REMEDIAL ACTION PLAN
PHASE I
FORMER ATHENS TANK FARM
Willowbrook, Los Angeles County, California

Prepared by:

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Kleinfelder Project Number 124094

June 15, 2012

Prepared on behalf of:

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WILLOWBROOK, LOS ANGELES COUNTY, CALIFORNIA

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CALIFORNIA WATER CODE
SECTION 13267 STATEMENT

I, Dok Choe, do hereby declare, under penalty of perjury under the laws of the State of California, that I am an EMES Project Manager for ExxonMobil Environmental Services Company and that I am authorized to attest to the veracity of the information contained in this **REMEDIAL ACTION PLAN PHASE I**, dated June 15, 2012, and that the information contained therein is true and correct. This declaration was executed at 12851 East 166th Street, Cerritos, California, on June 15, 2012.

Dok Choe
EMES Project Manager
ExxonMobil Environmental Services Company

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ACRONYMS

APC	Air pollution control
ARAR	Applicable of relevant and appropriate requirement
ART	Air Respiration Test
AST	Aboveground storage tank
ASTM	American Society for Testing and Materials
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, xylenes
Cal/EPA	State of California Environmental Protection Agency
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfm	Cubic feet per minute
CGS	California Geological Survey
CHHSL	California Human Health Screening Level
Cm/s	Centimeters per second
COPC	Constituent of potential concern
COC	Constituent of concern
CPT	Cone penetrometer test
CSM	Conceptual Site Model
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EC	Engineering Control
EMES	ExxonMobil Environmental Services
EMJRP	Earvin Magic Johnson Regional Park
EPA	Environmental Protection Agency
ERH	Electro-resistive heating
FEMA	Federal Emergency Management Agency
ft/ft	Feet per foot
GSWater	Golden State Water Company
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HHRA	Human Health Risk Assessment
HHSE	Human health screening evaluation
HI	Hazard Index
HSC	Health and Safety Code
IC	Institutional Control
ICE	Internal combustion engine
ILCR	Incremental Lifetime Cancer Risk
ISCO	*In-situ* Chemical Oxidation
ITRC	Interstate Technology and Regulatory Council
Kleinfelder	Kleinfelder West, Inc.
LACDPW	Los Angeles County Department of Public Works
LADRP	Los Angeles Department of Regional Planning
LADWP	City of Los Angeles, Department of Water and Power
LARWQCB	Los Angeles Regional Water Quality Control Board

ACRONYMS (Continued)

LUC	Land Use Control
mg/L	Milligrams per Liter
mph	Miles per hour
$\mu g/m^3$	Micrograms per cubic meter
msl	Mean sea level
No.	Number
NPDES	National Pollutant Discharge Elimination System
OEHHA	Office of Environmental Health Hazard Assessment
OD	Outside diameter
O&M	Operation and Maintenance
OEHHA	Office of Environmental Health Hazard Assessment
PAH	Polycyclic aromatic hydrocarbon
PID	Photo-ionization detector
ppmv	Parts per million by volume
PVC	Polyvinyl chloride
RACER	Remedial Action Cost Engineering and Requirements
RAO	Remedial Action Objective
RAP	Remedial Action Plan Phase I
RAWP	Remedial Action Work Plan
ROI	Radius of Influence
SCAQMD	South Coast Air Quality Management District
Site	Former Athens Tank Farm
SVE	Soil Vapor Extraction
SVOCs	Semi-volatile organic compounds
SWPPP	Stormwater pollution prevention plan
TPH	Total petroleum hydrocarbons
UHC	Ujima Housing Corporation
USA	Underground Service Alert
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
UVA	Ujima Village Apartments
VFD	Variable frequency drive
VOC	Volatile organic compound

EXECUTIVE SUMMARY

On behalf of ExxonMobil Environmental Services Company (EMES), Kleinfelder West, Inc. (Kleinfelder) has prepared this Remedial Action Plan (RAP) Phase I to address impacted soils and soil vapors within the former Athens Tank Farm (Site) as requested by the Los Angeles Regional Water Quality Control Board (LARWQCB) in its letter dated December 14, 2011.

This RAP focuses on soil and soil vapor conditions with the specific objective of mitigating methane and petroleum hydrocarbon volatile organic compounds (VOCs), including benzene, present in shallow soil vapor beneath the Site. This RAP addresses soil and soil vapor concentrations with the specific objective of mitigating methane and petroleum hydrocarbon VOCs, including benzene, present in shallow soil vapor beneath the Site. In addition, the RAP provides for implementation of a remedial technology to mitigate off-Site migration of soil vapor and to begin to address soil vapor in adjacent off-Site areas. The remedial infrastructure proposed as part of the RAP has been developed to support incorporation of potential future off-Site remedy components that may be required, based upon the results of the initial phase of the RAP, ongoing off-Site investigations and pilot testing, and consultation with LARWQCB.

BACKGROUND

Operations at the Site began in 1924 and ceased in 1962. The tank farm aboveground storage tanks (ASTs), crude oil reservoirs, and pipeline pumping station were removed in 1963; the absorption plant was removed in 1964; and the property was sold to De Lay Land Company in July 1965 (Kleinfelder, 2007). The property remained vacant until UVA was developed in 1971. The land now occupied by Earvin Magic Johnson Regional Park (EMJRP) was developed in the early to mid-1980s.

During its operational life, the Site consisted of four major functional components: (1) Twenty-two 80,000 barrel steel ASTs; (2) Two concrete-lined crude oil reservoirs with a combined capacity of 1.8 million barrels; (3) A pipeline pumping station; and (4) an absorption plant.

Environmental investigations at the Site by others began in the 1990's. On-going investigations by EMES began in 2007. Environmental investigations by EMES include outdoor and indoor air, soil vapor, shallow soil, deep soil, shallow groundwater and deep groundwater (Section 2.4). Additionally, EMES has performed on-Site soil vapor extraction and air respiration pilot testing activities, and bench scale laboratory tests for *in-situ* chemical oxidation and stabilization/fixation to evaluate the feasibility of these remedial technologies for implementation at the Site (Section 2.7).

CONSTITUENTS OF POTENTIAL CONCERN

Constituents of potential concern identified in on-Site soil and soil vapor investigations that may be related to historical operations are petroleum hydrocarbons, including naphthalene and other polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene and xylenes (BTEX), and other petroleum VOCs. In addition, methane in soil gas, which may be generated by the anaerobic biodegradation of petroleum hydrocarbons, is considered a constituent of potential concern. Based on the results of human health risk assessments (HHRA) for the Ujima Village Apartments (UVA), Ujima Housing Corporation (UHC), and EMJRP properties (Kleinfelder, 2009a, 2009b, 2010d, 2010e, 2011b), these constituents of potential concern do not affect indoor air quality or pose a health hazard and/or they are consistent with the range of background concentrations reported in Southern California and do not exceed levels that trigger further investigation or remediation. Site-wide metals were also evaluated during the HHRA as chemicals of potential concern. The metals concentrations in surficial and shallow soil samples did not, in the aggregate, pose an incremental cancer risk (Kleinfelder, 2011b) and are interpreted to be consistent with the range of background concentrations reported in Southern California.

As noted above, methane is not considered a health risk; however, it is considered a constituent of concern (COC) due to potential safety hazards associated with asphyxia, flammability, and ignitability.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) presented in this RAP have been developed based on current on-Site soil and soil vapor environmental conditions and present uses of UVA and UHC as residential properties and EMJRP as a public park (Section 3). RAOs for the Site are to prevent or minimize potential exposure to concentrations of COCs exceeding remedial goals in surficial and shallow soil, and ambient air. RAOs associated with on-going groundwater and off-Site investigations, as necessary, will be developed based on the results of those investigations, in consultation with LARWQCB, and submitted under separate cover.

REMEDIAL GOALS

Investigations to date have identified methane concentrations in shallow soil gas sampling locations within the EMJRP, UVA, and UHC properties, as well as off-Site areas where investigations remain ongoing, that exceed the 5,000 part per million by volume (ppmv) screening level established by the Department of Toxic Substances Control (DTSC) Advisory on Methane Assessment and Common Remedies at School Sites (2005). This DTSC screening level applies to methane that accumulates or has the potential to accumulate in the subsurface immediately (5 feet below ground surface (bgs)) beneath the footprint of an existing building or proposed building and building improvements.

The remedial goal for residential and public park land use is to mitigate methane in the shallow soil gas to the 5,000 ppmv screening level (at 5 feet bgs) standard described above, which will also concurrently mitigate VOCs, including benzene, in the shallow subsurface and reduce levels of methane and VOCs in deeper soils that may contribute to methane and VOCs in the shallow subsurface through vertical migration or anaerobic biodegradation of the hydrocarbons at depth. Overall, this goal will be protective of current and future receptors identified in the risk assessments and will improve soil quality both near surface and for deeper soils.

Although not interpreted to originate with historic Site activities, nine locations where the LARWQCB asked for further assessment and delineation of lead-affected shallow soil will be excavated and disposed at an appropriately licensed facility.

REMEDIAL TECHNOLOGIES AND SCREENING

The technologies evaluated for applicability to achieve the remedial goals for the COC and media being addressed by this RAP included excavation and disposal, Soil Vapor Extraction (SVE), bioventing, *in-situ* chemical oxidation (ISCO), and solidification/fixation. The evaluations included field pilot testing of SVE and bioventing at multiple locations as well as laboratory bench-scale testing of ISCO and solidification.

Based upon the results of field pilot testing and laboratory bench-scale testing, as well as a screening evaluation of the applicability of different technologies to successfully and expeditiously mitigate methane in shallow soil gas at the Site and reduce levels of methane in deeper soils, SVE was selected as the most appropriate remedial technology. Although on-Site VOC concentrations, including benzene, do not pose an incremental cancer or non-cancer risk (Kleinfelder, 2011b), SVE provides the benefits of both direct extraction and destruction of VOCs and enhanced *in-situ* aerobic biodegradation of petroleum hydrocarbons. Additionally, while interpreted to be consistent with ambient or regional concentrations, shallow soils at nine locations distributed across UVA, UHC, and EMJRP will be excavated to remove lead-affected soils.

For this Site, with an RAO for methane, a gas under ambient conditions in a comparatively permeable vadose zone, and for volatile organic compounds, including benzene, the preferred presumptive remedy is SVE, which is consistent with United States Environmental Protection Agency (EPA) guidance (1993). Pilot testing at the Site supports the presumption that SVE can effectively achieve the remediation goal for methane of 5,000 ppmv at 5 feet bgs, mitigate VOCs, including benzene, in the shallow subsurface and also reduce levels of VOCs and methane in deeper soils that may directly contribute to methane and VOCs in the shallow subsurface through vertical migration and/or may indirectly contribute to methane through the anaerobic biodegradation of hydrocarbons at depth.

RECOMMENDED REMEDIAL ACTION

The recommended remedial action consists of the following components:

- SVE Mitigation of Methane and VOCs as described above.
- Focused Excavation - Soil will be removed from nine locations on Site and transported to a permitted off-Site treatment or disposal facility.

The SVE system will be implemented in a phased approach. The first phase (Phase I) proposes fifteen SVE wells along Clovis Avenue and the southeast boundary of EMJRP while the demolition of the UVA property is completed. Phase I will:

1. Achieve expedited implementation of remedial actions at the site.

2. Reduce the potential for off-Site migration.
3. Potentially begin to achieve methane and VOC removal proximal to off-Site residences.
4. Provide valuable field performance data that can be applied to the second phase (Phase II), and
5. Based on performance monitoring of Phase I of SVE, as well as the results of on-going off-Site SVE pilot testing, and consultation with LARWQCB, allow the integration of additional on-site or off-Site SVE extraction wells into the Phase I SVE well field.

The Phase II of SVE system will be designed and implemented with expansion to the UVA and UHC properties (upon completion of UVA demolition) based on the Phase I operational performance and additional investigations and feasibility activities which are ongoing. Similarly constructed SVE wells are proposed for Phase II, however, based on the Phase I SVE system operational performance, the layout and configuration of the SVE wells may be modified.

A Remedial Action Work Plan (RAWP) detailing the implementation details for Phase I of the work will be submitted to the LARWQCB. Subject to LARWQCB approval of the RAWP, ExxonMobil will begin securing necessary permits, negotiating access agreements with property owners, and ordering the material necessary for Phase I of SVE remediation. Contingent on obtaining permits and access agreements, installation of the proposed Phase I SVE system could begin in the fourth quarter of 2012. It is anticipated that soil excavation at the nine proposed locations will precede construction of the Phase I SVE.

1.0 INTRODUCTION

On behalf of ExxonMobil Environmental Services Company (EMES), Kleinfelder West, Inc. (Kleinfelder) has prepared this Remedial Action Plan (RAP) Phase I to address shallow soil vapor within the former Athens Tank Farm (Site) that contain concentrations of methane and petroleum hydrocarbon volatile organic compounds (VOCs), including benzene, above remediation goals. Additionally, this RAP includes focused removal of surficial soil at discrete locations identified during previous Site investigations and reported to Los Angeles Regional Water Quality Control Board (LARWQCB). LARWQCB-approved investigations of groundwater and off-Site soil and soil vapor are ongoing (Kleinfelder, 2011n). A RAP will be prepared to address groundwater and off-Site soil and soil vapor, as appropriate, and submitted under separate cover to LARWQCB following completion of those investigations.

This RAP has been prepared in response to LARWQCB direction that a RAP be submitted by April 13, 2012 (LARWQCB, 2011). On behalf of EMES, Kleinfelder requested an extension of the RAP submittal date to June 15, 2012 (Kleinfelder, 2011q); which was approved by LARWQCB (LARWQCB, 2012). The referenced LARWQCB correspondence is included in Appendix A.

Based on the findings reported in Human Health Screening Evaluations (HHSE) (Kleinfelder, 2008a and 2009b), and Human Health Risk Assessments (HHRA) performed at the Site (Kleinfelder, 2011b), while some constituents of potential concern (COPCs) exceed shallow soil default regulatory screening levels, COPCs are present, in soil and soil vapor, at concentrations that are not indicative of an incremental increased cancer risk or are consistent with the range of background concentrations reported in Southern California (Kleinfelder, 2011b).

1.1 REGULATORY FRAMEWORK

This RAP has been prepared generally consistent with:

- California Health and Safety Code (HSC), Section 25356
- Department of Toxic Substances Control (DTSC) Guidance Document No. EO-95-007-PP, *Remedial Action Plan (RAP) Policy* (DTSC, 1995).
- State Water Board Resolution 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges* under Water Code Section 13304

- US EPA OSWER Directive 9355.0-48FS, Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with Volatile Organic Compounds in Soils (EPA, 1993).

1.2 OBJECTIVES

The purpose of this RAP is to comply with the provisions of California HSC, Section 25356.1 and to define the remedial action alternatives, evaluation process, and selected remedial alternative(s) to address constituent of concerns (COCs) in soil and soil vapor on Site. The RAP has been developed to achieve the following general objectives to select and implement the recommended remedial action at the Site:

1. Develop remedial action objectives (RAOs);
2. Identify and screen remedial technologies;
3. Propose remedial actions;
4. Propose a conceptual remedial design and performance monitoring plan; and
5. Provide a preliminary schedule for implementation of proposed remedial actions.

The Site-specific objectives of this RAP are to:

1. Reduce the potential for off-Site migration;
2. Potentially begin to achieve methane and VOC removal proximal to off-Site residences;
3. Provide field performance data that can be applied to the Phase II Soil Vapor Extraction (SVE) design; and
4. Based on performance monitoring of the Phase I of SVE, as well as the results of ongoing off-Site SVE pilot testing, and consultation with LARWQCB, integrate additional on-Site and off-Site SVE wells, as applicable, into the Phase I SVE system.

1.3 REPORT ORGANIZATION

The remainder of this RAP is organized as follows:

Section 2 presents a summary discussion of historical and current land use, geology, hydrogeology, and Site assessment findings from previous Site investigations.

Section 3 identifies RAOs and target remedial goal for soil and soil vapor within the Site.

Section 4 identifies, evaluates, and screens relevant remedial technologies and alternatives.

Section 5 describes the proposed remedial actions.

Section 6 provides a conceptual remedial design and a summary of the reporting and overall implementation schedule.

Section 7 presents the limitations for the preparation of this RAP.

Section 8 identifies references cited throughout this RAP.

2.0 SITE DESCRIPTION AND BACKGROUND

This section presents a Site description and background information regarding geographic parameters, geology, hydrogeology, site history, and previous environmental site assessments. Summaries of the findings of human health risk assessments, pilot testing, and laboratory bench testing of possible remediation technologies are also presented in this section.

2.1 GEOGRAPHIC PARAMETERS

The former Athens Tank Farm property was a 122-acre parcel located in Willowbrook, an unincorporated area within the County of Los Angeles, California (Plate 2.1). The Site is bounded by Avalon Boulevard and a single-family residential development on the west, El Segundo Boulevard on the south, by 120th Street on the north, and to the east by Clovis Avenue and a single-family residential development (Plate 2.2). The Site encompasses the Earvin Magic Johnson Regional Park (EMJRP), the Ujima Village Apartment (UVA) complex, and Ujima Housing Corporation (UHC) properties (Plate 2.3).

2.1.1. Topographic Setting

The United States Geological Survey (USGS) Inglewood, California 7.5-Minute Series, Topographic Quadrangle Map documents surface elevations at the Site range from 95 to 120 feet above mean sea level (msl) (USGS, 1981) (Plates 2.4 and 2.5) and surface topography slopes to the east approximately 0.01 feet per foot (ft/ft). Artificial topographic features at EMJRP include landscaped hummocks and mounds with approximately 3 to 7 feet of vertical relief. Off-Site to the east, the surface topography continues to slope gently to the east toward Compton Creek at a similar gradient of approximately 0.01 ft/ft.

2.1.2. Hydrologic Setting

Surface water runoff at the Site is variable due to the landscaped terrain features and the locations of two artificial lakes. The Site lies within a mapped Federal Emergency Management Agency (FEMA) Flood Hazard Zone X, which designates “areas determined to be outside the 500-year flood-plain” (FEMA, 2008). The Site does not fall within an inundation hazard zone, according to the Los Angeles County Department of

Regional Planning (LADRP, 1990). Compton Creek, which runs northwest to southeast, is located approximately 0.3 mile east of the Site.

There are two artificial lakes located at EMJRP, which are each approximately five acres in size. They are lined with a geomembrane (STO Design Group, Inc., 2001) and there is a small man-made island within each of the lakes. Water used to maintain a consistent level in the lakes is supplied by Golden State Water Company (GSWater, 1984) (Plate 2.3).

2.2 GEOLOGY AND HYDROGEOLOGY

2.2.1. Site Geology

The Site is located within the Los Angeles Basin, which in turn is located near the northern edge of the Peninsular Ranges geomorphic province. Structurally, the Site is located near the eastern margin of the Newport-Inglewood uplift and the northeasterly limb of the Rosecrans Anticline (Plate 2.4). Surface deposits at the Site were mapped as Upper Pleistocene Lakewood Formation by the California Department of Water Resources (DWR) (1961) and as Quaternary old alluvial flood plain deposits by the California Geological Survey (CGS) (1999) (Plates 2.4 and 2.5, respectively). The Lakewood Formation consists of unconsolidated to semi-consolidated marine and continental gravel, sand, sandy silt, silt, and clay with shale pebbles. The Lakewood Formation unconformably overlies, with increasing depth, the Lower Pleistocene San Pedro Formation and Pico Formation. These formations are part of a greater than 20,000-foot thick sequence of non-marine and marine sedimentary rocks that fill the Los Angeles Basin. In the vicinity of the Site, the Lakewood and San Pedro Formations dip to the east-northeast (DWR, 1961).

Interpretation of soil types at the Site is based on geologic logging of soil samples as well as cone penetrometer test (CPT) results. CPT data include continuous (relative to depth) measurement of penetration stress, sleeve friction, fluid pore pressure, and friction ratio. These data are used to interpret soil behavior type, based on the charts developed by Robertson (1990). Soils encountered during prior investigations (Kleinfelder, 2008a, 2008b, 2009b, 2010b, 2011d, 2011e, and 2011g) consist primarily of silt with interbedded clay, sand, silty sand, sandy silt, and sand with gravel to depths ranging from ground surface to approximately 170 feet below ground surface (bgs).

Subsurface soils are interpreted to be consistent with the Lakewood Formation (Plate 2.5), as described by DWR (1961).

The May 31, 2010, *Site Assessment Report* (Kleinfelder, 2010b) presented a subsurface lithologic model of the Site using CPT penetration stress values, with boring-log information for confirmation. The lithologic interpretation was developed by defining the site based on the two predominant soil textures encountered on-site, fine- and coarse-grained. This required selection of a penetration-stress value with which to define the fine / coarse threshold. This method was tested and refined by comparison to the lithologic interpretations by geologists licensed in the state of California. The interpreted lithology shown on the cross sections is consistent with the reported condition of sediments in the Lakewood Formation as described in Section 2.2.2 (DWR, 1961), comprising complex interbedded finer- and coarser-grained sediments characteristic of anastomosing stream channels interbedded with shallow-marine sediments. In addition, bedding on the east-west trending cross sections suggests the eastward-dipping structural trend of the Rosecrans Anticline that is mapped in this area (DWR, 1961).

The lithologic model, as presented in the May 31, 2010, *Site Assessment Report* (Kleinfelder, 2010b) shows discontinuous layers of coarser-grained sediments within the finer-grained sediments at the Site. Coarser-grained sediments interpreted to be locally continuous layers are present at depths of approximately 8 to 20 feet bgs and 40 to 50 feet bgs in the cross-section running north-south along the eastern edge of the site. These coarser-grained layers are approximately 5 to 10 feet thick. A continuous coarser-grained sediment layer is also present at depths of approximately 8 to 20 feet bgs in the cross-section running east-west along the southern edge of the site. The lithologic model indicates portions of the site where coarser-grained sediments make up more than half of the vertical profile, particularly in the southern portion of the Site near the intersection of Wadsworth Avenue and El Segundo Boulevard at depths of 40 feet bgs and greater and in the northeast portion of the Site at depths of approximately 8 to 50 feet bgs.

