groundwater/surface water relationship and flow near Lamar Canal;
- Collection of water–level measurements from all monitor wells and piezometers associated with HAA-18;
- Sampling of newly installed and existing on-site monitor wells to confirm previous data and delineate down-gradient groundwater impacts;
- Installation of fifteen (15) shallow temporary borings using a hand auger to investigate any impacts to soil in the area of the abandoned petroleum pipeline in the northwest portion of the site.

3.1 Groundwater Monitor Well Installation and Development

Three pairs of monitor wells were installed down-gradient of the known groundwater impacts to delineate the horizontal and vertical extent of the VOC-impacted groundwater. The wells were identified as H18-MW-6S/6D, H18-MW-7S/7D and H18-MW-8S/8D. Wells H18-MW-6S through H18-MW-8S were installed within the shallow zone of the upper aquifer unit. The screen interval in each of the three wells was 15 to 25 ft bgs. Wells H18-MW-6D through H18-MW-8D were installed within a

deeper groundwater zone of the upper aquifer. The screen interval in each of the three wells was 35 to 45 ft bgs. The wells were constructed of 2-inch diameter Schedule 40 polyvinyl chloride (PVC). Well screens consisted of a 2-inch diameter, flush-threaded, 0.010-inch slotted Schedule 40 PVC. Clean, inert, siliceous sand was used to construct a uniform and continuous filter pack to 2 ft above the top of the screen. A seal consisting of hydrated bentonite pellets measuring between 2 and 3 ft thick was poured into the annular space above the sand filter pack. A grout mix consisting of Portland cement and bentonite was pumped into the remaining annular space using a 1-inch tremie pipe to a depth of approximately 1-ft bgs. The monitor wells were then completed at ground surface with concrete and a flushmount cover. Boring logs for the newly installed wells are located in Appendix B.

Following well installation, which was completed by ARM Environmental Services, Inc. under the supervision of an ARCADIS geologist, the monitor wells were developed. Development activities were conducted using a high-powered submersible pump, which surged the well and removed fines. Well development was considered complete when the water became clear. Development water was contained in United States Department of Transportation (USDOT)-approved 55-gallon drums. The monitor wells were surveyed for location and elevation by Bateman Civil Survey Company, a Georgia-certified land surveyor. All soil investigation-derived waste (IDW) from installation of monitor wells was segregated by borehole and collected in USDOT-approved 55-gallon drums. The drums were staged in a centralized location, pending proper off-site disposal. Monitor well locations are shown on Figure 3-1.

3.2 Piezometer Installation; Groundwater/Surface Water Flow near Lamar Canal

Two piezometers were installed in the south side of Lamar Canal to obtain data on the relationship between shallow groundwater and surface water within the canal. The piezometers were designated as H18-PZ-01 and H18-PZ-02. Piezometers were constructed of ¾-inch inner diameter stainless steel. For both piezometers, a one-foot slotted stainless steel well point was attached to a four-foot stainless steel riser. No sand pack or bentonite seal was used during installation as the piezometers were not installed for sampling purposes. Boring logs from the piezometers are included in Appendix B. Soil IDW from the installation of the piezometers was stored in USDOT-approved 55-gallon drums and staged in a centralized location as described above. Following completion of all site activities, a waste characterization sample was collected from each drum to determine proper disposal practices. Piezometer locations are shown on Figure 3-1.

3.3 Water-Level Measurements

Two (2) sets of water-level measurements were collected from the HAA-18 site as part of this investigation. The first set of water levels was collected prior to the sampling of the new and existing monitor wells in January 2010. A second set was collected in mid-February 2010 following installation of the two new piezometers. The first set of water-level measurements was taken to provide a comprehensive view of vertical and horizontal gradients in the area. The second set was taken both to analyze the vertical and horizontal gradients as well as to analyze the hydraulic relationship between surface water in Lamar Canal and shallow groundwater. Water elevation data is included in Table 2-2.

3.4 Sampling of New and Existing Monitor Wells

Groundwater samples were collected from the new monitor wells installed as described above. Existing wells were also sampled to confirm the results of previous investigations and to obtain data to potentially delineate the down-gradient extent of VOC impacts. The following wells were sampled:

- HGL-3B, HGL-3C (HGL-installed wells in the shallow (B) and deep (C) zones of the upper aquifer);
- MW-1, MW-2, MW-3, MW-4, MW-5 (USACE-installed shallow wells; MW-2 was sampled at a later date as it could not initially be located); and
- H18-MW-6S, H18-MW-6D, H18-MW-7S, H18-MW-7D, H18-MW-8S and H18-MW-8D (ARCADIS-installed wells in the shallow (S) and deep (D) zones of the upper aquifer)

Low-flow techniques were used to collect groundwater samples from the monitor wells. During well purging activities groundwater was removed from the wells at a rate ranging from 180 to 250 milliliters per minute (mL/min). Field measurements were collected at five-minute intervals and included pH, specific conductance, temperature, oxidation reduction potential (ORP), dissolved oxygen (DO), and turbidity. Once field parameters stabilized according to standard procedures, the groundwater samples were collected and submitted to Shealy Environmental Services, Inc. Each of the samples was analyzed for VOCs in accordance with USEPA Method 8260B and SVOCs in accordance with USEPA Method 8270D. In addition, a duplicate sample was collected from one selected monitor well (MW-3). Groundwater sampling sheets are included in Appendix C. Purge water IDW collected prior to sample collection was stored in a USDOT-approved 55-gallon drum and staged

in a centralized location pending proper disposal. A composite sample was collected from the drum and submitted to the laboratory for waste characterization analysis.

3.5 Soil Sampling Along Abandoned Pipeline

The *Internal Draft Phase II Report for Hunter Army Airfield* (USACE 2005) stated that a pipeline that initiated at the Southland Tank Farm System at the Savannah Dock and terminated at the Bulk Fuel Facility entered the HAAF property in the HAA-18 area. The report further stated that the six-inch pipeline was buried approximately 30-inches below street level and conveyed jet fuel to the storage tanks and fueling pits. An interviewee cited in the USACE report stated that the pipeline was abandoned in place reportedly in the 1960s. Drawings of the pipeline location included in the *Internal Draft Archive Search Report for HAA-15 MCA Barracks Site* (USACE 2004) show that the pipeline entered HAAF between the current locations of monitor wells MW-3 and MW-4. As part of this investigation, ground-penetrating radar (GPR) was used to evaluate the location of the pipeline. GPR data indicated that a pipeline was present along the route indicated in the referenced documents. The estimated location of the abandoned pipeline based on these documents is included on Figure 2-1 and subsequent figures.

In order to investigate potential impacts from the abandoned-in-place petroleum pipeline, fifteen (15) temporary shallow borings were installed using a hand auger. Borings were designated as H18-SB01 through H18-SB15 and were installed to the water table (depths ranging from 2.0 to 6.0 ft bgs). The completion depths of the hand auger borings were a function of depth to shallow groundwater, which decreased with proximity to the adjacent off-site ditch. The locations of the temporary borings are included on Figure 2-2.

The soil was screened for VOCs with a PID. The PID readings did not indicate VOC detections in any sample. Since there were no indications of impacts, one soil sample was collected from each boring location from the interval directly above the water table. All temporary borings were backfilled and hydrated with bentonite chips from total depth to just below land surface. The borings were completed with material consistent with the surrounding surficial material, in this case, topsoil. Boring logs for the temporary soil boring installation are included in Appendix D. The soil IDW from the temporary boring installation was stored in a USDOT-approved 55-gallon drum. In order to determine the waste characterization for disposal purposes, a sample was collected from the drum and submitted for analysis.

4. Results from Investigation Conducted between January and March 2010

4.1 Geology and Hydrogeology

4.1.1 Geologic conditions

The shallow geology, based on the investigations at HAA-18, is indicative of the expected depositional environment of a back bay area behind and up to the former beach, which is where the current runways are located, with an underlying confining unit.

A geologic cross section (Figure 4-1), which spans from southwest to northeast commencing north of Pond 29 across the HAA-18 site shows a massive homogeneous sand unit that extends from land surface down to approximately ten to 20 ft bgs in the northern portion of the adjacent HAA-15 site. The massive fine grained sand unit at the top of the sequence appears to be part of the beach. The cross-section also illustrates that minor silt and clay seams are found between five and ten ft bgs at monitor well locations HGL-3C and H18-MW-8D on the HAA-18 site. A series of silty clay and sandy silt units interbedded with fine sands underlies the massive sand unit consistently across the HAA-18 site and the northern portion of the HAA-15 site observed during installation of the new monitor wells. These units are interpreted as marsh, bay or lagoon deposits behind the Pamlico barrier terrace. Additionally, increasing silt and clay content was consistently encountered site-wide between 45 and 50 ft bgs. This is interpreted as the upper part of the Hawthorne, which acts as a confining unit to the underlying Floridan aquifer.

4.1.2 Hydrogeologic conditions

Groundwater flows within the shallow zone of the upper aquifer under unconfined conditions. During 2010 and previous investigations, the water table was approximately 1 to 4 ft bgs. Based on groundwater levels, Lamar Canal appears to be an important hydrogeologic feature. The canal is a local discharge for groundwater, resulting in groundwater flow in the shallow zone of the upper aquifer to be toward the canal from both sides, mirroring the local topography. Groundwater flow across the HAA-18 site is in a southeastern direction toward the canal. The groundwater at adjacent HAA-15 site flows to the northwest.

Silt and clay seams at HAA-18 and HAA-15 divide parts of the uppermost unconsolidated aquifer system into separate zones. Downward vertical hydraulic

gradients in a majority of the on-site well pairs suggest that the upper aquifer unit in sections of HAA-15 and across the southern sections of HAA-18 functions as two distinct zones. The boring logs for monitor wells HGL-2B/C and 3B/C have been included in Appendix B, along with the logs for the wells installed in 2010. A summary of groundwater elevations at monitor well pairs is included in Table 4-1. At the adjacent HAA-15 site, differences in hydraulic heads are greater than1 foot downward at four well pairs (HGL-1, HGL-6, HGL-7, and HGL-8) where the screen intervals are separated by 10 ft. This robust downward gradient suggests that the aquifers are separated at some locations by the persistent clayey silt unit acting as a confining layer at HAA-15. In comparison, water elevations show smaller differences in hydraulic heads in two of the four well pairs on the HAA-18 site. There is an approximate 1.0-foot and 0.5-foot vertical hydraulic head difference from the shallow zone to the deep zone of the upper aquifer in the H18-MW-7 and H18-MW-8 well pairs, respectively. No significant hydraulic head difference is observed at the H18-MW-6 and HGL-3B/C well pairs. This illustrates that although clay/silt layers may exist throughout the HAA-18 site, the separated aquifer zones are limited in extent. In general and for consistent reference, groundwater found anywhere from 1 to 30 ft bgs is considered part of the shallow zone of the upper aquifer. The deep portion of the upper aquifer consists of groundwater encountered between 30 and 45 ft bgs. Groundwater wells MW-1 through MW-5, HGL-3B, and H18-MW-6S through H18-MW-8S are screened within the shallow portion of the upper aquifer (i.e. total depth between 25 and 30.5 ft bgs). Groundwater wells HGL-3C and H18-MW-6D through H18-MW-8D are screened within the deep portion of the upper aquifer (i.e. total depth between 39.4 and 45 ft bgs).

4.1.3 Groundwater flow direction

As part of the initial site investigation activities completed by ARCADIS in 2008 and 2009, potentiometric surface figures were completed for the site based on water levels collected in December 2008 and February 2009. Because of the limited number of wells at the site in 2008 and 2009, data from all monitor wells (screened in the shallow and deep portions of the upper aquifer) were combined to provide an overall potentiometric surface depiction. These figures were developed to determine overall groundwater flow direction and guide subsequent investigations. These figures are included as Figures 2-7 and 2-8. The potentiometric contours showed that overall groundwater flow in the upper aquifer is towards the south-southeast.

During the February 2010 groundwater sampling event, a complete round of water levels was collected to confirm groundwater flow directions, which included the newly installed on-site piezometers. It appeared based on the data collected from the

piezometers, that a more significant hydraulic gradient is found near Lamar Canal in the shallow zone of the upper aquifer and that the canal is likely acting as a discharge point for shallow groundwater. On the adjacent HAA-15 site, shallow groundwater appears to flow to the northwest towards the canal, while shallow groundwater on the HAA-18 site flows southeast, also towards the canal. This is consistent with the findings that shallow groundwater appears to primarily follow topographic contours toward drainage ditches, canals and first-order streams. Groundwater along the northwest slope of the ridge at adjacent site HAA-15 flows to the northwest down the slope. However, at HAA-18 there is a subtle elevation drop from North Perimeter Road to the southeast to Lamar Canal. Lamar Canal is considered the local discharge boundary for the shallow groundwater in the area of HAA-18 and HAA-15. Based on past and current data, shallow groundwater consistently flows to this canal. A site map with topographic contours is included as Figure 4-2.

Using data from the monitoring wells that had been recently installed within the shallow and deep portion of the upper aquifer, groundwater flow directions were reevaluated for both the shallow and deep zones of the upper aquifer. Groundwater gauging measurements from shallow wells and piezometers (HGL-3B, MW-1, MW-3 through MW-5, H18-MW-6S through H18-MW-8S, H18-PZ-01 and H18-PZ-02) are presented separately from the deep wells (HGL-3C and H18-MW-6D through H18-MW-8D) on potentiometric figures generated with 2010 data. Figure 4-3 and Figure 4-4 present the February 2010 groundwater flow conditions in the shallow and deep zones of the upper aquifer, respectively. Water elevation data is included in Table 2-2. Overall, groundwater flow directions based on the February 2010 event appear consistent with previous conclusions. The data indicate that the flow directions for the shallow and deep zones of the upper aquifer may be slightly different. The shallow zone groundwater flow direction across most of the site is to the southeast toward Lamar Canal, while the flow direction in the deep aquifer appears to be toward the south.

4.1.4 Surface water flow

With the exception of Lamar Canal, which traverses the southern portion of HAA-18 and runs in a southwesterly direction, there were no surface water features observed on the HAA-18 site. As described previously, ARCADIS installed two piezometers into the south side of the canal to monitor the relationship between the surface water level in the canal and the shallow groundwater levels. It appears, based on the recent observation of the piezometer levels, that the two are related and that the canal is acting as a local discharge point for shallow groundwater, as shown on Figure 4-3. Water level data is included in Table 2-2. The surface water in the drainage canal west

of the HAAF boundary appears to be an expression of groundwater and likely affects the hydraulics of the upper aquifer. However, this ditch is not on HAAF property and could not be evaluated during this investigation.

4.2 Nature and Extent

4.2.1 Soil Sampling Results

In January 2010, ARCADIS conducted additional unsaturated soil sampling along the route of the abandoned pipeline that runs along the northwest site boundary. As described previously, a petroleum pipeline was constructed in approximately 1958 and was reportedly abandoned in place sometime in the 1960s. Fifteen (15) shallow soil borings were installed using a hand auger along the on-site extent of this abandoned pipeline. VOCs were not detected during PID screening. Only very low levels of acetone (maximum concentration of 0.065 mg/kg, well below notification standards and a common laboratory contaminant) were detected in soil samples sent for laboratory analysis of VOCs. No SVOCs were detected in samples sent for laboratory analysis. No evidence of a release from the pipeline was found. Table 4-2 provides a summary of the soil sample results from the pipeline investigation. Sample results are shown on Figure 4-5. Laboratory analytical data is located in Appendix E.

4.2.2 Groundwater Sampling Results

Five (5) existing monitor wells (HGL-3C, MW-1 and MW-3 through MW-5) and six (6) new monitor wells (H18-MW-6S through H18-MW-8S and H18-MW-6D through H18-MW-8D) were sampled as part of the January 2010 event. In addition, two (2) existing monitor wells (HGL-3B and MW-2) that were inadvertently omitted in January were sampled during the March 2010 sampling event.

Contaminant distribution in the 2010 sampling results was similar to that observed during the 2007 event, although concentrations of VOCs were significantly lower. The only VOC detected above the PQL in the monitor wells screened in the shallow zone was benzene. Benzene was detected in the sample from MW-2 at a concentration of 0.59 µg/L. This concentration is below all the applicable screening criteria. SVOCs were not detected above the PQL or applicable screening criteria, as shown in Table 2-5. Laboratory analytical data is located in Appendix E.

Benzene (1.7 µg/L), ethylbenzene (0.9 µg/L) and naphthalene (16 µg/L) were the only petroleum hydrocarbon VOCs detected above PQLs in groundwater samples from

monitor wells screened in the deep zone of the upper aquifer. These compounds were only detected in samples from monitoring well HGL-3C and were not detected in samples from any of the other monitor wells screened within the deep zone of the upper aquifer. The only other VOC detected above PQL was chloroform, which was detected at a concentration of 0.85 µg/L in the sample from monitor well H18-MW-8D. This value is below all applicable screening standards. Other VOCs, including acetone, bromodichloromethane, carbon disulfide, dibromochloromethane, methylene chloride, toluene and xylenes were detected below the PQL in the deep monitor well network. The reported concentrations are estimated values that are below laboratory PQLs but above laboratory method detection limits (MDLs). Two SVOCs, acenaphthylene and caprolactam, were also detected below PQL and are listed as estimated values. Complete groundwater results from the January 2010 ARCADIS investigation are shown in Table 2-5 and illustrated on Figure 2-5. Table 2-5 also shows a comparison to applicable screening criteria consisting of USEPA Maximum Contaminant Levels (MCLs), 2009 Industrial Water Quality Standards (IWQS) and Type I Risk Reduction Standards (RRS).

5. Comprehensive Data Summary

5.1 Hydrogeology

The following summarizes the results of the investigation of site hydrogeology:

- Overall groundwater flow direction in the upper aquifer unit has consistently been to the south-southeast, indicating that groundwater flows from off-site onto HAAF in the area of HAA-18.
- The flow direction of shallow and deep groundwater may differ slightly. Shallow groundwater appears to be influenced by topography and flows towards Lamar Canal to the southeast while deep groundwater appears to flow in a more consistent southern direction.
- Calculated groundwater elevations in the piezometers in the Lamar Canal and the new well pairs indicate that Lamar Canal is a discharge point for water from the shallow groundwater zone of the upper aquifer. Groundwater elevations show a higher horizontal gradient in the area of the canal.
- Measured hydraulic heads suggest that there is a semi-confining unit in the southern portion of the site (i.e. H18-MW-07S/D and H18-MW-08S/D) with head differences of 0.4 and 1.1 ft. There was little to no difference in the hydraulic heads observed in the two northern well pairs (i.e. H18-MW-06S/D and HGL-3B/C).
- Hydraulic conductivities calculated from data taken during the adjacent site HAA-15 investigation varied from 8 ft/year to 250 ft/year and similar variations are expected in the HAA-18 area. Widely varying hydraulic conductivities are typical in back barrier sequences and represent the variation from low energy marsh deposits of clays and silts to high energy tidal channel deposits of well sorted sands.
- Overall, the local stratigraphy of HAA-18 fits the depositional environment of a lagoon and/or marsh behind a barrier island up to a beach.

5.2 Soil Sampling Results

The following summarizes the results and conclusions of the investigation of unsaturated soil at the site:

- Data from unsaturated soil samples collected by USACE from a grid of locations for PID screening did not indicate the presence of VOCs.

- Unsaturated soil samples collected for laboratory analysis by USACE along the northern boundary of the site and by ARCADIS in the area of the abandoned petroleum pipeline did not contain concentrations of any compound above GA EPD HSRA notification standards.
- A source area was not located on the subject site during the investigations.

5.3 Groundwater Sampling Results

The following summarizes the results of the investigation of groundwater at the site:

- Based on the results from the 2006 sampling of monitor well HGL-3C, the site was designated as a separate area of concern (HAA-18) and the primary constituents of concern were identified as BTEX and naphthalene. Subsequent groundwater data confirmed BTEX and naphthalene as the primary contaminants of concern.
- None of the contaminants detected in groundwater samples from the site were at concentrations that indicate equilibrium with NAPL. A potential source for the groundwater impacts was not identified during the investigation.
- Most groundwater impacts have been detected in DPT and monitor well locations along the northern and western boundary, predominantly in the area around monitor well HGL-3B/C. Results from groundwater samples collected by the USACE using DPT in 2007 and from monitor well samples collected in 2007 and 2010 matched this distribution. Results from groundwater samples taken from monitor wells in 2008 indicated a different distribution with more contaminant mass south and east of monitor well HGL-3C.
- Groundwater sample results from monitor wells HGL-3B (screened in the shallow zone of the upper aquifer immediately above HGL-3C) and previous DPT groundwater sampling results indicate the predominant groundwater impacts are in the deeper zone of the upper aquifer.
- Monitor well data indicate that the down-gradient extent of the VOC-impacted groundwater in the shallow and deep zones of the upper aquifer may have been reached. No VOCs were detected above applicable screening standards in the down-gradient shallow or deep zone wells that were installed in January 2010. VOC concentrations in these groundwater samples did not exceed any USEPA MCLs, IWQS or Type I RRS concentrations. With the exception of chloroform which was detected at 0.85 µg/L, there were no VOC concentrations above the PQL in groundwater samples taken in January 2010 from these three downgradient well pairs.

- During sampling in 2010, VOC concentrations in samples from monitor wells were in most cases below PQL and were lower than the results from previous monitor well sampling events. The highest concentrations were detected in the sample from monitor well HGL-3C, which contained 16 µg/L of naphthalene and 1.7 µg/L of benzene. Both concentrations were below the applicable screening criteria.
- Results from the 2010 investigation indicate that groundwater in the top portion of the shallow zone of the upper aquifer likely discharges to Lamar Canal. Since no impacts have been detected in shallow groundwater adjacent to the canal, impacts to the canal from HAA-18 groundwater are unlikely.

6. References

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ARCADIS

Tables

Table 2-1
Monitor Well / Piezometer Construction Summary
Hunter Army Airfield, Savannah, Georgia
HAA-18 (Boundary Investigation Site)

Location ID	Installation Date	Northing	Easting	TOC Elevation (ft MSL)	Well Diameter (in)	Screen Interval (ft bgs)	Screen Length (ft)
MW-1	9/1/2007	741307.62	976478.18	13.31	2	18.8 - 28.8	10
MW-2	9/1/2007	741511.53	975936.10	15.9	2	20.5 - 30.5	10
MW-3	9/1/2007	741505.30	975758.78	14.62	2	15.5 - 25.5	10
MW-4	9/1/2007	741294.55	975562.77	15.65	2	19.1 - 29.1	10
MW-5	9/1/2007	740922.90	975626.24	14.7	2	20.0 - 30.0	10
HGL-2B[11]	3/1/2006	740679.10	975180.65	12.71	2	15.0 - 25.0	10
HGL-2C[11]	3/1/2006	740679.10	975180.65	12.75	2	34.0 - 44.0	10
HGL-3B	3/14/2006	741608.26	976012.63	14.57	2	14.7 - 24.7	10
HGL-3C	3/14/2006	741608.26	976012.63	14.49	2	29.4 - 39.4	10
H18-MW-6S	1/18/2010	741041.86	976603.25	13.14	2	15.0 - 25.0	10
H18-MW-6D	1/15/2010	741039.95	976596.80	12.83	2	35.0 - 45.0	10
H18-MW-7S	1/15/2010	740930.19	976029.63	14.19	2	15.0 - 25.0	10
H18-MW-7D	1/15/2010	740938.36	976033.98	13.78	2	35.0 - 45.0	10
H18-MW-8S	1/15/2010	741013.71	975360.66	12.61	2	15.0 - 25.0	10
H18-MW-8D	1/15/2010	741021.73	975364.92	12.53	2	35.0 - 45.0	10
H18-PZ-01	1/27/2010	741009.02	976607.45	12.24	1	4.0 - 5.0	1
H18-PZ-02	1/27/2010	740892.16	976027.33	11.55	1	4.0 - 5.0	1

Notes:

1.) ft - feet

2.) ft bgs - feet below ground surface

3.) ft MSL - feet above mean sea level

4.) in - inches

5.) TOC - Top of Casing

6.) All wells (except MW-6/6D through MW-8/8D, PZ-01, PZ-02 and HGL-3B) surveyed on December 16, 2008 by Chatham Surveying Services, Inc.

7.) Wells MW-6/6D through MW-8/8D, PZ-01 and PZ-02 surveyed by Bateman Civil Survey on February 10, 2010.

8.) Well coordinates are based on Georgia State Plane (NAD 1983 feet)

9.) Installation date for MW-1 through 5 is approximate

10.) Data for HGL wells taken from HAA-15 historical documents.

11.) HGL-2B/C destroyed in late 2009.

Table 2-2
Groundwater Elevation Data, 2007-2010
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

Location ID	TOC Elevation (ft MSL)	Screened Interval (ft)	Measurement Date	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Change in Elevation (ft)
Shallow Zone of Upper Aquifer						
MW-1	13.31	18.8 - 28.8	9/5/2007	1.15	12.16	--
	13.31	18.8 - 28.8	12/16/2008	1.60	11.71	-0.45
	13.31	18.8 - 28.8	2/26/2009	2.23	11.08	-0.63
	13.31	18.8 - 28.8	1/27/2010	0.51	12.80	1.72
	13.31	18.8 - 28.8	2/16/2010	0.60	12.71	-0.09
MW-2	15.90	20.5 - 30.5	9/5/2007	3.73	12.17	--
	15.90	20.5 - 30.5	12/16/2008	4.00	11.90	-0.27
	15.90	20.5 - 30.5	2/26/2009	4.93	10.97	-0.93
	15.90	20.5 - 30.5	3/30/2010	3.65	12.25	1.28
MW-3	14.62	15.5 - 25.5	12/16/2008	1.57	13.05	--
	14.62	15.5 - 25.5	2/26/2009	2.67	11.95	-1.10
	14.62	15.5 - 25.5	1/27/2010	0.33	14.29	2.34
	14.62	15.5 - 25.5	2/16/2010	0.45	14.17	-0.12
MW-4	15.65	19.1 - 29.1	9/6/2007	3.66	11.99	--
	15.65	19.1 - 29.1	12/16/2008	3.98	11.67	-0.32
	15.65	19.1 - 29.1	2/26/2009	4.94	10.71	-0.96
	15.65	19.1 - 29.1	1/27/2010	2.88	12.77	2.06
	15.65	19.1 - 29.1	2/16/2010	3.05	12.60	-0.17
MW-5	14.70	20.0 - 30.0	9/6/2007	3.10	11.60	--
	14.70	20.0 - 30.0	12/16/2008	3.65	11.05	-0.55
	14.70	20.0 - 30.0	2/26/2009	4.30	10.40	-0.65
	14.70	20.0 - 30.0	1/27/2010	2.80	11.90	1.50
	14.70	20.0 - 30.0	2/16/2010	2.99	11.71	-0.19
HGL-3B	14.57	14.7 - 24.7	2/26/2009	3.39	11.18	--
	14.57	14.7 - 24.7	1/27/2010	1.28	13.29	2.11
	14.57	14.7 - 24.7	2/16/2010	1.54	13.03	-0.26
	14.57	14.7 - 24.7	3/30/2010	2.16	12.41	-0.62
H18-MW-6S	13.14	15.0 - 25.0	1/27/2010	0.72	12.42	--
	13.14	15.0 - 25.0	2/16/2010	1.25	11.89	-0.53
H18-MW-7S	14.19	15.0 - 25.0	1/27/2010	1.49	12.70	--
	14.19	15.0 - 25.0	2/16/2010	1.82	12.37	-0.33
H18-MW-8S	12.61	15.0 - 25.0	1/27/2010	1.07	11.54	--
	12.61	15.0 - 25.0	2/16/2010	1.20	11.41	-0.13
H18-PZ-01	12.24	4.0 - 5.0	2/16/2010	1.30	10.94	--
H18-PZ-02	11.55	4.0 - 5.0	2/16/2010	2.50	9.05	--

Table 2-2
Groundwater Elevation Data, 2007 - 2010
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

Location ID	TOC Elevation (ft MSL)	Screened Interval (ft)	Measurement Date	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Change in Elevation (ft)
Deep Zone of Upper Aquifer						
HGL-3C	14.49	29.4 - 39.4	9/5/2007	2.25	12.24	--
	14.49	29.4 - 39.4	12/16/2008	2.44	12.05	-0.19
	14.49	29.4 - 39.4	2/26/2009	3.36	11.13	-0.92
	14.49	29.4 - 39.4	1/27/2010	1.32	13.17	2.04
	14.49	29.4 - 39.4	2/16/2010	1.58	12.91	-0.26
H18-MW-6D	12.83	35.0 - 45.0	1/27/2010	0.52	12.31	--
	12.83	35.0 - 45.0	2/16/2010	0.75	12.08	-0.23
H18-MW-7D	13.78	35.0 - 45.0	1/27/2010	2.25	11.53	--
	13.78	35.0 - 45.0	2/16/2010	2.52	11.26	-0.27
H18-MW-8D	12.53	35.0 - 45.0	1/27/2010	1.44	11.09	--
	12.53	35.0 - 45.0	2/16/2010	1.56	10.97	-0.12

Notes:
1.) ft : feet
2.) ft BTOC: feet below top of casing
3.) ft MSL: feet above mean sea level
4.) -- : No data
5.) Water level data for September 2007 were obtained from groundwater sampling logs in the North Perimeter Road Preliminary Investigation (USACE 2008).

Table 2-3
2007 USACE Preliminary Investigation - DPT Groundwater Results
Hunter Army Airfield, Savannah, Georgia
HAA-18 (Boundary Investigation Site)

			Location ID	DPT-1S	DPT-1D	DPT-2S	DPT-2D	DPT-3S	DPT-3D	DPT-4S	DPT-4D	DPT-5S	DPT-5D
			Sample Date	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007
			Depth	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft
Chemical Name	MCL	2009 IWQS	Type I RRS										
VOCs - USEPA Method 8260B (µg/L)													
Acetone	--	--	4,000	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	**13**	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Benzene	5	51	5	< 1.0 U	**9.3**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	700	2,100	700	< 1.0 U	**7.6**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	--	--	DL	< 1.0 U	**2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m-Xylene/p-Xylene	10,000 [11]	--	10,000 [11]	< 2.0 U	**2.1**	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Naphthalene	--	--	20	< 1.0 U	**950**	**42**	**74**	**6.4**	< 1.0 U	**20**	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	10,000 [11]	--	10,000 [11]	< 1.0 U	**5.7**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	1,000	5,980	1,000	< 1.0 U	**1.8**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

			Location ID	DPT-6S	DPT-6D	DPT-7S	DPT-7D	DPT-8S	DPT-8D	DPT-9S	DPT-9D	DPT-10S	DPT-10D
			Sample Date	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/22/2007	5/22/2007	5/22/2007	5/22/2007	5/22/2007	5/22/2007
			Depth	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft
Chemical Name	MCL	2009 IWQS	Type I RRS										
VOCs - USEPA Method 8260B (µg/L)													
1,2,4-Trimethylbenzene	--	--	DL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	5	51	5	< 1.0 U	**18**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	700	2,100	700	< 1.0 U	**6.8**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m-Xylene/p-Xylene	10,000 [11]	--	10,000 [11]	< 2.0 U	**3.2**	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Naphthalene	--	--	20	< 1.0 U	**45**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	10,000 [11]	--	10,000 [11]	< 1.0 U	**6.3**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	1,000	5,980	1,000	< 1.0 U	**0.72**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	2.4	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3**	< 1.0 U

Table 2-3
2007 USACE Preliminary Investigation - DPT Groundwater Results
Hunter Army Airfield, Savannah, Georgia
HAA-18 (Boundary Investigation Site)

			Location ID	DPT-11S	DPT-11D	DPT-12S	DPT-12D	DPT-13S	DPT-13D	DPT-14S	DPT-14D	DPT-15S	DPT-15D
			Sample Date	5/22/2007	5/22/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007	5/23/2007
			Depth	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft
Chemical Name	MCL	2009 IWQS	Type I RRS										
VOCs - USEPA Method 8260B (µg/L)													
Acetone	--	--	**4,000**	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	**12**	< 5.0 U	< 5.0 U
Naphthalene	--	--	**20**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**14**	< 1.0	< 1.0 U	< 1.0 U

			Location ID	DPT-16S	DPT-16D	DPT-17S	DPT-17D	DPT-18S	DPT-18D	DPT-19S	DPT-19D	DPT-20S	DPT-20D
			Sample Date	5/24/2007	5/24/2007	5/23/2007	5/23/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007
			Depth	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft
Chemical Name	MCL	2009 IWQS	Type I RRS										
VOCs - USEPA Method 8260B (µg/L)													
Acetone	--	--	**4,000**	**7.2**	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Naphthalene	--	--	**20**	< 1.0 U	**5**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

			Location ID	DPT-21S	DPT-21D	DPT-22S	DPT-22D	DPT-23S	DPT-23D	DPT-24S	DPT-24D	DPT-25S	DPT-25D
			Sample Date	5/24/2007	5/24/2007	5/24/2007	5/24/2007	5/23/2007	5/23/2007	5/24/2007	5/24/2007	5/24/2007	5/24/2007
			Depth	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft	10 ft	25 ft
Chemical Name	MCL	2009 IWQS	Type I RRS										
VOCs - USEPA Method 8260B (µg/L)													
Acetone	--	--	**4,000**	< 5.0 U	< 5.0 U	< 5.0 U	**34**	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylene Chloride	--	--	**5**	< 1.0 U	< 1.0 U	**2.6**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Notes:

1.) Only detected compounds are shown on this table; if a VOC was not detected in any of the sampling locations, it is not shown.

2.) DL = Detection Limit. Defined as practical quantitation limit.

3.) ft = feet

4.) IWQS = In-stream Water Quality Standard. GA EPD Rule 391-3-6-.03.

5.) MCL = Maximum Contaminant Level. USEPA National Priority Drinking Water Regulations (May 2009)

6.) µg/L = Microgram per Liter

7.) RRS = Risk Reduction Standard. GAEPD Rule 391-3-19-.07 (July 23, 2003).

8.) U = Analyte was not detected at or above the practical quantitation limit.

9.) USACE = U.S. Army Corps of Engineers

10.) VOCs = Volatile Organic Compounds

11.) The Type I RRS and MCL are both 10,000 mg/kg for total Xylenes.

12.) **Bold** = Concentration above laboratory reporting limit

13.) Highlighted = Concentration above one or more applicable standards

Table 2-4
2007 USACE Preliminary Investigation - DPT Soil Results
Hunter Army Airfield, Savannah, Georgia
HAA-18 (Boundary Investigation Site)

	Location ID	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10
	Sample Depth	2.5-3.2 ft	3.0-4.0 ft	2.4-2.9 ft	1.4-1.9 ft	1.4-1.9 ft	1.2-1.8 ft	1.6-2.2 ft	3.0-3.5 ft	2.9-3.6 ft	2.2-2.9 ft
	Date	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007
Chemical Name	**Notification Concentrations (see Note 11)**										
VOCs - USEPA Method 8260B (mg/kg)											
1,1-Dichloropropene	**0.2**	<0.006 U	<0.0055 U	<0.0069 U	**0.0094**	**0.0087**	<0.0058 U	<0.0067 U	<0.0042 U	<0.0058 U	<0.007 U
1,2,3-Trichloropropane	**0.54**	<0.006 U	<0.0055 U	<0.0069 U	**0.029**	**0.03**	<0.0058 U	<0.0067 U	<0.0042 U	<0.0058 U	<0.007 U
2-Hexanone	**--**	<0.06 U	<0.055 U	<0.069 U	<0.065 U	**0.0096**	<0.058 U	<0.067 U	<0.042 U	<0.058 U	<0.070 U
Acetone	**2.74**	<0.06 U	**0.025**	**0.056**	**0.063**	**0.078**	**0.076**	**0.019**	**0.0072**	<0.058 U	**0.058**
Methylene Chloride	**0.08**	<0.006 U	<0.0055 U	<0.0069 U	**0.0041**	<0.0066 U	<0.0058 U	**0.0042**	**0.0031**	<0.0058 U	<0.007 U
p-Isopropyltoluene	**--**	<0.006 U	<0.0055 U	<0.0069 U	<0.0065 U	<0.0066 U	**0.0021**	<0.0067 U	<0.0042 U	<0.0058 U	<0.007 U
Toluene	**14.4**	<0.006 U	<0.0055 U	<0.0069 U	<0.0065 U	<0.0066 U	**0.0012**	<0.0067 U	**0.00086**	<0.0058 U	<0.007 U

Notes:

1.) Only detected compounds are shown on this table; if a VOC was not detected in any of the sampling locations, it is not shown

2.) ft = feet

3.) mg/kg = milligrams per kilograms

4.) VOCs = Volatile Organic Compounds

5.) U = Analyte was not detected at or above the practical quantitation limit.

6.) **Bold** = Concentration above laboratory practical quantitation limit

7.) Highlighted = Concentration above one or more applicable standard

8.) A HSRA Notification Concentration does not exist for 1,1-Dichloropropene; listed concentration based on a dichloropropene mixture

9.) -- = No HSRA Notification Concentration or Type I RRS exists for this compound

Table 2-5
Monitor Well Groundwater Analytical Results, 2006-2010
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

			Location ID	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4
			Sample Date	9/5/2007	12/16/2008	1/21/2010	9/5/2007	12/16/2008	3/30/2010	9/5/2007	9/5/2007	12/16/2008	1/22/2010	1/22/2010	9/6/2007	12/16/2008	1/22/2010
Chemical Name	MCL	2009 IWQS	Type I RRS														
VOCs - USEPA Method 8260B (µg/L)																	
1,2,3-Trichlorobenzene	--	--	DL	< 1.0 U	< 0.50 U	NA	< 1.0 U	< 0.50 U	NA	< 1.0 U	< 1.0 U	< 0.50 U	NA	NA	< 1.0 U	< 0.50 U	NA
1,2,4-Trichlorobenzene	70	70	70	< 1.0 U	< 0.50 U	0.33 J	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
1,2-Dichloroethane	5	37	5	< 1.0 U	**2.2**	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
4-Isopropyltoluene	--	--	DL	< 1.0 U	**1.5**	NA	**2.9**	< 0.50 U	NA	< 1.0 U	< 1.0 U	< 0.50 U	NA	NA	< 1.0 U	< 0.50 U	NA
Acetone	--	--	4,000	< 5.0 U	**38**	1.5 J	< 5.0 U	< 10 U	2.4 UB	< 5.0 U	< 5.0 U	< 10 U	1.9 J	2.9 J	< 5.0 U	**22**	< 10.0 U
Benzene	5	51	5	< 1.0 U	**82**	< 0.50 U	**9.3**	**3.3**	**0.59**	< 1.0 U	< 1.0 U	**1.1**	< 0.50 U	< 0.50 U	< 1.0 U	**76**	< 0.50 U
Bromodichloromethane	--	--	100 [18]	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
Carbon Disulfide	--	--	4,000	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
Chloroform	--	470	100	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
Chloromethane	--	DL	3	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	**0.63**	< 0.50 U
Cyclohexane	--	--	DL	NA	**56**	< 0.50 U	NA	< 0.50 U	< 0.50 U	NA	NA	< 0.50 U	< 0.50 U	< 0.50 U	NA	**10**	< 0.50 U
Dibromochloromethane	--	--	100 [18]	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U
Ethylbenzene	700	2,100	700	< 1.0 U	**8.6**	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	**6.9**	< 0.50 U
Isopropylbenzene	--	--	DL	< 1.0 U	**6.7**	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	**1**	< 0.50 U
Methylcyclohexane	--	--	DL	NA	**15**	< 5.0 U	NA	< 5.0 U	< 5.0 U	NA	NA	< 5.0 U	< 5.0 U	< 5.0 U	NA	< 5.0 U	< 5.0 U
Methylene Chloride	5	590	5	< 1.0 U	**1.9**	< 0.50 U	< 1.0 U	< 0.50 U	0.20 UB	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	**3.7**	< 0.50 U
m-Xylene/p-Xylene	10,000 [19]	--	10,000 [19]	< 2.0 U	NA	NA	< 2.0 U	NA	NA	< 2.0 U	< 2.0 U	NA	NA	NA	< 2.0 U	NA	NA
o-Xylene	10,000 [19]	--	10,000 [19]	< 1.0 U	NA	NA	< 1.0 U	NA	NA	< 1.0 U	< 1.0 U	NA	NA	NA	< 1.0 U	NA	NA
Toluene	1,000	5,980	1,000	< 1.0 U	**3.7**	< 0.50 U	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 U	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 1.0 U	**100**	< 0.50 U
Xylenes (total)	10,000	--	10,000	< 3.0 U[a]	**8.8**	< 0.50 U	< 3.0[a]	< 0.50 U	< 0.50 U	< 3.0 U[a]	< 3.0 U[a]	**20**	< 0.50 U	< 0.50 U	< 3.0 U[a]	**60**	< 0.50 U
SVOCs - USEPA Method 8270D (µg/L)																	
Acenaphthylene	--	DL	DL	NA	NA	< 1.0 U	NA	NA	< 1.1 U	NA	NA	NA	< 1.0 U	< 1.0 U	NA	NA	< 1.0 U
Caprolactam	--	--	DL	NA	NA	< 5.0 U	NA	NA	< 5.6 U	NA	NA	NA	< 5.0 U	< 5.0 U	NA	NA	< 5.0 U
Naphthalene	--	--	20	< 1.0 U	**20**	< 1.0 U	**14**	**3.6**	< 1.1 U	< 1.0 U	< 1.0 U	**2.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 0.50 U	< 1.0 U

Table 2-5
Groundwater Monitoring Data Summary (2006 - 2010) - VOCs and SVOCs
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

			Location ID	MW-5	MW-5	MW-5	HGL-3B	HGL-3B	HGL-3C	HGL-3C	HGL-3C	HGL-3C	H18-MW-6S	H18-MW-6D	H18-MW-7S	H18-MW-7D	H18-MW-8S	H18-MW-8D
			Sample Date	9/6/2007	12/16/2008	1/22/2010	3/1/2006	3/30/2010	3/1/2006	9/5/2007	12/16/2008	1/25/2010	1/26/2010	1/26/2010	1/26/2010	1/26/2010	1/26/2010	1/26/2010
Chemical Name	MCL	2009 IWQS	Type I RRS															
VOCs - USEPA Method 8260B (µg/L)																		
1,2,3-Trichlorobenzene	--	--	DL	< 1.0 U	< 0.50 U	NA	NR	NA	NR	**1.7**	< 0.50 U	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	70	70	70	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	**1.1**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
1,2-Dichloroethane	5	37	5	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
4-Isopropyltoluene	--	--	DL	< 1.0 U	< 0.50 U	NA	NR	NA	NR	< 1.0 U	< 0.50 U	NA	NA	NA	NA	NA	NA	NA
Acetone	--	--	4,000	< 5.0 U	< 10 U	< 10.0 U	< 5.0 J	2.2 UB	< 5.0 U	< 5.0 U	< 10 U	2.8 J	2.5 J	2.8 J	3.4 J	2.6 J	3.1 J	5.0 J
Benzene	5	51	5	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 J	< 0.50 U	**14**	**11**	< 0.50 U	**1.7**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Bromodichloromethane	--	--	100 [18]	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	0.20 J	< 0.50 U	< 0.50 U	< 0.50 U	0.35 J
Carbon Disulfide	--	--	4,000	< 1.0 U	< 0.50 U	< 0.50 U	< 5.0 J	< 0.50 U	< 5.0 U	< 1.0 U	< 0.50 U	0.17 J	< 0.50 U	< 0.50 U	0.11 J	< 0.50 U	< 0.50 U	0.31 J
Chloroform	--	470	100	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	0.34 J	0.19 J	< 0.50 U	< 0.50 U	**0.85**
Chloromethane	--	--	3	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Cyclohexane	--	--	DL	NA	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	NA	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Dibromochloromethane	--	--	100 [18]	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	0.21 J
Ethylbenzene	700	2,100	700	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 J	< 0.50 U	**10**	**4.7**	< 0.50 U	**0.9**	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Isopropylbenzene	--	--	DL	< 1.0 U	< 0.50 U	< 0.50 U	NR	< 0.50 U	NR	< 1.0 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Methylcyclohexane	--	--	DL	NA	< 5.0 U	< 5.0 U	NR	< 5.0 U	NR	NA	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Methylene Chloride	--	590	5	< 1.0 U	**1.2**	< 0.50 U	< 1.0 J	0.21 UB	< 1.0 U	< 1.0 U	< 0.50 U	0.20 BJ	0.20 BJ	0.21 BJ	0.21 BJ	0.18 BJ	0.18 BJ	0.20 BJ
m-Xylene/p-Xylene	10,000 [19]	--	10,000 [19]	< 2.0 U	NA	NA	< 2.0 J	NA	**5.1**	**0.81**	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	10,000 [19]	--	10,000 [19]	< 1.0 U	NA	NA	< 1.0 J	NA	**7.6**	**3.4**	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,000	5,980	1,000	< 1.0 U	< 0.50 U	< 0.50 U	< 1.0 J	< 0.50 U	**1.6**	**1**	< 0.50 U	0.19 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
Xylenes (total)	10,000	--	10,000	< 3.0 U[a]	< 0.50 U	< 0.50 U	< 3.0 J	< 0.50 U	**12.7**[a]	**4.21**	< 0.50 U	0.46 J	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U	< 0.50 U
SVOCs - USEPA Method 8270D (µg/L)																		
Acenaphthylene	--	--	DL	NA	NA	< 1.0 U	NR	< 1.1 U	NR	NA	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.62 J
Caprolactam	--	--	DL	NA	NA	< 5.0 U	NR	< 5.6 U	NR	NA	NA	< 5.0 U	< 5.1 U	1.8 J	< 5.1 U	< 5.0 U	1.7 J	< 5.0 U
Naphthalene	--	--	20	< 1.0 U	< 0.50 U	< 1.0 U	NR	< 1.1 U	NR	**360**	< 0.50 U	**16**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Notes:
1.) Only detected compounds are shown on this table; if a VOC was not detected in any of the sampling locations, it is not shown
2.) B = Analyte was detected in associated blank.
3.) DL = Detection Limit. Defined as practical quantitation limit.
4.) IWQS = In-stream Water Quality Standard. GA EPD Rule 391-3-6-.03.
5.) J = Analyte was detected below practical quantitation limit and is estimated..
6.) MCL = Maximum Contaminant Level. USEPA National Priority Drinking Water Regulations (May 2009)
7.) NA = Not analyzed
8.) NR = Not Reported
9.) µg/L = Microgram per Liter
10.) RRS = Risk Reduction Standard. GAEPD Rule 391-3-19-.07 (July 23, 2003).
11.) USACE = U.S. Army Corps of Engineers
12.) VOCs = Volatile Organic Compounds
13.) SVOCs = Semi-volatile Organic Compounds
14.) U = Analyte was not detected at or above the method detection limit. Value is expressed as less than practical quantitation limit.
15.) **Bold** = Concentration above laboratory practical quantitation limit
16.) Highlighted = Concentration exceeds one or more applicable standards
17.) a - Represents the combination of m-Xylene/p-Xylene and o-Xylene; Total Xylenes were not included as part of the laboratory report
18.) Total Trihalomethanes limit = 100 µg/L
19.) The Type I RRS and MCL is 10,000 mg/kg for total Xylenes.

Table 4-1
Groundwater Elevations at Well Pairs
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

Well ID	HGL-3B	HGL-3C	HGL-3B	HGL-3C	HGL-3B	HGL-3C
Date	2/26/2009		1/27/2010		2/16/2010	
Well Depth (ft BGS)	24.7	39.4	24.7	39.4	24.7	39.4
TOC Elevation (ft MSL)	14.57	14.49	14.57	14.49	14.57	14.49
Water Level (ft BTOC)	3.39	3.36	1.28	1.32	1.54	1.58
Groundwater Elevation (ft MSL)	11.18	11.13	13.29	13.17	13.03	12.91
Hydraulic Head Difference	-0.05		-0.12		-0.12	

Well ID	H18-MW-6S	H18-MW-6D	H18-MW-6S	H18-MW-6D
Date	1/27/2010		2/16/2010	
Well Depth (ft BGS)	25.0	45.0	25.0	45.0
TOC Elevation (ft MSL)	13.14	12.83	13.14	12.83
Water Level (ft BTOC)	0.72	0.52	1.25	0.75
Groundwater Elevation (ft MSL)	12.42	12.31	11.89	12.08
Hydraulic Head Difference	-0.11		0.19	

Table 4-1
Groundwater Elevations at Well Pairs
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

Well ID	H18-MW-7S	H18-MW-7D	H18-MW-7S	H18-MW-7D
Date	1/27/2010		2/16/2010	
Well Depth (ft BGS)	25.0	45.0	25.0	45.0
TOC Elevation (ft MSL)	14.19	13.78	14.19	13.78
Water Level (ft BTOC)	1.49	2.25	1.82	2.52
Groundwater Elevation (ft MSL)	12.70	11.53	12.37	11.26
Hydraulic Head Difference	-1.17		-1.11	

Well ID	H18-MW-8S	H18-MW-8D	H18-MW-8S	H18-MW-8D
Date	1/27/2010		2/16/2010	
Well Depth (ft BGS)	25.0	45.0	25.0	45.0
TOC Elevation (ft MSL)	12.61	12.53	12.61	12.53
Water Level (ft BTOC)	1.07	1.44	1.20	1.56
Groundwater Elevation (ft MSL)	11.54	11.09	11.41	10.97
Hydraulic Head Difference	-0.45		-0.44	

Notes:
1.) ft BGS: feet below ground surface
2.) ft BTOC: feet below top of casing
3.) ft MSL: feet above mean sea level

Table 4-2
Soil Analytical Results, DPT Pipeline Investigation, 2010
HAA-18 (Boundary Investigation Site)
Hunter Army Airfield, Savannah, Georgia

	Location ID	H18-SB01	H18-SB02	H18-SB03	H18-SB04	H18-SB05	H18-SB06
	Sample Depth	4.0 - 5.0	4.0 - 5.0	4.0 - 5.0	5.0 - 6.0	1.0 - 2.0	1.0 - 2.0
	Sample Date	1/14/2010	1/14/2010	1/14/2010	1/14/2010	1/14/2010	1/14/2010
Chemical Name	Notification Concentrations						
VOCs - USEPA Method 8260B (mg/kg)							
Acetone	2.74	< 0.011U	**0.045**	**0.027**	**0.019**	0.011 J	< 0.016U
SVOCs - USEPA Method 8270D (mg/kg)							
No SVOCs detected.							

	Location ID	H18-SB07	H18-SB08	H18-SB09	H18-SB10	H18-SB11	H18-SB12
	Sample Depth	1.0 - 2.0	2.0 - 3.0	2.0 - 3.0	4.0 - 5.0	4.0 - 5.0	2.0 - 3.0
	Sample Date	1/14/2010	1/14/2010	1/14/2010	1/14/2010	1/14/2010	1/14/2010
Chemical Name	Notification Concentrations						
VOCs - USEPA Method 8260B (mg/kg)							
Acetone	2.74	< 0.012U	**0.052**	**0.065**	< 0.011U	0.014 J	0.012 J
SVOCs - USEPA Method 8270D (mg/kg)							
No SVOCs detected.							

	Location ID	H18-SB13	H18-SB14	H18-SB15
	Sample Depth	4.0 - 5.0	3.0 - 4.0	3.0 - 4.0
	Sample Date	1/14/2010	1/14/2010	1/14/2010
Chemical Name	Notification Concentrations (see Note 9)			
VOCs - USEPA Method 8260B (mg/kg)				
Acetone	2.74	**0.029**	0.015 J	**0.024**
SVOCs - USEPA Method 8270D (mg/kg)				
No SVOCs detected.				

Notes:
1.) Only detected compounds appear on table. If a compound was not detected in any soil boring, the compound is not included in the table.
2.) All soil samples were analyzed for VOCs and SVOCs.
3.) **Bold** values represent concentrations above the laboratory practical quantitation limit.
4.) J = Analyte was detected below practical quantitation limit and is estimated..
5.) VOCs = Volatile Organic Compounds
6.) SVOCs = Semivolatile Organic Compounds
7.) U = Analyte was not detected at or above the method detection limit. Value is expressed as less than practical quantitation limit.
8.) USEPA = United States Environmental Protection Agency
9.) GAEPD Rule 391-3-19-.04 Release Notification - Appendix I

Figures

SOURCE: http://maps.google.com/maps, February 2009.

HUNTER ARMY AIRFIELD, GEORGIA

HAA-18 SITE INVESTIGATION REPORT

Site Location Map

ARCADIS

FIGURE

1-1

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F1-1 H18_SIR_REG.mxd SAVED: 7APR2010

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line (6") Reportedly Abandoned in Place

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

Site Layout with Abandoned Pipeline Approximate Location

ARCADIS

FIGURE
2-1

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAF-S.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F2-1 H18_SIR_PIPELINE.mxd SAVED: 15APR2010

Well ID	Screen Interval (ft bgs)
MW-1	18.8 - 28.8
MW-2	20.5 - 30.5
MW-3	15.5 - 25.5
MW-4	19.1 - 29.1
MW-5	20.0 - 30.0
HGL-2B (a)	15.0 - 25.0
HGL-2C (a)	34.0 - 44.0
HGL-3B	14.7 - 24.7
HGL-3C	29.4 - 39.4
H18-MW-6S	15.0 - 25.0
H18-MW-6D	35.0 - 45.0
H18-MW-7S	15.0 - 25.0
H18-MW-7D	35.0 - 45.0
H18-MW-8S	15.0 - 25.0
H18-MW-8D	35.0 - 45.0
H18-PZ-01	4.0 - 5.0
H18-PZ-02	4.0 - 5.0

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (deep)
- Monitor Well (destroyed)
- Monitor Well (shallow)
- Piezometer
- Direct Push Boring - Groundwater Vertical Profile (May 2007)
- Surface Soil Sample (August 2007)
- Soil Boring (January 2010)

(a) HGL-2B/2C could not be located after February 2009 and apparently was destroyed during construction activities in late 2009.