2.2.2. Hydrogeology

The Site is located in the Central Groundwater Basin of the Los Angeles Coastal Plain (Central Basin). The Central Basin is bounded to the north by the Hollywood Basin, and the Elysian, Repetto, Merced, and Puente Hills Basins, to the east by the Los Angeles

County/Orange County line, and to the south and west by the Newport-Inglewood uplift. Aquifers beneath the area, in descending stratigraphic order, include the Exposition, Gage, Lynwood, Silverado, and Sunnyside Aquifers (DWR, 1961).

The regional hydrogeologic cross section presented by the DWR suggests that, in the vicinity of the Site, the Exposition Aquifer is present between depths of approximately 55 and 110 feet bgs (DWR, 1961). The bottom of the Exposition Aquifer was not identified, although it is expected to be encountered between 170 and 200 feet bgs, based on data from groundwater monitoring well “Willowbrook 1”, which is located at the northeast corner of the EMJRP in the northern parking lot (Plate 2.2). (Kleinfelder, 2010b, 2011f, and 2011i).

Groundwater measured on April 9, 2012, in the Site and off-Site monitoring wells ranged in depth from approximately 38.40 to 47.06 feet bgs (elevations of approximately 52.30 to 62.66 feet above msl) in the shallow water-bearing zone. Groundwater in the deeper water-bearing zone ranged from approximately 105.81 to 129.26 feet bgs (elevations of approximately 7.37 to 23.24 feet below msl) (unpublished field data, April 9, 2012, to be included in *Second Quarter 2012 Groundwater Monitoring Report* due to LARWQCB on July 15, 2012).

2.3 HISTORICAL AND PRESENT LAND USE

2.3.1. Historical Property Use

General Petroleum Company of California began operations at Athens Tank Farm in 1924. In 1926, Socony Oil purchased the properties of General Petroleum Company of California. Improvements at the site included twenty-two 80,000 barrel (a “barrel” is defined as 42-gallons of liquid) steel, above ground storage tanks (ASTs); two concrete-lined crude oil reservoirs with a combined capacity of 1.8 million barrels; a pipeline pumping station (a portion of which was leased to Shell Oil in 1953) (Shell Oil Co., 1953); and an absorption plant (Kleinfelder, 2007).

In 1962, Mobil Oil Corporation (Mobil, successor to Socony Oil) ceased operations at Athens Tank Farm, and began phasing out operations in preparation for divesting the property. The tank farm ASTs, crude oil reservoirs, and pipeline pumping station were removed in 1963. The absorption plant was removed in 1964, and the Athens Tank Farm property was vacant by 1965. The Athens Tank Farm property was subsequently purchased from Mobil by De Lay Land Company in July 1965 (Kleinfelder, 2007). The property remained vacant until UVA was developed in 1971; the land now occupied by EMJRP was developed in the early to mid-1980s.

2.3.2. Present Property Use and Site Description

The property that contained the Site is now comprised of the EMJRP, UVA, and UHC properties (Plate 2.3). The area east of the Site consists of single-family residential developments, with some commercial properties that are generally located along the major thoroughfares that traverse the area (e.g., El Segundo Boulevard, Avalon Boulevard, Central Avenue, etc.). The properties comprising the Site are described in the following paragraphs.

EMJRP is a public park that surrounds the UVA and UHC properties to the north, west and south (Plate 2.3). The park contains two artificial lakes that are each approximately five acres in area with an approximate perimeter of 0.5 miles. There is a small man-made island within each of the artificial lakes. The grassy areas of the park are currently undeveloped and are accessible to the public for recreational use. A power-line corridor owned by the City of Los Angeles, Department of Water and Power (LADWP) transects the western portion of EMJRP (Plate 2.3).

The vacant UVA complex consists of 24 residential buildings containing 300 apartment units and seven non-residential buildings (management office, maintenance/storage areas, community buildings, etc.).

UHC is currently developed with four modular buildings, two of which are utilized by a day care facility. UHC also owns an approximately triangular-shaped parcel of land located at the northeast intersection of El Segundo Boulevard and Clovis Avenue (Plate 2.3). This vacant parcel of land, which was part of the former Athens Tank Farm, is located adjacent to the southeast corner of EMJRP.

2.4 SUMMARY OF ENVIRONMENTAL SITE ASSESSMENTS

Environmental site assessments, and investigations at UVA and UHC properties were conducted by others beginning in the 1990's (Rincon Consultants, Inc., 2006a and 2006b). Environmental investigations and human health screening evaluations/risk assessments of EMJRP, UVA, and UHC were initiated by ExxonMobil in 2007 and are described in the following documents:

- *Evaluation of Site History and Potential Contaminant Sources* (Kleinfelder, 2007)
- *Air Quality Survey and Limited Subsurface Investigation* (Kleinfelder, 2008a)
- *Preliminary Shallow Soil Investigation Report* (Kleinfelder, 2008b)
- *Preliminary Multimedia Lake Investigation Report* (Kleinfelder, 2008c)
- *Initial Site Assessment Report* (Kleinfelder, 2009a)
- *Revised Human Health Screening Evaluation* (Kleinfelder, 2009b)
- Groundwater Monitoring Well Installation Reports (Kleinfelder, 2010a and 2011e)
- Human Health Risk Assessments (Kleinfelder, 2010d; 2010e; 2011b)
- *Interim Remedial Action Plan* (Kleinfelder, 2011c)
- *Methane Hazard Evaluation Report* (Kleinfelder, 2011d)
- *Investigation of Ambient Metals Concentrations* (Kleinfelder, 2011h and 2012c)
- *Shallow Soil and Soil Vapor Assessment Report* (Kleinfelder, 2011j)
- Soil Vapor Extraction Pilot Test Reports (Kleinfelder, 2011m and 2011o)
- *Human Health Screening Evaluation of Potential Vapor Intrusion* (Kleinfelder, 2011p)
- *Supplemental Off-Site Assessment Report* (Kleinfelder, 2012b)
- 2010 Groundwater Monitoring Reports (Kleinfelder, 2010c, 2010f, and 2011a)
- 2011 Groundwater Monitoring Reports (Kleinfelder, 2011f, 2011i, 2011l, and 2012a)
- 2012 Groundwater Monitoring Reports (Kleinfelder, 2012e)

2.5 RISK ASSESSMENT

HHSEs (Kleinfelder, 2008a and 2009b) that incorporated initial site investigation data were prepared and submitted to LARWQCB in 2008 and 2009. A Site-wide HHRA that integrated the HHSEs, together with the soil and soil vapor data was prepared for the Site in 2010 (Kleinfelder, 2010d), an update of which was submitted to LARWQCB in February 2011 (Kleinfelder, 2011b). A summary of the HHRA data and conclusions are presented in the following subsections.

2.5.1. Potential Sources of Chemicals

The former Athens Tank Farm comprised approximately 122 acres, and during its operational life consisted of four major functional components, which are discussed in more detail in the following paragraphs.

(1) ABOVE GROUND STORAGE TANKS

The facility had 22 ASTs (Plate 2.3), reportedly constructed of steel, each having a volume of approximately 80,000 barrels, and they were used to store gasoline, natural gasoline, diesel fuel, crude oil, and fuel oil (Kleinfelder, 2007). Each of the tanks was surrounded by an earthen levee.

The primary sources of the COPCs include the ASTs and their associated piping. The specific compounds of potential concern include ethylbenzene and xylenes (BTEX), organic lead, and polycyclic aromatic hydrocarbons (PAHs) (Kleinfelder, 2011b).

(2) CRUDE OIL STORAGE RESERVOIRS

Crude oil was stored in two reservoirs located in the eastern portion of the Site (Plate 2.3). The reservoirs and the areas inside the berms appear to have occupied approximately 30 acres of the property. The reservoirs were constructed of earthen slopes, with a concrete lining (Kleinfelder, 2007). The reservoirs were designated No. 6 and No. 7. Reservoir No. 6 had a 600,000 barrel capacity and reservoir number (No.) 7 had a 1,186,800 barrel capacity. The potential sources of petroleum hydrocarbons would have been the reservoirs themselves and their associated pipelines. Given the variability of crude oil composition, the primary COPCs include BTEX and PAHs (Kleinfelder, 2011b).

(3) ABSORPTION PLANT

The absorption plant was located west of crude oil storage reservoir No. 6, in the central portion of the Site (Kleinfelder, 2007) (Plate 2.3). The absorption plant processed natural gasoline to remove propane and butane. Natural gasoline is a mixture of mostly pentanes and heavier hydrocarbons that are separated from extracted natural gas.

The COPCs for the absorption plant are components of natural gasoline. As natural gasoline is derived from oil and gas wells, organic lead is not expected to be associated with the absorption plant. The specific COPCs for the absorption plant are the BTEX compounds (Kleinfelder, 2011b).

(4) PIPELINE STATION

The pipeline station was the portion of the facility that initially included pumps and five small ASTs. Two of the ASTs were described as gasoline tanks, each with a capacity of 5,000 barrels (Kleinfelder, 2007). Two other of these five tanks were described as "steel foamite tanks on a concrete base" each having a capacity of approximately 3,200 barrels. It is interpreted that the foamite stored in these tanks was fire suppression foam. The fifth AST was a water tank with a capacity of 500 barrels (Kleinfelder, 2007). This tank was fed by the on-Site groundwater supply well, and was used for the fire suppression system. A transformer used for electrical service to the former Athens Tank Farm was also located in the pipeline station.

The pipeline station conveyed petroleum products handled by the former Athens Tank Farm. The potential sources of petroleum hydrocarbons include the ASTs, pumps, and associated pipelines. Sources of COPCs include gasoline, natural gasoline, diesel, fuel oil and crude oil. The specific COPCs are primarily BTEX, organic lead, and PAHs (Kleinfelder, 2011b).

2.5.2. Constituents of Potential Concern

COPCs were initially identified based upon historical Site activities and corroborated or eliminated from consideration during the progression of investigations. COPCs addressed in the HHRA (Kleinfelder, 2011b) were identified separately for each media of concern (e.g., shallow soil, ambient air, groundwater, and other) and organized by the potentially affected receptor (e.g., residents, park workers, and park visitors). Constituents that may be related to historical operations at the Site are petroleum hydrocarbons, including naphthalene and other PAHs, benzene, toluene, BTEX, and other petroleum-related VOCs and semi-volatile organic compounds (SVOCs) and organic lead. In addition methane in soil gas, which may be generated by the anaerobic biodegradation of petroleum hydrocarbons, is considered a COPC. Methane is not considered a health risk, but is considered a COPC due to potential safety hazards associated with asphyxia, flammability, and ignitability.

These were compounds identified in on-Site soil and soil vapor investigations (Kleinfelder, 2008a, 2008b, 2009a, 2010b, and 2011e). In addition, LARWQCB-directed evaluations of metals concentrations associated with the Site in comparison to published investigations resulted in the conclusion that metals distributions in soil at the

Site likely reflects metals distributions observed regionally and in other urban areas of California (Kleinfelder, 2012c). The following discussions present a summary of potentially affected media on Site.

SHALLOW SOIL CONSTITUENTS OF POTENTIAL CONCERN:

COPCs reported in surficial soil (0 to 4 feet bgs) and shallow soil (0 to 10 feet bgs) were addressed for potential direct contact by six receptor groups, including: (1) park maintenance workers; (2) park construction workers; (3) Site-wide park visitors; (4) sports field park visitors; (5) (proposed) basketball court area visitors; and (6) residents of Ujima Village, and daycare and school students (Kleinfelder, 2011b). Table 2.1 presents the constituents that were evaluated as shallow soil COCs in the HHRA.

AMBIENT AIR CONSTITUENTS OF POTENTIAL CONCERN:

Constituents that were detected in media (soil, groundwater) that could serve as sources of COPCs in ambient air were identified as ambient air COPCs. Media that may serve as a source of volatile and non-volatile COPCs in ambient air include soil vapor (volatile COPCs) and surficial and shallow soil (non-volatile COPCs). Volatile COPCs in ambient air were identified from those constituents detected in soil vapor samples collected within five feet of the ground surface. Table 2.2 presents the constituents that were evaluated as ambient air COPCs in the HHRA based upon soil vapor data.

GROUNDWATER CONSTITUENTS OF POTENTIAL CONCERN:

Water for domestic (potable) purposes at the Site is supplied by the Golden State Water Company from sources outside the area potentially affected by Site operations. Therefore, groundwater is not an exposure pathway for the purposes of risk assessment (Kleinfelder, 2011b) and is not addressed in this RAP.

CONSTITUENTS OF POTENTIAL CONCERN IN OTHER MEDIA

Constituents detected in surface water, sediments, and fish tissue from the artificial lakes at EMJRP were used in the risk evaluations. The conclusion of the HHRA was that the presence of the COPCs in these other media was unrelated to Site operations (Kleinfelder, 2011b) and are not addressed in this RAP.

2.6 RECEPTORS AND EXPOSURE PATHWAY ANALYSIS

Potential exposure pathways and receptors were evaluated in the HHRA (Kleinfelder, 2011b) for the UVA, UHC, and EMJRP, including the proposed sports improvement areas and artificial lakes at the Site (Kleinfelder, 2008a and 2009b). A Conceptual Site Model (CSM) that visually illustrates the exposure pathways has been prepared for the Site (Plate 2.6); in summary, exposure pathways include:

- Direct contact with soil COPCs through ingestion, dermal contact, and inhalation of dust; and, indirect contact through inhalation of vapors in indoor and ambient air by occupants of the UVA and UHC properties;
- Direct contact with soil COPCs through ingestion, dermal contact, and inhalation of dust; and, indirect contact through inhalation of vapors in ambient air by park maintenance workers, park construction workers, and visitors to the proposed sports improvement areas (sports fields and basketball courts) and remainder of the park; and,
- Consumption of fish caught by recreational fishermen from the artificial surface water impoundments. This exposure pathway is not associated with methane or petroleum hydrocarbon VOCs in soil or soil vapor and is not addressed in this RAP.

2.6.1. Risk Assessment Results

This section presents a summary of the conclusions from the HHRA (Kleinfelder, 2011b) concerning potential exposure of residents at UVA and UHC, park visitors, park maintenance personnel, and construction workers to constituents present at the park and proposed sports improvement areas.

2.6.1.1 Park Maintenance Worker, Park Construction Worker, Site-wide Visitor, Sports Improvement Areas (Proposed Basketball Courts and Sports Fields Improvements)

The non-cancer Hazard Index (HI) and the cumulative Incremental Lifetime Cancer Risk (ILCR) for the park maintenance worker, park construction worker, Site-wide park visitor, and sports improvements areas visitor exposed to surficial or shallow soils are less than the level that triggers risk management decisions under State of California Environmental Protection Agency (Cal/EPA) policy (Kleinfelder, 2011b and DTSC, 1994). These results indicate that for the evaluated populations and exposure scenarios, the COPCs do not pose cancer and non-cancer health risks that exceed levels that require action under Cal/EPA policy.

2.6.1.2 Occupants of UVA and UHC Properties

COPCs detected in surficial and shallow soil were not present at concentrations that required further investigation or remediation under Cal/EPA policy either by comparison to California Human Health Screening Level (CHHSLs) (Kleinfelder, 2011b), by comparison to background concentrations established by DTSC (arsenic, PAHs) (Kleinfelder, 2011b), by comparison to site-specific background concentrations (Kleinfelder, 2012c) or based on detection frequencies in soil samples of less than five percent (Kleinfelder, 2009b).

COPCs detected in indoor air were present at concentrations consistent with concentrations measured in outdoor air samples and with concentrations reported for the South Coast Air Basin in the South Coast Air Quality Management District (SCAQMD) MATES III study (SCAQMD, 2008). Furthermore, not all VOCs detected in soil vapor were detected in indoor air. Therefore, there was no indication of soil vapor intrusion into the UVA and UHC properties.

2.6.1.3 Metals

Site-wide metals concentrations in surficial and shallow soil samples did not, in the aggregate, pose an incremental cancer risk (Kleinfelder, 2011b). Subsequent LARWQCB-directed evaluations of metals concentrations associated with the Site in comparison to published investigations resulted in the conclusion that metals distributions in soil at the Site likely reflects metals distributions observed regionally and in other urban areas of California (Kleinfelder, 2012c).

2.6.1.4 Methane

Methane is included as a COC in this RAP due to potential safety considerations associated with asphyxia, flammability, and ignitability. Methane was detected in the soil gas within UVA, UHC, and EMJRP properties at concentrations exceeding the 5,000 parts per million by volume (ppmv) screening level listed in the DTSC (2005) advisory for soil gas, as presented on Plate 3.1.

2.7 SUMMARY OF REMEDIAL TECHNOLOGY PILOT TESTS

To evaluate the efficacy of several remedial technologies considered in this RAP, pilot and bench scale testing were performed. SVE and air respiration testing (ART) were performed on Site and petroleum hydrocarbon-affected soil samples from the Site were sent to a feasibility testing laboratory for *in-situ* chemical oxidation (ISCO) and stabilization and/or fixation testing.

2.7.1. Soil Vapor Extraction Pilot Tests

SVE pilot testing was performed at multiple locations on the Site (Kleinfelder, 2011m and Kleinfelder, 2011o). Specifically, four locations at UVA (Plate 2.7) and two locations in EMJRP were approved by LARWQCB for SVE pilot testing. Soil vapors were extracted from shallow (5 to 15 feet bgs) and deep (20 to 30 feet bgs) zones at each location. Results of the SVE pilot testing concluded that SVE is a technically feasible remediation technology for the Site. Effective radius of influence (ROI) was estimated by the pore velocity method. Pore velocities ranging from 0.01 centimeters per second (cm/s) to 0.001 cm/s are suggested for VOC extraction (United States Army Corps of Engineers [USACE], 2002). Using a pore velocity of 0.01 cm/s calculated ROIs for the testing locations ranged from 8 to 87 feet (Kleinfelder, 2011o and 2012d). Using the data collected during the pilot testing activities and applying a pore velocity of 0.001 cm/s, effective radii of influence for the testing locations range from 43 to 225 feet, as shown on Appendix C.

The on-Site SVE pilot testing locations were selected to provide SVE performance data because they represented different surface and soil conditions present at the Site. The UVA and UHC area has surface conditions consisting of slab-on-grade foundations for the apartment buildings and asphalt driving and parking locations. These surface conditions affect how soil vapor will flow in soil when the vacuum is induced on the well. In contrast, the test locations in the EMJRP were in landscaped areas with limited surface barriers/improvements (e.g., concrete paved walking paths, asphaltic concrete paved parking lots, etc.).

Typical SVE pilot testing activities for petroleum hydrocarbon remediation are shorter duration events and designed to obtain flow and ROI data. However, extended pilot testing activities were performed at SVE well E-2B for one month and at SVE well E-3B for three months. The purpose of the longer duration testing was to develop additional data for further evaluation of the effectiveness of SVE for mitigating methane.

During the one-month SVE test at E-2B, initial influent methane concentrations were approximately 210,000 ppmv, and decreased to 72,000 ppmv. During the three-month

SVE test at E-3B, initial influent methane concentrations were approximately 27,900 ppmv and decreased to less than 5,000 ppmv (Kleinfelder, 2011o).

In addition to on-Site SVE pilot testing, LARWQCB-approved off-Site pilot testing is on-going. A report of results from off-Site pilot testing will be submitted to LARWQCB on July 3, 2012.

2.7.2. Air Respiration Test

ART was used to evaluate bioventing as a remedial alternative. Bioventing is an *in-situ* remediation technology that enhances/stimulates natural aerobic bioremediation of petroleum hydrocarbon compounds in the subsurface. Petroleum degrading bacteria are nearly ubiquitous in soils. These bacteria can operate either aerobically (in the presence of oxygen) or anaerobically (without the presence of oxygen). However, aerobic degradation is generally faster than anaerobic degradation. As long as oxygen is present, petroleum degrading bacteria will preferentially operate aerobically. ART was developed to provide rapid field measurements of *in-situ* biodegradation rates. The test was performed by injecting air into unsaturated soil and measuring the rate at which oxygen is depleted. ART at SVE well E-4B yielded an oxygen utilization rate of approximately 15 percent oxygen per day. This high oxygen utilization rate indicates that bioventing is a potentially effective remedial technology for soil and, indirectly, soil gas.

2.7.3. Bench-Scale ISCO Laboratory Test

ISCO involves injecting chemical oxidants into the vadose zone and/or groundwater to oxidize organic compounds as described in Section 4.1.3. Soil samples were recovered from two representative locations on-Site that had TPH-impacts based on earlier soil sampling events. The samples were sent to a feasibility testing laboratory to test the ability of strong oxidants to react with the TPH impacts in the soil.

Three oxidants were evaluated during the bench test: (1) iron-catalyzed hydrogen peroxide; (2) potassium permanganate; and (3) sodium persulfate. The oxidants were dosed into the test reactors at 200 percent of the theoretical stoichiometric requirement. The treatability test results showed that iron-catalyzed hydrogen peroxide decreased TPH to a greater extent than other oxidants tested. Total petroleum hydrocarbons (TPH) concentrations were reduced by an average of 80 percent by the iron-catalyzed hydrogen peroxide solution, compared to less than 55 percent using the permanganate and persulfate solutions. However, laboratory personnel noted that frequent mixing of the test reactors was required to facilitate the oxidation reactions, which is not practical or possible under field conditions, where variable subsurface conditions and depth of contamination often severely limit the ability to achieve adequate mixing of hydrocarbons and the oxidizing agents. Therefore, ISCO application of oxidants is eliminated from consideration as a remedial alternative (Section 4.1.3). Bench scale feasibility laboratory reports are presented in Appendix B.

3.0 REMEDIAL ACTION OBJECTIVES

This section describes development of RAOs, which are site-specific, media-specific (e.g., soil or soil vapor) goals for protecting human health and the environment. RAOs identify COCs, exposure pathways, potential receptors, and an acceptable chemical concentration or range of concentrations for each exposure pathway. RAOs include either an exposure pathway or a contaminant concentration (or both) in a given media because protectiveness may be achieved in two ways: (1) limiting or eliminating exposure pathway(s); or (2) reducing contaminant concentrations (EPA, 1988).