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

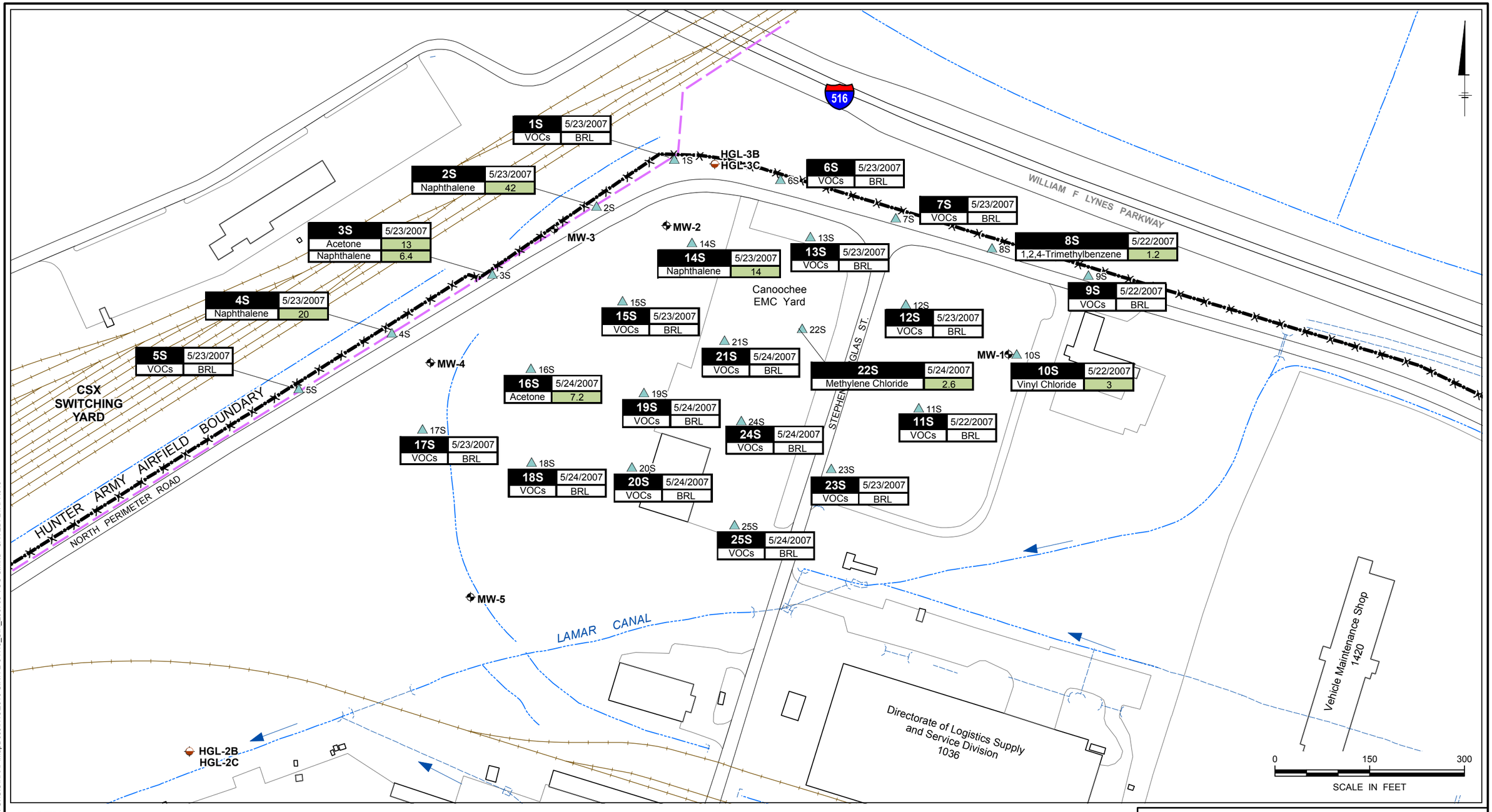
HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

Site Layout with Sampling Locations

ARCADIS

FIGURE
2-2

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H182010 SIR\ F2-2 H18_SIR_SITE.mxd SAVED: 21APR2010



CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B DPCSR PATH: G:\GIS\HAAP\MapDocs\H18\2010 SIR\ F2-3 H18_SIR_200705 VOC S.mxd SAVED: 21APR010

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (shallow)
- Monitor Well (deep)
- Direct Push Boring - Groundwater Vertical Profile (May 2007)

DPT Sample	Sample Date
Analyte	Result

VOCs - Volatile Organic Compounds
BRL - Below Laboratory Reporting Limit

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).

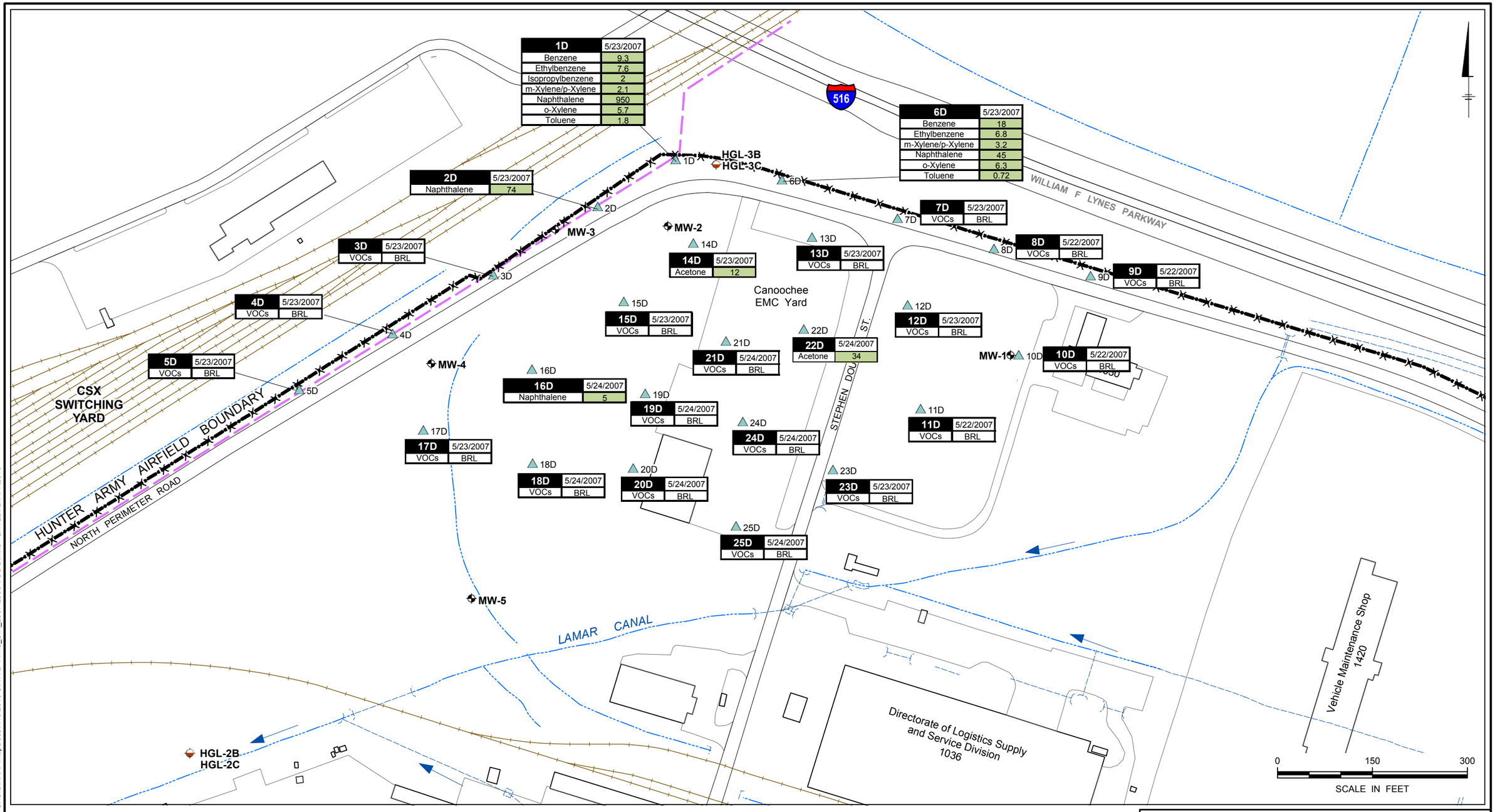
NOTES:
1) All samples were collected using Direct Push Technology (DPT) from 10 feet below ground surface (ft bgs).
2) Samples analyzed for VOCs by 8260B.
3) All concentrations in micrograms per liter (µg/L).
4) Only those analytes with at least one detection are shown.
5) Data collected by USACE during North Perimeter Road Preliminary Investigation.

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

VOCs in DPT Groundwater Samples (10 ft bgs)
(2007 USACE Preliminary Investigation)

ARCADIS

FIGURE
2-3



LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (shallow)
- Monitor Well (deep)
- Direct Push Boring - Groundwater Vertical Profile (May 2007)

DPT Sample	Sample Date
Analyte	Result

VOCs - Volatile Organic Compounds
BRL - Below Laboratory Reporting Limit

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).

NOTES:
1) All samples were collected using Direct Push Technology (DPT) from 25 feet below ground surface (ft bgs).
2) Samples analyzed for VOCs by 8260B.
3) All concentrations in micrograms per liter (µg/L).
4) Only those analytes with at least one detection are shown.
5) Data collected by USACE during North Perimeter Road Preliminary Investigation.

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

VOCs Detected in DPT Groundwater Samples (25 ft bgs) (2007 USACE Preliminary Investigation)

ARCADIS

FIGURE **2-4**

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F2-4 H18_SIR_2007-2008 VOC D.mxd SAVED: 21APR2010

MW-3	9/5/2007	12/16/2008	1/21/2010
Benzene	< 1.0	1.1	< 0.5
Naphthalene	< 1.0	2.1	< 1.0
Xylenes (total)	< 3.0	20	< 0.5

HGL-3B	3/1/2006	3/30/2010
No Detections Above PQLs		

HGL-3C	3/1/2006	9/5/2007	12/16/2008	1/25/2010
1,2,3-Trichlorobenzene	NR	1.7	< 0.50	NA
1,2,4-Trichlorobenzene	NR	1.1	< 0.50	< 0.50
Benzene	14	11	< 0.50	1.7
Ethylbenzene	10	4.7	< 0.50	0.9
Naphthalene	NR	360	< 0.50	16
Toluene	1.6	1	< 0.50	0.19 J
Xylenes (total)	12.7	4.21	< 0.50	0.46 J

MW-4	9/6/2007	12/16/2008	1/21/2010
Acetone	< 5.0	22	< 10.0
Benzene	< 1.0	76	< 0.5
Chloromethane	< 1.0	0.63	< 0.5
Cyclohexane	NA	10	< 0.5
Ethylbenzene	< 1.0	6.9	< 0.5
Isopropylbenzene	< 1.0	1	< 0.5
Methylene Chloride	< 1.0	3.7	< 0.5
Toluene	< 1.0	100	< 0.5
Xylenes (total)	< 3.0*	60	< 0.5

MW-2	9/5/2007	12/16/2008	3/30/2010
4-Isopropyltoluene	2.9	< 0.50	NA
Benzene	9.3	3.3	0.59
Naphthalene	14	3.6	< 1.1

MW-1	9/5/2007	12/16/2008	1/21/2010
1,2-Dichloroethane	< 1.0	2.2	< 0.50
4-Isopropyltoluene	< 1.0	1.5	NA
Acetone	< 5.0	38	< 10.0
Benzene	< 1.0	82	< 0.5
Cyclohexane	NA	56	< 0.5
Ethylbenzene	< 1.0	8.6	< 0.5
Isopropylbenzene	< 1.0	6.7	< 0.5
Methylcyclohexane	NA	15	< 5.0
Methylene Chloride	< 1.0	1.9	< 0.5
Naphthalene	< 1.0	20	< 1.0
Toluene	< 1.0	3.7	< 0.5
Xylenes (total)	< 3.0*	8.8	< 0.5

H18-MW-8S	1/26/2010
No Detections Above PQLs	

H18-MW-8D	1/26/2010
Chloroform	0.85

H18-MW-7S	1/26/2010
No Detections Above PQLs	

H18-MW-6S	1/26/2010
No Detections Above PQLs	

H18-MW-6D	1/26/2010
No Detections Above PQLs	

H18-MW-7D	1/26/2010
No Detections Above PQLs	

MW-5	9/6/2007	12/16/2008	1/21/2010
Methylene Chloride	< 1.0	1.2	< 0.5

HGL-2B/C	1/25/2010
Well Destroyed (Could Not Sample)	

HGL-3B
HGL-3C
MW-3
MW-2
MW-4
MW-1
H18-MW-8S
H18-MW-8D
H18-MW-7S
H18-MW-7D
H18-MW-6S
H18-MW-6D
H18-PZ-01
H18-PZ-02
MW-5
HGL-2B
HGL-2C

516

WILLIAM F LYNES PARKWAY

CSX SWITCHING YARD

HUNTER ARMY AIRFIELD BOUNDARY

NORTH PERIMETER ROAD

LAMAR CANAL

STEPHEN DOUGLAS ST.

EMC Yard

Vehicle Maintenance Shop 1420

Directorate of Logistics Supply and Service Division 1036

0 150 300

SCALE IN FEET

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (deep)
- Monitor Well (shallow)
- Piezometer

Monitor Well Sample	Date
Analyte	2.9

VOCs - Volatile Organic Compounds
SVOCs - Semi-Volatile Organic Compounds
NA - Laboratory did not analyze particular analyte in 8260B run.
NR - Not reported.
* Estimated value. (Xylenes analysis (2007) were for m&p-xylenes and o-xylenes. Combined results reported as total xylenes.)

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

NOTES:
1) All concentrations expressed in micrograms per liter (µg/L).
2) 2006 data collected by HGL during MCA Barracks (HAA-15) Investigation.
3) 2007 data collected by USACE during North Perimeter Road Investigation.
4) 2008 data collected by ARCADIS for HAAF Boundary Investigation.
5) 2010 data collected by ARCADIS for Site Investigation.
6) Samples analyzed for VOCs by 8260B.
7) Only those analytes with at least one detection are shown.
8) Highlighted values represent those values above the Practical Quantitation Limits (PQL).

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

VOCs and SVOCs Detected in Groundwater Monitor Wells (2006–2010)

ARCADIS

FIGURE **2-5**

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F2-5 H18_SIR_201002 GW VOCs.mxd SAVED: 23APR2010

SS-1	
2.5-3.2 ft.	8/10/2007
VOCs	BRL

SS-2	
3.0-4.0 ft.	8/10/2007
Acetone	0.025

SS-3	
2.4-2.9 ft.	8/10/2007
Acetone	0.056

SS-4	
1.4-1.9 ft.	8/10/2007
1,1-Dichloropropene	0.0094
1,2,3-Trichloropropane	0.029
Acetone	0.063
Methylene Chloride	0.0041

SS-5	
1.4-1.9 ft.	8/10/2007
1,1-Dichloropropene	0.0087
1,2,3-Trichloropropane	0.03
2-Hexanone	0.0096
Acetone	0.078

SS-6	
1.2-1.8 ft.	8/10/2007
Acetone	0.076
p-Isopropyltoluene	0.0021
Toluene	0.0012

SS-7	
1.6-2.2 ft.	8/10/2007
Acetone	0.019
Methylene Chloride	0.0042

SS-8	
3.0-3.5 ft.	8/10/2007
Acetone	0.076
Methylene Chloride	0.0042
Toluene	0.0012

SS-9	
2.9-3.6 ft.	8/10/2007
VOCs	BRL

SS-10	
2.2-2.9 ft.	8/10/2007
Acetone	0.058

1S/D (SS-1) HGL-3B HGL-3C 6S/D (SS-6) 7S/D (SS-7) 8S/D (SS-8) 9S/D (SS-9)
2S/D (SS-2) 3S/D (SS-3) 4S/D (SS-4) 5S/D (SS-5)
MW-2 MW-3 MW-4 MW-5 MW-10 10S/D (SS-10)
HGL-2B HGL-2C
14S/D 13S/D 15S/D 12S/D 22S/D 21S/D 16S/D 19S/D 17S/D 24S/D 11S/D 18S/D 20S/D 23S/D 25S/D 25S/D

CSX SWITCHING YARD
HUNTER ARMY AIRFIELD BOUNDARY
NORTH PERIMETER ROAD
LAMAR CANAL
STEPHEN DOUGLAS ST.
WILLIAM F LYNE
Canoochee EMC Yard
Directorate of Logistics Supply and Service Division 1036
Vehicle Maintenance Shop 1420
1030

0 150 300
SCALE IN FEET

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (shallow)
- Monitor Well (deep)
- Direct Push Boring - Groundwater Vertical Profile (May 2007)
- Surface Soil Sample (August 2007)

DPT Sample	
Depth	Date
Analyte	Result

VOCs - Volatile Organic Compounds
BRL - Below Laboratory Reporting Limit

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).

NOTES:
1) Samples analyzed for VOCs by 8260B.
2) All concentrations in milligrams per kilogram (mg/kg).
3) Only those analytes with at least one detection are shown.
4) Data collected by USACE during North Perimeter Road Preliminary Investigation (2007).

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

VOCs Detected in DPT Soil Samples (2007 USACE Preliminary Investigation)

ARCADIS

FIGURE **2-6**

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F2-6 H18_SIR_200708 VOC SS.mxd SAVED: 21APR2010

Well ID	Screen Interval (ft bgs)
MW-1	18.8 - 28.8
MW-2	20.5 - 30.5
MW-3	15.5 - 25.5
MW-4	19.1 - 29.1
MW-5	20.0 - 30.0
HGL-2B	15.0 - 25.0
HGL-2C	34.0 - 44.0
HGL-3B	14.7 - 24.7
HGL-3C	29.4 - 39.4

516

WILLIAM F LYNES PARKWAY

12.5

13.0

12.0

11.5

HGL-3B/C
(NM/12.05)

MW-3
(13.05)

MW-2
(11.90)

MW-4
(11.67)

MW-1
(11.71)

MW-5
(11.05)

HGL-2B/C
(NM/NM)

CSX
SWITCHING
YARD

HUNTER ARMY AIRFIELD BOUNDARY

NORTH PERIMETER ROAD

Canoochee
EMC Yard

STEPHEN DOUGLAS ST.

1030

LAMAR CANAL

Directorate of Logistics Supply
and Service Division
1036

Vehicle Maintenance Shop
1420

0 150 300

SCALE IN FEET

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Monitor Well (deep)
- Monitor Well (shallow)
- Standing Water
- Groundwater Contour (ft, amsl)
- (inferred where dashed)
- Direction of Groundwater Flow
- (NM) Not Measured
- (11.05) Groundwater Elevation (ft, amsl) Measured December 12, 2008

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).

NOTE: Potentiometric contour lines are based on a combination of wells from the shallow and deep portion of the upper aquifer.

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

Groundwater Potentiometric Map (December 2008)

ARCADIS

FIGURE
2-7

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTJANIC,FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F2-7 H18_SIR_200812 POT.mxd SAVED: 15APR2010

Well ID	Screen Interval (ft bgs)
MW-1	18.8 - 28.8
MW-2	20.5 - 30.5
MW-3	15.5 - 25.5
MW-4	19.1 - 29.1
MW-5	20.0 - 30.0
HGL-2B	15.0 - 25.0
HGL-2C	34.0 - 44.0
HGL-3B	14.7 - 24.7
HGL-3C	29.4 - 39.4

516

WILLIAM F LYNES PARKWAY

HGL-3B/C (11.18/11.13)

MW-3 (11.95)

MW-2 (10.97)

MW-4 (10.71)

MW-1 (11.08)

11.5

11.0

10.5

10.0

Canoochee EMC Yard

STEPHEN DOUGLAS ST.

1030

ARMY AIRFIELD BOUNDARY

H PERIMETER ROAD

MW-5 (10.40)

LAMAR CANAL

HGL-2B/C (9.53/9.80)

Directorate of Logistics Supply and Service Division 1036

Vehicle Maintenance Shop 1420

0 150 300

SCALE IN FEET

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Monitor Well (deep)
- Monitor Well (shallow)
- Standing Water
- Groundwater Contour (ft, amsl)
- (inferred where dashed)
- Direction of Groundwater Flow
- (NM) Not Measured
- (10.40) Groundwater Elevation (ft, amsl) Measured February 27, 2009

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).

NOTE: Potentiometric contour lines are based on a combination of wells from the shallow and deep portion of the upper aquifer.

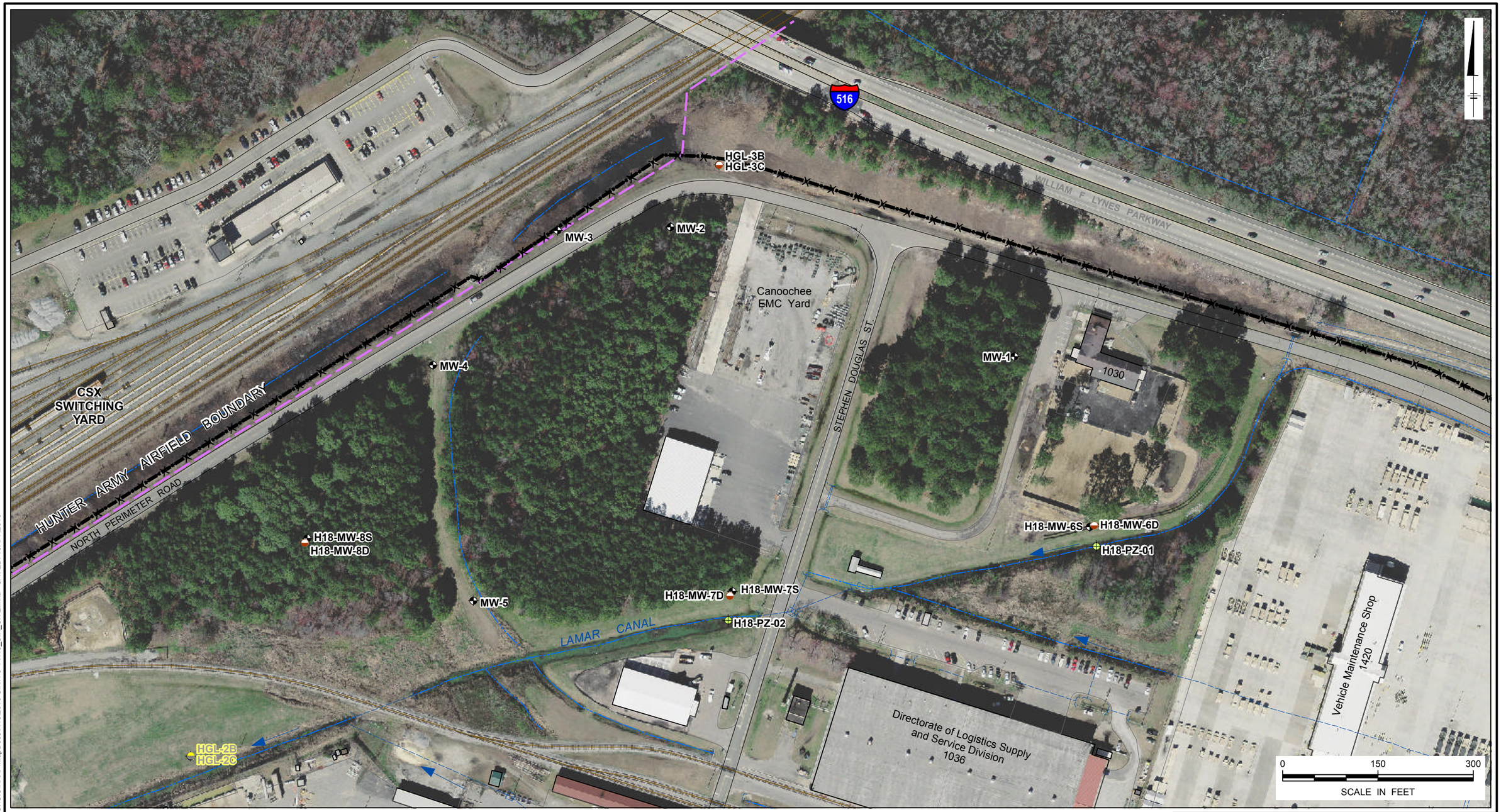
HUNTER ARMY AIRFIELD, GEORGIA

HAA-18 SITE INVESTIGATION REPORT

Groundwater Potentiometric Map (February 2009)

ARCADIS

FIGURE **2-8**



LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line (6") Abandoned in Place
- Monitor Well (deep)
- Monitor Well (destoyed)
- Monitor Well (shallow)
- Piezometer

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

Site Layout with Monitor Well Locations

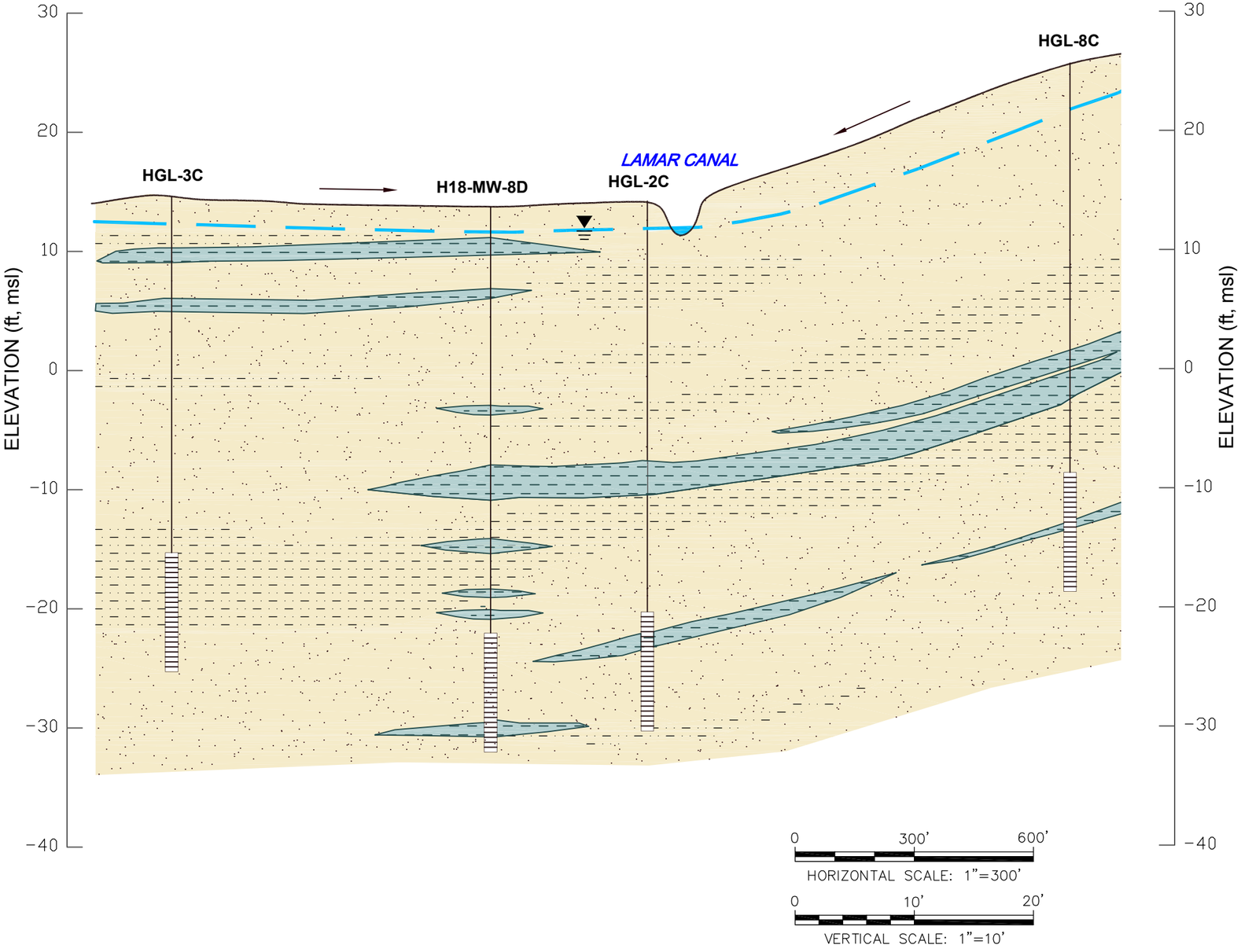
ARCADIS

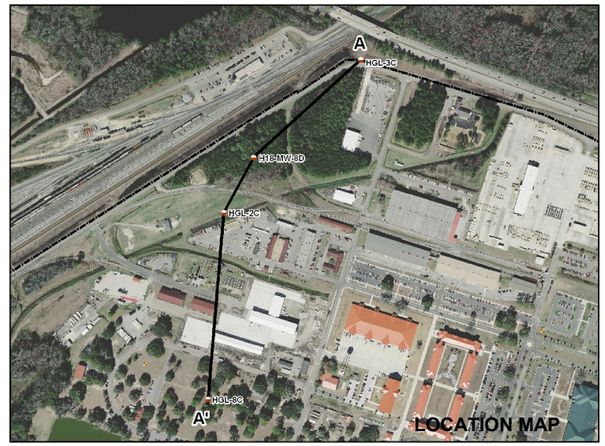
FIGURE
3-1

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H182010 SIR\ F3-1 H18_SIR_SITE.mxd SAVED: 15APR2010