3.1 REGULATORY REQUIREMENTS

Regulatory requirements are preliminarily identified in this section of the RAP. These requirements specifically refer to cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental laws or state environmental or facility siting laws. The applicable regulatory requirements and guidance referenced to prepare this RAP include:

- California Health and Safety Code 25356.1, regulations pertaining to preparation of RAPs;
- County of Los Angeles Department of Public Works Landfill Gas Protection Policy. April 1998;
- County of Los Angeles 2011 Building Code;
- SWRCB. Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304 – SWRCB Resolution 92-49
- DTSC. Advisory on Methane Assessment and Common Remedies at School Sites, School Property Evaluation and Cleanup Division. June 16, 2005;
- DTSC. Advisory – Active Soil Gas Investigation. Department of Toxic Substances Control, California Environmental Protection Agency, Sacramento, California. March 3, 2010;
- DTSC. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). Department of Toxic Substances Control, California Environmental Protection Agency, Sacramento, California. October 2011;
- DTSC. Remedial Action Plan (RAP) Policy EO-95-007-PP. November 16, 1995; and

- Office of Environmental Health Hazard Assessment (OEHHA). Use of California Human Health Screening Levels (CHSSLs) in Evaluation of Contaminated Properties. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, Sacramento, California. January 2005.

3.2 REMEDIAL ACTION OBJECTIVES

This RAP considers current use of the Site, impacted media based on completed on-Site investigations, and the HHRA (Kleinfelder, 2011b) in the development of the RAOs. Two current uses of the Site are: (1) residential use (UVA and UHC); and (2) use as a public park (EMJRP). It should be noted, though, that the UVA facility is vacant and demolition of the facility is planned. Two impacted media on-Site based on completed investigations are: (1) soil; and (2) soil vapor. LARWQCB-approved investigations for groundwater and off-Site soil and soil vapor are ongoing. A RAP will be prepared to address groundwater and off-Site soil and soil vapor, as appropriate, and submitted under separate cover to LARWQCB following completion of those investigations and based on performance monitoring of remedial actions presented in this RAP.

RAOs for residential and public park land use are to: (1) prevent or minimize potential resident or on-Site receptor exposure to concentrations of COCs exceeding remedial goals in surface and shallow soil, and indoor and ambient air; and (2) prevent or minimize potential off-site migration of soil vapor containing COCs at concentrations above remedial goals.

DTSC (2005) established a screening level of 5,000 ppmv for methane that accumulates or has the potential to accumulate in the subsurface immediately beneath the footprint of an existing building or proposed building, including associated improvements. Methane concentrations that exceed the DTSC screening level were found in shallow soil gas (i.e., at 5 feet bgs) collected from locations within the eastern portion of EMJRP and within UVA and UHC properties (Plate 3.1). While the DTSC screening level is not directly applicable to deeper soils, soil gas samples containing methane in excess of the screening level also were collected from 15 feet bgs (Plate 3.2), and 32 feet bgs (Plate 3.3). Methane is included as a COC due to potential hazards associated with flammability, ignitability and asphyxia.

For residential and public park land use areas, the following subsections describe the potential receptors and exposure pathways, COCs and a summary of the HHRA (Kleinfelder, 2011b), and RAOs.

3.2.1. Residential Land Use

Residential land use is consistent with past or existing uses of UVA and UHC properties.

Potential Receptors and Exposure Pathways

A residential land use exposure scenario was evaluated in the HHRA (Kleinfelder, 2011b) at the request of DTSC and LARWQCB. The following potential receptors and exposure pathways were considered during RAO development.

- On-Site residents who may be directly exposed to shallow soil COPCs through ingestion, dermal contact, and inhalation of dust;
- On-Site residents who may be exposed to COPCs contained in vapors in indoor and outdoor air; and
- On-Site residents who may be affected by accumulated methane.

COPCs and HHRA Summary

The revised HHRA (Kleinfelder, 2011b) presents documentation that concentrations of carcinogenic PAHs, pesticides/herbicides, and metals were detected at UVA and UHC, but which are consistent with the range of background concentrations reported in Southern California, or are not indicative of an incremental cancer risk (Kleinfelder, 2011b). Results of the HHRA also presented the results of laboratory analysis that COPCs detected in indoor air were present at concentrations consistent with concentrations measured in outdoor air and with concentrations reported for the South Coast Air Basin. It was concluded that soil vapor intrusion did not affect indoor air quality or pose a health hazard concern. Similarly, methane did not affect indoor air quality.

Two of nine previously identified and delineated excavation locations exhibiting elevated lead concentrations in shallow soils are within the UVA and UHC properties as indicated on Plate 5.1. Although not interpreted to originate with historic Site activities, nine locations where the LARWQCB asked for further assessment and delineation of lead-affected shallow soil will be excavated and disposed at an appropriately licensed facility.

RAOs

The RAOs will be achieved by remediating methane to the remedial goal of 5,000 ppmv in shallow soil gas to a depth of 5 feet bgs.

3.2.2. Public Park Land Use

The current uses of EMJRP include playgrounds, unpaved picnic areas, paved walking paths, and sports fields.

Potential Receptors and Exposure Pathways

The land use scenario evaluated for development of RAOs is consistent with the current use of EMJRP. The following potential receptors and exposure pathways were considered during this evaluation.

- Park construction workers who may be exposed to shallow soil COPCs through ingestion, dermal contact, inhalation of dust and vapors in ambient air during construction activities;
- Sports field visitors, Site-wide park visitors, and proposed basketball court visitors who may be exposed to surficial soil COPCs through ingestion, dermal contact, inhalation of dust and vapors; and
- Park maintenance workers who may be exposed to surficial or shallow soil containing COPCs during normal park maintenance activities through ingestion, dermal contact, and inhalation of dust and vapors.

COPCs and HHRA Summary

Results of the revised HHRA showed that cumulative risks to potential receptors did not exceed levels that trigger further investigation or remediation under Cal/EPA policy (Kleinfelder, 2011b).

The HHRA (Kleinfelder, 2011b) indicated that the ILCR for the sports fields' park visitor slightly exceeded the point of departure for risk management decisions under Cal/EPA policy (DTSC, 1994). The calculated ILCR of 2×10^{-6} was largely attributable to PAHs.

The concentrations of PAHs reported for the EMJRP property were evaluated by comparing PAH concentrations at EMJRP to PAH background concentrations in Southern California per DTSC guidance (DTSC, 2009). The results of this further evaluation demonstrated that the soil concentrations of PAHs in samples from the EMJRP property were consistent with or below the levels approved by DTSC as estimates of background for Southern California. DTSC concurred with the assessment that PAHs are within the range of background concentrations in Southern California soils (LARWQCB, 2011); therefore, PAHs in soil on the EMJRP property did not trigger further investigation, mitigation, or remediation.

Seven of nine previously identified and delineated excavation locations exhibiting elevated lead concentrations in shallow soils are within the EMJRP as indicated on Plate 5.1. Although not interpreted to originate with historic Site activities, nine locations where the LARWQCB asked for further assessment and delineation of lead-affected shallow soil will be excavated and disposed at an appropriately licensed facility.

RAOs

The RAOs will be achieved by remediating methane to the remedial goal of 5,000 ppmv in shallow soil gas to a depth of 5 feet bgs.

3.3 REMEDIAL GOAL DEVELOPMENT

Remedial goals for achieving the RAOs are developed in this section. Remediation goals are developed by considering the chemical-specific regulatory requirements and guidelines and human health and environmental risk.

According to the DTSC Methane Advisory, “5,000 ppmv is commonly utilized as an action level above which mitigative measures are recommended” (DTSC, 2005). Therefore, 5,000 ppmv of methane in shallow soil gas at a depth of 5 feet bgs has been selected as the remedial goal for on-Site soil vapor.

The remedial goal for residential and public park land use is to mitigate methane in the shallow soil gas consistent with DTSC (2005) guidance, which will also concurrently mitigate VOCs, including benzene, in the shallow subsurface and reduce levels of methane and VOCs in deeper soils that may contribute to methane and VOCs in the shallow subsurface through vertical migration or anaerobic biodegradation of the hydrocarbons at depth. Overall, this approach will be protective of current and future receptors identified in the risk assessments and will improve soil vapor both near surface and for deeper soils.

Although not interpreted to originate with historic Site activities, nine locations where the LARWQCB asked for further assessment and delineation of lead-affected shallow soil will be excavated and disposed at an appropriately licensed facility (Plate 5.1).

3.4 ESTIMATED AREAS TO BE ADDRESSED

The areas and depths of media that will be addressed by this RAP are described in this section. The purpose of this section is to support calculation of the estimated volumes of media to which the remediation goals apply. The estimated media volumes are used for conceptual design of the selected remedial action. The media areas and depths described in the following paragraphs were identified based on the results of investigations conducted at the Site.

3.4.1. Soil

Cal/EPA guidance requires consideration of the 0 to 10 feet depth interval during human health risk assessment of potential dermal absorption, ingestion, and dust inhalation exposures related to shallow soil. The interval of 0 to 10 feet also is the greatest depth expected to be disturbed by park construction workers. Consequently, the 0 to 10 foot soil depth interval will be addressed for lead in shallow soil. Potential health hazards related to shallow soil contact and corresponding mitigative measures are further detailed in the Soil Management Plan developed for the Site (Kleinfelder, 2011g).

The soil to be addressed is at the locations of soil samples (SS-031, SS-032, SS-038, SS-064, SS-071, SS-073, SS-078, SS-097, and SS-114) as shown on Plate 5.1. For UVA, UHC, and EMJRP, the estimated volume of shallow soil to be removed for off-Site disposal and replaced with clean fill is 72 cubic yards. Derivation of volume estimates is also presented on Plate 5.1.

3.4.2. Soil Vapor

Shallow soil gas will be remediated to reduce the methane concentration to less than 5,000 ppmv at 5 feet bgs. The expected extent of the influence of the shallow soil gas methane mitigation system is shown on Plate 5.2. The expected extent of influence includes the areas where methane has been identified as exceeding 5,000 ppmv in shallow soil vapor, as depicted in Plate 3.1, as well as those areas where deeper soil vapor beneath the Site and along the eastern and southeastern site borders has the potential to impact shallow soil vapor, as depicted in Plates 3.2 and 3.3.

4.0 REMEDIAL TECHNOLOGIES AND SCREENING

This section outlines potentially applicable remedial technologies to achieve the RAOs developed in Section 3.0, screening of those technologies, and a final selection of a technology deemed to be most applicable for the Site considering currently available information. Section 5.0 presents the conceptual design of the selected technology, and Section 6.0 details the implementation plan, reporting, and schedule for the selected technology.

4.1 REMEDIAL SCREENING

To facilitate expedited screening and selection of applicable remedial technologies for similar types of sites, the EPA recommends the consideration and use of presumptive remedies (EPA, 1993). Presumptive remedies are preferred technologies for site types demonstrating a characteristic profile of conditions that have a historical pattern of consistent remedy selection and ultimate effectiveness relative to their profile. Characteristic profiles include such qualities as:

- Contaminant types and chemical characteristics;
- Subsurface soil types and geophysical properties; and
- Site conditions, limitations, and subsurface stratigraphy.

For sites that predominately, but do not completely, meet the profile typical for a presumptive remedy, enhancements to the remedy or additional supplemental technologies may also be applicable for concurrent or future consideration.

For the Site, with an RAO for methane[1] in a comparatively permeable vadose zone, the preferred presumptive remedy presented in EPA guidance is soil vapor extraction (SVE) (EPA, 1993). On-Site SVE pilot test data gathered thus far supports the presumption that SVE can effectively achieve the remediation goal for methane (5,000 ppmv at 5 feet bgs). An evaluation of ART results leads to a conclusion that, assuming SVE can bring

[1] Although methane is not technically a VOC, it is a gas under ambient conditions, and is therefore volatile. For the purpose of technology evaluation in this Section 4.0 the term "VOCs" includes methane.

oxygen into the treatment area, SVE can also reduce the heavier-end[2] petroleum hydrocarbons.

Section 4.1.1 describes SVE and its applicability to the Site based on the pilot test results thus far. Sections 4.1.2 through 4.1.6 describe additional potentially applicable technologies that were evaluated for the Site and ultimately screened out from further consideration for this RAP. Following implementation of the first phase of this RAP, performance monitoring data will be collected as described in Section 5.2 and used to refine or revise the remedial approach, as necessary.

4.1.1. Soil Vapor Extraction

SVE is an *in-situ* remediation technology that extracts soil vapor from unsaturated soil using a vacuum blower attached to perforated wells. The extracted soil vapor may be impacted with VOCs and SVOCs, depending on the relative volatility of the constituents, as well as methane and other gases that may be present in the vadose zone. The impacted soil vapor is passed through an air pollution control (APC) device, such as granulated activated carbon or a thermal/catalytic oxidizer. The type of APC device used is selected based on the anticipated types and concentrations of constituents in extracted soil vapor.

The effectiveness of SVE is dependent upon the ability of the carrier media (soil gas) to flow through unsaturated soil and transport the contaminant to the treatment system. Geotechnical soil properties, such as porosity, soil permeability, soil type, and moisture content will affect the flow rate of extracted vapors and distance from the well that the carrier media can influence. In order to evaluate SVE effectiveness at a given site, pilot testing is performed to estimate flow capabilities of the unsaturated soil and the ROI.

SVE is a proven and readily implementable technology, especially for methane and VOCs in permeable soils, and is considered a presumptive remedy for the Site. The following factors were considered when evaluating the applicability and potential effectiveness of SVE for the Site:

- Radius of influence can vary widely and be inconsistent in heterogeneous soils;

[2] The term “heavier-end” refers to higher molecular weight, non-volatile, petroleum hydrocarbons.

- Some Site disturbance with installing the system and operating/monitoring vent wells; and
- Effectiveness is directly proportional to contaminant volatility.

SVE is being retained as a technology to mitigate methane and petroleum hydrocarbon VOCs in this RAP.

SVE as designed will recover methane and petroleum hydrocarbon VOCs and increase air flow and subsurface oxygen concentration for bioremediation of residual petroleum hydrocarbons. The pilot testing completed thus far indicates SVE may be effective for mitigating methane and VOCs, including benzene, in shallow soil. Based on the findings of ongoing investigations, pilot testing, and performance monitoring of the SVE system proposed in this RAP, the SVE system may be modified.

4.1.2. Excavation and Disposal or Treatment

The technology entails excavating impacted soil from the Site and either treating/replacing it or transporting it to an appropriately licensed disposal facility. The areas where soil was removed would be backfilled with laboratory-certified clean imported fill material. Excavation of impacted soil would necessarily result in excavation of non-impacted soil at the same time. Non-impacted soil may be used to backfill the excavations. A sampling plan would be implemented to segregate impacted soil from non-impacted soil.

Excavation is a proven and readily implementable technology. Focused excavation is applicable to address lead in shallow soils at nine locations encountered at the Site. The following factors were considered when evaluating the applicability and effectiveness of excavation for the Site:

- Generation of fugitive emissions during excavation;
- Volume of soil being excavated;
- Depth and composition of the media requiring excavation;
- Transportation of impacted soil and clean replacement soil through populated areas may affect community acceptability;
- Distance from the Site to the nearest disposal facility with the required permit will affect cost; and

- COPCs still exist in the removed soil, though the soil has been removed from the Site, the toxicity has not been reduced.

Focused, limited excavation and off-Site disposal was retained to address removal of soil from nine locations at the Site. Excavation was screened out as an alternative to directly address methane in soil gas due to the factors listed above and the excessive site disturbance that would result from such excavation, compared with the relative advantages of SVE.

4.1.3. *In-situ* Chemical Oxidation (ISCO)

ISCO involves injecting or augering/mixing chemical oxidants into the vadose zone and/or saturated zone to oxidize organic compounds. Common oxidants used for destruction of petroleum hydrocarbons are hydrogen peroxide, potassium permanganate, and sodium persulfate (Interstate Technology and Regulatory Council [ITRC], 2005). ISCO applications consist of injecting or mixing oxidant solution into the subsurface to oxidize organic matter, including adsorbed, dissolved, and liquid phase hydrocarbons. ISCO applications using peroxide are best-suited to sites with relatively permeable soil, neutral to acidic groundwater, low alkalinity, low naturally-occurring organic matter, and dissolved iron concentrations less than 60 milligrams per liter (mg/L) (ITRC, 2005).

The following factors were considered when evaluating the applicability and effectiveness of ISCO for the Site:

- Potential for undesirable by-products such as mobilizing naturally occurring metals;
- Unpredictable and often limited effectiveness in heterogeneous soils when injecting;
- Potential for generation of fugitive gases and hazardous levels of heat;
- Significant Site disturbance when augering, and mixing chemical oxidants;
- Potential for utility and pipeline infrastructure in the vicinity of the Site; and
- Results of bench-scale ISCO pilot testing results.

ISCO was screened out as an alternative to directly address the methane due to the factors above compared with the relative advantages of SVE. ISCO was also screened out as a potential future supplement for SVE to mediate the petroleum hydrocarbons based on bench-scale feasibility testing that suggests there would be limited effectiveness for field implementation coupled with the high degree of site disturbance and hazards of ISCO relative to other alternatives.

4.1.4. Thermally Assisted Soil Vapor Extraction

The effectiveness of SVE (Section 4.1.1) can be enhanced by raising the temperature of the subsurface through thermally assisted methods such as steam injection or electro-resistive heating (ERH). This enhancement raises the vapor pressure of the contaminant(s) in the soil being ventilated; therefore increasing the gas-phase concentration and ultimately the contaminant removal rate. The reduction in total treatment time can sometimes offset the cost of including the enhancement, particularly for heavier and/or less volatile contaminant(s).

The following factors were considered when evaluating the applicability and effectiveness of thermally assisted SVE for the Site:

- Potentially high additional cost over SVE alone;
- Site disturbance for installing/securing ERH equipment;
- Inherent hazards of heat generation; and
- Energy use/impact considerations.

Thermally-assisted SVE was screened out as an alternative to directly address the methane due to the factors listed above compared with the relative advantages of SVE alone and considering the methane is in the gaseous phase at typical subsurface temperatures.

4.1.5. Bioventing

Bioventing is an *in-situ* remediation technology that enhances/stimulates natural aerobic bioremediation of petroleum hydrocarbon compounds in the subsurface. The presence of methane as a degradation product of the petroleum hydrocarbons, and the ART testing performed at the Site, indicate that petroleum degrading bacteria are present in the subsurface. These bacteria can operate both aerobically (in the presence of oxygen) and anaerobically (without the presence of oxygen), however the aerobic biodegradation is generally faster than anaerobic biodegradation. As long as adequate oxygen is present, petroleum degrading bacteria will preferentially operate aerobically. Bioventing is similar in implementation to SVE (Section 4.1.1), however vapor flows are often lower as the intent is to meet the minimum oxygen demand of the subsurface. This is accomplished by either vapor extraction or air injection through perforated wells.

Bioventing was screened out as a stand-alone alternative to directly address the methane and VOCs due to the fact that SVE is a more aggressive approach that combines direct extraction and destruction of hydrocarbons as well as the enhancement of *in-situ* aerobic biodegradation by pulling air into the subsurface. Bioventing was retained as a potentially appropriate follow-up to SVE after volatile constituents have been sufficiently reduced.

4.1.6. Land Use Controls (LUCs)

Land Use Controls (LUCs) are legal and administrative mechanisms (institutional controls [ICs]) and physical installations (engineering controls [ECs]) that are used to prevent exposure to Site COCs. LUCs implement land use and access restrictions that limit the exposure of hypothetical landowners or users of the property to hazardous substances and to maintain the integrity of the remedial action until remediation is complete and remediation goals have been achieved. Monitoring and inspections are conducted to ensure that the land use restrictions are being followed. LUCs were screened out in this RAP, but may be considered based on future assessment.

4.2 REMEDIAL TECHNOLOGY SELECTION AND CONSIDERATIONS

The selected technology for remediation of shallow methane to the remedial goal of 5,000 ppmv is SVE, which also will concurrently remove VOCs, including benzene, from the shallow subsurface. The system will be designed to ventilate in the 20 to 30 foot interval (with possible adjustment during final design and installation, as described in Section 5). This will pull shallow methane and VOCs downward (prevent upward migration) towards the extraction points for removal and will also remove methane and VOCs in deeper soils. Overall, methane and the volatile fraction of the petroleum hydrocarbons, including the BTEX compounds, will be physically removed by the ventilation, while the heavier hydrocarbons will be degraded by the addition of oxygen that occurs as SVE circulates air through the subsurface. Furthermore, methane generation, that may be occurring through anaerobically-driven methanogenesis of the petroleum hydrocarbons, will decrease once oxygen is present.

Though pilot testing indicated SVE was effective in remediating methane, there was variability observed in the influence the technology was able to the achieve in the subsurface. This variability was concluded to be due primarily to the heterogeneous nature of the subsurface (Kleinfelder; June 2012). The US Army Corps of Engineers (USACE, 2002) recommends assuming a pore velocity between 0.01 cm/s and 0.001 cm/s in estimating SVE radius of influence with the faster velocity of 0.01 cm/s being the most conservative and resulting in the closest well spacing and more pore exchanges relative to operating time. Typically, higher design-basis pore velocities are assumed where the contaminant(s) have a lower vapor pressure, high solubility (particularly in moist soils), and/or a significant fraction is adsorbed to organic carbon in the subsurface. Such conditions require more pore exchanges to achieve remediation. For the purposes of this RAP, a pore velocity of 0.001 cm/s is assumed which is at the higher end of the USACE-recommended range as methane is a light, mobile, highly volatile gas with a low water solubility (0.002%) and negligible adsorptive capacity (Dean, John A., 1992). Utilizing a 0.001 cm/s pore velocity as the design-basis, the ROI for the Site is estimated in the range of 43 feet to 225 feet. For the Site conceptual SVE system design-basis, a 100-foot radius ROI is assumed.