A
NORTH

A'
SOUTH





LEGEND

- SAND
- SILT
- CLAY
- WATER TABLE
- SCREENED INTERVAL
- DIRECTION OF SURFACE WATER FLOW

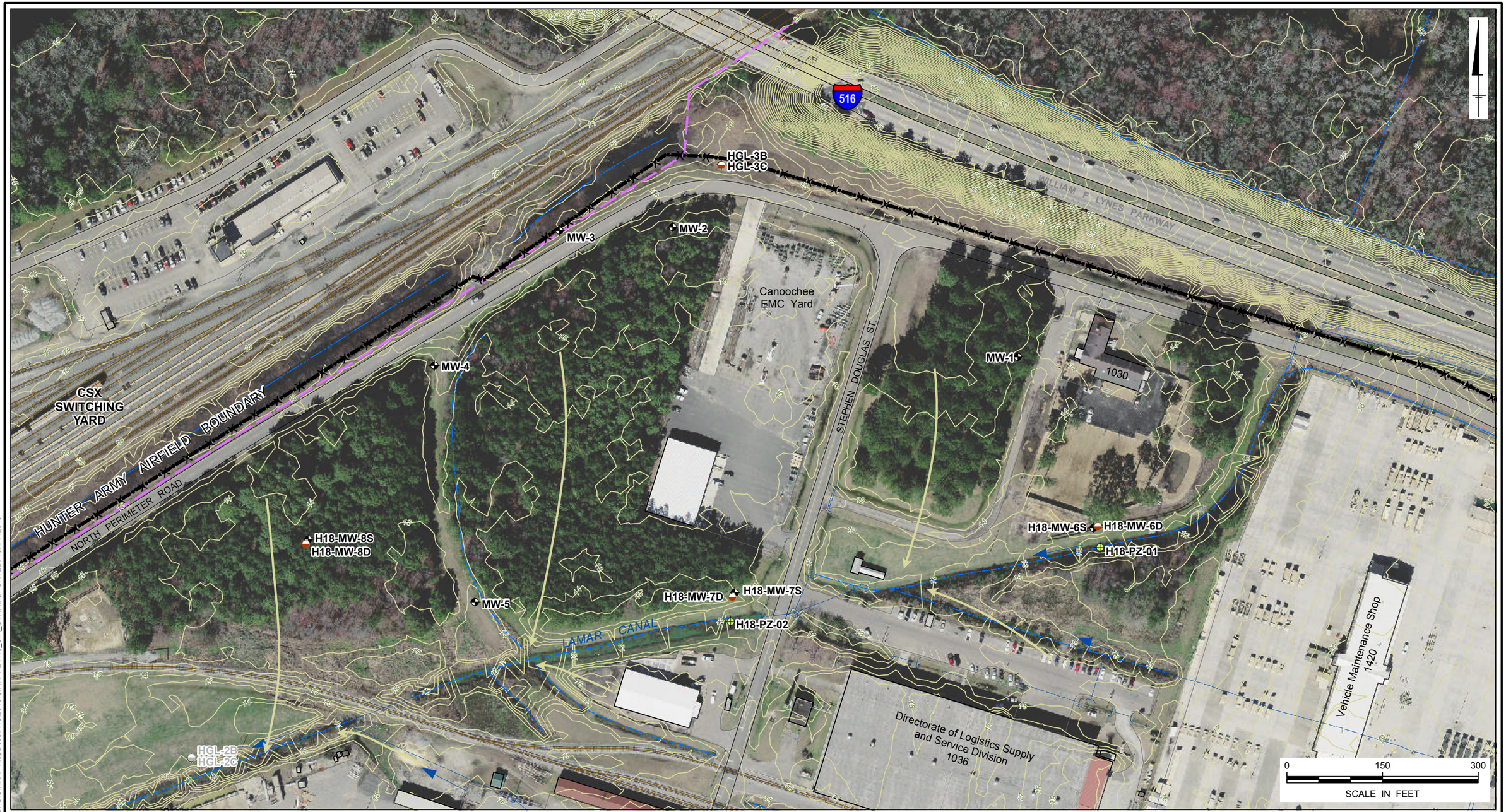
HUNTER ARMY AIRFIELD, GEORGIA

HAA-18 SITE INVESTIGATION REPORT

Geologic Cross-Section A-A'

ARCADIS

FIGURE **4-1**



LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Topographic Contour Line (ft, msl)
- General Surface Slope Direction
- Monitor Well (shallow)
- Monitor Well (deep)
- Monitor Well (destoyed)
- Piezometer

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

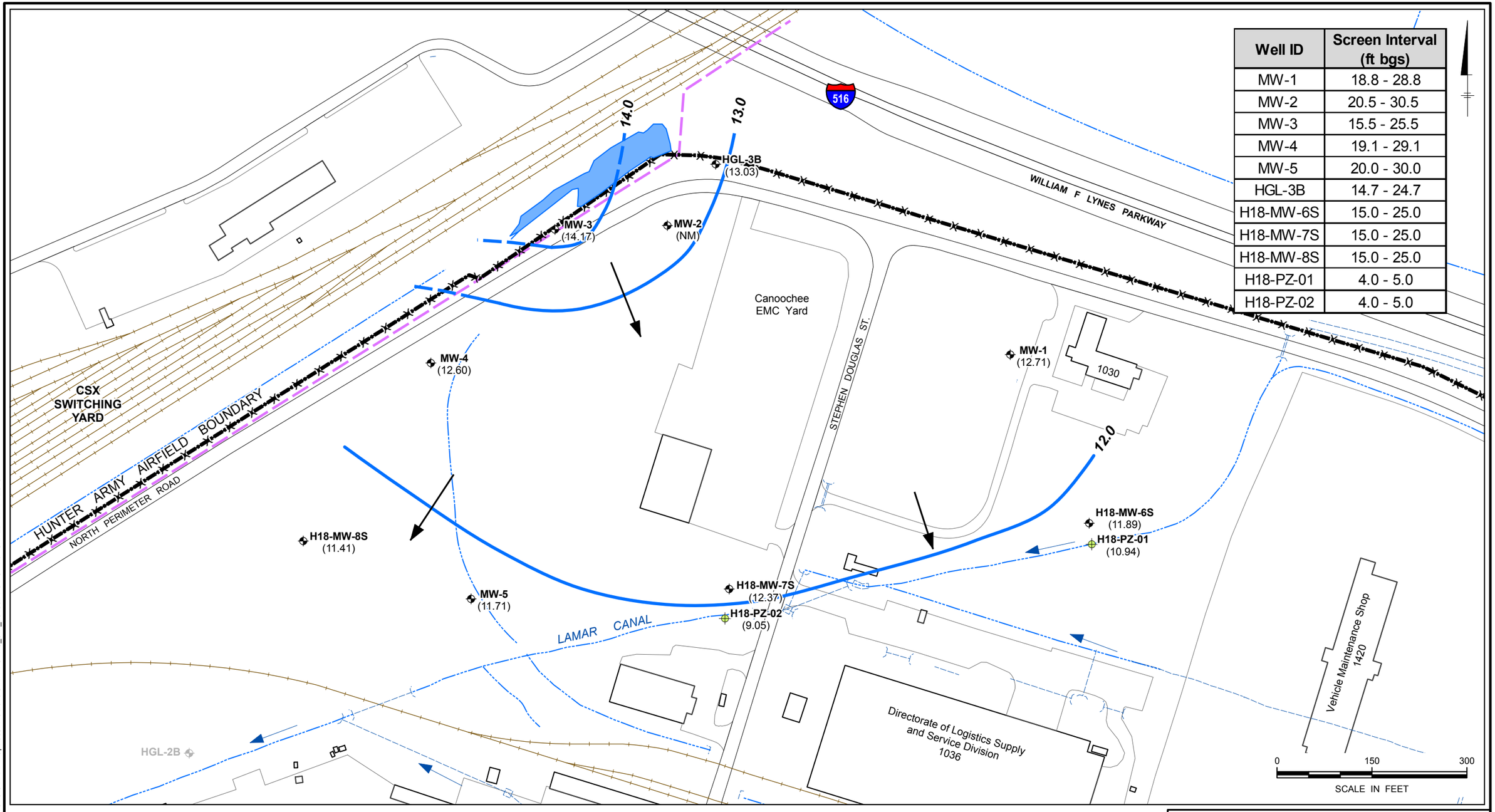
Topographic Contours with Monitor-Well Locations

ARCADIS

FIGURE
4-2

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F4-2 H18_SIR_CTR.mxd SAVED: 15APR2010

Well ID	Screen Interval (ft bgs)
MW-1	18.8 - 28.8
MW-2	20.5 - 30.5
MW-3	15.5 - 25.5
MW-4	19.1 - 29.1
MW-5	20.0 - 30.0
HGL-3B	14.7 - 24.7
H18-MW-6S	15.0 - 25.0
H18-MW-7S	15.0 - 25.0
H18-MW-8S	15.0 - 25.0
H18-PZ-01	4.0 - 5.0
H18-PZ-02	4.0 - 5.0



LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (shallow)
- Piezometer
- Monitor Well (destroyed)
- Standing Water
- Groundwater Contour (ft amsl)
- (inferred where dashed)
- Direction of Groundwater Flow
- (NM) Not Measured (could not locate)
- (11.71) Groundwater Elevation (ft amsl) Measured February 16, 2010

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

Groundwater Potentiometric Map for the Shallow Portion of the Upper Aquifer (February 2010)

ARCADIS

FIGURE
4-3

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP09HAFS.H18B.DPCSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F4-3 H18_SIR_201002 POT S.mxd SAVED: 22APR2010

Well ID	Screen Interval (ft bgs)
HGL-3C	29.4 - 39.4
H18-MW-6D	35.0 - 45.0
H18-MW-7D	35.0 - 45.0
H18-MW-8D	35.0 - 45.0

516

HGL-3C
(12.91)

WILLIAM F LYNES PARKWAY

CSX
SWITCHING
YARD

HUNTER ARMY AIRFIELD BOUNDARY

NORTH PERIMETER ROAD

Canoochee
EMC Yard

STEPHEN DOUGLAS ST.

1030

H18-MW-8D
(10.97)

H18-MW-6D
(12.08)

12.0

H18-MW-7D
(11.26)

LAMAR CANAL

11.0

HGL-2C

Directorate of Logistics Supply
and Service Division
1036

Vehicle Maintenance Shop
1420

0 150 300
SCALE IN FEET

LEGEND

- Fence at Hunter Army Airfield property boundary
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line
- Monitor Well (deep)
- Monitor Well (destroyed)
- Groundwater Contour (ft amsl)
- (inferred where dashed)
- Direction of Groundwater Flow
- (NM) Not Measured (could not locate)
- (10.97) Groundwater Elevation (ft amsl) Measured February 16, 2010

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).
3) BATEMAN CIVIL SURVEY (FEBRUARY 2010).

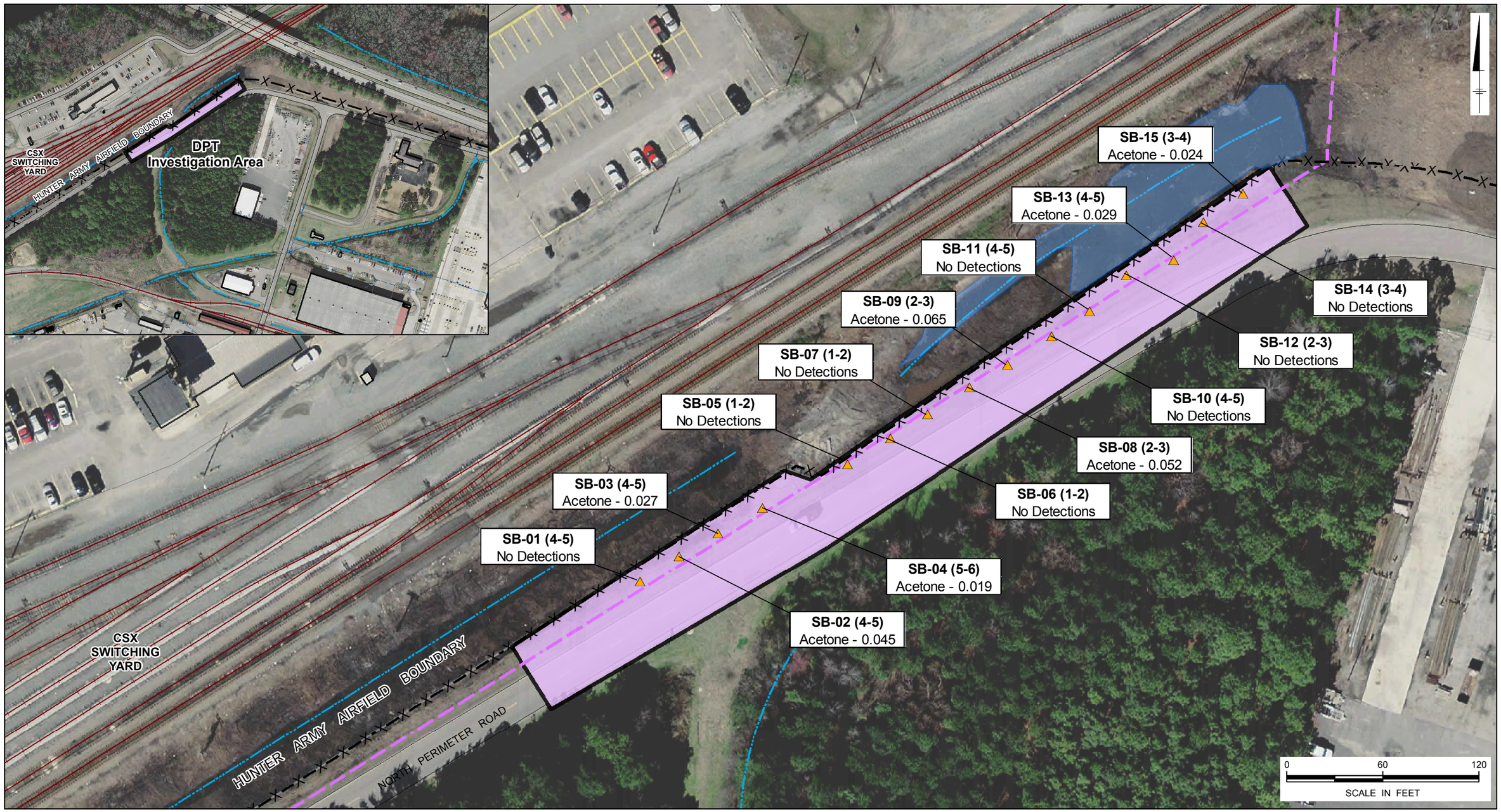
HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

Groundwater Potentiometric Map for the Deep Portion of the Upper Aquifer (February 2010)

ARCADIS

FIGURE
4-4

CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DP.CSR PATH: G:\GIS\HAAF\MapDocs\H18\2010 SIR\ F4-4 H18_SIR_201002 POT D.mxd SAVED: 15APR2010



LEGEND

- Fence at Hunter Army Airfield property boundary
- DPT Investigation Area
- Standing Water
- Storm Water Drainage System
- Surface Water Flow Direction
- Former Fuel Transfer Line (6") Abandoned in Place
- Soil Boring (January 2010)

Soil Boring ID (Depth Interval ft-bgs)
Analyte - Result

REFERENCES:
1) SAGIS (2008).
2) JAMES M. KEATON SURVEY (DECEMBER 2008).

NOTES:
1) All samples collected in January 2010.
2) All concentrations expressed in milligrams per kilogram (mg/kg).
3) Acetone is a common laboratory contaminant.
4) ft-bgs - feet below ground surface

HUNTER ARMY AIRFIELD, GEORGIA
HAA-18 SITE INVESTIGATION REPORT

VOCs and SVOCs Detected in Soil Samples from 2010 Pipeline Investigation

ARCADIS

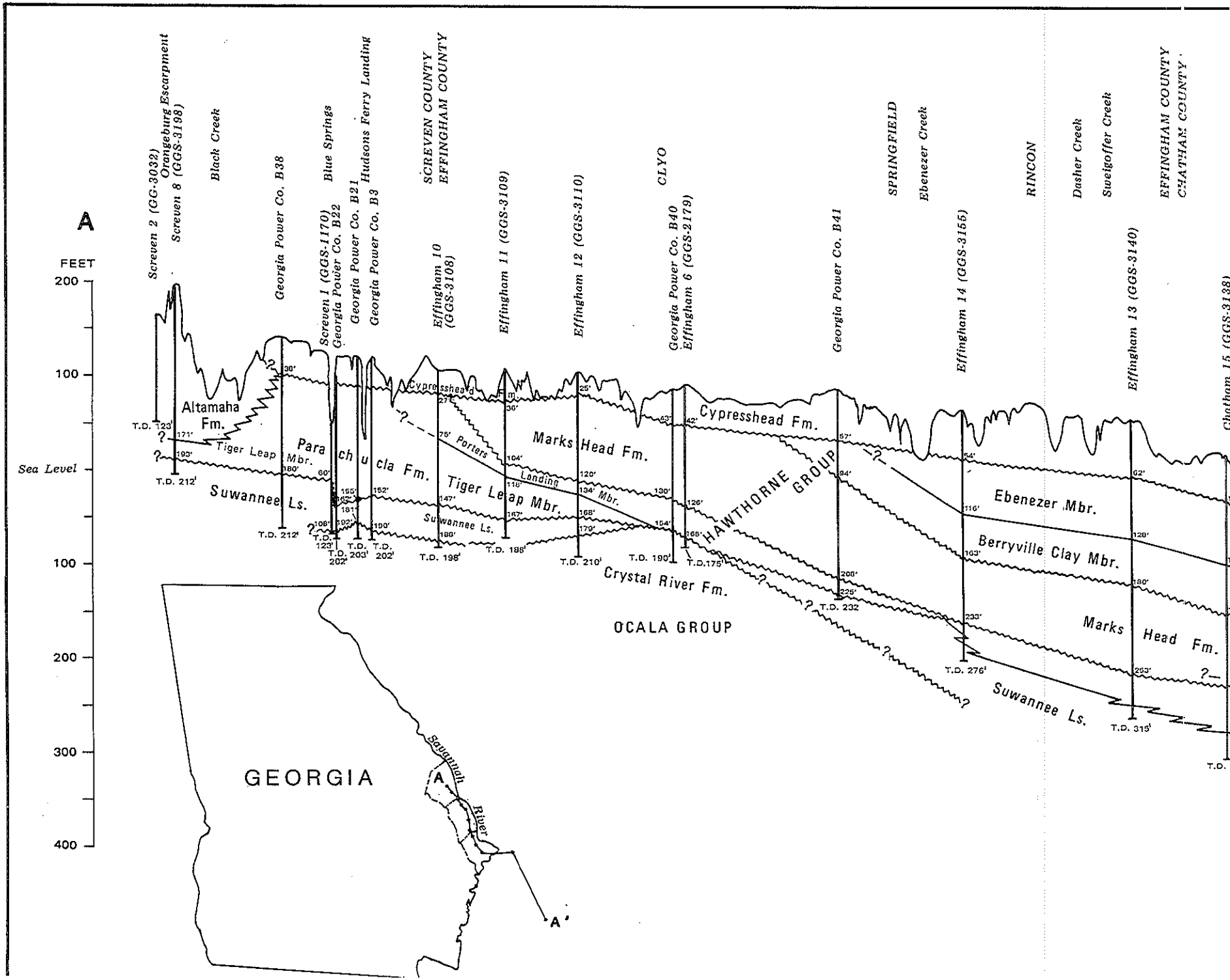
FIGURE
4-5

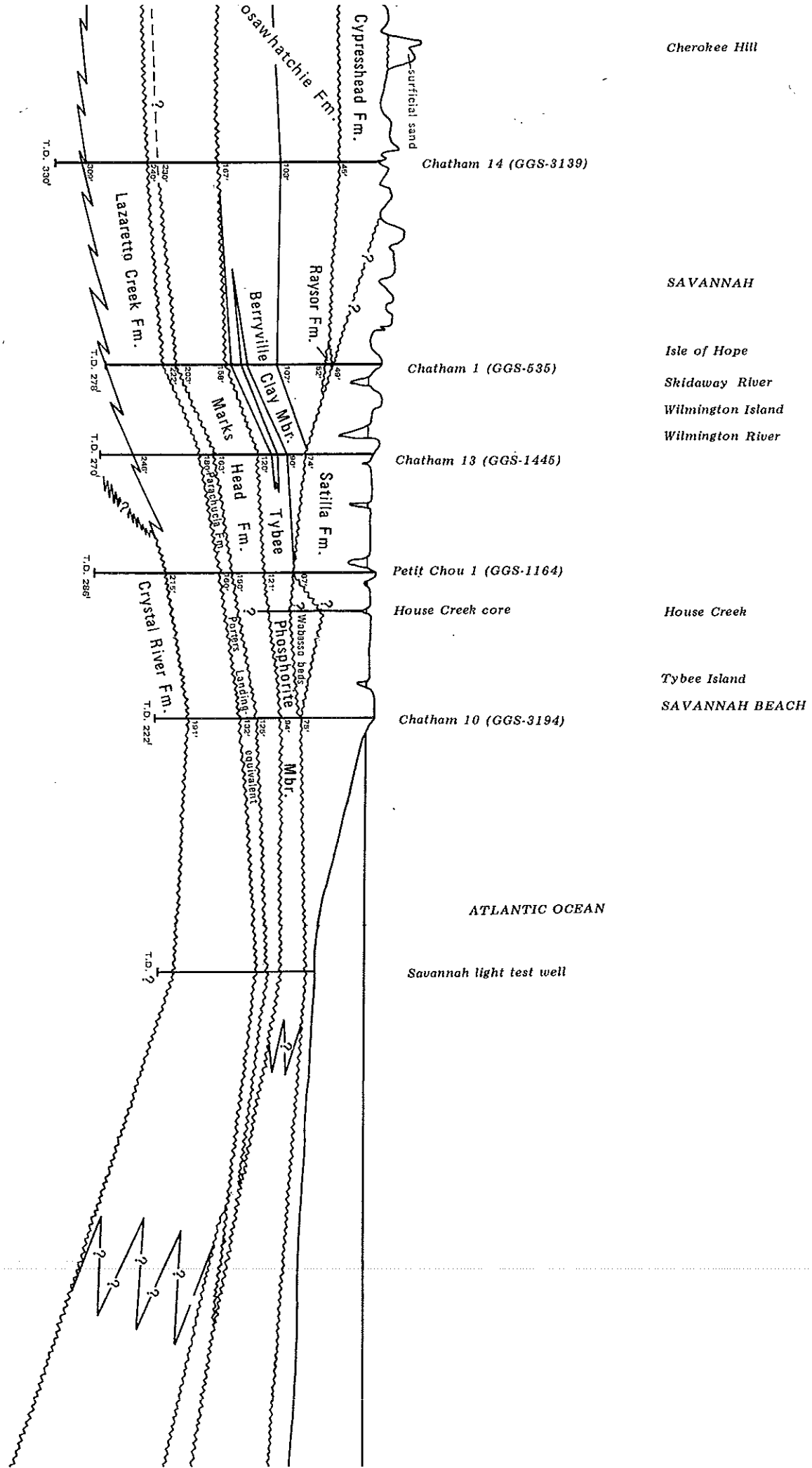
CITY:(KNOXVILLE) DIV/GROUP:(ENV) DB:(B.ALTOM) PIC:(T.TALELE) PM:(C.BERTZ) TM:(S.BOSTIAN/C.FORMAN)
PROJECT: GP08HAFS.H18B.DPCSR PATH: G:\GIS\HAA-P\MapDocs\H18\2010 CSR\ F4-5 H18_SIR_201001 SOIL VOCs.mxd SAVED: 21APR2010

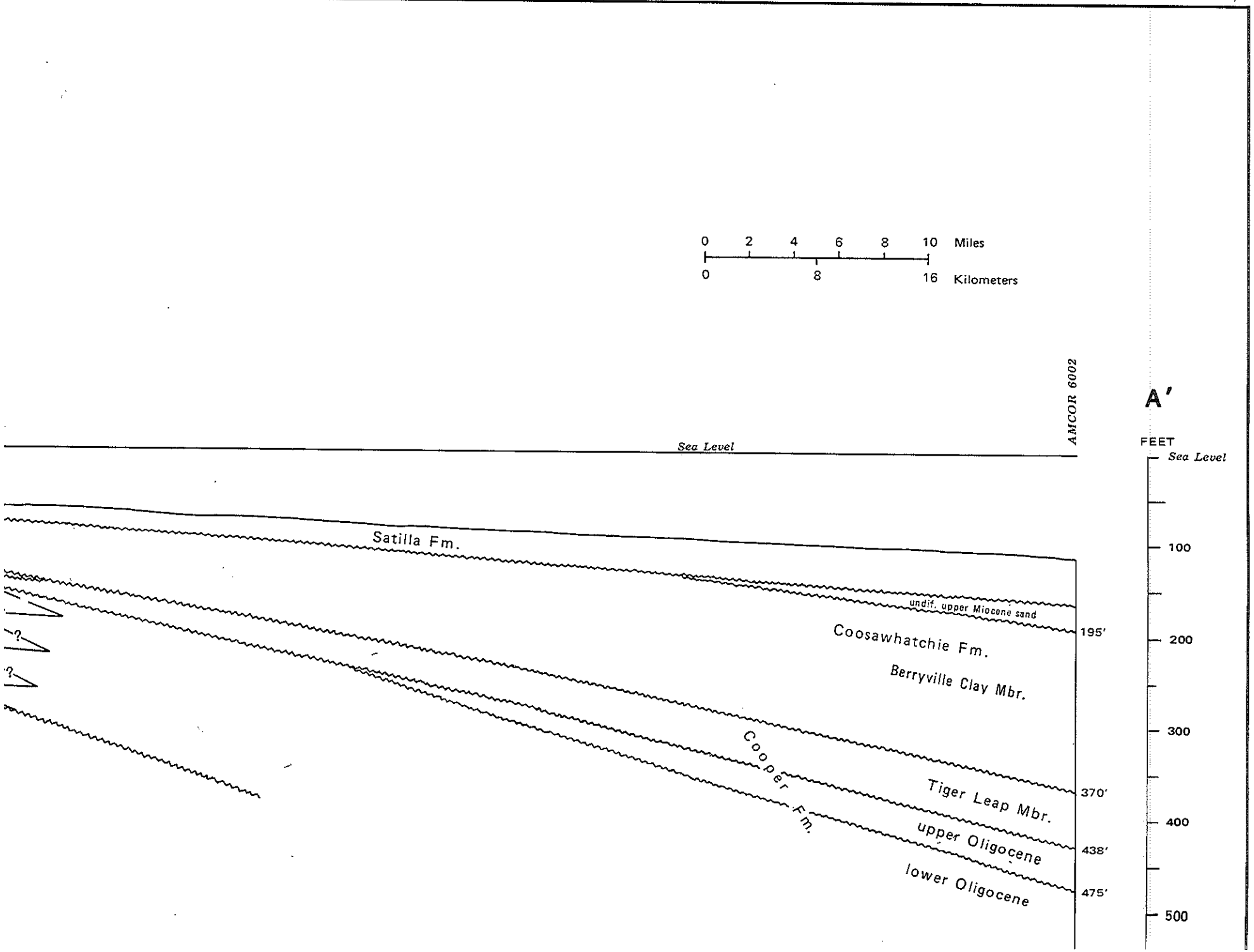
ARCADIS

Appendix A

Cross-Section A-A' from Huddleston, 1988


A
FEET
200
100
Sea Level
100
200
300
400
Screven 2 (GG-3032)
Orangeburg Escarpment
Screven 8 (GGS-3198)
Black Creek
Georgia Power Co. B38
Screven 1 (GGS-1170)
Georgia Power Co. B22
Blue Springs
Georgia Power Co. B21
Georgia Power Co. B3
Hudsons Ferry Landing
SCREVEN COUNTY
EFFINGHAM COUNTY
Effingham 10 (GGS-3108)
Effingham 11 (GGS-3109)
Effingham 12 (GGS-3110)
CLYO
Georgia Power Co. B40
Effingham 6 (GGS-2179)
Georgia Power Co. B41
SPRINGFIELD
Ebenezer Creek
Effingham 14 (GGS-3155)
RINCON
Dasher Creek
Sweigoffer Creek
Effingham 13 (GGS-3140)
EFFINGHAM COUNTY
CHATHAM COUNTY
Chatham 15 (GGS-3138)
Altamaha Fm.
Tiger Leap
Paracha ucla Fm.
Suwannee Ls.
Cypresshead Fm.
Porters
Landing
Marks Head Fm.
Tiger Leap Mbr.
HAWTHORNE GROUP
Ebenezer Mbr.
Berryville Clay Mbr.
Crystal River Fm.
OCALA GROUP
T.D. 212'
T.D. 123'
T.D. 202'
T.D. 203'
T.D. 198'
T.D. 188'
T.D. 210'
T.D. 190'
T.D. 175'
T.D. 232
T.D. 276'
T.D. 315'
GEORGIA
Savannah River
A
A'


Cypresshead Fm.
Osawhatchie Fm.
surficial sand
Cherokee Hill
Chatham 14 (GGS-3139)
T.D. 330'
Lazaretto Creek Fm.
Berryville Clay Mbr.
Raysor Fm.
SAVANNAH
Isle of Hope
Chatham 1 (GGS-535)
T.D. 278'
Skidaway River
Wilmington Island
Wilmington River
Marks Head Fm.
Tybee
Satilla Fm.
Chatham 13 (GGS-1445)
T.D. 270'
Parachucla Fm.
Petit Chou 1 (GGS-1164)
T.D. 286'
House Creek core
House Creek
Crystal River Fm.
Porters
Landing
Phosphorite
Wabasso beds
Tybee Island
SAVANNAH BEACH
Chatham 10 (GGS-3194)
T.D. 222'
equivalent
Mbr.
ATLANTIC OCEAN
Savannah light test well
T.D. ?