The actual ROI of the installed SVE system may vary from the conceptual design basis ROI of 100 feet due to surface or subsurface heterogeneity, preferential pathways, cumulative effect of soil vapor extracted from multiple wells concurrently, or other factors. As discussed previously, the SVE system will be implemented in two phases. Phase I will consist of SVE wells installed along Clovis Avenue and the southeast boundary of EMJRP. These SVE wells will be configured to mitigate potential off-Site migration of methane to the east and south. Phase II will consist of expansion of the SVE system to the UVA and UHC properties. During operation of the Phase I SVE system, performance monitoring data will be collected and evaluated to better define the operating ROI range for the system at the Site. The performance monitoring data will be used to modify the Phase I and Phase II SVE systems, if necessary, by adjusting the SVE well network configuration or SVE well locations. The system performance monitoring plan and implementation plan are described in Sections 5.2 and 6.0, respectively.

Notwithstanding the variability in ROI, pilot testing provided clear evidence that SVE was effective in remediating subsurface methane and petroleum hydrocarbon VOCs within its area of influence. The remedial effect of SVE on the residual heavy-end petroleum hydrocarbons was also beneficial. However, the RAP proposes monitoring of the SVE system to evaluate system performance and, if necessary, prepare a RAP addendum or revision to propose modification to the SVE system based on performance monitoring.

5.0 PROPOSED REMEDIAL ACTION

This section describes the proposed remedial action for the Site, which has been selected as described in Section 4.0. The proposed remedial action has been selected to achieve the remedial goals described in Section 3.0.

The following paragraphs present a conceptual design of the proposed remedial action; discussion of health and safety, permitting, and waste management considerations; and description of post-implementation actions.

5.1 REMEDIAL ACTION

The proposed remedial action comprises excavation at nine locations where LARWQCB asked for further assessment and delineation of lead-affected shallow soil and disposal at an appropriately licensed facility, and SVE for mitigation of methane and petroleum hydrocarbon VOCs in shallow soils. The remedial action conceptual designs for the focused excavation and SVE mitigation of methane are described in Sections 5.1.1 and 5.1.2, respectively. Health and safety considerations are described in Section 5.1.3. Environmental and construction permitting issues are described in Section 5.1.4. Waste management related to remedial action is described in Section 5.1.5.

5.1.1. Conceptual Design of Focused Excavation

This section presents a conceptual design for focused soil excavation and off-Site disposal at an appropriately licensed disposal facility.

Implementation

Soil at depths ranging from 4 to 10 feet bgs will be excavated from nine locations (Plate 5.1) and disposed at an appropriately licensed disposal facility. The estimated volume of soil to be excavated is 72 cubic yards.

Implementation of remediation will commence with land surveying to establish boundaries around the remediation areas. Control areas will be established for equipment, soil stockpiles, and personnel decontamination. Soil will be excavated and loaded into roll-off bins. After collection and analysis of soil samples for waste classification, the roll-off bins will be transported to an appropriately licensed disposal facility. Laboratory- certified clean fill will be imported to the Site to backfill the excavations (DTSC, 2001).

Excavated soil will be handled consistent with procedures listed in the Soil Management Plan (Kleinfelder, 2011g). Dust control will be implemented in accordance with SCAQMD Rules 402, 403, and 1166, as applicable. Rules 402 and 403 relate to nuisance and fugitive dust emissions; Rule 1166 relates to VOC emissions. Although the purpose of excavation is not for VOC control, some VOCs may be present in excavated soil. Dust control measures will include some or all of the following:

- Wetting soil;
- On-Site traffic speed limits;
- Limiting drop heights during soil handling; and
- Discontinuing operations during high wind events.

Excavated soil will be profiled for disposal at an appropriately licensed disposal facility that is permitted to accept impacted soil. To the extent possible, acceptance of the soil for disposal will be obtained from the licensed facility before soil excavation commences. Analyses required for profiling and classification typically include, but may not be limited to, TPH by EPA Method 8015B modified and VOCs by EPA Method 8260B, and metals by EPA Methods 6010B and 7471A (Kleinfelder, 2011k).

Excavated soil will be transported by appropriately licensed waste transporters to an appropriately licensed disposal facility. Soil will be handled and transported consistent with applicable regulations, including Department of Transportation regulations in 49 CFR, OSHA regulations in 29 CFR, and hazardous waste regulations in Title 22 of the California Code of Regulations (22 CCR).

5.1.2. Conceptual Design of SVE Mitigation of Methane and VOCs

This section presents a conceptual design for the SVE system. The conceptual design is based on a conventional SVE system with vertical extraction wells.

SVE will be implemented at depths estimated between 20 and 30 feet bgs to pull methane and VOCs in shallow soil downward to the extraction points and to remove methane and VOCs from deeper soils, which may contribute to methane and VOCs in the shallow soil. This approach has the advantage of pulling contaminants downward to extraction points and not inadvertently moving contaminant mass upwards. During SVE from this deeper zone, methane and VOC concentrations in shallow and deep vapor monitoring points will be monitored to evaluate effectiveness and reported to LARWQCB.

Implementation

The proposed SVE system will be implemented in a phased approach with the first phase along Clovis Avenue and the southeast boundary of the EMJRP to mitigate potential lateral off-Site methane migration to the east and south. The SVE system will consist of SVE wells, underground vapor conveyance piping, an air pollution control device, instrumentation and controls, and a fenced area to enclose the remediation equipment. The Phase I SVE wells are proposed at locations that are readily accessible to expedite implementation and actively address methane and VOCs in shallow soil gas at the south and east perimeter of the Site. The proposed locations of the Phase I SVE wells and corresponding conceptual ROI of 100 feet are illustrated on Plate 5.2. A Remedial Action Work Plan (RAWP) will be submitted to the LARWQCB. EMES will be prepared to begin implementing this work within 30 days of LARWQCB approval and obtaining any permits and/or access agreements.

Prior to startup of the Phase I SVE system, the SVE wells and vapor monitoring probes will be sampled with a field instrument for VOCs, methane, oxygen, and carbon dioxide. Once operation of the Phase I SVE system begins, monitoring will be performed to evaluate these compounds within the influence of the system. Based on evaluation of the performance monitoring results, the design of the Phase II SVE may be modified. Phase II will consist of expansion of the SVE system to the UVA and UHC properties, after demolition. The proposed locations of the Phase II SVE wells illustrated on Plate 5.2 are based on the conceptual ROI of 100 feet. The conceptual ROI will be modified as appropriate based on monitoring data collected during operation of SVE Phase I. As future use of the site becomes better understood (continued use as a park, plans for UVA property, etc.), layout of the Phase II SVE wells and configuration of the full-scale SVE system may be modified.

Operation

The SVE system will be operated by extracting soil vapor from the wells concurrently. Operational data will be collected on a weekly basis and the system operation will be adjusted as necessary to meet the RAOs and to maintain compliance with SCAQMD regulations under a Permit to Operate.

Extraction Wells and Soil Vapor Monitoring Probes

SVE wells will be vertical wells installed with screened intervals between 20 and 30 feet bgs. The proposed well screen interval and well configuration are conceptual and will be further developed through the design, planning, and field implementation process. The SVE well conceptual layout was developed based on an ROI of 100 feet that was interpolated based on pilot test results (Appendix C).

The Phase I SVE wells will consist of:

(1) Seven SVE wells installed along the east side of Clovis Avenue;
(2) Four SVE wells installed along the west side of Clovis Avenue in locations staggered from the wells on the east side; and
(3) Four SVE wells will be installed to the north of El Segundo Boulevard, in the southeast corner of the Site.

Based on the conceptual ROI of 100 feet, approximately 32 SVE wells will be installed at the Site for Phase II SVE. The number of SVE wells installed during Phase II may change based on operational observations during Phase I. The extraction wells will be configured to operate as both SVE or air infiltration wells. The air infiltration wells may be used based on operational observations to enhance the system performance.

Extraction wells will be constructed using methods and materials consistent with those previously approved by LARWQCB and installed at the Site. SVE wells will be constructed in borings drilled using a drilling rig with 10-inch outside diameter (OD) hollow-stem augers. Extraction wells will be constructed with 4-inch diameter schedule 40 (SCH 40) polyvinyl chloride (PVC) casings. Screened intervals will be completed with 0.020-inch slotted casing. Well screens will be installed within sand filter packs. Well seals will be constructed between the filter packs and the ground surface. The extraction wells will be finished at ground surface with traffic-rated well boxes.

Piping

A system of header and branch piping will convey extracted soil vapor to the SVE system enclosure. Piping will be constructed using schedule 40 PVC pipe of varying diameters, depending on whether the pipe is a branch run, submain header, or main header. The well field will be divided into localized zones with common flow headers and control manifolds. Valves will allow selection of individual wells and zones of wells for extraction or infiltration based on operational observations to enhance system performance. Piping will be buried in shallow trenches for protection.

SVE Equipment

The SVE system will be installed within a fenced equipment enclosure for security, aesthetics, and sound attenuation. During the Phase I SVE implementation, the conceptual design consists of a blower to extract soil vapor from the SVE wells and an internal combustion engine (ICE) for air pollution control. During the Phase II SVE implementation, additional SVE equipment may be installed, if needed. Conceptually, the Phase II SVE implementation will consist of several vacuum blowers configured in parallel, a low pressure air infiltration blower, an air/liquid separator vessel, and a thermal oxidizer for air pollution control. The SVE wells installed during the Phase I SVE implementation will be connected to the new equipment and the ICE will be removed from operation. The configuration and type of extraction blowers, air pollution control equipment, and integrated system controls will be developed and finalized during the full-scale system design.

The Phase I SVE implementation extraction and air pollution control equipment will be selected based on the pilot testing results. The extraction rates measured during pilot testing ranged from approximately 2.5 to 5.0 cubic feet per minute (cfm) per foot of well screen. An ICE uses a combustion process to control emissions; therefore, oxygen will be required for treatment of soil vapor. Initial oxygen concentrations in the extracted soil vapor are expected to be low; consequently, dilution air will be required to supplement the oxygen required for the combustion process. The extraction and air pollution control equipment will be sized with the capacity to meet the anticipated operating conditions.

A valve manifold will be provided for monitoring the system performance and controlling system flow from the extraction wells. Conceptually, the valve manifold will include valves, pressure gauges, and sample ports constructed within or adjacent to an SVE system enclosure. The SVE equipment will be installed within sound attenuating enclosures. Utility service required for operation of the SVE system will include electric power, natural gas as needed for supplemental fuel, and either landline or cellular communication for telemetry.

5.1.3. Health and Safety

A health and safety program will be developed for mitigating hazards associated with remediation activities at the Site. The scope of the health and safety program will include worker protection, Site security and Site control, off-Site resident protection, and traffic safety. The health and safety program will address chemical hazards associated with COCs and chemicals used during remediation (e.g., lubricants and cleaners), physical hazardous associated with working around construction equipment, heat and cold stress, and common biological hazards (bees, wasps, dogs, etc.).

5.1.4. Permitting

Various permits will be required for design, construction, and implementation of the proposed remedial solution, including:

- Compliance with the California Environmental Quality Act (CEQA) in the form of an Initial Study and a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report;
- Permits from the Los Angeles County Environmental Health Division;
- A building permit will be required for construction of the SVE system;
- Authority to Construct and a Permit to Operate from the SCAQMD will be required for construction and operation of the SVE system;
- Depending on the quantity of earth disturbed during the phases of remedial actions, approval of grading plans may be also be required; and
- National Pollutant Discharge Elimination System (NPDES) stormwater pollution prevention permit plan.

5.1.5. Waste Management

A waste management plan will be prepared consistent with ExxonMobil protocols to control and manage waste streams generated during the implementation and operations and maintenance of the proposed remedial solution. The largest waste volume is expected to include excavated soils. Soil cuttings and other investigation derived waste from well installation will also require management. Other wastes requiring management include decontamination residuals, incidental rubbish, and inert demolition waste.

5.2 POST REMEDIAL IMPLEMENTATION ACTIONS

Additional actions will be performed after implementation of the proposed remedial action. The purpose of post-implementation actions is to assess the effectiveness and protectiveness of the remedial actions, as well as compliance with permit conditions. Periodic operation and maintenance (O&M) during SVE operation will include monitoring of the methane, oxygen, carbon dioxide, and VOC concentrations in extracted soil vapor and effluent from the air pollution control device.

In order to evaluate the efficacy of the SVE system for extracting shallow soil methane impacts, the SVE system and soil vapor monitoring probes surrounding the extraction wells will monitored. The SVE system operational data will be collected on a weekly basis. Performance data, such as system flow rate, influent vapor concentration, vacuum, operating temperature and treated effluent concentrations will be logged and operational trends will be tracked.

In addition to the SVE system data collection, existing soil vapor monitoring probes surrounding the SVE wells will be monitored for vacuum response and sampled with a field gas analyzer for methane, oxygen, and carbon dioxide and for VOCs with a photoionization detector (PID). The soil vapor monitoring probes are installed in clusters of three, with probes located at 5-, 15- and 32-foot bgs. Monitoring will be performed at the three depths.

The following soil vapor monitoring probes will be monitored during Phase I:

SV-006, SV-007, SV-008, SV-018, SV-060, SV-061, SV-090, SV-091, SV-092, SV-098, SV-104, SV-105, SV-106, SV-107, SV-108, SV-109, SV-113, SV-117, SV-118, SV-119, SV-120, SV-121, SV-122, SV-123, SV-124, SV-125, SV-126, SV-133, SV-134, and SV-135.

The following monitoring schedule is proposed:

- Baseline sampling before system startup,
- Daily sampling during first week of system operation,
- Weekly sampling for the first six weeks of operation,
- Monthly sampling for six months after first six weeks of operation, and
- Quarterly sampling thereafter while the system is operational.

The performance data collected during the Phase I operation will be used to evaluate the SVE system influence and the Phase II SVE well layout and configuration may be modified accordingly. Implementation of LUCs may be considered in the future as part of the overall remedial plan.

After completion of remedial action, upon approval of the LARWQCB, the SVE system will be decommissioned and extraction wells will be appropriately abandoned in compliance with local requirements.

6.0 IMPLEMENTATION, REPORTING AND SCHEDULE

This section presents a conceptual remedial design for the various phases of the soil and soil vapor remedy.

Implementation of the recommended remedial action consists of focused excavation and off-Site disposal and SVE. The scope of work for the focused excavation is well-defined based on previous delineation of the excavation locations. Therefore, to expedite LARWQCB approval to proceed with the focused excavation work, implementation details are included below. A RAWP for the focused excavation work will be submitted to LARWQCB following approval of this RAP. The SVE system design is conceptual and requires further development prior to implementation. Therefore, the design and implementation details for the SVE system will be further developed in a separate RAWP and submitted to LARWQCB for approval.

6.1 IMPLEMENTATION OF EXCAVATION AND OFF-SITE DISPOSAL

The following subsections discuss each task of focused excavation and off-Site disposal and the activities of which they consist.

- Selecting excavation locations;
- Permits, notifications and site preparation;
- Excavation methodology;
- Land surveying;
- Control measures;
- Air monitoring during excavation;
- Field variances;
- Transportation Plan; and
- Record Keeping.

<u>Permitting and Site Preparation</u>

It is expected that the following permits may be required for excavation operations:

- CEQA Negative Declaration or Mitigated Negative Declaration;
- A grading permit from the County of Los Angeles Department of Public Works Building and Safety (LACDPW);

- Building permits from LACDPW;
- SCAQMD permits; and
- NPDES permit.

The excavation and soil handling will be conducted by a qualified, Hazardous Waste Operations and Emergency Response (HAZWOPER)-trained, contractor using conventional earthwork equipment. The contractor will prepare a Site Specific Health and Safety Plan (HASP), which will address identification of hazards, hazard mitigation, safe work practices and emergency response procedures for the project. The Site-specific HASP will be prepared to comply with applicable requirements of 29 CFR 1910.120 and 8 CCR GIS0 5192.

Utility Clearance

Prior to commencing with excavation activities, Underground Service Alert (USA) will be contacted at least 48 hours in advance to identify the location of utilities that enter the property. All proposed excavation areas will be clearly marked with white paint or surveyors flagging as required by USA. USA will contact all utility owners of record within the Site vicinity and notify them of the intent to excavate. All utility owners of record will be expected to clearly mark the position of their utilities on the ground surface throughout the designated area.

USA will not mark utilities within the interior of the Site; consequently a private utility locating service will be employed to perform a geophysical survey. Available utility location information will be supplemented with survey of areas surrounding the proposed locations that have not been surveyed to attempt to locate utility lines and subsurface improvements.

Soil Excavation Extent and Methods

Soil will be excavated at the locations shown on Plate 5.1. The vertical extent of excavations will be limited to 10 feet bgs. The estimated in-place volume of impacted soil to be excavated is approximately 72 cubic yards.

Soil excavation activities are expected to take approximately two weeks to complete. Work is typically performed between 7:00 a.m. and 3:30 p.m., Monday through Friday.

When not directly loaded into trucks, the excavated soil will either be stockpiled or placed in covered soil bins until characterization and disposal arrangements are completed. Stockpiled soil will be placed on plastic sheeting and covered with plastic sheeting when not actively being worked on and at the end of each workday. Soil samples will be collected and submitted for chemical analyses to evaluate disposal alternatives at a frequency of at least one discrete sample per excavation location. Off-Site disposal of excavated soil will be based on the soil analytical results under appropriate documentation and consistent with applicable federal, state, and local regulations.

Backfilling will be conducted in compliance with federal, state, and local requirements. Backfill materials may consist of laboratory-certified clean fill or alternative backfill materials (e.g. cement slurry) to 4 feet bgs at deeper excavation locations followed by laboratory-certified clean fill to grade. Laboratory-certified clean fill material (DTSC, 2001) will be imported to the Site. A geotechnical field technician will provide observation and testing services during backfill operations. *In-situ* density tests will be performed to determine when a minimum relative compaction rate of 90 percent has been achieved relative to the maximum dry density obtained from American Society for Testing and Materials (ASTM) D6938-10. The backfilling process will continue until the desired Site grade is reached.

Control Measures

Measures will be implemented to control dust emissions, reduce track-out of soil by vehicles, prevent entry of unauthorized persons, and manage stormwater. Dust control measures will comply with SCAQMD feasible control measures to protect on-Site and off-Site receptors from chemicals in soil and nuisance dust. Stormwater management activities will comply with applicable LARWQCB regulations. Control measures are described in the following paragraphs.

Dust suppression will be performed by lightly spraying or misting the work areas (such as the excavation, soil handling areas and haul roads) with water, BioSolve®, or a similar surfactant if water is not sufficient to reduce the potential for dust generation. Misting may also be used on soil placed in the transport trucks. Efforts will be made to minimize the soil drop height from the excavator’s bucket onto the soil pile or into the transport trucks. The excavator will be positioned so as to load or stockpile soil from the leeward side. After the soil is loaded into the transport trucks, the soil will be covered to prevent soil from spilling out of the truck during transport to the disposal facility. Additionally, soil stockpiles and truck beds containing soil will be covered to minimize the potential for dust generation.

Excavation locations will be secured at night using temporary fencing and other means to reduce the potential for unauthorized personnel to enter the excavation area. Low-visibility, low-permeability windscreen material will be attached to the temporary and permanent fencing prior to commencement of on-Site activities.

If precipitation is anticipated, engineering controls will be implemented to minimize the collection of rainwater in excavation and soil stockpile areas. While on Site, all vehicles will maintain slow speeds of less than 5 miles per hour for safety purposes and for dust control measures. Before exiting the Site, vehicle tires will be inspected and brushed, if necessary, to ensure that impacted soil remains on Site. This cleanup/decontamination area will be established as close to the excavation and/or loading areas as possible to minimize the spreading of impacted soil.

Perimeter Air Monitoring During Excavation

Airborne particulate monitoring will be conducted to verify and document the effectiveness of dust suppression measures in conformance with SCAQMD Rule 403. To mitigate off-Site dust migration impacts to neighboring properties, watering of the active excavation areas will be conducted throughout the removal action. Factors considered in providing fugitive dust control measures will include wind direction, wind speed, and available dust control and dust suppression methods.

Air monitoring for particulates will be performed during the excavation activities at the perimeter of the Site using an upwind/downwind sampling approach. The limit on dust concentrations at the property boundaries will be PM_{10} levels not to exceed 50 micrograms per cubic meter ($\mu g/m^3$) when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers.

VOCs are expected to be encountered during excavation activities based on VOC concentrations in the Site soil and soil vapor. Air monitoring will be conducted as a safety precaution using a direct reading PID during excavation and soil handling activities as specified in the HASP, and in conformance with SCAQMD Rule 1166 requirements.

Transportation Plan

Based on analytical results for soil samples previously collected from the Site, soils removed from the Site are expected to be handled as non-hazardous waste. All shipments of non-hazardous waste will be transported under a non-hazardous waste manifest or bill-of-lading.

Approximately 100 tons (72 cubic yards) of soil will be removed from the Site in the areas shown on Plate 5.1. Assuming each truck carries 25 tons, approximately 6 trucks will be needed to transport the impacted soil. Before leaving the Site, each truck driver will be instructed to notify the Site Manager. All vehicles will be required to maintain speeds of less than 5 miles per hour (mph) for safety and for dust control purposes. Prior to exiting the Site, vehicles will be swept to remove soil from areas not covered or protected. The Site Manager will be responsible for inspecting each truck to observe whether the payloads are properly covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest has been completed and signed by the generator (or its agent) and the transporter.

Record Keeping

Kleinfelder will be responsible for maintaining a field logbook, which will serve to document observations, personnel on Site, equipment arrival and departure times, and other important project information. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. Logbooks will be bound, with consecutively numbered pages and each page will indicate the date and time of the entry. All entries will be legible, written in black or blue ink, and signed by the author. Language will be factual and objective. If an error is made, corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed.

Soil profiled as non-hazardous and sent off Site for disposal will be documented using a Non-Hazardous Waste Manifest or Bill-of-Lading form. At a minimum, this form will include the following information:

- Generator name and address;
- Transportation company;
- Accepting facility name and address;
- Waste shipping name and description; and
- Quantity shipped.

If some portion of the excavated soil is profiled as hazardous waste under California or EPA regulations, the Uniform Hazardous Waste Manifest (hazardous waste manifest) form will be used to track the movement of soil from the point of generation to the point of ultimate disposition. The hazardous waste manifests will include the following information:

- Name and address of the generator, transporter, and the destination facility;
- United States Department of Transportation description of the waste being Transported and any associated hazards;
- Waste quantity;
- Name and phone number of a contact in case of an emergency;
- EPA Hazardous Waste Generator Number; and
- Other information required either by the EPA and/or the DTSC.

Prior to transporting the excavated soil off-Site, an authorized representative of EMES will sign each hazardous and/or non-hazardous waste manifest. The removal action Site Manager will maintain one copy of hazardous and/or non-hazardous waste manifests on Site for the duration of excavation activities.

6.2 IMPLEMENTATION OF SOIL VAPOR EXTRACTION

The SVE system implementation will be phased as described in Section 5.1.2. A detailed description of the initial SVE system and design rationale will be provided in a RAWP that will be submitted to the LARWQCB. Subject to LARWQCB approval of the RAWP, EMES will begin securing necessary permits, negotiating access agreements with property owners, and ordering the materials necessary for the Phase I SVE remediation. Contingent on obtaining permits and access agreements in a timely manner, installation of the proposed Phase I SVE system could begin in the fourth quarter of 2012.

Upon approval by LARWQCB of the RAWP and acquisition of necessary permits, installation activities will commence and be performed by a California-licensed engineering contractor with supervision by a California registered Professional Civil Engineer.

SVE Phase II will consist of expansion of the SVE system to the UVA and UHC properties. The conceptual ROI used to implement SVE Phase I will be modified as appropriate based on monitoring data collected during operation of Phase I. After demolition, and as future use of the site becomes better understood, layout of the Phase II SVE wells and configuration of the full-scale SVE system may be modified.

6.3 SCHEDULE

The proposed schedule for the activities related to the RAP and remediation activities includes a public review period which will be initiated by LARWQCB and coordinated with EMES. Comments on the RAP will be addressed in consultation with LARWQCB.

Excavation and Off-Site Disposal

A tentative implementation schedule for Excavation and Off-Site Disposal is shown in Plate 6.1. The schedule shows tasks such as:

- Review of Remedial Action Plan Phase I by LARWQCB;
- Preparation of responses to comments;
- Revised Remedial Action Plan Phase I publication, as necessary;
- Excavation Work Plan preparation;
- Health and Safety Plan for Excavation Activities preparation;
- Permits application and notifications to regulatory agencies;
- Subcontractor Selection;
- Subsurface Clearance;
- Excavation Activities;

- Laboratory Analysis of Confirmation Samples; and
- Soil Excavation Completion Report Preparation.

Implementation excavation and off-site disposal will be initiated upon approval by LARWQCB and necessary access permits are secured from the property owners.

Soil Vapor Extraction

A tentative implementation schedule for installation of Soil Vapor Extraction System is shown in Plate 6.1. The schedule shows tasks such as:

- Review of Remedial Action Plan Phase I and RAWP by LARWQCB;
- Preparation of responses to comments;
- Revised Remedial Action Plan Phase I and RAWP publication, as necessary;
- Engineering Design of SVE System;
- Health and Safety Plan for SVE System Installation preparation;
- Permits application and notifications to regulatory agencies;
- Subcontractor Selection;
- Subsurface Clearance;
- SVE System Installation Activities, including utilities;
- SVE System Inspection and Start-up;
- Laboratory Analysis of Baseline Samples; and
- SVE System Installation Completion Report Preparation.

6.4 REPORTING

Excavation and Off-Site Disposal

A Soil Excavation Completion Report will be prepared at the conclusion of excavation activities. The Soil Excavation Completion Report will describe the activities conducted pursuant to this RAP and include the following items:

- Site Description and Background;
- Summary of Excavation Activities;
- Quality Assurance Review and Required Regulatory Documentation;
- As-Built Drawings;

- Discussion of Variances;
- Summary and Conclusions;
- References; and
- Appendices and Supporting Documentation.

The Soil Excavation Completion Report will be submitted to LARWQCB within 45 days after completion of excavation activities and receipt of copies of bills of lading / disposal manifest from disposal facilities. A copy of the Report will be placed in the public repository (Geotracker).

Soil Vapor Extraction System

A SVE System Installation Completion Report will be prepared at the conclusion of the system installation. The SVE System Installation Completion Report will describe the activities conducted pursuant to this RAP and include the following items:

- Site Description and Background;
- Summary of Installation Activities;
- Quality Assurance Review and CEQA Documentation;
- As-Built Drawings;
- Discussion of Variances;
- Results of Initial System Inspection and Start-up;
- Baseline Soil Vapor Monitoring;
- Summary and Conclusions;
- References; and
- Appendices and Supporting Documentation.

The SVE System Installation Completion Report will be submitted to LARWQCB for final review and approval within 60 days of the SVE system installation and receipt of the Permit to Operate. Upon receipt of approval of the Report from LARWQCB, a copy of the Report and approval letter will be placed in the public repository (Geotracker).

7.0 LIMITATIONS

Kleinfelder performed the services for this project under the Standard Procurement Agreement with Procurement, a division of ExxonMobil Global Services Company (signed on June 21, 2007). Kleinfelder states that the services performed are consistent with professional standard of care defined as that level of services provided by similar professionals under like circumstances. This report is based on the regulatory standards in effect on the date of the report. It has been produced for the primary benefit of ExxonMobil Global Services Company and its affiliates.

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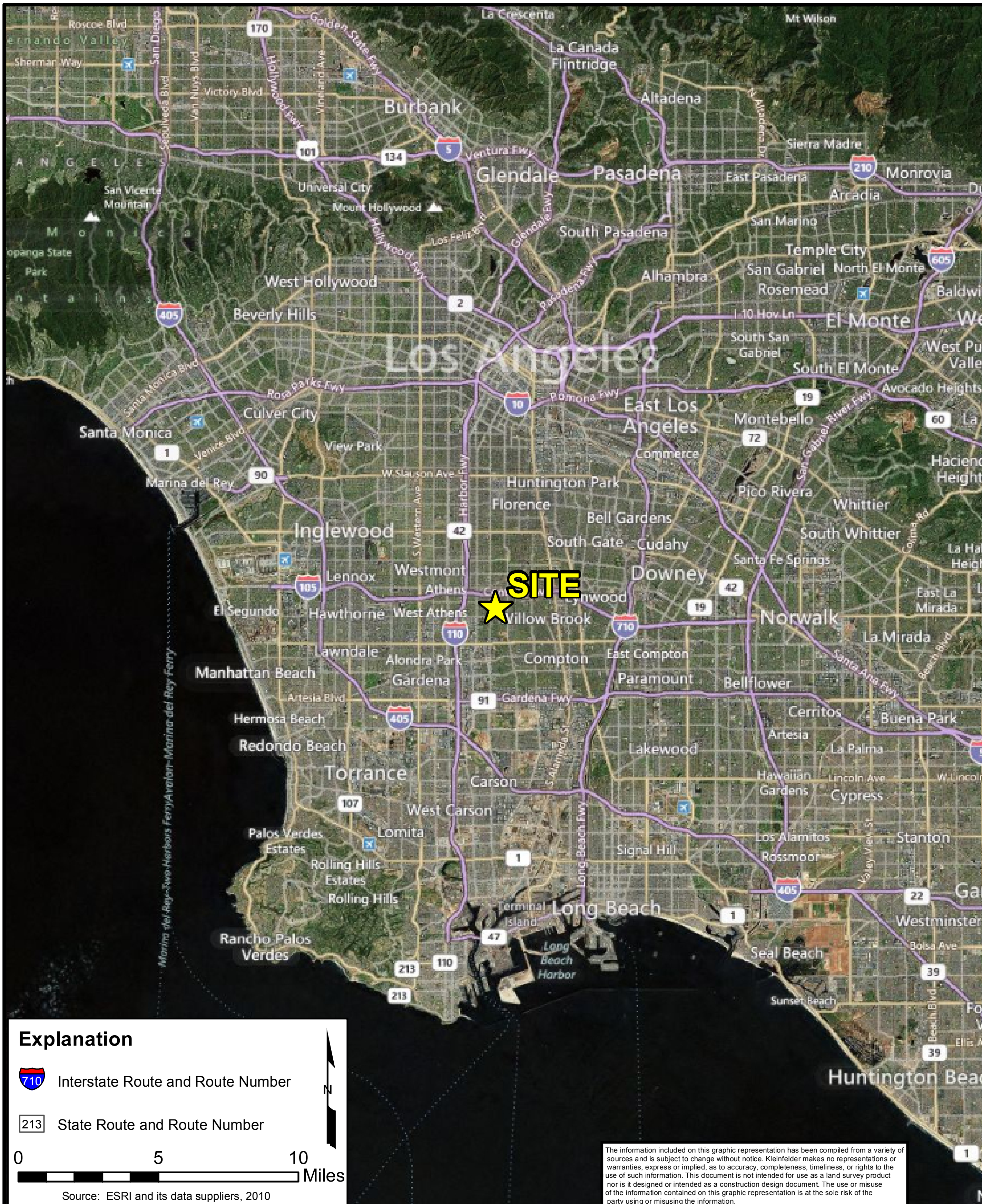
PLATES



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PROJECT NO.	124094
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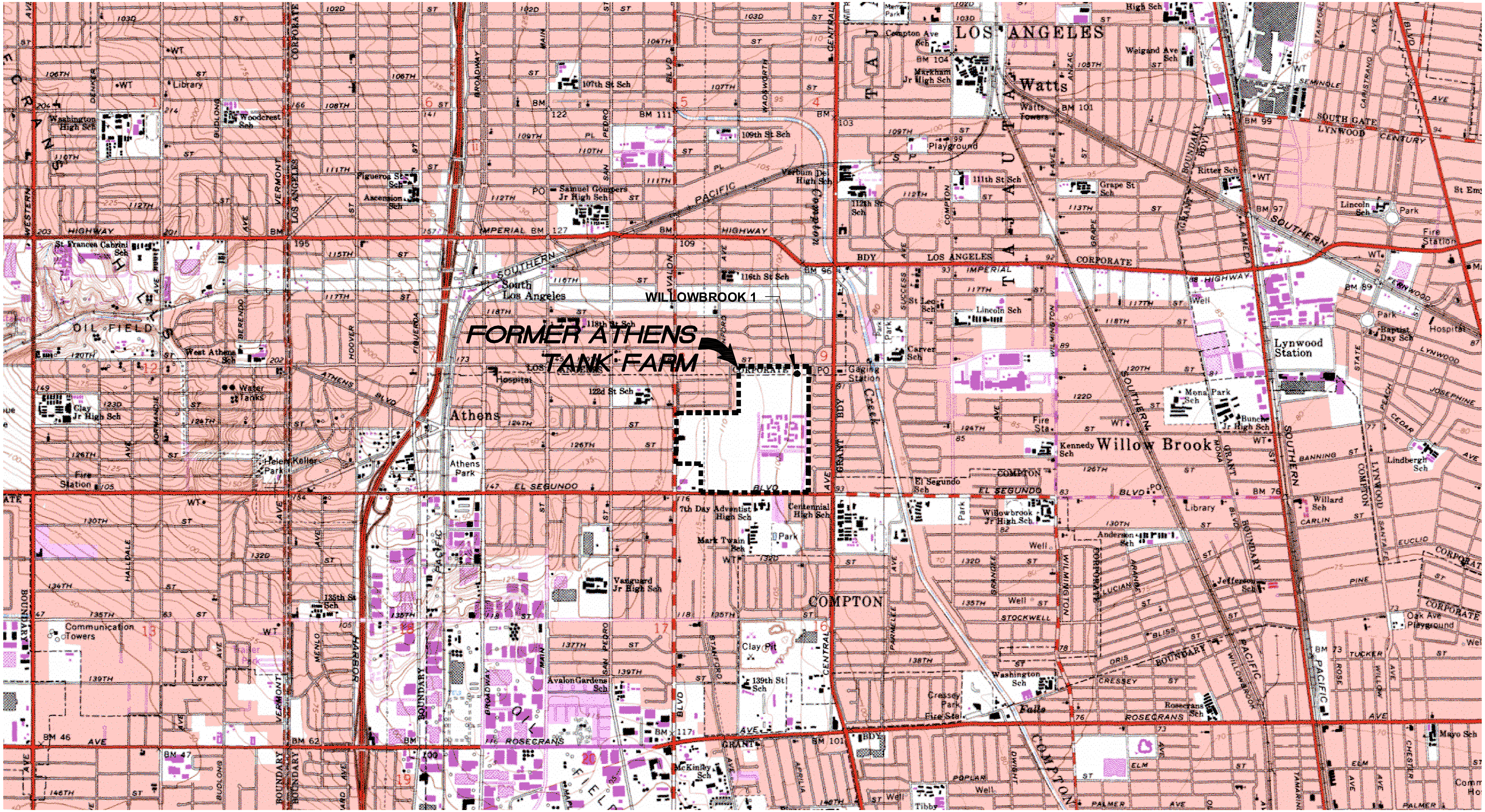
DRAWN BY:	R. ALVAREZ
CHECKED BY:	M. PATE
FILE NAME:	124094p3_1.mxd

General Location Map

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
2.1



SOURCE: U.S.G.S. 7.5' topographic series, Inglewood, California quadrangle dated 1964, photorevised 1981.

N

2,000 1,000 0 2,000

APPROXIMATE SCALE (feet)

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SITE VICINITY MAP

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
2.2

PLOTTED: 12 Jun 2012, 12:46pm, dfahrney
ATTACHED IMAGES: Images: o33118h2_SouthGate-CA.tif Images: o33118h3_Inglewood-CA.tif
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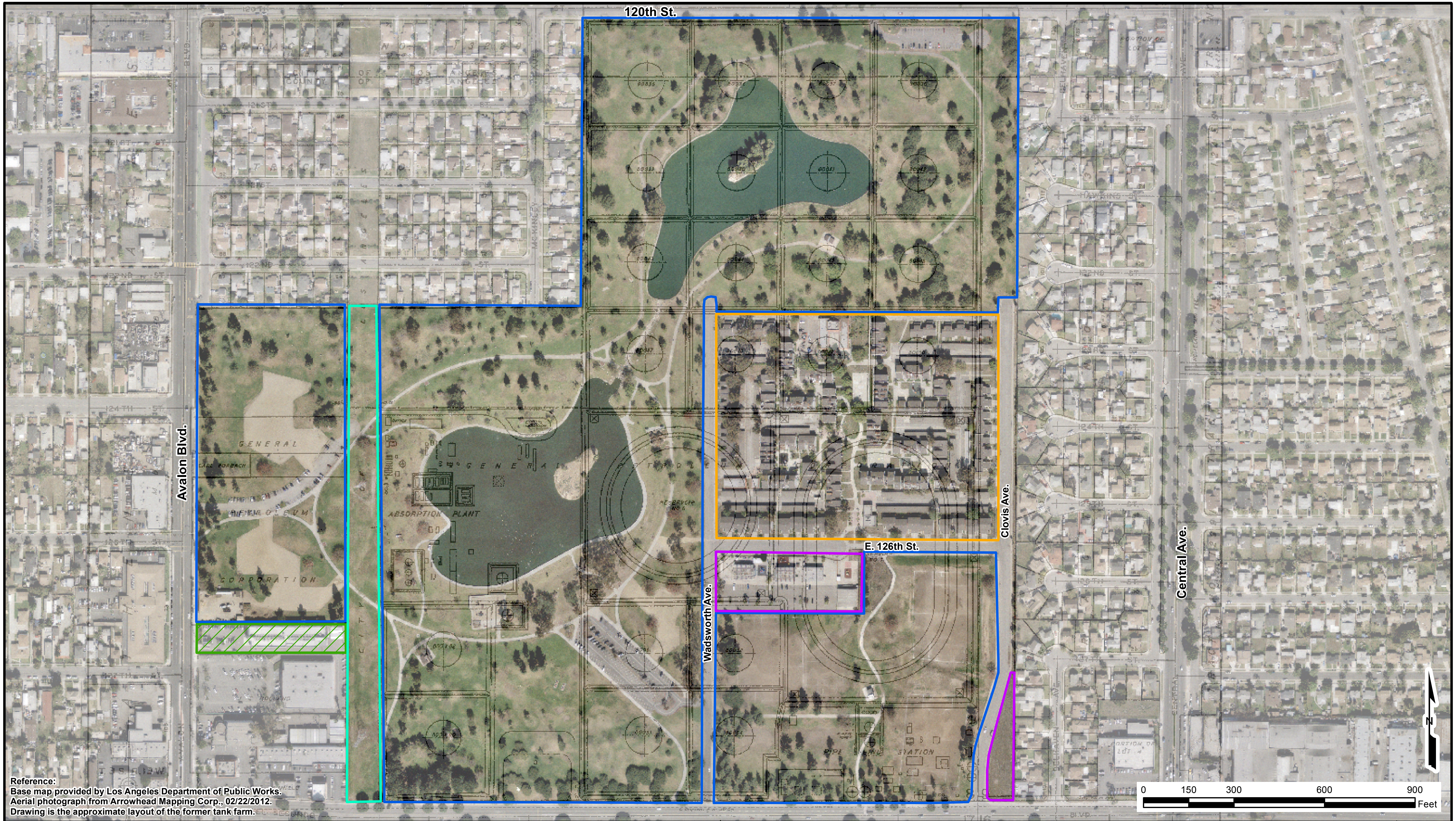
RIVERSIDE, CA



Projected Coordinate System: NAD 1983,
State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

Explanation

- City of Los Angeles
- Earvin Magic Johnson Regional Park
- Ujima Housing Corporation
- Ujima Village Apartment Complex
- Animo Watts Charter High School

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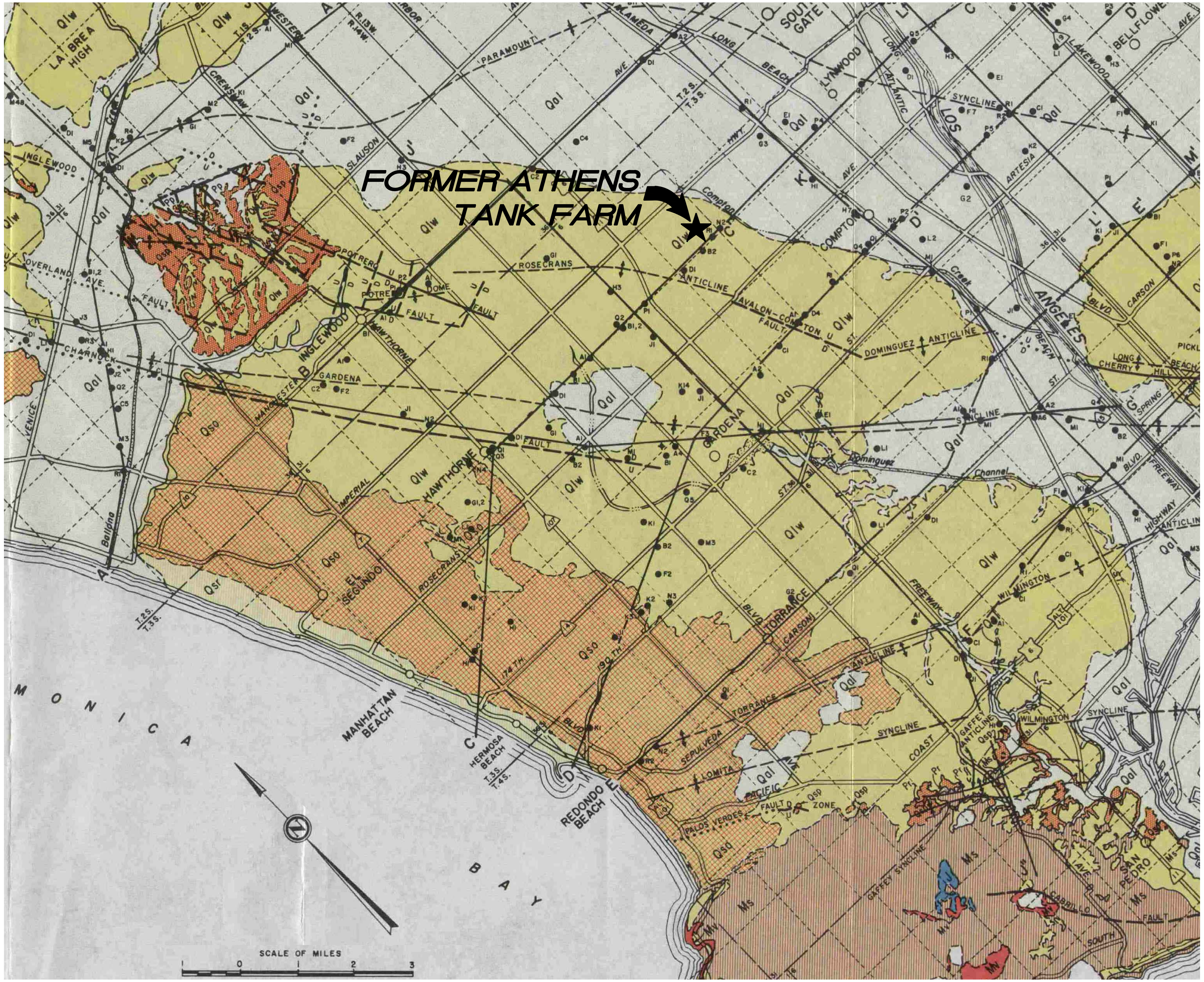
Site Plan

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
2.3



SOURCE: STATE OF CALIFORNIA, DEPARTMENT OF WATER RESOURCES, SOUTHERN CALIFORNIA DISTRICT. GROUND WATER GEOLOGY OF THE COASTAL PLAIN OF LOS ANGELES COUNTY. AREAL GEOLOGY, DATED 1961