0 2 4 6 8 10 Miles
0 8 16 Kilometers
AMCOR 6002
A'
FEET
Sea Level
Sea Level
100
200
300
400
500
Satilla Fm.
undif. upper Miocene sand
195'
Coosawhatchie Fm.
Berryville Clay Mbr.
Cooper Fm.
Tiger Leap Mbr.
370'
upper Oligocene
438'
lower Oligocene
475'
?
?

ARCADIS

Appendix B

Monitor Well / Piezometer Installation Logs

Project: HAA-18

Page 1 of 2

Borehole and Well Construction Log

Project No. GP08HAFS

Site Location: Savannah, GA

Well ID	MW-6D	Contractor/Driller	ARM	Total Depth Drilled	45
Date Begin	1/15/2010	Rig Type	Mobile B-57/Geoprobe	Sample Method/Size	Macro Core
Date End		Method	HSA (lithology by DPT)	Cutting Disposal	Drum

Well Construction Log

Boring Dia. 8"

Time
Begin: 1250
End:

Construction

Intervals (ft BGS)
Riser: 0'-35'
Screen: 35'-45'
Surf. Seal: 0'-30'
Seal: 30'-33'
Filter Pack: 33'-45'
Backfill: N/A

Materials
Riser: 2" sch. 40 PVC
Screen: 2" sch. 40 PVC
Surf. Seal: Portland/bentonite
Seal: Bentonite
Filter Pack: Sand
Backfill:

Surface Completion
Protection: Flush Mount
Pad: 2' x 2' concrete
Lock: pad lock
Date/Time:

ARCADIS G&M Personel
lithology: Josh Frizzell
Field Work:
Log Draft:

Symbols
Grout:
Bentonite:
Sand:
Gravel:
Backfill: X
Contact:
Implied or Gradational Contact:

Borehole Log

Time
Begin:
End:

Depth (ft)	Spl Run	Class	Description	Ft. Rec.	Blow Count	PID (ppm)
0			10 YR s/2 grayish brown silty well sorted fine sand			
1			10 YR 4/1 dark gray sandy soft moderate plasticity clay			
2			10 YR 4/2 dark grayish brown sandy medium firm high plasticity clay			0.0
3						
4						0.0
5			10 YR 7/1 gray silty well sorted fine sand			
6						
7						
8			10 YR 5/1 gray sandy soft high plasticity clay with wood fragments			
9						
10			10 YR 5/1 gray silty to clayey well sorted fine sand, clayey lenses have moderate to high plasticity, soft			
11						
12						
13						
14						
15						
16						
17			Interbedded 10 YR 5/1 gray silty poorly sorted medium to very coarse sand and 10 YR 5/1 soft high plasticity			
18			clay, sand is subangular			
19						
20						
21			10 YR 5/1 gray silty to clayey poorly sorted subangular medium to very coarse sand			
22						
23						
24						
25						

Project: HAA-15

Page 1 of 1

Borehole and Well Construction Log

Project No. GP08HAFS

Site Location: Savannah, GA

Well ID: PZ-2
Date Begin: 1/27/2010
Date End: 1/27/2010

Contractor/Driller: ARM
Rig Type:
Method: Water Jet

Total Depth Drilled: 5
Sample Method/Size:
Cutting Disposal:

Boring Dia. ___"

Time
Begin:
End:

Construction

Intervals (ft BGS)

Riser:
Screen: 4-5
Surf. Seal:
Seal:
Filter Pack:
Backfill:

Materials

Riser: 3/4" Glav. Steel
Screen: Stainless
Well Point
Surf. Seal:
Seal:
Filter Pack:
Backfill:

Surface Completion

Protection: Threaded Cap
Pad:
Lock:
Date/Time:

ARCADIS G&M Personel

Field Work: JDF
Log Draft: JDF

Symbols

Grout:
Bentonite:
Sand:
Gravel:
Backfill: X
Contact:
Implied or Gradational Contact:

Depth (ft)	Spl Run	Class	Borehole Log Description	Ft. Rec.	Blow Count	PID (ppm)
			Time Begin: End:			
0			PZ installed in bed of Lamar Canal, total riser length= 10 feet, PZ installed to approx. 5 feet			
1			below canal sediment with stickup above canal water			
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Project: Hunter AAF

Page 1 of

Borehole and Well Construction Log

Project No. GP08HAFS

Site Location HAA-18

Well ID	MW-6S	Contractor/Driller	ARM	Total Depth Drilled	25'
Date Begin	1/18/2010	Rig Type	Mobile B-57	Sample Method/Size	
Date End	1/18/2010	Method	Hollow-Stem Anger	Cutting Disposal	drum (65-gal)

Well Construction Log

Boring Dia. ___"

Time
Begin: 1448
End:

Construction

Intervals (ft BGS)

Riser: 0'-15'
Screen: 15'-25'
Surf. Seal:
Seal: 11'-13.2'
Filter Pack: 13.2'-25'
Backfill: N/A

Materials

Riser: 2" sch.40 PVC
Screen: 2" sch. 40 PVC, 0.01" slot
Surf. Seal: Portland/bentonite
Seal: Bentonite
Filter Pack: Sand
Backfill: N/A

Surface Completion

Protection: Flush Mount
Pad: 2' x 2' concrete
Lock: pad lock
Date/Time:

ARCADIS G&M Personel

Field Work: B. Wolf
Log Draft: J. Frizzell

Symbols

Grout:
Bentonite:
Sand:
Gravel:
Backfill: X
Contact:
Implied or Gradational Contact:

Borehole Log

Time
Begin:
End:

Depth (ft)	Spl Run	Class	Description	Ft. Rec.	Blow Count	PID (ppm)
0			See MW-6D log for lithology.			
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Borehole and Well Construction Log

Project: HAA-18 | Page 1 of 2

Project No. GP08HAFS | Site Location: Savannah, GA

Well ID	MW-7D	Contractor/Driller	ARM	Total Depth Drilled	45
Date Begin	1/15/2010	Rig Type	Mobile b-57	Sample Method/Size	Macro Core
Date End		Method	HAS (lithology by DPT)	Cutting Disposal	Drum

Well Construction Log

Boring Dia. 8"

Time
Begin:
End:

Construction

Intervals (ft BGS)

Riser: 0'-35'
Screen: 35'-45'
Surf. Seal: 0'-30'
Seal: 30'-33'
Filter Pack: 33'-45'
Backfill: N/A

Materials

Riser: 2" sch. 40 PVC
Screen: 2" sch. 40 PVC, 0.01" slot
Surf. Seal: Portland/bentonite
Seal: Bentonite
Filter Pack: Sand
Backfill: N/A

Surface Completion

Protection: Flush Mount
Pad: 2' x 2' concrete
Lock: pad lock
Date/Time:

ARCADIS G&M Personel

lithology: Josh Frizzell
Field Work:
Log Draft:

Symbols

Grout:
Bentonite:
Sand:
Gravel:
Backfill: X

Contact:
Implied or Gradational Contact:

Depth (ft)	Spl Run	Class	Borehole Log Description	Ft. Rec.	Blow Count	PID (ppm)
			Time Begin: End:			
0			10 YR 4/2 dark grayish brown silty well sorted fine sand, roots			
1			10 YR 7/2 light gray silty well sorted fine sand			
2			10 YR 3/1 very dark gray sandy medium firm high plasticity clay			0.0
3						
4						
5						0.0
			10 YR 3/1 very dark gray firm clay			
6						
7						
8						0.0
9						
			10 YR 7/2 gray clayeye well sorted fine sand, wood fragments			
10						
			10 YR 5/1 gray sandy soft clay, high plasticity, wood fragments			
11						
12						0.0
13						
14						
						0.0
15						
16						
						0.0
17						
			10 YR 5/1 gray soft high plasticity sandy clay, sand component is poorly sorted, coarse, subangular			
18						
			10 YR 5/1 gray silty poorly sorted coarse to very coarse subangular sand			0.0
19						
20						
						0.0
21						
22						
						0.0
23						
24						
			10 YR 4/1 gray silty poorly sorted fine to coarse sand, ~2" thick 10 YR 4/1 gray sand soft clay les @ 25'			0.0
25						

Project: HAA-18

Page 1 of 1

Borehole and Well Construction Log

Project No. GP08HAFS

Site Location: Savannah, GA

Well ID	MW-7S	Contractor/Driller	ARM	Total Depth Drilled	25
Date Begin	1/15/2010	Rig Type	Mobile b-57	Sample Method/Size	Macro Core
Date End		Method	HAS (lithology by DPT)	Cutting Disposal	Drum

Boring Dia. 8"

Time
Begin:
End:

Construction

Intervals (ft BGS)

Riser: 0'-15'
Screen: 15'-25'
Surf. Seal: 0'-11'
Seal: 11'-13'
Filter Pack: 13'-25'
Backfill: N/A

Materials

Riser: 2" sch. 40 PVC
Screen: 2" sch. 40 PVC, 0.01" slot
Surf. Seal: Portland/bentonite
Seal: Bentonite
Filter Pack: Sand
Backfill: N/A

Surface Completion

Protection: Flush Mount
Pad: 2' x 2' concrete
Lock: pad lock
Date/Time:

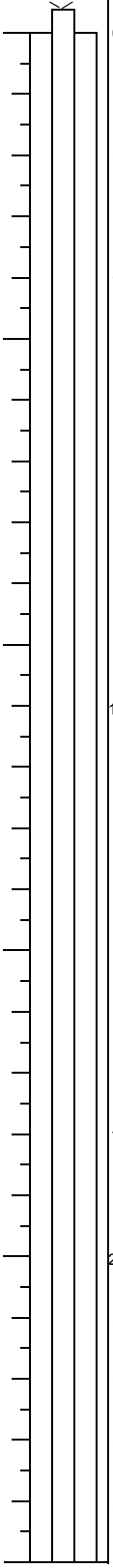
ARCADIS G&M Personel

lithology: B. Wolf
Field Work:
Log Draft:

Symbols

Grout:
Bentonite:
Sand:
Gravel:
Backfill: X

Contact:
Implied or Gradational Contact:



Depth (ft)	Spl Run	Class	Borehole Log Description	Ft. Rec.	Blow Count	PID (ppm)
			Time Begin: End:			
0			See MW-7D for lithology			
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Project: Hunter AAF (HAA-18)

Page 1 of 2

Borehole and Well Construction Log

Project No. GP08HAFS

Site Location HAA-18

Well ID	MW-8D	Contractor/Driller	ARM	Total Depth Drilled	45'
Date Begin	1/15/2010	Rig Type	Geoprobe, Mobil Drill (well installation)	Sample Method/Size	
Date End	1/15/2010	Method	DPT and HAS	Cutting Disposal	58-gal drum

Boring Dia. 6.25"

Time
Begin: 1135
End: 1255

Construction

Intervals (ft BGS)
Riser: 0'-35'
Screen: 35'-45'
Surf. Seal: 0'-30'
Seal: 30'-33'
Filter Pack: 33'-45'
Backfill: N/A

Materials
Riser: 2" sch. 40 PVC
Screen: 2" sch. 40 PVC, 0.01 slot
Surf. Seal: Portland/bentonite
Seal: Bentonite
Filter Pack: Sand
Backfill: N/A

Surface Completion
Protection: Flush Mount steel manhole
Pad: 2' x 2' concrete
Lock: pad lock
Date/Time:

ARCADIS G&M Personel
Field Work: B. Wolf
Log Draft:

Symbols
Grout:
Bentonite:
Sand:
Gravel:
Backfill: X
Contact:
Implied or Gradational Contact:

Time
Begin: 0:00
End:

Depth (ft)	Spl Run	Class	Borehole Log Description	Ft. Rec.	Blow Count	PID (ppm)
0			Tan/white, fine grained SAND, poorly graded, loose			0.0
1			Black CLAY, stiff, very plastic			0.0
2						
3			Black to dark brown CLAY with silt and fine grained sand, stiff, very plastic			0.0
4						
5			Black/dark gray CLAY, stiff, very plastic			0.0
6			Tan/gray CLAY, mod stiff, very plastic			0.0
7			Tan, fine grained SAND with clay (~25%), poorly graded			0.0
			Gray CLAY with fine sand (~15%), mod stiff, plastic becoming softer and sandier with depth, moist			0.0
8						
9			Gray, fine grained SAND with silt and clay (~25%) poorly graded, loose, saturated			0.0
10			SAME AS ABOVE			0.0
11						
12			Gray, fine grained SAND with silty and clay (~25%) poorly grained, loose, saturaded			0.0
13						
14						
15			SAME AS ABOVE			0.0
16			Gray, sandy CLAY (~20% F sand), soft, plastic, saturated. Becoming sandier with depth			0.0
17						
18						
19			Gray fine to medium SAND with silty and clay (~15%), mod loose, poorly graded, wet (lost last 6" of core)			0.0
20			SAME AS ABOVE			
21			Gray, sandy CLAY (~20% F sand), soft, plastic, saturated			0.0
			Gray, F/M SAND with silty and clay (~10%) mod dense well graded, subangular to subrounded grains,			0.0
22			saturated			0.0
			Gray, sand CLAY (~30% F sand), soft, plastic, saturated			
23						
24						
25			Gray F/M/C SAND, <20% silt and clay, med dense, well graded, subangular to subrounded grains, saturated			

Project: Hunter AAF (HAA-18)

Page 1 of 1

Borehole and Well Construction Log

Project No. GP08HAFS

Site Location HAA-18

Well ID	MW-8S	Contractor/Driller	ARM	Total Depth Drilled	25'
Date Begin	1/15/2010	Rig Type	Geoprobe, Mobil Drill (well installation)	Sample Method/Size	
Date End	1/15/2010	Method	HSA	Cutting Disposal	55-gal drum

Well Construction Log

Boring Dia. 6.25"

Time
Begin:
End:

Construction

Intervals (ft BGS)

Riser: 0'-15'
Screen: 15'-25'
Surf. Seal: 0'-11'
Seal: 11'-13'
Filter Pack: 13'-25'
Backfill: N/A

Materials

Riser: 2" sch. 40 PVC
Screen: 2" sch. 40 PVC, 0.01 slot
Surf. Seal: Portland/bentonite
Seal: Bentonite
Filter Pack: Sand
Backfill: N/A

Surface Completion

Protection: Flush Mount steel manhole
Pad: 2' x 2' concrete
Lock: pad lock
Date/Time:

ARCADIS G&M Personel

Field Work: B. Wolf
Log Draft:

Symbols

Grout:
Bentonite:
Sand:
Gravel:
Backfill: X
Contact:
Implied or Gradational Contact:

Borehole Log

Depth (ft)	Spl Run	Class	Description	Ft. Rec.	Blow Count	PID (ppm)
			Time Begin: 0:00 End:			
0			See MW-8D log for lithology			
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25			Gray F/M/C SAND, <20% silt and clay, med dense, well graded, subangular to subrounded grains, saturated			

Project: HAA-15 Page 1 of

Borehole and Well Construction Log

Project No. GP08HAFS Site Location Savannah, GA

Well ID PZ-1 Contractor/Driller ARM Total Depth Drilled 5
Date Begin 1/27/2010 Rig Type Sample Method/Size
Date End Method Water Jet Cutting Disposal

Boring Dia. 3/4 "

Time
Begin:
End:

Construction

Intervals (ft BGS)

Riser:
Screen: 4-5
Surf. Seal:
Seal:
Filter Pack:
Backfill:

Materials

Riser: 3/4" Galv. Steel
Screen: Stainless
Well Point
Surf. Seal:
Seal:
Filter Pack:
Backfill:

Surface Completion

Protection:
Threaded Cap
Pad:
Lock:
Date/Time:

ARCADIS G&M Personel

Field Work: JDF
Log Draft: JDF

Symbols
Grout:
Bentonite:
Sand:
Gravel:
Backfill: X
Contact:
Implied or Gradational Contact:

Depth (ft)	Spl Run	Class	Borehole Log Description	Ft. Rec.	Blow Count	PID (ppm)
			Time Begin: End:			
0			PZ installed bed of Lamar Canal, total riser length= 10 feet, PZ installed to approx, 5 feet			
1			below canal sediment with stickup above canal water			
2						
3						
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ARCADIS

Appendix C

Groundwater Sampling Sheets

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 Project No. GP08HAFS Well ID: P-HGL-3C
Date: 1-25-10 Sampled By: Ryan Kontos/ Arcadis
Sampling Time: 1745 Recorded By: Ryan Kontos
Weather: Breezy Clear ~ 65° Duplicate/QA/QC: MS/MSD

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556 R10404	Lamotte 2020/ R8767

Purging Information

Casing Material: PVC
Casing Diameter: 2"
Total Depth: 39.4
Depth to Water: 1.10
Water Column: 38.3
Gallons/Foot: 0.16
Gallons in Well: 6.12

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)
Screen Interval: From: 29.4 To: 39.4
Pump Intake Setting: Middle of Screen ~ 25'
Volumes to be Purged: Low Flow
Total Volume Purged: ~3.6gal
Pump On: 1615 Off: 1715

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1620	5	250ml	250ml	1.80	131	5.31	481	18.28	-22.7	0.99	
1625	10			1.95	119	5.26	481	18.41	-10.9	0.86	
1630	15			1.98	93.3	5.26	482	18.46	-115.8	0.70	
1635	20			1.99	99.3	5.26	485	18.70	8.7	0.51	
1640	25			1.99	81.6	5.28	490	18.71	-27.2	0.45	
1645	30			1.99	72.1	5.29	495	18.72	-72.1	0.50	
1650	35			1.99	58.3	5.30	498	18.72	-156	0.47	
1655	40			1.99	36.6	5.31	500	18.73	-218	0.40	
1700	45			1.99	29.2	5.33	503	18.73	-312	0.46	
1705	50			1.99	19.6	5.35	507	18.73	-341	0.39	
1710	55			1.99	17.1	5.36	510	18.74	-333	0.35	
1715	60	↓	↓	1.99	15.5	5.38	512	18.74	-345	0.35	

Observations During Sampling

Well Condition: Good
Color: Clear
Odor: Slight

Purge Water Disposal: Drum
Turbidity(qualitative): <10 NTUs
Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab / ARCADIS	Preservative
8260 BTEX	9x 40ml HCL CG	HCL
8270 SVOC	6 x 1L — AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 | Project No. GP08HAFS | Well ID: P-MW-1
Date: 1-21-10 | Sampled By: Ryan Kontos/Arcadis
Sampling Time: 0905 | Recorded By: Ryan Kontos
Weather: Light Rain ~60° | Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/R10404	LaMotte 2020/R8767

Purging Information

Casing Material: PVC
Casing Diameter: 2"
Total Depth: 28.8
Depth to Water: 0.70
Water Column: 28.1
Gallons/Foot: 0.16
Gallons in Well: 4.49

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)
Screen Interval: From: 18.8 To: 28.8
Pump Intake Setting: Middle of Screen ~24'
Volumes to be Purged: Low Flow
Total Volume Purged: ~2.1 gal
Pump On: 0820 Off: 0855

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
0825	5	250ml	0.3gal	0.83	20.2	5.99	162	17.74	-586	0.86	
0830	10	↓	↓	0.84	9.69	6.04	164	17.92	-541	0.70	
0835	15			0.84	5.24	6.07	164	17.97	-551	0.48	
0840	20			0.84	6.69	6.10	165	18.08	-560	0.44	
0845	25			0.84	7.01	6.13	165	18.12	-572	0.41	
0850	30			0.84	4.26	6.16	164	18.21	-578	0.37	
0855	35	↓	↓	0.84	4.02	6.17	162	18.30	-586	0.35	

Observations During Sampling

Well Condition: Good
Color: Clear
Odor: NONE

Purge Water Disposal: Drum
Turbidity(qualitative): <10 NTU's
Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab _____ ARCADIS _____	Preservative
VOC's 8260B	3x 40ml CG	HCL
SVOC's 8270	2x 1L AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location:	Fort Stewart/HAAF / HAA-18	Project No.	GP08HAFS	Well ID:	P-MW-3
Date:	1-22-10	Sampled By:	Erica Maddox		
Sampling Time:	0940	Recorded By:	Erica Maddox		
Weather:	Misty Rain, 50's	Duplicate/QA/QC:	DUP-HAA-18		

Instrument Identification

Instrument:	PID	Water Quality Meter(s)	
		YSI 556	Turbidimeter 2020e
Serial #:	NA	R8740	R7369

Purging Information

Casing Material:	PVC	Purge Method: (circle one)	Submersible Centrifugal Bladder Bailer (Peristaltic)
Casing Diameter:	2"	Screen Interval: From:	15.5 To: 25.5
Total Depth:	25.5	Pump Intake Setting:	Mid screen ~ 20.5
Depth to Water:	0.4	Volumes to be Purged:	Low Flow
Water Column:	25.1	Total Volume Purged:	2
Gallons/Foot:	0.16	Pump On:	0845 Off: 0945
Gallons in Well:	4.02		

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
0850	5	180	0	0.40	35.2	6.0	436	15.02	91.1	6.99	
0855	10	180	0.25	0.39	26.9	5.97	433	15.38	68.0	5.01	
0900	15	180	0.5	0.38	10.56	5.94	424	16.06	58.2	1.64	
0905	20	180	0.75	0.38	6.91	5.94	427	15.94	49.0	0.80	
0910	25	180	1.0	0.38	5.62	5.94	428	16.14	42.9	0.51	
0915	30	180	1.25	0.38	4.89	5.94	429	16.22	40.7	0.50	
0920	35	180	1.50	0.38	4.69	5.94	429	16.25	40.2	0.47	
0925	40	180	1.75	0.38	4.50	5.94	430	16.27	39.9	0.44	
0930	45	180	2.0	0.38	4.22	5.94	432	16.28	38.9	0.42	

Erica Maddox 1/22/10

Observations During Sampling

Well Condition:	Good	Purge Water Disposal:	Drum
Color:	Clear	Turbidity(qualitative):	orange particles
Odor:	None	Other (OVA, HNU,etc.):	

Constituents Sampled	Container Description: From Lab ✓ ARCADIS	Preservative
VOCs	40 mL VOA Vial	HCl
SVOCs	2 L amber	None

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 Project No. GP08HAFS Well ID: PMW-4

Date: 1-22-10 Sampled By: Ryan Kontos / Arcadis

Sampling Time: 1025 Recorded By: Ryan Kontos

Weather: Foggy ~60° Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556 R10404	Lamotte 2020/ 28767

Purging Information

Casing Material: PVC

Casing Diameter: 2"

Total Depth: 29.1

Depth to Water: 2.52

Water Column: 26.58

Gallons/Foot: 0.16

Gallons in Well: 4.25

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)

Screen Interval: From: 19.1 To: 29.1

Pump Intake Setting: Middle of Screen ~ 24.1'

Volumes to be Purged: Low Flow

Total Volume Purged: 3.0 gal

Pump On: 0925 Off: 1015

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
0930	5	250ml	0.3gal	2.69	25.8	5.92	531	17.33	-462	0.72	
0935	10	↓	↓	2.69	27.3	5.92	525	17.58	-476	0.91	
0940	15			2.69	18.8	5.93	527	17.70	-491	0.56	
0945	20			2.69	14.6	5.94	530	17.78	-517	0.37	
0950	25			2.69	10.17	5.93	532	17.91	-528	0.39	
0955	30			2.69	9.02	5.94	534	18.04	-541	0.41	
1000	35			2.69	13.0	5.94	536	18.13	-549	0.52	
1005	40			2.69	8.83	5.94	540	18.13	-560	0.40	
1010	45			2.69	8.54	5.93	541	18.14	-565	0.44	
1015	50	↓	↓	2.69	9.01	5.94	543	18.15	-569	0.41	

Observations During Sampling

Well Condition: Good

Color: Clear

Odor: Slight

Purge Water Disposal: Drum

Turbidity(qualitative): 40 NTU's

Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab / ARCADIS	Preservative
8260 BTOC's	3 x 40ml CG	HCL
8270 SVOC's	2 x 1L AG	NONE

Boring/Casing Volumes

2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 | Project No. GP08HAFS | Well ID: P-MW-5
Date: 1-22-10 | Sampled By: Ryan Kontos / Arcadis
Sampling Time: 0980 | Recorded By: Ryan Kontos
Weather: Foggy ~60° | Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/10404	Lamotte 2020/ R8Q-67

Purging Information

Casing Material: PVC
Casing Diameter: 2"
Total Depth: 30
Depth to Water: 2.49
Water Column: 27.51
Gallons/Foot: 0.16
Gallons in Well: 4.4

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)
Screen Interval: From: 20 To: 30
Pump Intake Setting: Middle of Screen ~25'
Volumes to be Purged: Low Flow
Total Volume Purged: ~2.7 gal
Pump On: 0805 Off: 0850

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
0810	5	250ml	0.13gal	2.50	64.0	5.89	142	16.05	-526	2.15	
0815	10	↓	↓	2.50	121	5.79	143	16.74	-550	1.34	
0820	15			2.50	75.4	5.77	143	16.96	-559	1.02	
0825	20			2.50	18.1	5.75	143	17.21	-568	0.88	
0830	25			2.50	21.1	5.74	144	17.43	-575	0.97	
0835	30			2.50	11.0	5.73	143	17.48	-584	0.90	
0840	35			2.50	9.57	5.72	143	17.52	-588	0.87	
0845	40			2.50	8.91	5.72	144	17.56	-592	0.85	
0850	45	↓	↓	2.50	9.03	5.72	144	17.58	-596	0.80	

Observations During Sampling

Well Condition: Good
Color: Clear
Odor: NONE

Purge Water Disposal: Drum
Turbidity(qualitative): <10 NTU's
Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab / ARCADIS	Preservative
VOCs 8260	3x40ml CG	HCL
SVOCs 8270	2x 1L AG	NONE

Boring/Casing Volumes
2" = 0.16 4" = 0.65

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ARCADIS

Groundwater Sampling Form

Site Location:	Fort Stewart/HAAF HAA-18	Project No.	GP08HAFS	**Well ID:**	P-MW-6
Date:	1-26-10	Sampled By:	Ryan Komosi/ Arcadis		
Sampling Time:	0945	Recorded By:	Ryan Komosi		
Weather:	Clear Cool ~ 45°	Duplicate/QA/QC:	N/A		