LEGEND

SEDIMENTARY ROCKS

Qal	ALLUVIUM — GRAVEL, SAND, SILT, AND CLAY
Qsr	ACTIVE DUNE SAND — WHITE OR GREYISH, WELL SORTED SAND
Qso	OLDER DUNE SAND — FINE TO MEDIUM SAND WITH SILT, AND GRAVEL LENSES
Qlw	LAKEWOOD FORMATION (INCLUDES "TERRACE DEPOSITS," "PALOS VERDES SAND," AND "UNNAMED UPPER PLEISTOCENE DEPOSITS") — MARINE AND CONTINENTAL GRAVEL, SAND, SANDY SILT, SILT, AND CLAY WITH SHALE PEBBLES
Qsp	SAN PEDRO FORMATION (INCLUDES "LA HABRA CONGLOMERATE" AND PART OF "SAUGUS FORMATION") — MARINE AND CONTINENTAL GRAVEL, SAND, SANDY SILT, SILT, AND CLAY
Qsp-Pp	UNDIFFERENTIATED SAN PEDRO FORMATION AND/OR PICO FORMATION — MARINE, PARTIALLY CONSOLIDATED GRAVEL, SAND, SILT, AND CLAY
Pp	PICO FORMATION — MARINE SAND, SILT, AND CLAY INTERBEDDED WITH GRAVEL
Pr	REPETTO FORMATION — MARINE SILTSTONE WITH LAYERS OF SANDSTONE AND CONGLOMERATE
Ms	(SANTA MONICA MOUNTAINS) MODELO FORMATION — MARINE CONGLOMERATIC SANDSTONE, SANDSTONE, AND SHALE; TOPANGA FORMATION — MARINE CONGLOMERATE, SANDSTONE, AND SHALE; (PALOS VERDES HILLS) MONTEREY FORMATION — MUDSTONE, DIATOMITE, AND SHALE; (ELYSIAN HILLS, REPETTO HILLS, AND PUENTE HILLS) PUENTE FORMATION — MARINE SILTSTONE, SANDSTONE, SHALE, CONGLOMERATE, LIMESTONE, AND TUFF
Φ	VAQUEROS AND SESPE FORMATIONS — CONTINENTAL RED CONGLOMERATE AND SANDSTONE
E	MARTINEZ FORMATION — MARINE CONGLOMERATE, SANDSTONE, SANDY SHALE, AND SHALE
E-K	UNDIVIDED MARTINEZ AND CHICO FORMATIONS
Ks	CHICO FORMATION — UPPER MARINE MEMBER-HARD CONGLOMERATE, SANDSTONE, AND SHALE; LOWER CONTINENTAL MEMBER-RED CONGLOMERATE AND SANDSTONE

IGNEOUS AND METAMORPHIC ROCKS

Mv	MIDDLE MIOCENE VOLCANIC ROCKS — VOLCANIC FLOWS, BRECCIAS, TUFFS, AND INTRUSIVES. CHIEFLY BASALTIC AND ANDESITIC WITH OCCASIONAL ACID ROCKS. GENERALLY ASSOCIATED WITH TOPANGA, MODELO, OR PUENTE FORMATIONS
Kg	(SANTA MONICA MOUNTAINS) INTRUSIVES OF GRANITE AND GRANODIORITE
J	(PALOS VERDES HILLS) CATALINA SCHIST. COMPARED WITH FRANCISCAN FORMATION OF THE COAST RANGES. VARIED TYPES OF SCHISTOSE ROCKS
Ŧ	SANTA MONICA SLATE — GREY TO BLACK SLATE, SPOTTED SLATE, MICA SCHIST WITH QUARTZ VEINS

LEGEND

U / D	FAULT (DASHED WHERE APPROXIMATLY LOCATED; U- UPTHROWN SIDE; D-DOWNTHROWN SIDE)
U / D	CONCEALED FAULT
	ANTICLINE (DASHED WHERE APPROXIMATLY LOCATED.
	SYNCLINE (DASHED WHERE APPROXIMATLY LOCATED.
	CONTACT (DASHED WHERE APPROXIMATLY LOCATED.
● A5	WELLS USED IN PREPARATION OF GEOLOGIC SECTIONS.
A——A'	LINE LOCATION OF GEOLOGIC SECTIONS SHOWN ON PLATES 6A THROUGH 6G.

PLOTTED: 12 Jun 2012, 12:40pm, dfahrney

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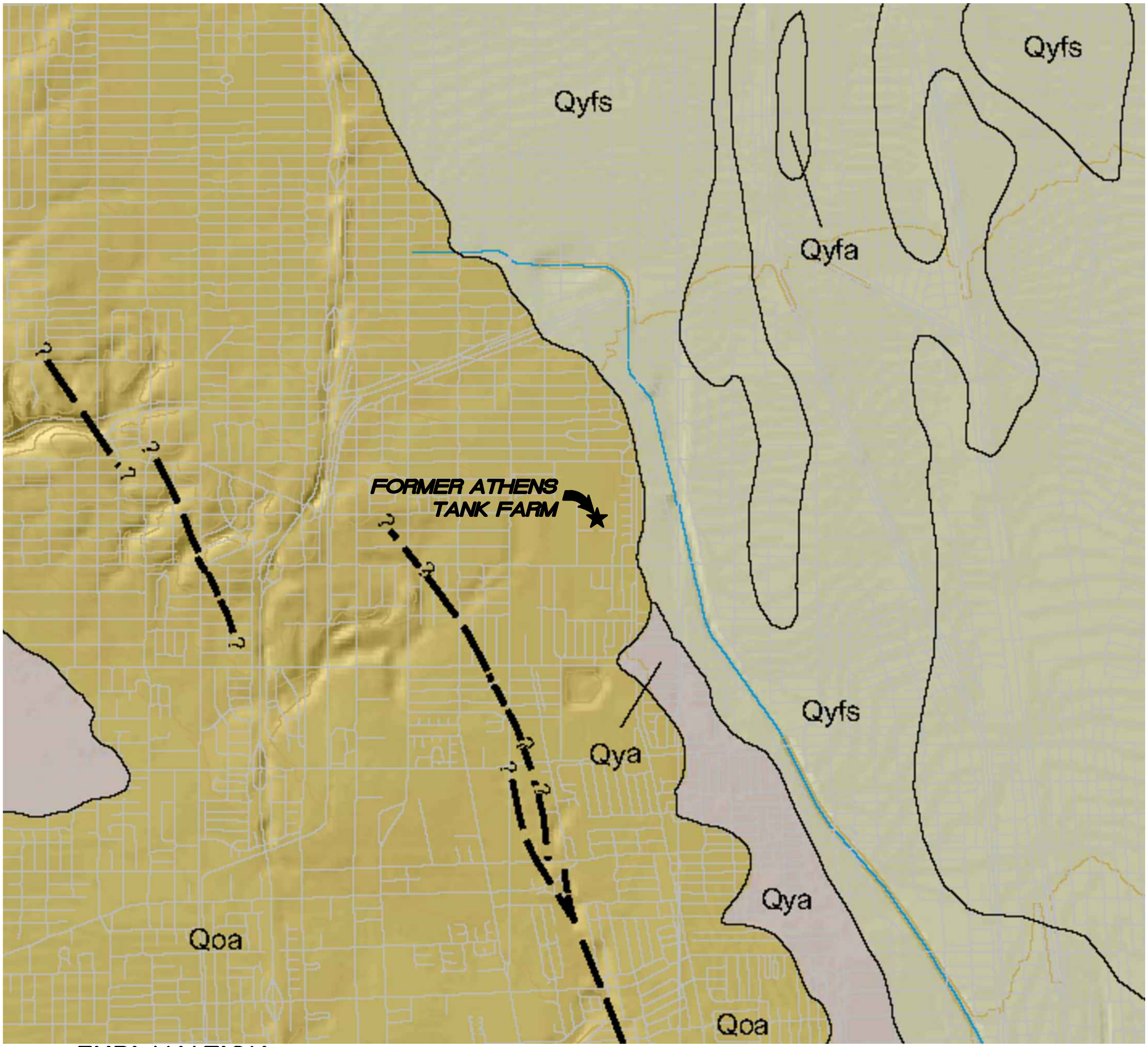
AREAL GEOLOGIC MAP

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
2.4



EXPLANATION

Qyf	Young alluvial fan and valley deposits, undivided a = sand, s = silt, c = clay
Qoa	Old alluvial flood plain deposits, undivided
Qya	Young alluvial flood plain deposits, unit 1
? ?	INFERRED FAULT LOCATION

N

4,000 2,000 0 4,000

APPROXIMATE SCALE (feet)

SOURCE: GEOLOGIC MAP OF LONG BEACH 30'x60' QUADRANGLE, CALIFORNIA. CALIFORNIA DEPT. OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY, AND MOSS LANDING MARINE LABORATORIES, VERSION 1.0 2003

PLOTTED: 12 Jun 2012, 12:41pm, dfahrney LAYOUT: 2

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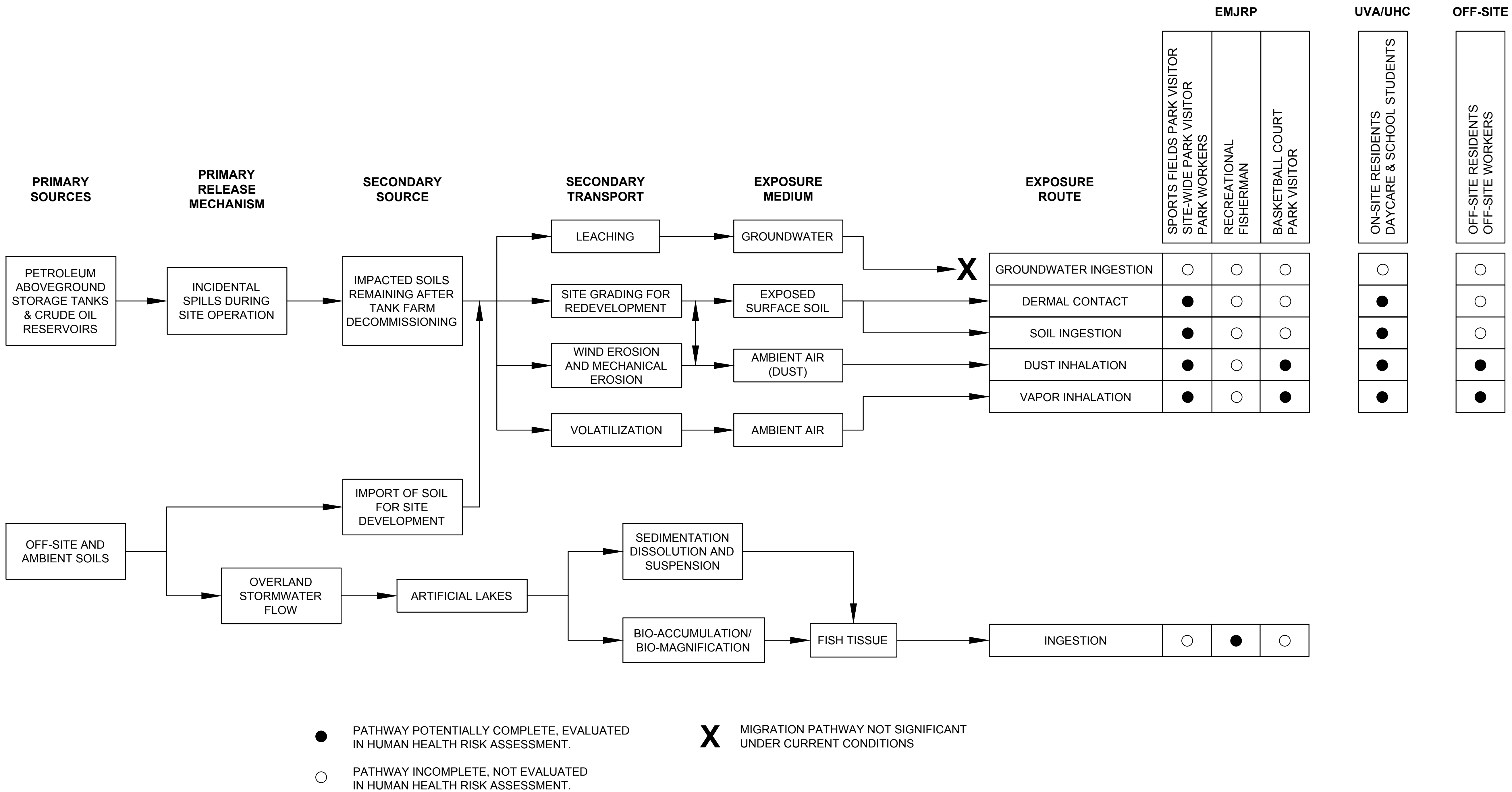
REGIONAL GEOLOGIC MAP

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE

2.5



Exposure Route	Sports Fields Park Visitor / Site-Wide Park Visitor / Park Workers	Recreational Fisherman	Basketball Court Park Visitor	On-Site Residents / Daycare & School Students	Off-Site Residents / Off-Site Workers
GROUNDWATER INGESTION	○	○	○	○	○
DERMAL CONTACT	●	○	○	●	○
SOIL INGESTION	●	○	○	●	○
DUST INHALATION	●	○	●	●	●
VAPOR INHALATION	●	○	●	●	●
INGESTION	○	●	○		

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LAYOUT: 2.10_CSM_11x17

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CONCEPTUAL SITE MODEL FLOWCHART

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE

2.6

Projected Coordinate System: NAD 1983,
State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

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Explanation

- SV-037 Soil Vapor Extraction Pilot Test Probe
- SV-135 Soil Vapor Probe Location

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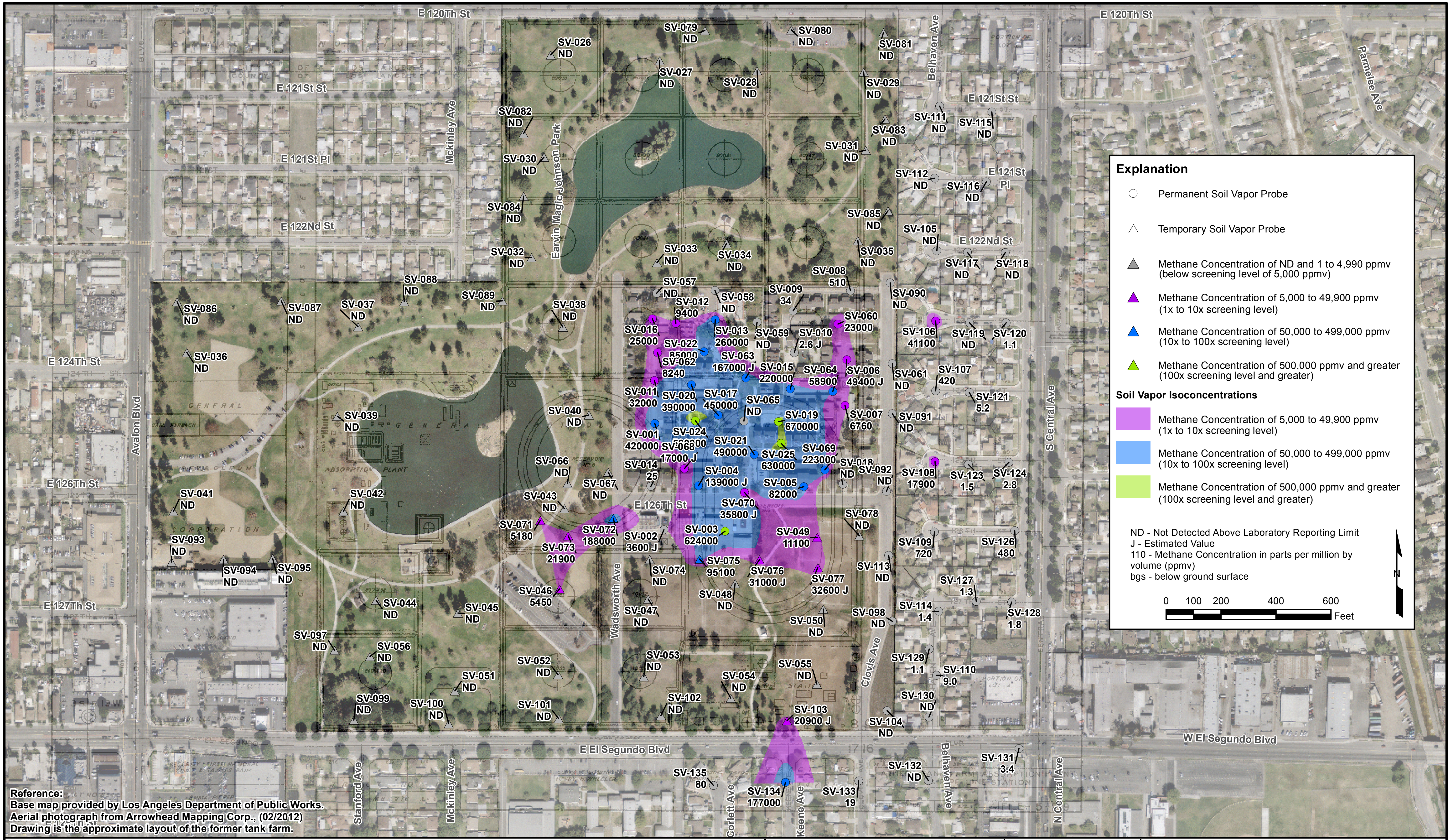
Soil Vapor Extraction Pilot Test Locations

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
2.7



Projected Coordinate System: NAD 1983, State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

Plate shows most recent sampling results from the following sources:

Kleinfelder, 2008. Report Air Quality Survey and Limited Subsurface Investigation. August 20.
Kleinfelder, 2010. Site Assessment Report. May 31.
Kleinfelder, 2011. Shallow Soil and Soil Vapor Assessment Report. August 5.
Kleinfelder, 2011. Off-Site Assessment Report. October 28.
Kleinfelder, 2012. Supplemental Off-Site Assessment Report. March 2.
Kleinfelder, 2012. Monthly Soil Gas Monitoring Report – April 2012. May 16.
Kleinfelder, 2012. Resampling of Soil Vapor Probes. May 18.

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PROJECT NO.	124094
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DRAWN BY:	R. ALVAREZ
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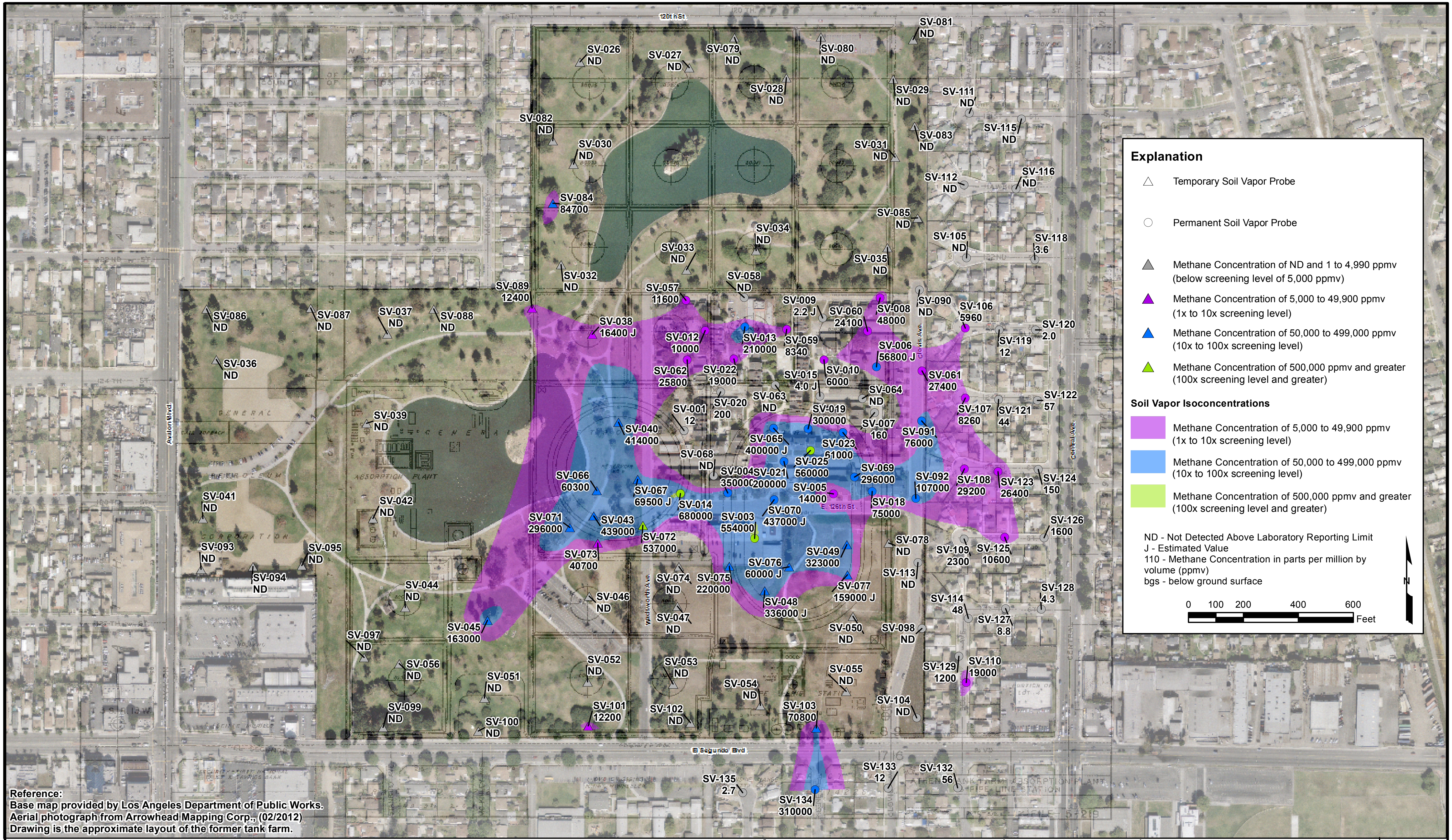
FILE NAME:	124094n3_2.mxd

Methane Concentrations in Soil Vapor at 5 Feet bgs

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
3.1



Projected Coordinate System: NAD 1983, State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

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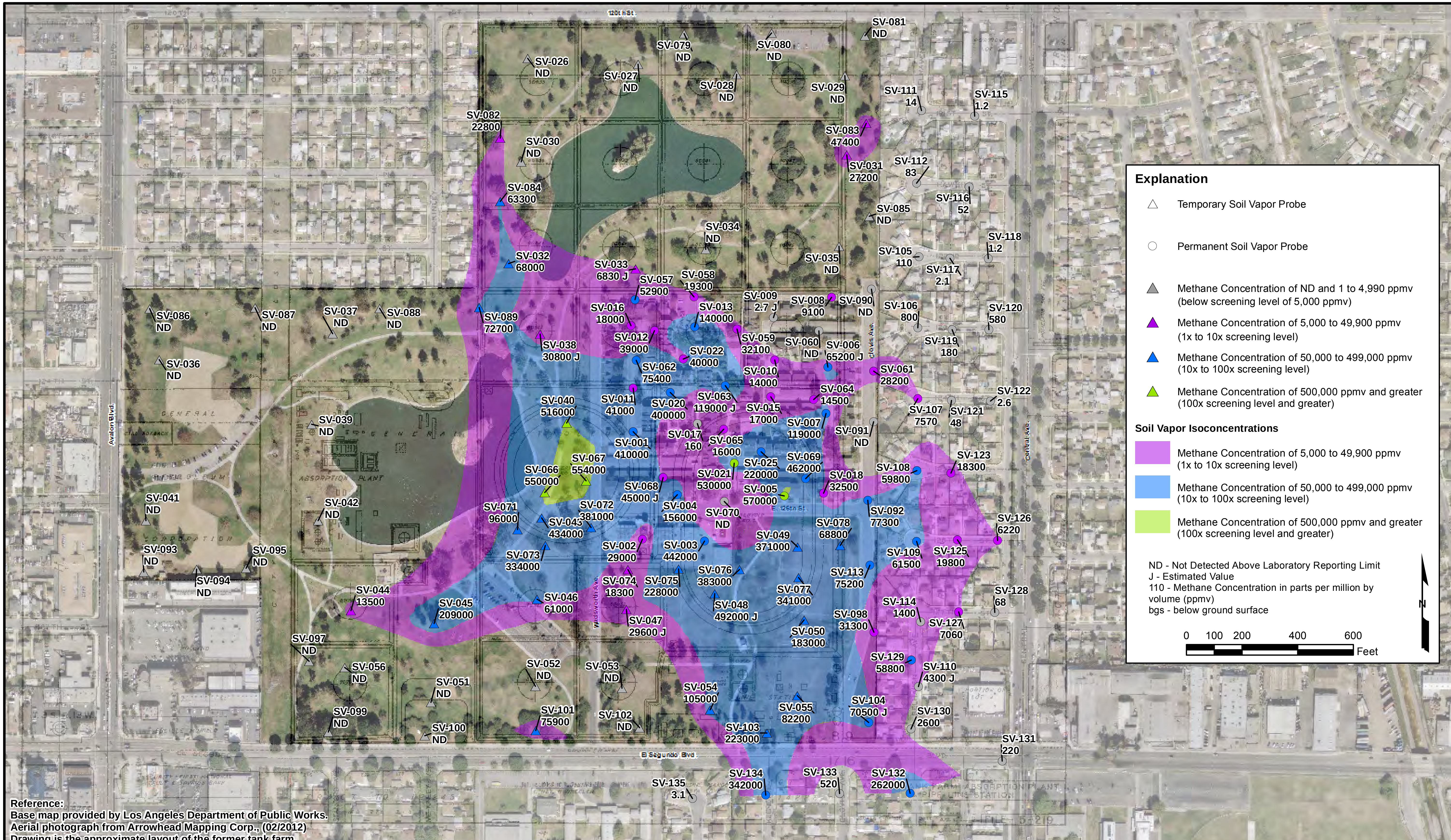
DRAWN BY:	R. ALVAREZ
CHECKED BY:	J. STOCK
FILE NAME:	124094n3_3.mxd

Methane Concentrations in Soil Vapor at 15 Feet bgs

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
3.2



Projected Coordinate System: NAD 1983, State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

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Plate shows most recent sampling results from the following sources:

Kleinfelder, 2008. Report Air Quality Survey and Limited Subsurface Investigation. August 20.
Kleinfelder, 2010. Site Assessment Report. May 31.
Kleinfelder, 2011. Shallow Soil and Soil Vapor Assessment Report. August 5.
Kleinfelder, 2011. Off-Site Assessment Report. October 28.
Kleinfelder, 2012. Supplemental Off-Site Assessment Report. March 2.
Kleinfelder, 2012. Monthly Soil Gas Monitoring Report – April 2012. May 16.
Kleinfelder, 2012. Resampling of Soil Vapor Probes. May 18.

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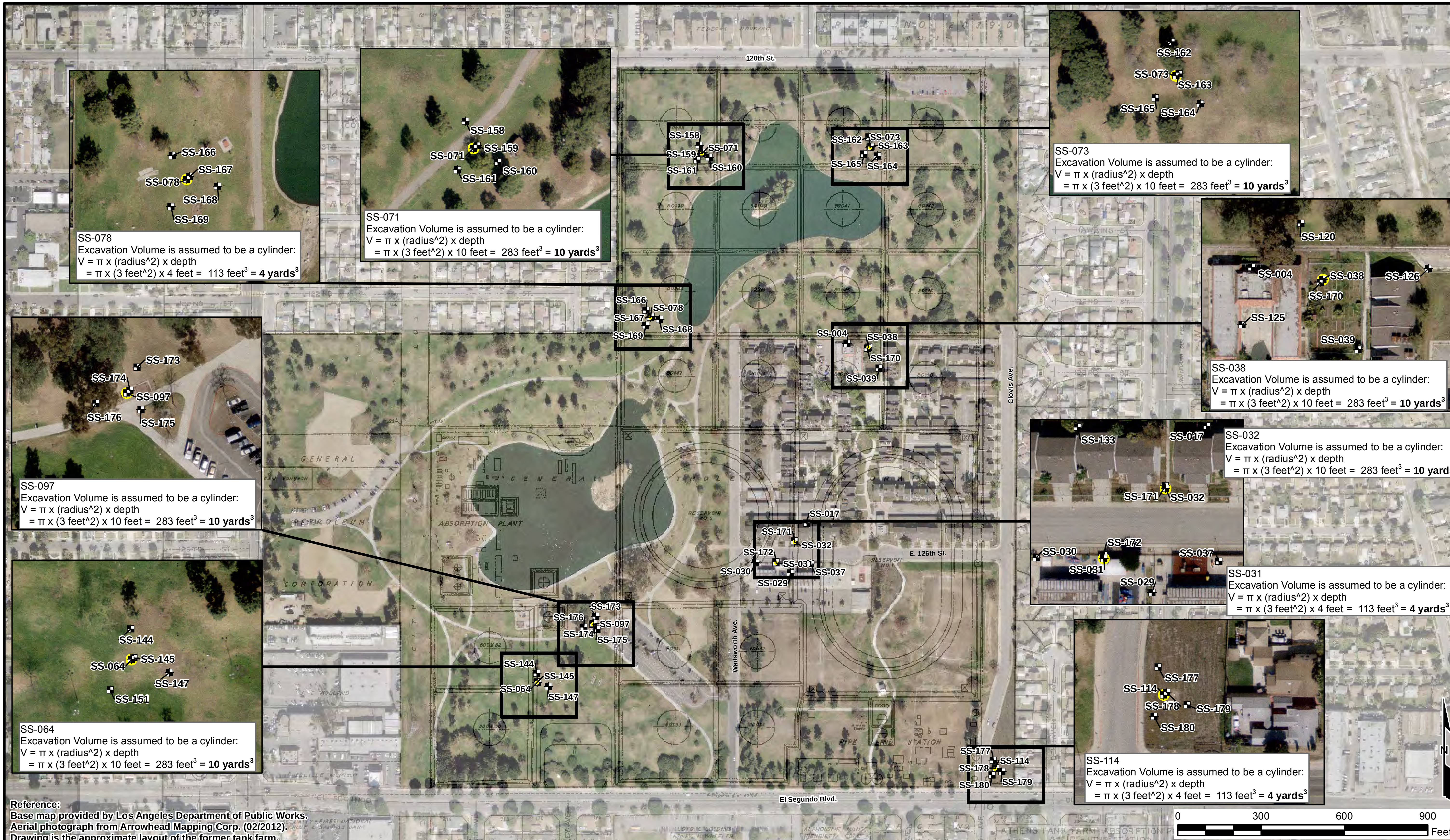
PROJECT NO.	124094
DRAWN:	06/2012
DRAWN BY:	R. ALVAREZ
CHECKED BY:	J. STOCK
FILE NAME:	124094n3_4.mxd

Methane Concentrations in Soil Vapor at 32 Feet bgs

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
3.3



Projected Coordinate System: NAD 1983,
State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

Explanation

- SS-180 Shallow Soil Boring Location
- Proposed Excavation Area

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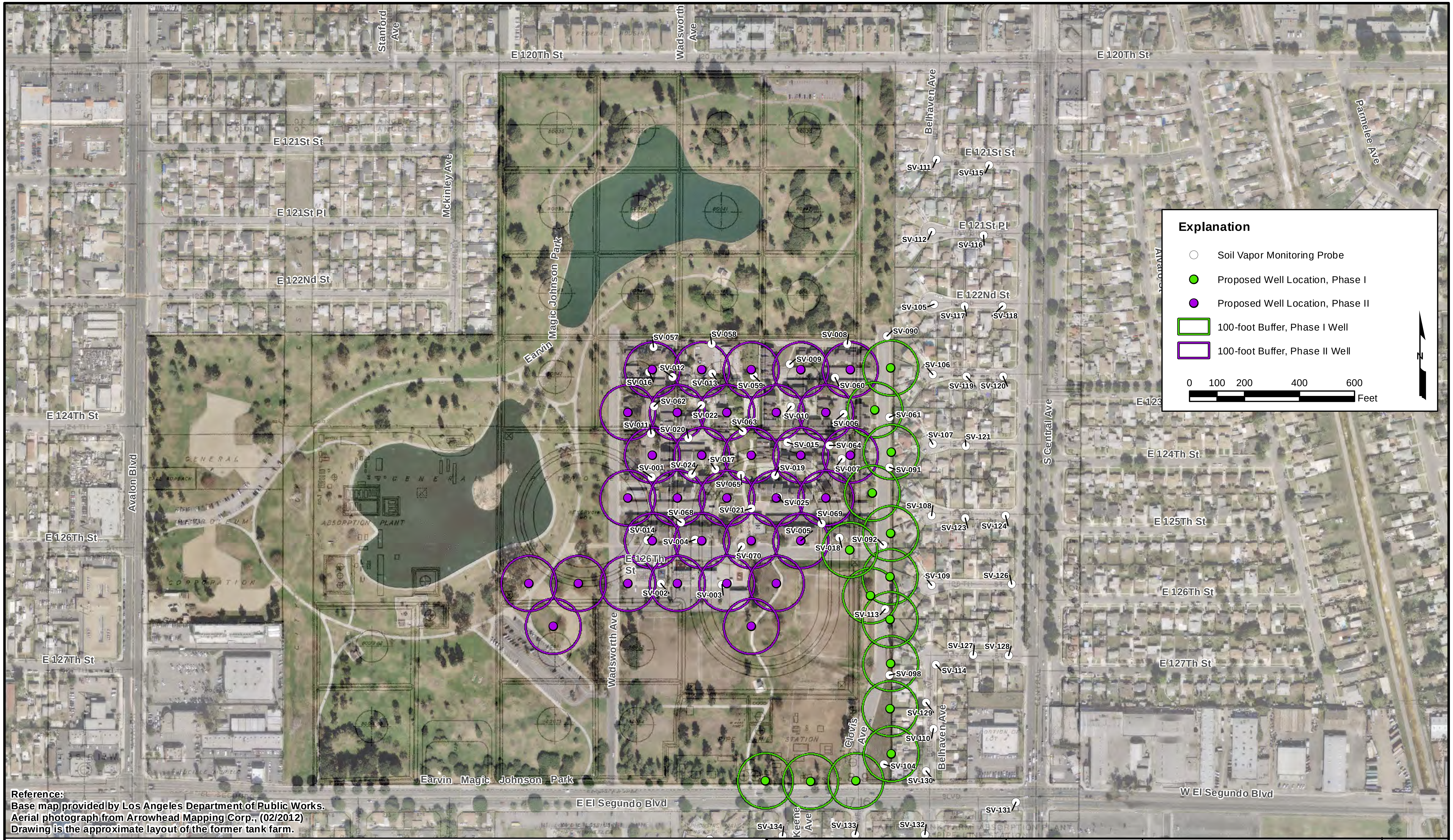
PH (213) 622-3706

PROJECT NO.	124094
DRAWN:	06/2012
DRAWN BY:	R. ALVAREZ
CHECKED BY:	J. STOCK
FILE NAME:	124094n3_1.mxd

Proposed Excavation Areas

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
5.1



Reference:
Base map provided by Los Angeles Department of Public Works.
Aerial photograph from Arrowhead Mapping Corp., (02/2012)
Drawing is the approximate layout of the former tank farm.

Projected Coordinate System: NAD 1983,
State Plane, California V FIPS 0405 Feet
Projection: Lambert Conformal Conic

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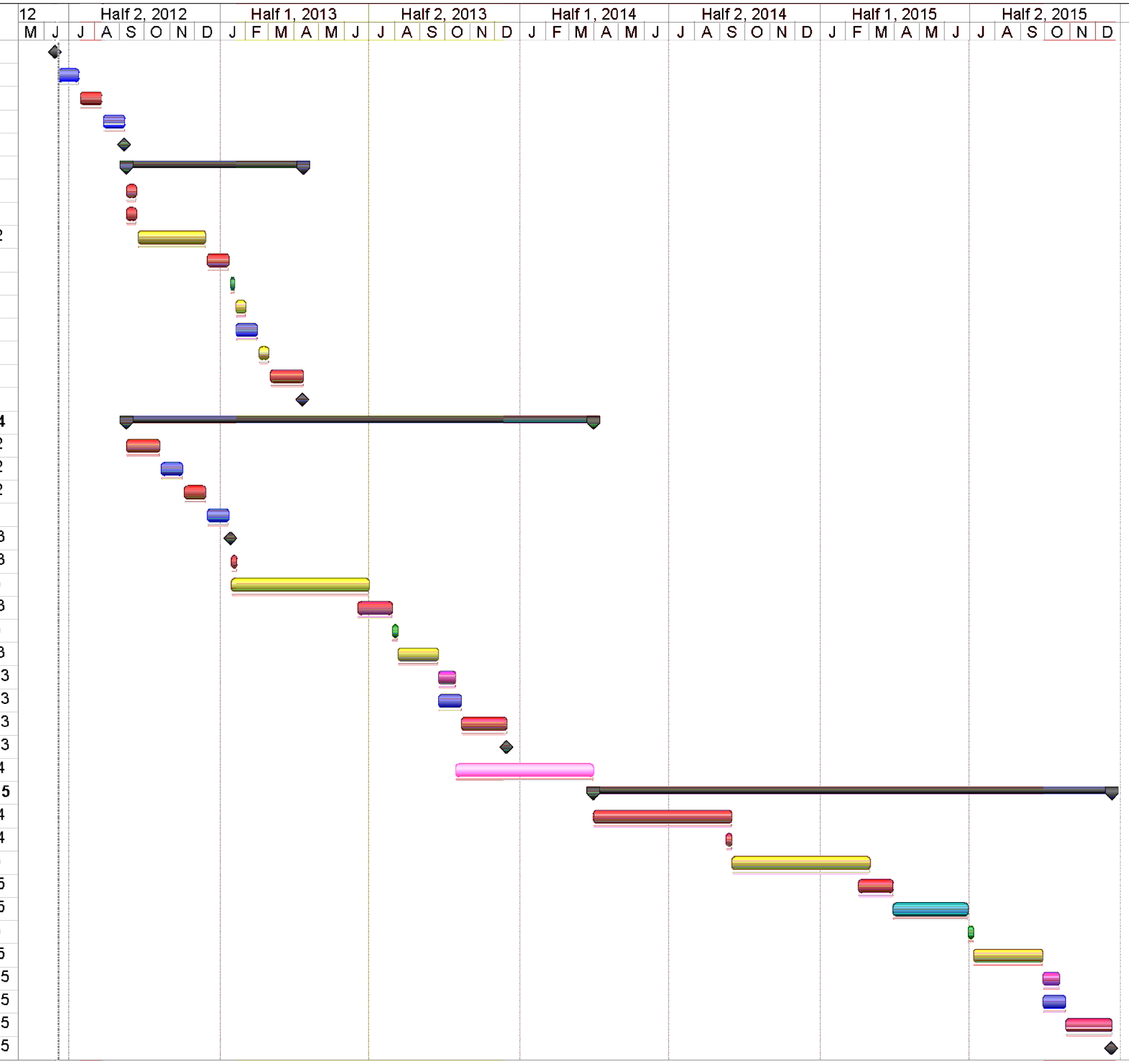
PROJECT NO.	124094
DRAWN:	06/2012
DRAWN BY:	K.HAGAN
CHECKED BY:	S.BAILEY
FILE NAME:	124094p5_2.mxd

Conceptual Soil Vapor Extraction System Layout

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
5.2

ID	Task Name	Duration (Working Days)	Start	Finish
1	**Remedial Action Plan Phase I Submittal to LARWQCB**	1 day	Fri 6/15/12	Fri 6/15/12
2	Regulatory Agency and Community Review Period	20 days	Mon 6/18/12	Fri 7/13/12
3	Address Comments and Submit Revised On-site Soil and Soil Vapor RAP to LARWQCB	20 days	Mon 7/16/12	Fri 8/10/12
4	LARWQCB Review and Approval	20 days	Mon 8/13/12	Fri 9/7/12
5	**RAP Approval Letter from LARWQCB**	1 day	Fri 9/7/12	Fri 9/7/12
6	**Excavation and Off-site Disposal**	**155 days**	**Mon 9/10/12**	**Fri 4/12/13**
7	Excavation Work Plan Preparation	10 days	Mon 9/10/12	Fri 9/21/12
8	Health and Safety Plan Preparation	10 days	Mon 9/10/12	Fri 9/21/12
9	Permits Application and Notifications to Regulatory Agencies	60 days	Mon 9/24/12	Fri 12/14/12
10	Subcontractor Selection	20 days	Mon 12/17/12	Fri 1/11/13
11	Subsurface Clearance	5 days	Mon 1/14/13	Fri 1/18/13
12	Excavation Activities	10 days	Mon 1/21/13	Fri 2/1/13
13	Laboratory Analysis of Comfirmation Samples	20 days	Mon 1/21/13	Fri 2/15/13
14	Backfill Activities	10 days	Mon 2/18/13	Fri 3/1/13
15	Soil Excavation Completion Report Preparation	30 days	Mon 3/4/13	Fri 4/12/13
16	Soil Excavation Report Submittal	1 day	Fri 4/12/13	Fri 4/12/13
17	**Phase I - Interim SVE System Installation**	**406 days**	**Mon 9/10/12**	**Mon 3/31/14**
18	Engineering Design; Submit RAWP to LARWQCB	30 days	Mon 9/10/12	Fri 10/19/12
19	Regulatory Agency and Community Review Period	20 days	Mon 10/22/12	Fri 11/16/12
20	Address Comments and Submit Revised On-site Soil and Soil Vapor RAWP to LARWQCB	20 days	Mon 11/19/12	Fri 12/14/12
21	LARWQCB Review and Approval	20 days	Mon 12/17/12	Fri 1/11/13
22	**RAP Approval Letter from LARWQCB**	1 day	Mon 1/14/13	Mon 1/14/13
23	Health and Safety Plan Preparation	5 days	Tue 1/15/13	Mon 1/21/13
24	Permits Application and Notifications to Regulatory Agencies	120 days	Tue 1/15/13	Mon 7/1/13
25	Subcontractor Selection	30 days	Tue 6/18/13	Mon 7/29/13
26	Subsurface Clearance	5 days	Tue 7/30/13	Mon 8/5/13
27	Soil Vapor Extraction System Installation	35 days	Tue 8/6/13	Mon 9/23/13
28	Soil Vapor Extraction System Inspection Baseline Samples Collection and Start-up	15 days	Tue 9/24/13	Mon 10/14/13
29	Laboratory Analysis of Baseline Samples	20 days	Tue 9/24/13	Mon 10/21/13
30	SVE System Installation and Start-up Report Preparation	40 days	Tue 10/22/13	Mon 12/16/13
31	Interim SVE System Installation and Start-up Report Submittal	1 day	Mon 12/16/13	Mon 12/16/13
32	Initial Phase I SVE Operation - 6 Months Performance Monitoring	120 days	Tue 10/15/13	Mon 3/31/14
33	**Phase II - SVE System Installation**	**450 days**	**Tue 4/1/14**	**Mon 12/21/15**
34	Engineering Design	120 days	Tue 4/1/14	Mon 9/15/14
35	Health and Safety Plan Preparation	5 days	Tue 9/9/14	Mon 9/15/14
36	Permits Application and Notifications to Regulatory Agencies	120 days	Tue 9/16/14	Mon 3/2/15
37	Subcontractor Selection	30 days	Tue 2/17/15	Mon 3/30/15
38	Flame Oxidizer Unit Fabrication	65 days	Tue 3/31/15	Mon 6/29/15
39	Subsurface Clearance	5 days	Tue 6/30/15	Mon 7/6/15
40	Soil Vapor Extraction System Installation	60 days	Tue 7/7/15	Mon 9/28/15
41	Soil Vapor Extraction System Inspection Baseline Samples Collection and Start-up	15 days	Tue 9/29/15	Mon 10/19/15
42	Laboratory Analysis of Baseline Samples	20 days	Tue 9/29/15	Mon 10/26/15
43	SVE System Installation and Start-up Report Preparation	40 days	Tue 10/27/15	Mon 12/21/15
44	SVE System Installation and Start-up Report Submittal	1 day	Mon 12/21/15	Mon 12/21/15



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PROJECT NO.	124094
DRAWN:	06/2012
DRAWN BY:	K.HAGAN
CHECKED BY:	R.MACEDO
FILE NAME:	124094p6_1.mxd