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/ R 10404	Lamotte 2020/ R8767

Purging Information

Casing Material:	PVC	Purge Method: (circle one)	Submersible	Centrifugal	Bladder Bailer Peristaltic
Casing Diameter:	2"	Screen Interval: From:	15	To:	25
Total Depth:	25.0	Pump Intake Setting:	Middle of Screen ~ 20'		
Depth to Water:	0.62	Volumes to be Purged:	Low Flow		
Water Column:	24.38	Total Volume Purged:	~2.4 gal		
Gallons/Foot:	0.16	Pump On:	0855	Off:	0935
Gallons in Well:	3.9				

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
0900	5	~250	0.3gal	0.65	12.6	5.88	102	15.31	-651	1.69	
0905	10	↓	↓	0.65	6.91	5.80	100	16.44	-667	0.84	
0910	15			0.65	3.66	5.75	100	16.98	-677	0.45	
0915	20			0.65	3.01	5.72	99	17.18	-682	0.40	
0920	25			0.65	2.73	5.69	99	17.43	-685	0.32	
0925	30			0.65	2.63	5.68	99	17.58	-687	0.30	
0930	35			0.65	2.51	5.67	98	17.66	-690	0.27	
0935	40	↓	↓	0.65	2.25	5.67	98	17.70	-693	0.29	

Observations During Sampling

Well Condition:	Good / New	Purge Water Disposal:	Drum
Color:	Clear	Turbidity(qualitative):	<10 NTU's
Odor:	None	Other (OVA, HNU,etc.):	N/A

Constituents Sampled	Container Description From Lab	ARCADIS	Preservative
8260 BTEX	3 40ml	CG	HCL
8270 PAH's	2 1L	AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location:	Fort Stewart/HAAF	Project No.	GP08HAFS	Well ID:	P-MW-6D
Date:	1-26-10	Sampled By:	Ryan Kontos/ Arcadis		
Sampling Time:	1115	Recorded By:	RK		
Weather:	Clear ~45°	Duplicate/QA/QC:	N/A		

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/ R10404	Lamotte 2020/ R8767

Purging Information

Casing Material:	PVC	Purge Method: (circle one)	Submersible Centrifugal Bladder Bailer (Peristaltic)
Casing Diameter:	2"	Screen Interval: From:	35 To: 45
Total Depth:	45.0	Pump Intake Setting:	Middle of Screen ~40'
Depth to Water:	0.37	Volumes to be Purged:	Low Flow
Water Column:	44.63	Total Volume Purged:	3.6 gal
Gallons/Foot:	0.16	Pump On:	1005 Off: 1105
Gallons in Well:	7.14		

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1010	5	250ml	0.3gal	0.48	50.1	6.48	208	17.32	669	1.98	
1015	10			0.49	46.8	6.71	209	17.88	642	1.22	
1020	15			0.49	39.2	6.78	206	17.98	-571	1.08	
1025	20			0.49	31.6	6.83	205	18.03	-499	1.00	
1030	25			0.49	26.9	6.90	203	18.14	-415	0.81	
1035	30			0.49	14.7	6.94	200	18.12	-396	0.70	
1040	35			0.49	12.5	6.97	198	18.11	-421	0.61	
1045	40			0.49	15.6	6.99	195	18.11	-468	0.56	
1050	45			0.49	11.2	7.02	191	18.10	-504	0.50	
1055	50			0.49	9.21	7.03	189	18.11	-529	0.48	
1100	55			0.49	8.79	7.03	187	18.10	-501	0.43	
1105	60	↓	↓	0.49	9.00	7.04	186	18.09	-490	0.45	

Observations During Sampling

Well Condition:	Good / New	Purge Water Disposal:	Drum
Color:	Clear	Turbidity(qualitative):	40 NTUs
Odor:	None	Other (OVA, HNU,etc.):	N/A

Constituents Sampled	Container Description From Lab _____ ARCADIS _____	Preservative
8260 BTEX	3x 40ml CG	HCL
8270 PAHs	2x 1L AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 | Project No. GP08HAFS | Well ID: PMW-7
Date: 1-26-10 | Sampled By: Ryan Kontos/ Arcadis
Sampling Time: 1715 | Recorded By: Ryan Kontos
Weather: Clear Breezy ~60° | Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/R10404	Lamotte 2020/R8767

Purging Information

Casing Material: PVC
Casing Diameter: 2"
Total Depth: 24
Depth to Water: 1.41
Water Column: 22.59
Gallons/Foot: 0.16
Gallons in Well: 3.6

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)
Screen Interval: From: 14 To: 24
Pump Intake Setting: Middle of screen ~19'
Volumes to be Purged: Low Flow
Total Volume Purged: ~3.3gal
Pump On: 1610 Off: 1705

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm (cpm))	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1615	5	250ml	0.3gal	1.46	31.2	6.03	190	19.22	-643	1.69	
1620	10	↓	↓	1.46	25.8	5.79	189	19.15	-649	1.00	
1625	15			1.46	22.1	5.68	190	19.40	-693	0.60	
1630	20			1.46	19.9	5.62	193	19.41	-666	0.47	
1635	25			1.46	18.1	5.60	194	19.45	-681	0.35	
1640	30			1.46	15.5	5.58	195	19.49	-709	0.29	
1645	35			1.46	12.6	5.55	194	19.55	-688	0.31	
1650	40			1.46	10.69	5.54	194	19.64	-678	0.45	
1655	45			1.46	8.34	5.52	193	19.69	-669	0.39	
1700	50			1.46	8.88	5.51	193	19.71	-675	0.33	
1705	55	↓	↓	1.46	9.27	5.50	193	19.75	-683	0.90	

Observations During Sampling

Well Condition: OK/Feet Print on PAD
Color: Clear
Odor: Slight

Purge Water Disposal: Drum
Turbidity(qualitative): Clouds
Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab / ARCADIS	Preservative
8260 BTEX	3x 40ml CG	HCL
8270 PAHs	2x 1L AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 Project No. GP08HAFS Well ID: PMW-7D

Date: 1-26-10 Sampled By: Ryan Kontos / Arcadis

Sampling Time: ~~RM45~~ 1545 Recorded By: Ryan Kontos

Weather: Clear Breezy ~60° Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556 / R10404	Lamotte 2020 / R8767

Purging Information

Casing Material: PVC

Casing Diameter: 2"

Total Depth: 45.0

Depth to Water: 2.15

Water Column: ~~@~~42.85

Gallons/Foot: 0.16

Gallons in Well: 6.8

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer Peristaltic

Screen Interval: From: 35 To: 45

Pump Intake Setting: Middle of screen ~40'

Volumes to be Purged: Low Flow

Total Volume Purged:

Pump On: 1455 Off: 1535

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1500	5	250ml	0.3gal	2.19	13.6	6.91	212	20.43	330	1.23	
1505	10	↓	↓	2.19	7.14	6.87	209	20.29	43	0.71	
1510	15			2.19	6.60	6.88	209	20.37	-373	0.606	
1515	20			2.19	5.83	6.86	210	20.43	-264	0.55	
1520	25			2.19	4.27	6.86	210	20.47	-294	0.46	
1525	30			2.19	5.11	6.85	211	20.51	-303	0.41	
1530	35			2.19	4.88	6.83	211	20.49	-291	0.36	
1535	40	↓	↓	2.19	4.02	6.82	210	20.50	-288	0.33	
~~1540~~											

Observations During Sampling

Well Condition: Good / New

Color: Clear

Odor: None

Purge Water Disposal: Drum

Turbidity(qualitative): <10 NTU's

Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab _____ ARCADIS _____	Preservative
8260 BTEX	3x 40ml CG	HCL
8270 PAH's	2x 1L AG	—

Boring/Casing Volumes

2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 Project No. GP08HAFS Well ID: PMW-8
Date: 1-26-10 Sampled By: Ryan Kontos/ Arcadis
Sampling Time: 1420 Recorded By: Ryan Kontos
Weather: Clear Breezy ~60° Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/ R10404	Camotte 2020/ R8767

Purging Information

Casing Material: PVC
Casing Diameter: 2"
Total Depth: 25.0
Depth to Water: 1.00
Water Column: 24.0
Gallons/Foot: 0.16
Gallons in Well: 3.84

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)
Screen Interval: From: 15 To: 25
Pump Intake Setting: Middle of Screen ~20'
Volumes to be Purged: Low Flow
Total Volume Purged: ~2.1 gal
Pump On: 1335 Off: 1410

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1340	5	250ml	250ml 0.3gal	1.04	24.6	6.37	728	19.00	-140	1.54	
1345	10	↓	0.3gal	1.06	10.08	6.30	736	19.03	-148	0.72	
1350	15			1.06	9.11	6.29	731	18.81	-149	0.55	
1355	20			1.06	7.51	6.29	728	18.87	-148	0.44	
1400	25			1.06	5.27	6.28	725	18.91	-146	0.40	
1405	30			1.06	6.39	6.28	721	18.95	-141	0.38	
1410	35	↓	↓	1.00	7.27	6.27	719	18.99	-144	0.35	

Observations During Sampling

Well Condition: Good/In Flood Area
Color: Clear
Odor: NONE

Purge Water Disposal: Drum
Turbidity(qualitative): <10 NTU's
Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description: From Lab / ARCADIS	Preservative
8260 BTEX	3x40ml / CG	HCL
8270 PAH's	2x1L / AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

ARCADIS

Groundwater Sampling Form

Site Location: Fort Stewart/HAAF HAA-18 Project No. GP08HAFS Well ID: PMW-8D
Date: 1-26-10 Sampled By: Ryan Kontos/Arcadis
Sampling Time: 1315 Recorded By: Ryan Kontos
Weather: Clear Breezy ~55° Duplicate/QA/QC: N/A

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	YSI 556/R10404	Lamotte 2020/B8767

Purging Information

Casing Material: PVC
Casing Diameter: 2"
Total Depth: 45.0
Depth to Water: 1.31
Water Column: 43.69
Gallons/Foot: 0.16
Gallons in Well: 6.99

Purge Method: (circle one) Submersible Centrifugal Bladder Bailer (Peristaltic)
Screen Interval: From: 35 To: 45
Pump Intake Setting: Middle of screen ~40'
Volumes to be Purged: Low Flow
Total Volume Purged: ~2.4 gal
Pump On: 1225 Off: 1305

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1230	5	250ml	0.3gal	1.34	14.2	6.81	249	18.38	-108	2.35	
1235	10	↓	↓	1.34	11.4	6.82	250	18.53	-122	1.18	
1240	15			1.34	9.69	6.83	249	18.42	-129	0.96	
1245	20			1.34	6.37	6.84	250	18.61	-130	0.58	
1250	25			1.34	4.24	6.84	250	18.67	-125	0.47	
1255	30			1.34	3.69	6.85	250	18.78	-122	0.41	
1300	35			1.34	4.55	6.85	251	18.81	-129	0.36	
1305	40	↓	↓	1.34	5.39	6.85	251	18.85	-135	0.37	

Observations During Sampling

Well Condition: Good/In Flood Area
Color: Clear
Odor: NONE

Purge Water Disposal: Drum
Turbidity(qualitative): <10 NTU's
Other (OVA, HNU,etc.): N/A

Constituents Sampled	Container Description From Lab / ARCADIS	Preservative
8260 BTEX	3x 40ml CG	HCL
8270 PAH's	2x 1L AG	—

Boring/Casing Volumes
2" = 0.16 4" = 0.65

HA-18

ARCADIS

Groundwater Sampling Form

Site Location:	Fort Stewart/HAAF	Project No.	GP08HAFS	Well ID:	MW-2
Date:	3-30-10	Sampled By:	J. Tillotson		
Sampling Time:	1632	Recorded By:	J. Tillotson		
Weather:	70°F, Sunny	Duplicate/QA/QC:			

Instrument Identification

Instrument:	PID	Water Quality Meter(s)	
		YSI 556	LaMotte 2020
Serial #:	N/A	CES 2007	CES 2008

Purging Information

Casing Material:	PVC	Purge Method: (circle one)	Submersible Centrifugal Bladder Bailer (Peristaltic)
Casing Diameter:	2"	Screen Interval: From:	To:
Total Depth:		Pump Intake Setting:	
Depth to Water:	3.65	Volumes to be Purged:	Low Flow
Water Column:		Total Volume Purged:	gallons
Gallons/Foot:	0.16	Pump On:	1557 Off:
Gallons in Well:			

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
~~1557~~	5	150									
1607	10	150	0.2	3.71	18.2	6.13	477	18.42	18.1	1.93	
1612	15	150	0.4	3.72	13.8	6.13	473	18.47	14.8	1.29	
1617	20	150	0.5	3.72	7.23	6.13	471	18.59	13.8	0.95	
1622	25	150	0.6	3.72	9.09	6.13	469	18.31	12.0	0.85	Particulates entering
1627	30	150	0.8	3.72	11.3	6.15	464	18.46	17.1	0.94	
1632	35	150	1.0	3.72	3.07	6.16	464	18.46	19.7	0.94	

Observations During Sampling

Well Condition:	Good	Purge Water Disposal:	Drum
Color:	Clear	Turbidity(qualitative):	Slightly Cloudy
Odor:		Other (OVA, HNU,etc.):	N/A

Constituents Sampled	From Lab Shaly ARCADIS	Container Description	Preservative
VOCs	3	40-mL VOA	HCl
SVOCs	2	1-L Amber	N/A

Boring/Casing Volumes
2" = 0.16 4" = 0.65

HA-18

ARCADIS

Groundwater Sampling Form

Site Location:	Fort Stewart/HAAF	Project No.	GP08HAFS	Well ID:	HGL-3B
Date:	3-30-10	Sampled By:	J. Tillotson		
Sampling Time:	1526	Recorded By:	J. Tillotson		
Weather:	75°F, Sunny	Duplicate/QA/QC:			

Instrument Identification

Instrument:	PID	Water Quality Meter(s)
Serial #:	N/A	YSI 556 / LaMotte 2020 CES 2007 / CES 2008

Purging Information

Casing Material:	PVC	Purge Method: (circle one)	Submersible Centrifugal Bladder Bailer (Peristaltic)
Casing Diameter:	2"	Screen Interval: From:	15 To: 25
Total Depth:	25	Pump Intake Setting:	20
Depth to Water:	2.16	Volumes to be Purged:	Low Flow
Water Column:	22.84	Total Volume Purged:	2 Gallons
Gallons/Foot:	0.16	Pump On:	1431 Off:
Gallons in Well:			

Field Parameter Measurements During Purging

Time	Minutes Elapsed	Rate (gpm or ml)	Volume Purged	Depth to Water	Turbidity (NTUs)	pH (SI Units)	Conductivity (µmhos/cm)	Temp (°C or °F)	ORP (mV)	Diss. Oxygen	Comments
1441	10	200	0.2	2.20	8.01	6.13	505	20.09	11.4	1.76	
1446	15	200	0.4	2.21	11.2	6.11	504	20.10	1.9	0.87	
1451	20	200	0.5	2.19	18.8	6.16	506	20.30	15.0	0.43	
1456	25	200	0.6	2.19	37.9	6.12	506	20.45	3.2	0.67	
1501	30	200	0.8	2.19	27.1	6.10	507	20.07	-0.5	0.49	
1506	35	200	0.9	2.19	19.5	6.09	507	20.37	-1.9	0.45	
1511	40	200	1.1	2.19	18.2	6.08	510	20.17	-3.6	0.39	
1516	45	200	1.3	2.19	16.0	6.07	508	20.24	-3.3	0.35	
1521	50	200	1.5	2.19	15.6	6.07	508	20.44	-4.9	0.33	
1526	55	200	1.7	2.19	12.7	6.06	510	20.10	-5.5	0.32	

Observations During Sampling

Well Condition:	Good	Purge Water Disposal:	Ground
Color:	Clear	Turbidity(qualitative):	Clear
Odor:		Other (OVA, HNU,etc.):	N/A

Constituents Sampled	Container Description From Lab Shealy ARCADIS		Preservative
VOCs	3	40-mL VOA	HCl
SVOCs	2	1-L Amber	N/A

Boring/Casing Volumes
2" = 0.16 4" = 0.65

303-903-3505

ARCADIS

Appendix D

Pipeline Investigation Boring Logs

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-01 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 6 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
4-5 ft bls	Grab	855	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR3/1 very dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		10YR8/3 very pale brown clayey well sorted fine sand, slightly plastic
2.0	3.0				7.5YR5/2 brown sandy medium fine to moderate to high plasticity clay
3.0	4.0		0.0		↓
4.0	5.0				↓
5.0	6.0		0.0		wet at 5 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-02 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 6 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
4-5 ft bls	Grab	915	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR3/4 very dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		↓
2.0	3.0				7.5YR5/2 brown sandy medium firm high plasticity clay
3.0	4.0		0.0		↓
4.0	5.0				↓
5.0	6.0		0.0		wet at 5.5 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-03 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 6 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
4-5 ft bls	Grab	930	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR3/1 very dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		↓
2.0	3.0				7.5YR5/2 brown sandy medium firm high plasticity clay
3.0	4.0		0.0		↓
4.0	5.0				↓
5.0	6.0		0.0		wet at 5 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-04 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 6 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
5-6 ft bls	Grab	955	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR5/4 yellowish brown silty to clayey well sorted fine sand, roots
1.0	2.0				↓
2.0	3.0		0.0		10YR5/2 grayish brown silty well sorted fine sand
3.0	4.0				7.5YR6/6 reddish yellow sandy medium firm high plasticity clay (3-4')
4.0	5.0		0.0		10YR7/2 light gray silty well sorted fine sand
5.0	6.0		0.0		10YR5/1 clayey well sorted fine sand, moderate plasticity

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-05 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 2 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
1-2 ft bls	Grab	1010	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0		0.0		10YR3/1 very dark gray silty well sorted fine sand
1.0	2.0		0.0		10YR4/2 dary grayish brown sandy soft clay, high plasticity, wet at 2 feet
2.0	3.0				(borehole on slope below pipeline)

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-06 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 2 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
1-2 ft bls	Grab	1025	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0		0.0		10YR3/1 very dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		7.5YR5/2 brown sandy soft high plasticity clay, wet at 2'
2.0	3.0				(borehole on slope below pipeline)

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-07 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 2 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
1-2 ft bls	Grab	1040	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR3/1 very dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		10YR3/1 very dark gray sandy soft high plasticity clay, wet at 2'
2.0	3.0				(borehole on slope below pipeline)

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-08 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 3 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
2-3 ft bls	Grab	1055	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0		0.0		10YR3/1 very dark gray silty well sorted fine sand, roots
1.0	2.0				↓
2.0	3.0		0.0		10YR3/1 very dark gray sandy soft high plasticity clay, wet at 3 feet
					(borehole on slope below pipeline)

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-09 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 3 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
2-3 ft bls	Grab	1110	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0		0.0		10YR3/1 very dark gray silty well sorted fine sand
1.0	2.0				↓
2.0	3.0		0.0		10YR6/1 gray sandy soft high plasticity clay, wet at 3'

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-10 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 5 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
4-5 ft bls	Grab	1130	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR3/1 silty well sorted fine sand
1.0	2.0		0.0		10YR5/2 grayish brown silty to clayey well sorted fine sand
2.0	3.0				10YR5/2 grayish brown sandy soft high plasticity clay
3.0	4.0		0.0		↓
4.0	5.0		0.0		wet at 5 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-11 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 5 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
4-5 ft bls	Grab	1310	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR4/1 very dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		10YR4/2 dark grayish brown sandy soft moderate plasticity clay
2.0	3.0				↓
3.0	4.0		0.0		↓
4.0	5.0		0.0		wet at 5 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-12 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 3 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
2-3 ft bls	Grab	1350	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR6/1 gray silty well sorted fine sand, roots
1.0	2.0		0.0		10YR6/1 gray sandy soft high plasticity clay
2.0	3.0				wet at 3 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-13 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 5 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
4-5 ft bls	Grab	1430	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR4/1 dark gray silty well sorted fine sand, roots
1.0	2.0		0.0		7.5YR5/1 gray sandy soft high plasticity, firm from 4 to 5 feet
2.0	3.0				↓
3.0	4.0		0.0		↓
4.0	5.0		0.0		wet at 5 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-14 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 4 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
3-4 ft bls	Grab	1450	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR4/1 very dark gray clayey well sorted fine sand, roots
1.0	2.0		0.0		10YR3/1 sandy soft high plasticity clay
2.0	3.0				↓
3.0	4.0		0.0		↓
4.0	5.0		0.0		wet at 4 feet

ARCADIS

SOIL CORE / SAMPLING LOG

Boring/Well SB-15 Project/No. HAA-18 Page 1 of 1

Site Location Savannah, GA Drilling Started 1/14/2010 Drilling Completed 1/14/2010

Drilling Contractor ARM Driller Josh Helper Josh

Drilling Fluid Used None Drilling Method

Length and Diameter of Coring Device NA Sampling Interval Continuous feet

Land-Surface Elev. feet ☐ Surveyed ☐ Estimated Datum

Total Depth Drilled 4 Feet Hole Diameter 2" Coring Device Hand Auger

Prepared By JDF Hammer Weight NA Hammer Drop NA ins.

Sampling Data:

Depth	Grab/Composite	Time	Laboratory Analysis
3-4 ft bls	Grab	1510	Volatile and Semi-volatile organics

Soil Characterization:

Sample/Core Depth (Feet bls) From	To	Core Recovery (Feet)	OVM Reading (ppm)	Blow Counts per 6 Inches	Sample/Core Description
0.0	1.0				10YR4/1 dark gray silty well sorted fine sand
1.0	2.0		0.0		↓
2.0	3.0				10YR5/2 brown sandy soft high plasticity clay
3.0	4.0		0.0		↓
4.0	5.0		0.0		wet at 4 feet

ARCADIS

Appendix E

Laboratory Analytical Reports

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

ARCADIS U.S., Inc.
30 Patewood Drive
Suite 155
Greenville, SC 29615
Attention: Janet Christy

Project Name: **HAA-18**

Project Number: **GP08HAFS.HI8B.DG0FI**

Lot Number: **LA15023**

Date Completed: **01/26/2010**

Nisreen Saikaly
Project Manager

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

* L A 1 5 0 2 3 *

Case Narrative
ARCADIS U.S., Inc.
Lot Number: LA15023

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Volatile Organic Compounds

The RPD for Acetone and Chloromethane (Methyl chloride) exceeded method control limits in batch 25504; however, all other QA/QC criteria for the LCS/LCSD were within acceptance criteria and method control limits. The associated sample results were reported and no corrective action was required.

The RPD for Acetone, Bromomethane (Methyl bromide), Chloroethane, Chloromethane (Methyl chloride) and Vinyl chloride exceeded method control limits in batch 25567; however, all other QA/QC criteria for the LCS/LCSD were within acceptance criteria and method control limits. The associated sample results were reported and no corrective action was required.

Sample Summary
ARCADIS U.S., Inc.
Lot Number: LA15023

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	H18-SB01(011410)(4-5)	Solid	01/14/2010 0855	01/15/2010
002	H18-SB02(011410)(4-5)	Solid	01/14/2010 0915	01/15/2010
003	H18-SB03(011410)(4-5)	Solid	01/14/2010 0930	01/15/2010
004	H18-SB04(011410)(5-6)	Solid	01/14/2010 0955	01/15/2010
005	H18-SB05(011410)(1-2)	Solid	01/14/2010 1010	01/15/2010
006	H18-SB06(011410)(1-2)	Solid	01/14/2010 1025	01/15/2010
007	H18-SB07(011410)(1-2)	Solid	01/14/2010 1040	01/15/2010
008	H18-SB08(011410)(2-3)	Solid	01/14/2010 1055	01/15/2010
009	H18-SB09(011410)(2-3)	Solid	01/14/2010 1110	01/15/2010
010	H18-SB10(011410)(4-5)	Solid	01/14/2010 1130	01/15/2010
011	H18-SB11(011410)(4-5)	Solid	01/14/2010 1310	01/15/2010
012	H18-SB12(011410)(2-3)	Solid	01/14/2010 1350	01/15/2010
013	H18-SB13(011410)(4-5)	Solid	01/14/2010 1430	01/15/2010
014	H18-SB14(011410)(3-4)	Solid	01/14/2010 1450	01/15/2010
015	H18-SB15(011410)(3-4)	Solid	01/14/2010 1510	01/15/2010

(15 samples)

Executive Summary

ARCADIS U.S., Inc.

Lot Number: LA15023

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
002	H18-SB02(011410)(4-5)	Solid	Acetone	8260B	45		ug/kg	9
003	H18-SB03(011410)(4-5)	Solid	Acetone	8260B	27		ug/kg	13
004	H18-SB04(011410)(5-6)	Solid	Acetone	8260B	19		ug/kg	17
005	H18-SB05(011410)(1-2)	Solid	Acetone	8260B	11	J	ug/kg	21
008	H18-SB08(011410)(2-3)	Solid	Acetone	8260B	52		ug/kg	33
009	H18-SB09(011410)(2-3)	Solid	Acetone	8260B	65		ug/kg	37
011	H18-SB11(011410)(4-5)	Solid	Acetone	8260B	14	J	ug/kg	45
012	H18-SB12(011410)(2-3)	Solid	Acetone	8260B	12	J	ug/kg	49
013	H18-SB13(011410)(4-5)	Solid	Acetone	8260B	29		ug/kg	53
014	H18-SB14(011410)(3-4)	Solid	Acetone	8260B	15	J	ug/kg	57
015	H18-SB15(011410)(3-4)	Solid	Acetone	8260B	24		ug/kg	61

(11 detections)

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-001**
Description: **H18-SB01(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0855**
% Solids: **79.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1623	DLB		25504	11.18

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		11	3.8	ug/kg	1
Benzene	71-43-2	8260B	ND		2.8	0.62	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		2.8	0.96	ug/kg	1
Bromoform	75-25-2	8260B	ND		2.8	0.39	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.8	1.0	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		5.6	1.4	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		2.8	0.73	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		2.8	1.0	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		2.8	0.96	ug/kg	1
Chloroethane	75-00-3	8260B	ND		2.8	0.73	ug/kg	1
Chloroform	67-66-3	8260B	ND		2.8	0.47	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		2.8	0.56	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		2.8	0.38	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		2.8	0.84	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		2.8	0.96	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		2.8	0.48	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		2.8	0.96	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		2.8	0.96	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		2.8	0.96	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		2.8	0.90	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		2.8	0.41	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		2.8	0.56	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		2.8	0.96	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		2.8	0.43	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		2.8	0.84	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		2.8	0.51	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		2.8	0.38	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		2.8	0.46	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		2.8	0.96	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		5.6	0.73	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		2.8	0.45	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		2.8	0.38	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.8	0.23	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		5.6	0.84	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		2.8	0.34	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		2.8	1.5	ug/kg	1
Styrene	100-42-5	8260B	ND		2.8	0.62	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		2.8	0.26	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		2.8	1.3	ug/kg	1
Toluene	108-88-3	8260B	ND		2.8	0.96	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		2.8	1.2	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		2.8	0.96	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		2.8	0.48	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		2.8	0.44	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-001**
Description: **H18-SB01(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0855**
% Solids: **79.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1623	DLB		25504	11.18

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		2.8	1.1	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		2.8	0.84	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		2.8	0.48	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		2.8	1.6	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		87	53-142
Bromofluorobenzene		108	47-138
Toluene-d8		100	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-001**

Description: **H18-SB01(011410)(4-5)** Matrix: **Solid**

Date Sampled: **01/14/2010 0855** % Solids: **79.4** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2025	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		84	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		84	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		84	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		84	9.3	ug/kg	1
Atrazine	1912-24-9	8270D	ND		84	21	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		84	21	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		84	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		84	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		84	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		84	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		84	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		84	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		84	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		160	55	ug/kg	1
Caprolactam	105-60-2	8270D	ND		84	21	ug/kg	1
Carbazole	86-74-8	8270D	ND		84	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		84	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		84	8.5	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		84	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		84	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		84	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		84	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		84	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		84	14	ug/kg	1
Chrysene	218-01-9	8270D	ND		84	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		84	11	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		84	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	46	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		84	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		84	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		84	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		84	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		84	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		160	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		160	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		84	40	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		84	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		84	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		84	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		84	18	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		84	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	31	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-001**
Description: **H18-SB01(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0855**
% Solids: **79.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2025	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		84	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		84	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		84	9.3	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		84	12	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		84	7.6	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		160	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		84	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		160	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		160	49	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		160	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		84	6.8	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		160	23	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		84	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		84	10	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	170	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		84	11	ug/kg	1
Phenol	108-95-2	8270D	ND		84	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		84	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		84	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		84	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		44	33-102
2-Fluorophenol		65	28-104
Nitrobenzene-d5		43	22-109
Phenol-d5		50	27-103
Terphenyl-d14		58	41-120
2,4,6-Tribromophenol		56	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-002**
Description: **H18-SB02(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0915**
% Solids: **78.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1646	DLB		25504	11.69

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**45**		**11**	**3.7**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		2.7	0.60	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		2.7	0.93	ug/kg	1
Bromoform	75-25-2	8260B	ND		2.7	0.38	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.7	0.98	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		5.5	1.3	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		2.7	0.71	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		2.7	0.98	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		2.7	0.93	ug/kg	1
Chloroethane	75-00-3	8260B	ND		2.7	0.71	ug/kg	1
Chloroform	67-66-3	8260B	ND		2.7	0.45	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		2.7	0.55	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		2.7	0.37	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		2.7	0.82	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		2.7	0.93	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		2.7	0.46	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		2.7	0.93	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		2.7	0.93	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		2.7	0.93	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		2.7	0.87	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		2.7	0.40	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		2.7	0.55	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		2.7	0.93	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		2.7	0.41	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		2.7	0.82	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		2.7	0.50	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		2.7	0.37	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		2.7	0.45	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		2.7	0.93	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		5.5	0.71	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		2.7	0.44	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		2.7	0.37	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.7	0.22	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		5.5	0.82	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		2.7	0.33	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		2.7	1.4	ug/kg	1
Styrene	100-42-5	8260B	ND		2.7	0.60	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		2.7	0.26	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		2.7	1.3	ug/kg	1
Toluene	108-88-3	8260B	ND		2.7	0.93	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		2.7	1.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		2.7	0.93	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		2.7	0.46	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		2.7	0.43	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-002**
Description: **H18-SB02(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0915**
% Solids: **78.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1646	DLB		25504	11.69

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		2.7	1.0	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		2.7	0.82	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		2.7	0.47	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		2.7	1.6	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		94	53-142
Bromofluorobenzene		109	47-138
Toluene-d8		100	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
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Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-002**
Description: **H18-SB02(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0915**
% Solids: **78.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2045	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		85	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		85	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		85	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		85	9.4	ug/kg	1
Atrazine	1912-24-9	8270D	ND		85	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		85	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		85	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		85	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		85	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		85	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		85	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		85	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		85	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	56	ug/kg	1
Caprolactam	105-60-2	8270D	ND		85	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		85	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		85	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		85	8.6	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		85	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		85	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		85	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		85	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		85	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		85	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		85	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		85	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		85	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	46	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		85	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		85	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		85	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		85	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		85	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		85	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		85	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		85	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		85	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		85	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		85	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	31	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-002**

Description: **H18-SB02(011410)(4-5)** Matrix: **Solid**

Date Sampled: **01/14/2010 0915** % Solids: **78.4** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2045	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		85	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		85	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		85	9.4	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		85	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		85	7.7	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		85	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	49	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		85	6.8	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	23	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		85	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		85	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		85	11	ug/kg	1
Phenol	108-95-2	8270D	ND		85	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		85	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		85	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		85	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		54	33-102
2-Fluorophenol		41	28-104
Nitrobenzene-d5		41	22-109
Phenol-d5		60	27-103
Terphenyl-d14		68	41-120
2,4,6-Tribromophenol		72	30-117

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

B = Detected in the method blank

J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-003**
Description: **H18-SB03(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0930**
% Solids: **78.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1709	DLB		25504	8.40

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**27**		**15**	**5.1**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		3.8	0.84	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		3.8	1.3	ug/kg	1
Bromoform	75-25-2	8260B	ND		3.8	0.53	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.8	1.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		7.6	1.8	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		3.8	0.99	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		3.8	1.4	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		3.8	1.3	ug/kg	1
Chloroethane	75-00-3	8260B	ND		3.8	0.99	ug/kg	1
Chloroform	67-66-3	8260B	ND		3.8	0.63	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.8	0.76	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		3.8	0.51	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.8	1.1	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		3.8	1.3	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.8	0.65	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.8	1.3	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.8	1.3	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.8	1.3	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		3.8	1.2	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		3.8	0.55	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		3.8	0.76	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		3.8	1.3	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.8	0.58	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.8	1.1	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		3.8	0.69	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.8	0.52	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.8	0.62	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.8	1.3	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		7.6	0.99	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		3.8	0.61	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		3.8	0.51	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.8	0.30	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		7.6	1.1	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		3.8	0.46	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		3.8	2.0	ug/kg	1
Styrene	100-42-5	8260B	ND		3.8	0.84	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.8	0.36	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		3.8	1.7	ug/kg	1
Toluene	108-88-3	8260B	ND		3.8	1.3	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.8	1.6	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.8	1.3	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.8	0.65	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.8	0.60	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-003**
Description: **H18-SB03(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0930**
% Solids: **78.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1709	DLB		25504	8.40

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.8	1.4	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		3.8	1.1	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		3.8	0.65	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.8	2.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	53-142
Bromofluorobenzene		116	47-138
Toluene-d8		105	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-003**
Description: **H18-SB03(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0930**
% Solids: **78.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/22/2010 0012	MZ	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		85	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		85	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		85	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		85	9.4	ug/kg	1
Atrazine	1912-24-9	8270D	ND		85	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		85	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		85	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		85	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		85	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		85	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		85	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		85	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		85	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	56	ug/kg	1
Caprolactam	105-60-2	8270D	ND		85	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		85	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		85	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		85	8.6	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		85	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		85	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		85	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		85	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		85	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		85	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		85	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		85	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		85	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	46	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		85	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		85	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		85	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		85	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		85	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		85	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		85	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		85	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		85	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		85	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		85	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	31	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-003**

Description: **H18-SB03(011410)(4-5)** Matrix: **Solid**

Date Sampled: **01/14/2010 0930** % Solids: **78.4** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/22/2010 0012	MZ	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		85	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		85	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		85	9.4	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		85	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		85	7.7	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		85	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	49	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		85	6.9	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	23	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		85	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		85	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		85	11	ug/kg	1
Phenol	108-95-2	8270D	ND		85	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		85	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		85	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		85	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		61	33-102
2-Fluorophenol		61	28-104
Nitrobenzene-d5		56	22-109
Phenol-d5		60	27-103
Terphenyl-d14		71	41-120
2,4,6-Tribromophenol		69	30-117

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

B = Detected in the method blank

J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-004**
Description: **H18-SB04(011410)(5-6)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0955**
% Solids: **80.6** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	01/19/2010 0120	DLB		25567	8.59

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**19**		**14**	**4.8**	**ug/kg**	**2**
Benzene	71-43-2	8260B	ND		3.6	0.79	ug/kg	2
Bromodichloromethane	75-27-4	8260B	ND		3.6	1.2	ug/kg	2
Bromoform	75-25-2	8260B	ND		3.6	0.51	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.6	1.3	ug/kg	2
2-Butanone (MEK)	78-93-3	8260B	ND		7.2	1.7	ug/kg	2
Carbon disulfide	75-15-0	8260B	ND		3.6	0.94	ug/kg	2
Carbon tetrachloride	56-23-5	8260B	ND		3.6	1.3	ug/kg	2
Chlorobenzene	108-90-7	8260B	ND		3.6	1.2	ug/kg	2
Chloroethane	75-00-3	8260B	ND		3.6	0.94	ug/kg	2
Chloroform	67-66-3	8260B	ND		3.6	0.60	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.6	0.72	ug/kg	2
Cyclohexane	110-82-7	8260B	ND		3.6	0.49	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.6	1.1	ug/kg	2
Dibromochloromethane	124-48-1	8260B	ND		3.6	1.2	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.6	0.61	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.6	1.2	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.6	1.2	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.6	1.2	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260B	ND		3.6	1.2	ug/kg	2
1,1-Dichloroethane	75-34-3	8260B	ND		3.6	0.53	ug/kg	2
1,2-Dichloroethane	107-06-2	8260B	ND		3.6	0.72	ug/kg	2
1,1-Dichloroethene	75-35-4	8260B	ND		3.6	1.2	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.6	0.55	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.6	1.1	ug/kg	2
1,2-Dichloropropane	78-87-5	8260B	ND		3.6	0.66	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.6	0.49	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.6	0.59	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		3.6	1.2	ug/kg	2
2-Hexanone	591-78-6	8260B	ND		7.2	0.94	ug/kg	2
Isopropylbenzene	98-82-8	8260B	ND		3.6	0.58	ug/kg	2
Methyl acetate	79-20-9	8260B	ND		3.6	0.48	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.6	0.29	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260B	ND		7.2	1.1	ug/kg	2
Methylcyclohexane	108-87-2	8260B	ND		3.6	0.44	ug/kg	2
Methylene chloride	75-09-2	8260B	ND		3.6	1.9	ug/kg	2
Styrene	100-42-5	8260B	ND		3.6	0.79	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.6	0.34	ug/kg	2
Tetrachloroethene	127-18-4	8260B	ND		3.6	1.7	ug/kg	2
Toluene	108-88-3	8260B	ND		3.6	1.2	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.6	1.5	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.6	1.2	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.6	0.61	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.6	0.57	ug/kg	2

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-004**
Description: **H18-SB04(011410)(5-6)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0955**
% Solids: **80.6** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	01/19/2010 0120	DLB		25567	8.59

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.6	1.4	ug/kg	2
Trichlorofluoromethane	75-69-4	8260B	ND		3.6	1.1	ug/kg	2
Vinyl chloride	75-01-4	8260B	ND		3.6	0.62	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		3.6	2.1	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		77	53-142
Bromofluorobenzene		96	47-138
Toluene-d8		105	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-004**
Description: **H18-SB04(011410)(5-6)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0955**
% Solids: **80.6** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2105	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		81	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		81	12	ug/kg	1
Acetophenone	98-86-2	8270D	ND		81	22	ug/kg	1
Anthracene	120-12-7	8270D	ND		81	8.9	ug/kg	1
Atrazine	1912-24-9	8270D	ND		81	20	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		81	20	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		81	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		81	11	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		81	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		81	14	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		81	11	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		81	12	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		81	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		160	53	ug/kg	1
Caprolactam	105-60-2	8270D	ND		81	20	ug/kg	1
Carbazole	86-74-8	8270D	ND		81	17	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		81	10	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		81	8.2	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		81	12	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		81	11	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		81	13	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		81	13	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		81	11	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		81	14	ug/kg	1
Chrysene	218-01-9	8270D	ND		81	13	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		81	11	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		81	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		400	44	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		81	12	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		81	27	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		81	27	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		81	15	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		81	27	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		400	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		400	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		160	22	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		160	21	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		81	39	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		81	27	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		81	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		81	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		81	18	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		81	13	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		400	30	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-004**
Description: **H18-SB04(011410)(5-6)**
Matrix: **Solid**
Date Sampled: **01/14/2010 0955**
% Solids: **80.6** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2105	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		81	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		81	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		81	8.9	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		81	12	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		81	7.3	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		160	14	ug/kg	1
Naphthalene	91-20-3	8270D	ND		81	12	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		160	28	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		160	47	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		160	23	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		81	6.5	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		160	22	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		400	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		81	15	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		81	9.9	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		400	170	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		81	11	ug/kg	1
Phenol	108-95-2	8270D	ND		81	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		81	16	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		81	11	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		81	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		55	33-102
2-Fluorophenol		64	28-104
Nitrobenzene-d5		62	22-109
Phenol-d5		67	27-103
Terphenyl-d14		56	41-120
2,4,6-Tribromophenol		64	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-005**
Description: **H18-SB05(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1010**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1756	DLB		25504	9.93

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**11**	**J**	**13**	**4.3**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		3.2	0.71	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		3.2	1.1	ug/kg	1
Bromoform	75-25-2	8260B	ND		3.2	0.45	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.2	1.2	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		6.5	1.6	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		3.2	0.84	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		3.2	1.2	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		3.2	1.1	ug/kg	1
Chloroethane	75-00-3	8260B	ND		3.2	0.84	ug/kg	1
Chloroform	67-66-3	8260B	ND		3.2	0.54	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.2	0.65	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		3.2	0.44	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.2	0.97	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		3.2	1.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.2	0.55	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.2	1.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.2	1.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.2	1.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		3.2	1.0	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		3.2	0.47	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		3.2	0.65	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		3.2	1.1	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.2	0.49	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.2	0.97	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		3.2	0.59	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.2	0.44	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.2	0.53	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.2	1.1	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		6.5	0.84	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		3.2	0.52	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		3.2	0.43	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.2	0.26	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		6.5	0.97	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		3.2	0.40	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		3.2	1.7	ug/kg	1
Styrene	100-42-5	8260B	ND		3.2	0.71	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.2	0.30	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		3.2	1.5	ug/kg	1
Toluene	108-88-3	8260B	ND		3.2	1.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.2	1.4	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.2	1.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.2	0.55	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.2	0.51	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-005**
Description: **H18-SB05(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1010**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1756	DLB		25504	9.93

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.2	1.2	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		3.2	0.97	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		3.2	0.56	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.2	1.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	53-142
Bromofluorobenzene		114	47-138
Toluene-d8		105	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-005**

Description: **H18-SB05(011410)(1-2)** Matrix: **Solid**

Date Sampled: **01/14/2010 1010** % Solids: **77.7** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2125	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		86	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		86	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		86	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		86	9.5	ug/kg	1
Atrazine	1912-24-9	8270D	ND		86	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		86	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		86	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		86	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		86	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		86	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		86	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		86	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		86	13	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	57	ug/kg	1
Caprolactam	105-60-2	8270D	ND		86	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		86	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		86	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		86	8.7	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		86	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		86	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		86	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		86	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		86	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		86	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		86	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		86	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		86	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	47	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		86	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		86	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		86	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		86	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		86	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		86	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		86	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		86	14	ug/kg	1
Fluorene	86-73-7	8270D	ND		86	12	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		86	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		86	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	32	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-005**
Description: **H18-SB05(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1010**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2125	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		86	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		86	13	ug/kg	1
Isophorone	78-59-1	8270D	ND		86	9.5	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		86	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		86	7.8	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		86	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	50	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		86	6.9	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	24	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		86	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		86	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		86	12	ug/kg	1
Phenol	108-95-2	8270D	ND		86	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		86	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		86	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		86	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		51	33-102
2-Fluorophenol		53	28-104
Nitrobenzene-d5		52	22-109
Phenol-d5		55	27-103
Terphenyl-d14		58	41-120
2,4,6-Tribromophenol		66	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-006**
Description: **H18-SB06(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1025**
% Solids: **76.5** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	01/19/2010 0143	DLB		25567	8.21

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		16	5.3	ug/kg	2
Benzene	71-43-2	8260B	ND		4.0	0.88	ug/kg	2
Bromodichloromethane	75-27-4	8260B	ND		4.0	1.4	ug/kg	2
Bromoform	75-25-2	8260B	ND		4.0	0.56	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		4.0	1.4	ug/kg	2
2-Butanone (MEK)	78-93-3	8260B	ND		8.0	1.9	ug/kg	2
Carbon disulfide	75-15-0	8260B	ND		4.0	1.0	ug/kg	2
Carbon tetrachloride	56-23-5	8260B	ND		4.0	1.4	ug/kg	2
Chlorobenzene	108-90-7	8260B	ND		4.0	1.4	ug/kg	2
Chloroethane	75-00-3	8260B	ND		4.0	1.0	ug/kg	2
Chloroform	67-66-3	8260B	ND		4.0	0.66	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		4.0	0.80	ug/kg	2
Cyclohexane	110-82-7	8260B	ND		4.0	0.54	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		4.0	1.2	ug/kg	2
Dibromochloromethane	124-48-1	8260B	ND		4.0	1.4	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		4.0	0.68	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260B	ND		4.0	1.4	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260B	ND		4.0	1.4	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260B	ND		4.0	1.4	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260B	ND		4.0	1.3	ug/kg	2
1,1-Dichloroethane	75-34-3	8260B	ND		4.0	0.58	ug/kg	2
1,2-Dichloroethane	107-06-2	8260B	ND		4.0	0.80	ug/kg	2
1,1-Dichloroethene	75-35-4	8260B	ND		4.0	1.4	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260B	ND		4.0	0.61	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260B	ND		4.0	1.2	ug/kg	2
1,2-Dichloropropane	78-87-5	8260B	ND		4.0	0.72	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		4.0	0.54	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		4.0	0.65	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		4.0	1.4	ug/kg	2
2-Hexanone	591-78-6	8260B	ND		8.0	1.0	ug/kg	2
Isopropylbenzene	98-82-8	8260B	ND		4.0	0.64	ug/kg	2
Methyl acetate	79-20-9	8260B	ND		4.0	0.53	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		4.0	0.32	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260B	ND		8.0	1.2	ug/kg	2
Methylcyclohexane	108-87-2	8260B	ND		4.0	0.49	ug/kg	2
Methylene chloride	75-09-2	8260B	ND		4.0	2.1	ug/kg	2
Styrene	100-42-5	8260B	ND		4.0	0.88	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		4.0	0.37	ug/kg	2
Tetrachloroethene	127-18-4	8260B	ND		4.0	1.8	ug/kg	2
Toluene	108-88-3	8260B	ND		4.0	1.4	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		4.0	1.7	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		4.0	1.4	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260B	ND		4.0	0.68	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260B	ND		4.0	0.63	ug/kg	2

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-006**
Description: **H18-SB06(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1025**
% Solids: **76.5** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	01/19/2010 0143	DLB		25567	8.21

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		4.0	1.5	ug/kg	2
Trichlorofluoromethane	75-69-4	8260B	ND		4.0	1.2	ug/kg	2
Vinyl chloride	75-01-4	8260B	ND		4.0	0.68	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		4.0	2.3	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	53-142
Bromofluorobenzene		111	47-138
Toluene-d8		108	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-006**
Description: **H18-SB06(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1025**
% Solids: **76.5** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2146	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		87	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		87	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		87	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		87	9.6	ug/kg	1
Atrazine	1912-24-9	8270D	ND		87	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		87	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		87	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		87	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		87	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		87	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		87	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		87	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		87	13	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	57	ug/kg	1
Caprolactam	105-60-2	8270D	ND		87	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		87	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		87	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		87	8.8	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		87	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		87	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		87	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		87	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		87	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		87	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		87	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		87	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		87	14	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		430	47	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		87	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		87	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		87	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		87	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		87	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		430	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		430	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	24	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		87	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		87	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		87	14	ug/kg	1
Fluorene	86-73-7	8270D	ND		87	12	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		87	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		87	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		430	32	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-006**
Description: **H18-SB06(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1025**
% Solids: **76.5** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2146	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		87	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		87	13	ug/kg	1
Isophorone	78-59-1	8270D	ND		87	9.5	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		87	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		87	7.8	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		87	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	30	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	50	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	25	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		87	7.0	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	24	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		430	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		87	17	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		87	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		430	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		87	12	ug/kg	1
Phenol	108-95-2	8270D	ND		87	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		87	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		87	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		87	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		63	33-102
2-Fluorophenol		88	28-104
Nitrobenzene-d5		58	22-109
Phenol-d5		58	27-103
Terphenyl-d14		64	41-120
2,4,6-Tribromophenol		74	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-007**
Description: **H18-SB07(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1040**
% Solids: **77.2** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1843	DLB		25504	10.85

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		12	4.0	ug/kg	1
Benzene	71-43-2	8260B	ND		3.0	0.66	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		3.0	1.0	ug/kg	1
Bromoform	75-25-2	8260B	ND		3.0	0.42	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.0	1.1	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		6.0	1.4	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		3.0	0.78	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		3.0	1.1	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		3.0	1.0	ug/kg	1
Chloroethane	75-00-3	8260B	ND		3.0	0.78	ug/kg	1
Chloroform	67-66-3	8260B	ND		3.0	0.50	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.0	0.60	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		3.0	0.40	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.0	0.89	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		3.0	1.0	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.0	0.51	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.0	1.0	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.0	1.0	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.0	1.0	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		3.0	0.95	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		3.0	0.44	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		3.0	0.60	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		3.0	1.0	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.0	0.45	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.0	0.89	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		3.0	0.54	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.0	0.41	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.0	0.49	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.0	1.0	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		6.0	0.78	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		3.0	0.48	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		3.0	0.40	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.0	0.24	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		6.0	0.89	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		3.0	0.36	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		3.0	1.6	ug/kg	1
Styrene	100-42-5	8260B	ND		3.0	0.66	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.0	0.28	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		3.0	1.4	ug/kg	1
Toluene	108-88-3	8260B	ND		3.0	1.0	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.0	1.3	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.0	1.0	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.0	0.51	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.0	0.47	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-007**
Description: **H18-SB07(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1040**
% Solids: **77.2** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1843	DLB		25504	10.85

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.0	1.1	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		3.0	0.89	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		3.0	0.51	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.0	1.7	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	53-142
Bromofluorobenzene		117	47-138
Toluene-d8		110	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-007**

Description: **H18-SB07(011410)(1-2)** Matrix: **Solid**

Date Sampled: **01/14/2010 1040** % Solids: **77.2** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2206	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		86	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		86	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		86	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		86	9.5	ug/kg	1
Atrazine	1912-24-9	8270D	ND		86	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		86	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		86	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		86	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		86	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		86	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		86	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		86	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		86	13	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	57	ug/kg	1
Caprolactam	105-60-2	8270D	ND		86	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		86	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		86	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		86	8.7	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		86	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		86	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		86	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		86	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		86	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		86	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		86	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		86	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		86	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	47	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		86	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		86	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		86	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		86	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		86	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		86	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		86	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		86	14	ug/kg	1
Fluorene	86-73-7	8270D	ND		86	12	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		86	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		86	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	32	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-007**
Description: **H18-SB07(011410)(1-2)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1040**
% Solids: **77.2** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2206	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		86	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		86	13	ug/kg	1
Isophorone	78-59-1	8270D	ND		86	9.5	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		86	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		86	7.8	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		86	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	50	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		86	6.9	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	24	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		86	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		86	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		86	12	ug/kg	1
Phenol	108-95-2	8270D	ND		86	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		86	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		86	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		86	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		47	33-102
2-Fluorophenol		47	28-104
Nitrobenzene-d5		49	22-109
Phenol-d5		49	27-103
Terphenyl-d14		64	41-120
2,4,6-Tribromophenol		72	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-008**
Description: **H18-SB08(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1055**
% Solids: **78.3** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1907	DLB		25504	9.56

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**52**		**13**	**4.5**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		3.3	0.73	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		3.3	1.1	ug/kg	1
Bromoform	75-25-2	8260B	ND		3.3	0.47	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.3	1.2	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		6.7	1.6	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		3.3	0.87	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		3.3	1.2	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		3.3	1.1	ug/kg	1
Chloroethane	75-00-3	8260B	ND		3.3	0.87	ug/kg	1
Chloroform	67-66-3	8260B	ND		3.3	0.55	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.3	0.67	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		3.3	0.45	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.3	1.0	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		3.3	1.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.3	0.57	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.3	1.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.3	1.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.3	1.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		3.3	1.1	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		3.3	0.49	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		3.3	0.67	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		3.3	1.1	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.3	0.51	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.3	1.0	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		3.3	0.61	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.3	0.45	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.3	0.55	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.3	1.1	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		6.7	0.87	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		3.3	0.53	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		3.3	0.45	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.3	0.27	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		6.7	1.0	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		3.3	0.41	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		3.3	1.7	ug/kg	1
Styrene	100-42-5	8260B	ND		3.3	0.73	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.3	0.31	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		3.3	1.5	ug/kg	1
Toluene	108-88-3	8260B	ND		3.3	1.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.3	1.4	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.3	1.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.3	0.57	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.3	0.53	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-008**
Description: **H18-SB08(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1055**
% Solids: **78.3** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1907	DLB		25504	9.56

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.3	1.3	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		3.3	1.0	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		3.3	0.57	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.3	1.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		86	53-142
Bromofluorobenzene		99	47-138
Toluene-d8		92	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-008**

Description: **H18-SB08(011410)(2-3)** Matrix: **Solid**

Date Sampled: **01/14/2010 1055** % Solids: **78.3** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2226	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		83	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		83	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		83	22	ug/kg	1
Anthracene	120-12-7	8270D	ND		83	9.2	ug/kg	1
Atrazine	1912-24-9	8270D	ND		83	21	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		83	21	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		83	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		83	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		83	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		83	14	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		83	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		83	12	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		83	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		160	55	ug/kg	1
Caprolactam	105-60-2	8270D	ND		83	21	ug/kg	1
Carbazole	86-74-8	8270D	ND		83	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		83	10	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		83	8.4	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		83	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		83	11	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		83	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		83	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		83	11	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		83	14	ug/kg	1
Chrysene	218-01-9	8270D	ND		83	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		83	11	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		83	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		410	45	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		83	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		83	27	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		83	27	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		83	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		83	27	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		410	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		410	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		160	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		160	21	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		83	40	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		83	27	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		83	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		83	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		83	18	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		83	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		410	30	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-008**
Description: **H18-SB08(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1055**
% Solids: **78.3** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2226	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		83	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		83	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		83	9.1	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		83	12	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		83	7.5	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		160	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		83	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		160	28	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		160	48	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		160	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		83	6.7	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		160	23	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		410	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		83	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		83	10	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		410	170	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		83	11	ug/kg	1
Phenol	108-95-2	8270D	ND		83	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		83	16	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		83	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		83	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		51	33-102
2-Fluorophenol		62	28-104
Nitrobenzene-d5		55	22-109
Phenol-d5		54	27-103
Terphenyl-d14		57	41-120
2,4,6-Tribromophenol		64	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-009**
Description: **H18-SB09(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1110**
% Solids: **79.6** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1930	DLB		25504	7.41

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**65**		**17**	**5.7**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		4.2	0.93	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		4.2	1.4	ug/kg	1
Bromoform	75-25-2	8260B	ND		4.2	0.59	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		4.2	1.5	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		8.5	2.0	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		4.2	1.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		4.2	1.5	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		4.2	1.4	ug/kg	1
Chloroethane	75-00-3	8260B	ND		4.2	1.1	ug/kg	1
Chloroform	67-66-3	8260B	ND		4.2	0.70	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		4.2	0.85	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		4.2	0.57	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		4.2	1.3	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		4.2	1.4	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		4.2	0.72	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		4.2	1.4	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		4.2	1.4	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		4.2	1.4	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		4.2	1.4	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		4.2	0.62	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		4.2	0.85	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		4.2	1.4	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		4.2	0.64	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		4.2	1.3	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		4.2	0.77	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		4.2	0.58	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		4.2	0.69	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		4.2	1.4	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		8.5	1.1	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		4.2	0.68	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		4.2	0.57	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		4.2	0.34	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		8.5	1.3	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		4.2	0.52	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		4.2	2.2	ug/kg	1
Styrene	100-42-5	8260B	ND		4.2	0.93	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		4.2	0.40	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		4.2	1.9	ug/kg	1
Toluene	108-88-3	8260B	ND		4.2	1.4	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		4.2	1.8	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		4.2	1.4	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		4.2	0.72	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		4.2	0.67	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-009**
Description: **H18-SB09(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1110**
% Solids: **79.6** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 1930	DLB		25504	7.41

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		4.2	1.6	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		4.2	1.3	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		4.2	0.73	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		4.2	2.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	53-142
Bromofluorobenzene		125	47-138
Toluene-d8		107	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-009**

Description: **H18-SB09(011410)(2-3)** Matrix: **Solid**

Date Sampled: **01/14/2010 1110** % Solids: **79.6** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2246	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		83	13	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		83	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		83	22	ug/kg	1
Anthracene	120-12-7	8270D	ND		83	9.1	ug/kg	1
Atrazine	1912-24-9	8270D	ND		83	21	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		83	21	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		83	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		83	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		83	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		83	14	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		83	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		83	12	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		83	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		160	54	ug/kg	1
Caprolactam	105-60-2	8270D	ND		83	21	ug/kg	1
Carbazole	86-74-8	8270D	ND		83	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		83	10	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		83	8.4	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		83	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		83	11	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		83	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		83	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		83	11	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		83	14	ug/kg	1
Chrysene	218-01-9	8270D	ND		83	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		83	11	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		83	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		410	45	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		83	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		83	27	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		83	27	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		83	15	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		83	27	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		410	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		410	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		160	22	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		160	21	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		83	40	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		83	27	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		83	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		83	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		83	18	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		83	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		410	30	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-009**

Description: **H18-SB09(011410)(2-3)** Matrix: **Solid**

Date Sampled: **01/14/2010 1110** % Solids: **79.6** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2246	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		83	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		83	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		83	9.1	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		83	12	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		83	7.4	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		160	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		83	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		160	28	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		160	48	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		160	23	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		83	6.6	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		160	23	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		410	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		83	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		83	10	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		410	170	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		83	11	ug/kg	1
Phenol	108-95-2	8270D	ND		83	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		83	16	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		83	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		83	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		46	33-102
2-Fluorophenol		46	28-104
Nitrobenzene-d5		46	22-109
Phenol-d5		50	27-103
Terphenyl-d14		60	41-120
2,4,6-Tribromophenol		66	30-117

PQL = Practical quantitation limit

ND = Not detected at or above the MDL

B = Detected in the method blank

J = Estimated result < PQL and ≥ MDL

E = Quantitation of compound exceeded the calibration range

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-010**
Description: **H18-SB10(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1130**
% Solids: **78.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	01/19/2010 0206	DLB		25567	11.44

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	67-64-1	8260B	ND		11	3.7	ug/kg	2
Benzene	71-43-2	8260B	ND		2.8	0.61	ug/kg	2
Bromodichloromethane	75-27-4	8260B	ND		2.8	0.94	ug/kg	2
Bromoform	75-25-2	8260B	ND		2.8	0.39	ug/kg	2
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		2.8	1.0	ug/kg	2
2-Butanone (MEK)	78-93-3	8260B	ND		5.6	1.3	ug/kg	2
Carbon disulfide	75-15-0	8260B	ND		2.8	0.72	ug/kg	2
Carbon tetrachloride	56-23-5	8260B	ND		2.8	1.0	ug/kg	2
Chlorobenzene	108-90-7	8260B	ND		2.8	0.94	ug/kg	2
Chloroethane	75-00-3	8260B	ND		2.8	0.72	ug/kg	2
Chloroform	67-66-3	8260B	ND		2.8	0.46	ug/kg	2
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		2.8	0.56	ug/kg	2
Cyclohexane	110-82-7	8260B	ND		2.8	0.37	ug/kg	2
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		2.8	0.83	ug/kg	2
Dibromochloromethane	124-48-1	8260B	ND		2.8	0.94	ug/kg	2
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		2.8	0.47	ug/kg	2
1,2-Dichlorobenzene	95-50-1	8260B	ND		2.8	0.94	ug/kg	2
1,3-Dichlorobenzene	541-73-1	8260B	ND		2.8	0.94	ug/kg	2
1,4-Dichlorobenzene	106-46-7	8260B	ND		2.8	0.94	ug/kg	2
Dichlorodifluoromethane	75-71-8	8260B	ND		2.8	0.89	ug/kg	2
1,1-Dichloroethane	75-34-3	8260B	ND		2.8	0.41	ug/kg	2
1,2-Dichloroethane	107-06-2	8260B	ND		2.8	0.56	ug/kg	2
1,1-Dichloroethene	75-35-4	8260B	ND		2.8	0.94	ug/kg	2
cis-1,2-Dichloroethene	156-59-2	8260B	ND		2.8	0.42	ug/kg	2
trans-1,2-Dichloroethene	156-60-5	8260B	ND		2.8	0.83	ug/kg	2
1,2-Dichloropropane	78-87-5	8260B	ND		2.8	0.51	ug/kg	2
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		2.8	0.38	ug/kg	2
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		2.8	0.46	ug/kg	2
Ethylbenzene	100-41-4	8260B	ND		2.8	0.94	ug/kg	2
2-Hexanone	591-78-6	8260B	ND		5.6	0.72	ug/kg	2
Isopropylbenzene	98-82-8	8260B	ND		2.8	0.44	ug/kg	2
Methyl acetate	79-20-9	8260B	ND		2.8	0.37	ug/kg	2
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		2.8	0.22	ug/kg	2
4-Methyl-2-pentanone	108-10-1	8260B	ND		5.6	0.83	ug/kg	2
Methylcyclohexane	108-87-2	8260B	ND		2.8	0.34	ug/kg	2
Methylene chloride	75-09-2	8260B	ND		2.8	1.4	ug/kg	2
Styrene	100-42-5	8260B	ND		2.8	0.61	ug/kg	2
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		2.8	0.26	ug/kg	2
Tetrachloroethene	127-18-4	8260B	ND		2.8	1.3	ug/kg	2
Toluene	108-88-3	8260B	ND		2.8	0.94	ug/kg	2
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		2.8	1.2	ug/kg	2
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		2.8	0.94	ug/kg	2
1,1,1-Trichloroethane	71-55-6	8260B	ND		2.8	0.47	ug/kg	2
1,1,2-Trichloroethane	79-00-5	8260B	ND		2.8	0.44	ug/kg	2

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-010**
Description: **H18-SB10(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1130**
% Solids: **78.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
2	5035	8260B	1	01/19/2010 0206	DLB		25567	11.44

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		2.8	1.1	ug/kg	2
Trichlorofluoromethane	75-69-4	8260B	ND		2.8	0.83	ug/kg	2
Vinyl chloride	75-01-4	8260B	ND		2.8	0.48	ug/kg	2
Xylenes (total)	1330-20-7	8260B	ND		2.8	1.6	ug/kg	2

Surrogate	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	53-142
Bromofluorobenzene		112	47-138
Toluene-d8		104	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-010**

Description: **H18-SB10(011410)(4-5)** Matrix: **Solid**

Date Sampled: **01/14/2010 1130** % Solids: **78.7** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2307	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		85	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		85	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		85	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		85	9.4	ug/kg	1
Atrazine	1912-24-9	8270D	ND		85	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		85	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		85	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		85	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		85	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		85	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		85	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		85	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		85	12	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		160	56	ug/kg	1
Caprolactam	105-60-2	8270D	ND		85	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		85	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		85	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		85	8.6	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		85	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		85	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		85	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		85	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		85	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		85	14	ug/kg	1
Chrysene	218-01-9	8270D	ND		85	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		85	11	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		85	13	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	46	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		85	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		85	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		85	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		85	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		85	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	160	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	140	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		160	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		160	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		85	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		85	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		85	13	ug/kg	1
Fluorene	86-73-7	8270D	ND		85	11	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		85	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		85	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	31	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-010**
Description: **H18-SB10(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1130**
% Solids: **78.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2307	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		85	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		85	12	ug/kg	1
Isophorone	78-59-1	8270D	ND		85	9.3	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		85	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		85	7.6	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		160	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		85	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		160	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		160	49	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		160	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		85	6.8	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		160	23	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		85	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		85	10	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	170	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		85	11	ug/kg	1
Phenol	108-95-2	8270D	ND		85	11	ug/kg	1
Pyrene	129-00-0	8270D	ND		85	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		85	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		85	12	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		54	33-102
2-Fluorophenol		83	28-104
Nitrobenzene-d5		60	22-109
Phenol-d5		69	27-103
Terphenyl-d14		63	41-120
2,4,6-Tribromophenol		66	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-011**
Description: **H18-SB11(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1310**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2017	DLB		25504	6.48

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**14**	**J**	**20**	**6.7**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		5.0	1.1	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		5.0	1.7	ug/kg	1
Bromoform	75-25-2	8260B	ND		5.0	0.70	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		5.0	1.8	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		9.9	2.4	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		5.0	1.3	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		5.0	1.8	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		5.0	1.7	ug/kg	1
Chloroethane	75-00-3	8260B	ND		5.0	1.3	ug/kg	1
Chloroform	67-66-3	8260B	ND		5.0	0.82	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		5.0	0.99	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		5.0	0.67	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		5.0	1.5	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		5.0	1.7	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		5.0	0.84	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		5.0	1.7	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		5.0	1.7	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		5.0	1.7	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		5.0	1.6	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		5.0	0.73	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	0.99	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		5.0	1.7	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		5.0	0.75	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		5.0	1.5	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		5.0	0.90	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		5.0	0.68	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		5.0	0.81	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		5.0	1.7	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		9.9	1.3	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		5.0	0.79	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		5.0	0.67	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	0.40	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		9.9	1.5	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		5.0	0.61	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		5.0	2.6	ug/kg	1
Styrene	100-42-5	8260B	ND		5.0	1.1	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		5.0	0.47	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		5.0	2.3	ug/kg	1
Toluene	108-88-3	8260B	ND		5.0	1.7	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		5.0	2.1	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		5.0	1.7	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		5.0	0.84	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		5.0	0.78	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-011**
Description: **H18-SB11(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1310**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2017	DLB		25504	6.48

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		5.0	1.9	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		5.0	1.5	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		5.0	0.85	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		5.0	2.9	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	53-142
Bromofluorobenzene		109	47-138
Toluene-d8		102	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-011**
Description: **H18-SB11(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1310**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2327	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		86	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		86	13	ug/kg	1
Acetophenone	98-86-2	8270D	ND		86	23	ug/kg	1
Anthracene	120-12-7	8270D	ND		86	9.5	ug/kg	1
Atrazine	1912-24-9	8270D	ND		86	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		86	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		86	11	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		86	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		86	12	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		86	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		86	12	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		86	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		86	13	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	57	ug/kg	1
Caprolactam	105-60-2	8270D	ND		86	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		86	18	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		86	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		86	8.7	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		86	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		86	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		86	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		86	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		86	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		86	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		86	14	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		86	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		86	14	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		420	47	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		86	13	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		86	28	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		86	28	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		86	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		86	28	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		420	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		420	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	23	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	22	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		86	41	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		86	28	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		86	14	ug/kg	1
Fluorene	86-73-7	8270D	ND		86	12	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		86	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		86	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		420	32	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-011**
Description: **H18-SB11(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1310**
% Solids: **77.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2327	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		86	11	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		86	13	ug/kg	1
Isophorone	78-59-1	8270D	ND		86	9.5	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		86	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		86	7.8	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	15	ug/kg	1
Naphthalene	91-20-3	8270D	ND		86	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	29	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	50	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	24	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		86	6.9	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	24	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		420	120	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		86	16	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		86	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		420	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		86	12	ug/kg	1
Phenol	108-95-2	8270D	ND		86	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		86	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		86	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		86	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		47	33-102
2-Fluorophenol		67	28-104
Nitrobenzene-d5		57	22-109
Phenol-d5		53	27-103
Terphenyl-d14		56	41-120
2,4,6-Tribromophenol		61	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-012**
Description: **H18-SB12(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1350**
% Solids: **74.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2040	DLB		25504	9.90

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**12**	**J**	**14**	**4.5**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		3.4	0.74	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		3.4	1.1	ug/kg	1
Bromoform	75-25-2	8260B	ND		3.4	0.47	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.4	1.2	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		6.8	1.6	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		3.4	0.88	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		3.4	1.2	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		3.4	1.1	ug/kg	1
Chloroethane	75-00-3	8260B	ND		3.4	0.88	ug/kg	1
Chloroform	67-66-3	8260B	ND		3.4	0.56	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.4	0.68	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		3.4	0.46	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.4	1.0	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		3.4	1.1	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.4	0.57	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.4	1.1	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.4	1.1	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.4	1.1	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		3.4	1.1	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		3.4	0.49	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		3.4	0.68	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		3.4	1.1	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.4	0.51	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.4	1.0	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		3.4	0.62	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.4	0.46	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.4	0.55	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.4	1.1	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		6.8	0.88	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		3.4	0.54	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		3.4	0.45	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.4	0.27	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		6.8	1.0	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		3.4	0.41	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		3.4	1.8	ug/kg	1
Styrene	100-42-5	8260B	ND		3.4	0.74	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.4	0.32	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		3.4	1.6	ug/kg	1
Toluene	108-88-3	8260B	ND		3.4	1.1	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.4	1.4	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.4	1.1	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.4	0.57	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.4	0.53	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-012**
Description: **H18-SB12(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1350**
% Solids: **74.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2040	DLB		25504	9.90

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.4	1.3	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		3.4	1.0	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		3.4	0.58	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.4	2.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	53-142
Bromofluorobenzene		111	47-138
Toluene-d8		102	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-012**

Description: **H18-SB12(011410)(2-3)** Matrix: **Solid**

Date Sampled: **01/14/2010 1350** % Solids: **74.7** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2347	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		89	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		89	14	ug/kg	1
Acetophenone	98-86-2	8270D	ND		89	24	ug/kg	1
Anthracene	120-12-7	8270D	ND		89	9.8	ug/kg	1
Atrazine	1912-24-9	8270D	ND		89	23	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		89	23	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		89	12	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		89	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		89	13	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		89	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		89	13	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		89	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		89	13	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	59	ug/kg	1
Caprolactam	105-60-2	8270D	ND		89	23	ug/kg	1
Carbazole	86-74-8	8270D	ND		89	19	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		89	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		89	9.0	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		89	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		89	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		89	15	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		89	15	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		89	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		89	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		89	15	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		89	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		89	14	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		440	48	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		89	14	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		89	29	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		89	29	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		89	17	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		89	29	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		440	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		440	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	24	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	23	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		89	43	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		89	29	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		89	14	ug/kg	1
Fluorene	86-73-7	8270D	ND		89	12	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		89	20	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		89	15	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		440	33	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-012**
Description: **H18-SB12(011410)(2-3)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1350**
% Solids: **74.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/24/2010 2347	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		89	12	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		89	13	ug/kg	1
Isophorone	78-59-1	8270D	ND		89	9.8	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		89	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		89	8.0	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	16	ug/kg	1
Naphthalene	91-20-3	8270D	ND		89	14	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	30	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	51	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	25	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		89	7.1	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	24	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		440	130	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		89	17	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		89	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		440	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		89	12	ug/kg	1
Phenol	108-95-2	8270D	ND		89	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		89	18	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		89	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		89	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		52	33-102
2-Fluorophenol		77	28-104
Nitrobenzene-d5		55	22-109
Phenol-d5		49	27-103
Terphenyl-d14		68	41-120
2,4,6-Tribromophenol		61	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-013**
Description: **H18-SB13(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1430**
% Solids: **75.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2103	DLB		25504	8.70

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**29**		**15**	**5.1**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		3.8	0.84	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		3.8	1.3	ug/kg	1
Bromoform	75-25-2	8260B	ND		3.8	0.53	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		3.8	1.4	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		7.6	1.8	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		3.8	0.99	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		3.8	1.4	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		3.8	1.3	ug/kg	1
Chloroethane	75-00-3	8260B	ND		3.8	0.99	ug/kg	1
Chloroform	67-66-3	8260B	ND		3.8	0.63	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		3.8	0.76	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		3.8	0.51	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		3.8	1.1	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		3.8	1.3	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		3.8	0.65	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		3.8	1.3	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		3.8	1.3	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		3.8	1.3	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		3.8	1.2	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		3.8	0.56	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		3.8	0.76	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		3.8	1.3	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		3.8	0.58	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		3.8	1.1	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		3.8	0.69	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		3.8	0.52	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		3.8	0.63	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		3.8	1.3	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		7.6	0.99	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		3.8	0.61	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		3.8	0.51	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		3.8	0.30	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		7.6	1.1	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		3.8	0.47	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		3.8	2.0	ug/kg	1
Styrene	100-42-5	8260B	ND		3.8	0.84	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		3.8	0.36	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		3.8	1.8	ug/kg	1
Toluene	108-88-3	8260B	ND		3.8	1.3	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		3.8	1.6	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		3.8	1.3	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		3.8	0.65	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		3.8	0.60	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-013**
Description: **H18-SB13(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1430**
% Solids: **75.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2103	DLB		25504	8.70

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		3.8	1.4	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		3.8	1.1	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		3.8	0.66	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		3.8	2.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	53-142
Bromofluorobenzene		115	47-138
Toluene-d8		101	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.** Laboratory ID: **LA15023-013**

Description: **H18-SB13(011410)(4-5)** Matrix: **Solid**

Date Sampled: **01/14/2010 1430** % Solids: **75.4** **01/15/2010 1943**

Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/25/2010 0008	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acenaphthene	83-32-9	8270D	ND		88	14	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		88	14	ug/kg	1
Acetophenone	98-86-2	8270D	ND		88	24	ug/kg	1
Anthracene	120-12-7	8270D	ND		88	9.7	ug/kg	1
Atrazine	1912-24-9	8270D	ND		88	22	ug/kg	1
Benzaldehyde	100-52-7	8270D	ND		88	22	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		88	12	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		88	12	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		88	13	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		88	15	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		88	13	ug/kg	1
1,1'-Biphenyl	92-52-4	8270D	ND		88	13	ug/kg	1
4-Bromophenyl phenyl ether	101-55-3	8270D	ND		88	13	ug/kg	1
Butyl benzyl phthalate	85-68-7	8270D	ND		170	58	ug/kg	1
Caprolactam	105-60-2	8270D	ND		88	22	ug/kg	1
Carbazole	86-74-8	8270D	ND		88	19	ug/kg	1
4-Chloro-3-methyl phenol	59-50-7	8270D	ND		88	11	ug/kg	1
4-Chloroaniline	106-47-8	8270D	ND		88	8.9	ug/kg	1
bis(2-Chloroethoxy)methane	111-91-1	8270D	ND		88	13	ug/kg	1
bis(2-Chloroethyl)ether	111-44-4	8270D	ND		88	12	ug/kg	1
bis(2-Chloroisopropyl)ether	108-60-1	8270D	ND		88	14	ug/kg	1
2-Chloronaphthalene	91-58-7	8270D	ND		88	14	ug/kg	1
2-Chlorophenol	95-57-8	8270D	ND		88	12	ug/kg	1
4-Chlorophenyl phenyl ether	7005-72-3	8270D	ND		88	15	ug/kg	1
Chrysene	218-01-9	8270D	ND		88	15	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		88	12	ug/kg	1
Dibenzofuran	132-64-9	8270D	ND		88	14	ug/kg	1
3,3'-Dichlorobenzidine	91-94-1	8270D	ND		430	48	ug/kg	1
2,4-Dichlorophenol	120-83-2	8270D	ND		88	14	ug/kg	1
Diethylphthalate	84-66-2	8270D	ND		88	29	ug/kg	1
Dimethyl phthalate	131-11-3	8270D	ND		88	29	ug/kg	1
2,4-Dimethylphenol	105-67-9	8270D	ND		88	16	ug/kg	1
Di-n-butyl phthalate	84-74-2	8270D	ND		88	29	ug/kg	1
4,6-Dinitro-2-methylphenol	534-52-1	8270D	ND		430	170	ug/kg	1
2,4-Dinitrophenol	51-28-5	8270D	ND		430	150	ug/kg	1
2,4-Dinitrotoluene	121-14-2	8270D	ND		170	24	ug/kg	1
2,6-Dinitrotoluene	606-20-2	8270D	ND		170	23	ug/kg	1
Di-n-octylphthalate	117-84-0	8270D	ND		88	42	ug/kg	1
bis(2-Ethylhexyl)phthalate	117-81-7	8270D	ND		88	29	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		88	14	ug/kg	1
Fluorene	86-73-7	8270D	ND		88	12	ug/kg	1
Hexachlorobenzene	118-74-1	8270D	ND		88	19	ug/kg	1
Hexachlorobutadiene	87-68-3	8270D	ND		88	14	ug/kg	1
Hexachlorocyclopentadiene	77-47-4	8270D	ND		430	32	ug/kg	1

PQL = Practical quantitation limit

B = Detected in the method blank

E = Quantitation of compound exceeded the calibration range

ND = Not detected at or above the MDL

J = Estimated result < PQL and ≥ MDL

P = The RPD between two GC columns exceeds 40%

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

N = Recovery is out of criteria

H = Out of holding time

Semivolatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-013**
Description: **H18-SB13(011410)(4-5)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1430**
% Solids: **75.4** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	01/25/2010 0008	JGH	01/19/2010 1136	25580

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Hexachloroethane	67-72-1	8270D	ND		88	12	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		88	13	ug/kg	1
Isophorone	78-59-1	8270D	ND		88	9.7	ug/kg	1
2-Methylnaphthalene	91-57-6	8270D	ND		88	13	ug/kg	1
2-Methylphenol	95-48-7	8270D	ND		88	7.9	ug/kg	1
3 & 4-Methylphenol	106-44-5	8270D	ND		170	16	ug/kg	1
Naphthalene	91-20-3	8270D	ND		88	13	ug/kg	1
2-Nitroaniline	88-74-4	8270D	ND		170	30	ug/kg	1
3-Nitroaniline	99-09-2	8270D	ND		170	51	ug/kg	1
4-Nitroaniline	100-01-6	8270D	ND		170	25	ug/kg	1
Nitrobenzene	98-95-3	8270D	ND		88	7.1	ug/kg	1
2-Nitrophenol	88-75-5	8270D	ND		170	24	ug/kg	1
4-Nitrophenol	100-02-7	8270D	ND		430	130	ug/kg	1
N-Nitrosodi-n-propylamine	621-64-7	8270D	ND		88	17	ug/kg	1
N-Nitrosodiphenylamine (Diphenylamine)	86-30-6	8270D	ND		88	11	ug/kg	1
Pentachlorophenol	87-86-5	8270D	ND		430	180	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		88	12	ug/kg	1
Phenol	108-95-2	8270D	ND		88	12	ug/kg	1
Pyrene	129-00-0	8270D	ND		88	17	ug/kg	1
2,4,5-Trichlorophenol	95-95-4	8270D	ND		88	12	ug/kg	1
2,4,6-Trichlorophenol	88-06-2	8270D	ND		88	13	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		51	33-102
2-Fluorophenol		75	28-104
Nitrobenzene-d5		61	22-109
Phenol-d5		60	27-103
Terphenyl-d14		62	41-120
2,4,6-Tribromophenol		63	30-117

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-014**
Description: **H18-SB14(011410)(3-4)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1450**
% Solids: **70.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2127	DLB		25504	8.59

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Acetone	**67-64-1**	**8260B**	**15**	**J**	**16**	**5.5**	**ug/kg**	**1**
Benzene	71-43-2	8260B	ND		4.1	0.91	ug/kg	1
Bromodichloromethane	75-27-4	8260B	ND		4.1	1.4	ug/kg	1
Bromoform	75-25-2	8260B	ND		4.1	0.58	ug/kg	1
Bromomethane (Methyl bromide)	74-83-9	8260B	ND		4.1	1.5	ug/kg	1
2-Butanone (MEK)	78-93-3	8260B	ND		8.2	2.0	ug/kg	1
Carbon disulfide	75-15-0	8260B	ND		4.1	1.1	ug/kg	1
Carbon tetrachloride	56-23-5	8260B	ND		4.1	1.5	ug/kg	1
Chlorobenzene	108-90-7	8260B	ND		4.1	1.4	ug/kg	1
Chloroethane	75-00-3	8260B	ND		4.1	1.1	ug/kg	1
Chloroform	67-66-3	8260B	ND		4.1	0.68	ug/kg	1
Chloromethane (Methyl chloride)	74-87-3	8260B	ND		4.1	0.82	ug/kg	1
Cyclohexane	110-82-7	8260B	ND		4.1	0.56	ug/kg	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	8260B	ND		4.1	1.2	ug/kg	1
Dibromochloromethane	124-48-1	8260B	ND		4.1	1.4	ug/kg	1
1,2-Dibromoethane (EDB)	106-93-4	8260B	ND		4.1	0.70	ug/kg	1
1,2-Dichlorobenzene	95-50-1	8260B	ND		4.1	1.4	ug/kg	1
1,3-Dichlorobenzene	541-73-1	8260B	ND		4.1	1.4	ug/kg	1
1,4-Dichlorobenzene	106-46-7	8260B	ND		4.1	1.4	ug/kg	1
Dichlorodifluoromethane	75-71-8	8260B	ND		4.1	1.3	ug/kg	1
1,1-Dichloroethane	75-34-3	8260B	ND		4.1	0.60	ug/kg	1
1,2-Dichloroethane	107-06-2	8260B	ND		4.1	0.82	ug/kg	1
1,1-Dichloroethene	75-35-4	8260B	ND		4.1	1.4	ug/kg	1
cis-1,2-Dichloroethene	156-59-2	8260B	ND		4.1	0.63	ug/kg	1
trans-1,2-Dichloroethene	156-60-5	8260B	ND		4.1	1.2	ug/kg	1
1,2-Dichloropropane	78-87-5	8260B	ND		4.1	0.75	ug/kg	1
cis-1,3-Dichloropropene	10061-01-5	8260B	ND		4.1	0.56	ug/kg	1
trans-1,3-Dichloropropene	10061-02-6	8260B	ND		4.1	0.68	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		4.1	1.4	ug/kg	1
2-Hexanone	591-78-6	8260B	ND		8.2	1.1	ug/kg	1
Isopropylbenzene	98-82-8	8260B	ND		4.1	0.66	ug/kg	1
Methyl acetate	79-20-9	8260B	ND		4.1	0.55	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		4.1	0.33	ug/kg	1
4-Methyl-2-pentanone	108-10-1	8260B	ND		8.2	1.2	ug/kg	1
Methylcyclohexane	108-87-2	8260B	ND		4.1	0.50	ug/kg	1
Methylene chloride	75-09-2	8260B	ND		4.1	2.1	ug/kg	1
Styrene	100-42-5	8260B	ND		4.1	0.91	ug/kg	1
1,1,2,2-Tetrachloroethane	79-34-5	8260B	ND		4.1	0.39	ug/kg	1
Tetrachloroethene	127-18-4	8260B	ND		4.1	1.9	ug/kg	1
Toluene	108-88-3	8260B	ND		4.1	1.4	ug/kg	1
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	8260B	ND		4.1	1.7	ug/kg	1
1,2,4-Trichlorobenzene	120-82-1	8260B	ND		4.1	1.4	ug/kg	1
1,1,1-Trichloroethane	71-55-6	8260B	ND		4.1	0.70	ug/kg	1
1,1,2-Trichloroethane	79-00-5	8260B	ND		4.1	0.65	ug/kg	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time

Volatile Organic Compounds by GC/MS

Client: **ARCADIS U.S., Inc.**
Laboratory ID: **LA15023-014**
Description: **H18-SB14(011410)(3-4)**
Matrix: **Solid**
Date Sampled: **01/14/2010 1450**
% Solids: **70.7** **01/15/2010 1943**
Date Received: **01/15/2010**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	01/18/2010 2127	DLB		25504	8.59

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Trichloroethene	79-01-6	8260B	ND		4.1	1.6	ug/kg	1
Trichlorofluoromethane	75-69-4	8260B	ND		4.1	1.2	ug/kg	1
Vinyl chloride	75-01-4	8260B	ND		4.1	0.71	ug/kg	1
Xylenes (total)	1330-20-7	8260B	ND		4.1	2.4	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	53-142
Bromofluorobenzene		113	47-138
Toluene-d8		103	68-124

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"
N = Recovery is out of criteria
H = Out of holding time