Proposed Implementation Schedule

FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE
6.1

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TABLES

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Table 2.1
Shallow Soil Constituents of Potential Concern Identified in HHRA
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

CAS Number	Compound	Park Maintenance Worker Surficial Soils (up to 4 feet bgs)	Park Maintenance and Construction Workers Shallow Soils (up to 10 feet bgs)	Park Visitor Site-Wide Surficial Soils (up to 4 feet bgs)	Park Visitor Site-Wide Shallow Soils (up to 10 feet bgs)	Park Visitor Basketball Courts Surficial Soils (up to 4 feet bgs)	Park Visitor Basketball Courts Shallow Soils (up to 10 feet bgs)	Park Visitor Sports Fields Surficial Soils (up to 4 feet bgs)	Park Visitor Sports Fields Shallow Soils (up to 10 feet bgs)
79005	1,1,2-Trichloroethane	-	X	-	X	-	X	-	-
87616	1,2,3-Trichlorobenzene	X	X	X	X	-	-	X	X
95636	1,2,4-Trimethylbenzene	X	X	X	X	X	X	X	X
106934	1,2-Dibromoethane	-	X	-	X	-	-	-	-
107062	1,2-Dichloroethane	-	-	-	-	-	-	-	-
78875	1,2-Dichloropropane	-	-	-	-	-	-	-	-
108678	1,3,5-Trimethylbenzene	X	X	X	X	-	-	X	X
106467	1,4-Dichlorobenzene	X	X	X	X	X	X	X	X
90120	1-Methylnaphthalene	X	X	X	X	X	X	X	X
95954	2,4,5-Trichlorophenol	X	X	X	X	-	-	X	X
88062	2,4,6-Trichlorophenol	-	X	-	X	-	-	-	X
94826	2,4-DB	X	X	X	X	-	-	-	-
53190	2,4-DDD	X	X	X	X	X	X	X	X
3424826	2,4-DDE	X	X	X	X	X	X	X	X
789026	2,4-DDT	X	X	X	X	X	X	-	-
120832	2,4-Dichlorophenol	-	X	-	X	-	-	-	X
105679	2,4-Dimethylphenol	X	X	X	X	X	X	-	X
606202	2,6-Dinitrotoluene	X	X	X	X	-	-	X	X
78933	2-Butanone	X	X	X	X	X	X	X	X
95578	2-Chlorophenol	X	X	X	X	-	-	-	-
591786	2-Hexanone	X	X	X	X	-	-	X	X
91576	2-Methylnaphthalene	X	X	X	X	X	X	X	X
95487	2-Methylphenol	-	X	-	X	-	-	-	X
88755	2-Nitrophenol	-	X	-	X	-	-	-	X
135988	2-Phenylbutane	X	X	X	X	X	X	X	X
1319773	3/4-Methylphenol	X	X	X	X	-	-	-	X
72548	4,4'-DDD	X	X	X	X	X	X	X	X
72559	4,4'-DDE	X	X	X	X	X	X	X	X
50293	4,4'-DDT	X	X	X	X	X	X	X	X
59507	4-Chloro-3-methylphenol	X	X	X	X	-	-	-	X
106478	4-Chloroaniline	X	X	X	X	-	-	-	-
622968	4-Ethyltoluene	-	-	-	-	-	-	-	-
108101	4-Methyl-2-pentanone	X	X	X	X	-	-	-	-
100027	4-Nitrophenol	X	X	X	X	-	-	-	-
83329	Acenaphthene	X	X	X	X	X	X	X	X
208968	Acenaphthylene	X	X	X	X	X	X	X	X
67641	Acetone	X	X	X	X	X	X	X	X
309002	Aldrin	X	X	X	X	-	-	-	-
120127	Anthracene	X	X	X	X	X	X	X	X
7440360	Antimony	X	X	X	X	X	X	X	X
11097691	Aroclor-1254	X	X	X	X	X	X	X	X

Notes:
- = Not detected or Not Analyzed in this medium within this area.
X = Detected at least once in this medium within this area.

Table 2.1
Shallow Soil Constituents of Potential Concern Identified in HHRA
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

CAS Number	Compound	Park Maintenance Worker Surficial Soils (up to 4 feet bgs)	Park Maintenance and Construction Workers Shallow Soils (up to 10 feet bgs)	Park Visitor Site-Wide Surficial Soils (up to 4 feet bgs)	Park Visitor Site-Wide Shallow Soils (up to 10 feet bgs)	Park Visitor Basketball Courts Surficial Soils (up to 4 feet bgs)	Park Visitor Basketball Courts Shallow Soils (up to 10 feet bgs)	Park Visitor Sports Fields Surficial Soils (up to 4 feet bgs)	Park Visitor Sports Fields Shallow Soils (up to 10 feet bgs)
7440382	Arsenic	X	X	X	X	X	X	X	X
7440393	Barium	X	X	X	X	X	X	X	X
71432	Benzene	X	X	X	X	X	X	X	X
56553	Benzo (a) anthracene	X	X	X	X	X	X	X	X
50328	Benzo (a) pyrene	X	X	X	X	X	X	X	X
205992	Benzo (b) fluoranthene	X	X	X	X	X	X	X	X
191242	Benzo (g,h,i) perylene	X	X	X	X	X	X	X	X
207089	Benzo (k) fluoranthene	X	X	X	X	X	X	X	X
65850	Benzoic acid	X	X	X	X	-	-	-	-
7440417	Beryllium	X	X	X	X	X	X	X	X
319857	beta-BHC	X	X	X	X	-	-	-	-
117817	bis(2-Ethylhexyl) phthalate	X	X	X	X	X	X	X	X
75274	Bromodichloromethane	X	X	X	X	X	X	-	-
74839	Bromomethane	-	X	-	X	-	-	-	-
85687	Butyl benzyl phthalate	X	X	X	X	X	X	X	X
7440439	Cadmium	X	X	X	X	X	X	X	X
75150	Carbon disulfide	X	X	X	X	X	X	X	X
12789036	Chlordane	X	X	X	X	X	X	X	X
75003	Chloroethane	-	-	-	-	-	-	-	-
67663	Chloroform	X	X	X	X	-	-	X	X
74873	Chloromethane	-	-	-	-	-	-	-	-
7440473	Chromium (total)	X	X	X	X	X	X	X	X
218019	Chrysene	X	X	X	X	X	X	X	X
7440484	Cobalt	X	X	X	X	X	X	X	X
7440508	Copper	X	X	X	X	X	X	X	X
99876	Cymene	X	X	X	X	X	X	X	X
319868	delta-BHC	X	X	X	X	-	-	-	-
53703	Dibenz (a,h) anthracene	X	X	X	X	X	X	X	X
74953	Dibromomethane	X	X	X	X	-	-	X	X
75718	Dichlorodifluoromethane	-	-	-	-	-	-	-	-
60571	Dieldrin	X	X	X	X	X	X	-	-
84662	Diethyl phthalate	X	X	X	X	X	X	X	X
108203	Diisopropyl ether	-	-	-	-	-	-	-	-
131113	Dimethyl phthalate	X	X	X	X	-	-	X	X
84742	Di-n-butyl phthalate	X	X	X	X	X	X	X	X
117840	Di-n-octyl phthalate	X	X	X	X	X	X	X	X
53494705	Endrin ketone	X	X	X	X	-	-	-	-
64175	Ethanol	X	X	X	X	X	X	X	X
100414	Ethylbenzene	X	X	X	X	X	X	X	X
206440	Fluoranthene	X	X	X	X	X	X	X	X

Notes:
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Table 2.1
Shallow Soil Constituents of Potential Concern Identified in HHRA
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

CAS Number	Compound	Park Maintenance Worker Surficial Soils (up to 4 feet bgs)	Park Maintenance and Construction Workers Shallow Soils (up to 10 feet bgs)	Park Visitor Site-Wide Surficial Soils (up to 4 feet bgs)	Park Visitor Site-Wide Shallow Soils (up to 10 feet bgs)	Park Visitor Basketball Courts Surficial Soils (up to 4 feet bgs)	Park Visitor Basketball Courts Shallow Soils (up to 10 feet bgs)	Park Visitor Sports Fields Surficial Soils (up to 4 feet bgs)	Park Visitor Sports Fields Shallow Soils (up to 10 feet bgs)
86737	Fluorene	X	X	X	X	-	-	X	X
58899	gamma-BHC	X	X	X	X	-	-	-	-
1024573	Heptachlor epoxide	X	X	X	X	X	X	-	-
193395	Indeno (1,2,3-c,d) pyrene	X	X	X	X	X	X	X	X
98828	Isopropylbenzene	X	X	X	X	X	X	X	X
7439921	Lead	X	X	X	X	X	X	X	X
78002	Lead, Organic	X	X	X	X	X	X	X	X
7439976	Mercury	X	X	X	X	X	X	X	X
72435	Methoxychlor	X	X	X	X	-	-	-	-
1634044	Methyl tert butyl ether	X	X	X	X	-	-	-	-
75092	Methylene chloride	X	X	X	X	-	-	X	X
7439987	Molybdenum	X	X	X	X	X	X	X	X
91203	Naphthalene	X	X	X	X	X	X	X	X
104518	n-Butylbenzene	X	X	X	X	-	-	-	X
7440020	Nickel	X	X	X	X	X	X	X	X
103651	n-Propylbenzene	X	X	X	X	-	-	X	X
87865	Pentachlorophenol	-	-	-	-	-	-	-	-
85018	Phenanthrene	X	X	X	X	X	X	X	X
108952	Phenol	X	X	X	X	-	-	-	-
129000	Pyrene	X	X	X	X	X	X	X	X
7782492	Selenium	X	X	X	X	-	-	X	X
7440224	Silver	X	X	X	X	X	X	X	X
100425	Styrene	X	X	X	X	X	X	-	X
75650	t-Butyl alcohol	-	X	-	X	-	X	-	-
98066	t-Butylbenzene	X	X	X	X	X	X	-	X
127184	Tetrachloroethylene	-	-	-	-	-	-	-	-
7440280	Thallium	X	X	X	X	X	X	X	X
108883	Toluene	X	X	X	X	X	X	X	X
PHCDali	TPH as Diesel (aliphatic)	X	X	X	X	X	X	X	X
PHCDaro	TPH as Diesel (aromatic)	X	X	X	X	X	X	X	X
PHCC6C10ali	TPH as Gasoline (aliphatic)	X	X	X	X	X	X	X	X
PHCC6C10aro	TPH as Gasoline (aromatic)	X	X	X	X	X	X	X	X
PHCMOali	TPH as Motor Oil (aliphatic)	X	X	X	X	X	X	X	X
PHCMOaro	TPH as Motor Oil (aromatic)	X	X	X	X	X	X	X	X
79016	Trichloroethylene	-	-	-	-	-	-	-	-
7440622	Vanadium	X	X	X	X	X	X	X	X
108054	Vinyl acetate	-	-	-	-	-	-	-	-
1330207	Xylenes, Total	X	X	X	X	X	X	X	X
7440666	Zinc	X	X	X	X	X	X	X	X

Notes:
- = Not detected or Not Analyzed in this medium within this area.
X = Detected at least once in this medium within this area.

Table 2.2
Ambient Air Constituents of Potential Concern Identified in HHRA
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

CAS Number	Compound	Site-Wide	Basketball Courts	Sports Fields
79005	1,1,2-Trichloroethane	-	-	-
87616	1,2,3-Trichlorobenzene	-	-	-
95636	1,2,4-Trimethylbenzene	X	X	X
106934	1,2-Dibromoethane	-	-	-
108678	1,3,5-Trimethylbenzene	X	X	X
106467	1,4-Dichlorobenzene	-	-	-
90120	1-Methylnaphthalene	-	-	-
95954	2,4,5-Trichlorophenol	-	-	-
88062	2,4,6-Trichlorophenol	-	-	-
94826	2,4-DB	-	-	-
53190	2,4-DDD	-	-	-
3424826	2,4-DDE	-	-	-
789026	2,4-DDT	-	-	-
120832	2,4-Dichlorophenol	-	-	-
105679	2,4-Dimethylphenol	-	-	-
606202	2,6-Dinitrotoluene	-	-	-
78933	2-Butanone	X	X	X
95578	2-Chlorophenol	-	-	-
591786	2-Hexanone	-	-	-
91576	2-Methylnaphthalene	-	-	-
95487	2-Methylphenol	-	-	-
88755	2-Nitrophenol	-	-	-
135988	2-Phenylbutane	-	-	-
1319773	3/4-Methylphenol	-	-	-
72548	4,4'-DDD	-	-	-
72559	4,4'-DDE	-	-	-
50293	4,4'-DDT	-	-	-
59507	4-Chloro-3-methylphenol	-	-	-
106478	4-Chloroaniline	-	-	-
622968	4-Ethyltoluene	X	X	X
108101	4-Methyl-2-pentanone	X	-	X
100027	4-Nitrophenol	-	-	-
83329	Acenaphthene	-	-	-
208968	Acenaphthylene	-	-	-
67641	Acetone	X	X	X
309002	Aldrin	-	-	-
120127	Anthracene	-	-	-
7440360	Antimony	-	-	-
11097691	Aroclor-1254	-	-	-
7440382	Arsenic	-	-	-
7440393	Barium	-	-	-
71432	Benzene	X	X	X
56553	Benzo (a) anthracene	-	-	-
50328	Benzo (a) pyrene	-	-	-
205992	Benzo (b) fluoranthene	-	-	-
191242	Benzo (g,h,i) perylene	-	-	-
207089	Benzo (k) fluoranthene	-	-	-

Notes:
- = Not detected or Not Analyzed in this medium within this area.
X = Detected at least once in this medium within this area.
Site-wide = Park Construction and Maintenance Workers; Site-wide Park Visitors

Table 2.2
Ambient Air Constituents of Potential Concern Identified in HHRA
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

CAS Number	Compound	Site-Wide	Basketball Courts	Sports Fields
65850	Benzoic acid	-	-	-
7440417	Beryllium	-	-	-
319857	beta-BHC	-	-	-
117817	bis(2-Ethylhexyl) phthalate	-	-	-
75274	Bromodichloromethane	-	-	-
74839	Bromomethane	-	-	-
85687	Butyl benzyl phthalate	-	-	-
7440439	Cadmium	-	-	-
75150	Carbon disulfide	X	-	-
12789036	Chlordane	-	-	-
67663	Chloroform	X	X	X
74873	Chloromethane	X	-	-
7440473	Chromium (total)	-	-	-
218019	Chrysene	-	-	-
7440484	Cobalt	-	-	-
7440508	Copper	-	-	-
99876	Cymene	-	-	-
319868	delta-BHC	-	-	-
53703	Dibenz (a,h) anthracene	-	-	-
74953	Dibromomethane	-	-	-
75718	Dichlorodifluoromethane	X	X	X
60571	Dieldrin	-	-	-
84662	Diethyl phthalate	-	-	-
131113	Dimethyl phthalate	-	-	-
84742	Di-n-butyl phthalate	-	-	-
117840	Di-n-octyl phthalate	-	-	-
53494705	Endrin ketone	-	-	-
64175	Ethanol	X	X	X
100414	Ethylbenzene	X	X	X
206440	Fluoranthene	-	-	-
86737	Fluorene	-	-	-
58899	gamma-BHC	-	-	-
1024573	Heptachlor epoxide	-	-	-
193395	Indeno (1,2,3-c,d) pyrene	-	-	-
98828	Isopropylbenzene	-	-	-
7439921	Lead	-	-	-
78002	Lead, Organic	-	-	-
7439976	Mercury	-	-	-
72435	Methoxychlor	-	-	-
1634044	Methyl tert butyl ether	-	-	-
75092	Methylene chloride	-	-	-
7439987	Molybdenum	-	-	-
91203	Naphthalene	-	-	-
104518	n-Butylbenzene	-	-	-
7440020	Nickel	-	-	-
103651	n-Propylbenzene	-	-	-
85018	Phenanthrene	-	-	-
108952	Phenol	-	-	-

Notes:
- = Not detected or Not Analyzed in this medium within this area.
X = Detected at least once in this medium within this area.
Site-wide = Park Construction and Maintenance Workers; Site-wide Park Visitors

Table 2.2
Ambient Air Constituents of Potential Concern Identified in HHRA
Former Athens Tank Farm
Willowbrook, Los Angeles County, California

CAS Number	Compound	Site-Wide	Basketball Courts	Sports Fields
129000	Pyrene	-	-	-
7782492	Selenium	-	-	-
7440224	Silver	-	-	-
100425	Styrene	-	-	-
75650	t-Butyl alcohol	-	-	-
98066	t-Butylbenzene	-	-	-
127184	Tetrachloroethylene	X	X	X
7440280	Thallium	-	-	-
108883	Toluene	X	X	X
PHCDali	TPH as Diesel (aliphatic)	-	-	-
PHCDaro	TPH as Diesel (aromatic)	-	-	-
PHCC6C10ali	TPH as Gasoline (aliphatic)	-	-	-
PHCC6C10aro	TPH as Gasoline (aromatic)	-	-	-
PHCMOali	TPH as Motor Oil (aliphatic)	-	-	-
PHCMOaro	TPH as Motor Oil (aromatic)	-	-	-
79016	Trichloroethylene	X	-	-
7440622	Vanadium	-	-	-
1330207	Xylenes, Total	X	X	X
7440666	Zinc	-	-	-

Notes:
- = Not detected or Not Analyzed in this medium within this area.
X = Detected at least once in this medium within this area.
Site-wide = Park Construction and Maintenance Workers; Site-wide Park Visitors

Kleinfelder
Bright People. Right Solutions.

APPENDIX A

Regulatory Correspondence

California Regional Water Quality Control Board
Los Angeles Region

320 West Fourth Street, Suite 200, Los Angeles, California 90013
(213) 576-6600 • FAX (213) 576-6640
http://www.waterboards.ca.gov/losangeles

Matthew Rodriquez
Secretary for Environmental Protection

Edmund G. Brown Jr.
Governor

December 14, 2011

Dok Choe
ExxonMobil Environmental Services Company
12851 E. 166th Street
Cerritos, CA 90703

Joe Mendoza
Deputy Director, Department of Parks & Recreation
County of Los Angeles
433 South Vermont Avenue
Los Angeles, CA 90020

Scott Stevenson
Acting Director, Construction Management Division
Community Development Commission
County of Los Angeles
4800 E. Cesar Chavez Avenue
Los Angeles, CA 90022

REVIEW OF SOIL VAPOR EXTRACTION PILOT TEST REPORT - FORMER ATHENS TANK FARM LOCATED AT WILLOWBROOK, LOS ANGELES COUNTY, CALIFORNIA 90059 (SITE CLEANUP NO. 0374, SITE ID 2040306)

Dear Mr. Choe, Mr. Mendoza and Mr. Stevenson:

The California Regional Water Quality Control Board (Regional Board), Los Angeles Region, is the public agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura Counties, including the above referenced site (Site).

The Regional Board has received and reviewed the document titled *Soil Vapor Extraction Pilot Test Report* (Report) for the Former Athens Tank Farm (Site), Carson, California dated December 2, 2011, prepared by Kleinfelder West, Inc. (Kleinfelder) on behalf of ExxonMobil Oil Corporation (ExxonMobil). The purpose of the soil vapor extraction (SVE) pilot test was to evaluate the potential effectiveness of SVE to remove volatile organic compounds (VOCs) from the vadose zone within the pilot test locations and to provide parameters for full-scale SVE system design, if appropriate. The specific objectives of the pilot testing include estimation of the lateral and vertical flow components and travel time of VOCs to extraction wells, soil permeability, radius of influence, SVE system equipment sizing, well network, piping and other components of a SVE system.

The Report documents the results of the SVE pilot testing performed at the wells located around the former Ujima Village Apartments (UVA) within the Site. The activities completed during the pilot testing include: 1) installation of four well pairs screened at the depth intervals of 6 to 16 feet below ground surface (bgs) in the shallow vadose zone, and 20 to 30 feet bgs in the deeper vadose zone, 2) installation of triple-clustered vacuum observation wells screened at 5, 15 and 32 feet bgs from each vapor extraction well, 3) a pneumatic step test for up to 30 minutes, and constant-rate vacuum tests on all test wells, and 4) collecting and analyzing vapor samples from the test well head and observation wells. One of the well pairs (SVE-006), however, was installed with screen intervals of 15 to 20 feet bgs and 25 to 30 feet bgs to accommodate lithologic variations. Geotechnical analyses were also performed to assess the characteristics of the soil. The observation wells installed in a cluster of three boreholes and are consistent with the existing soil vapor probes. An air respiratory test (ART) was performed prior to SVE pilot testing at each well location and provided data on oxygen uptake estimates and the degree of in-situ bioremediation effectiveness.

The results of the pilot testing at four locations within the UVA, near vapor wells SV-025 (SVE Wells E-1A/E-1B), SV-005 (E-2A/E-2B), SV-013 (E-3A/E-3B) and SV-006 (E-4A/E-4B) are summarized below:

1. Geotechnical analyses suggest subsurface conditions are heterogeneous in some locations, but may be conducive for SVE at all four locations.

2. ART data are inconclusive and cannot be used to evaluate bioventing as a remedial technology at this time. The Report recommends a long-term ART activities, injection and monitoring before implementation.

3. The average radius of vacuum influence (ROVI) in the shallow zone ranged from 8 to 50 feet and the ROVI in the deep zone ranged from 15 to 87 feet. Relatively higher ROVI were achieved in the deeper vadose zone tested.

4. VOCs and methane mass removal rates were calculated with relatively limited decrease of concentrations.

Results of the SVE pilot testing for removal of VOCs and methane from the subsurface beneath the UVA suggest that SVE is technically feasible to implement. The test data is favorable for the design and development of a full-scale SVE system if SVE is proposed as one of the remedial measures. The SVE pilot testing well locations are within the areas of the UVA and may not be representative of the conditions beneath the Earvin Magic Johnson Regional Park (EMJRP).

Based on the data obtained to date, the Report proposes the following scope of additional work:

1. Perform an additional long-term ART, approximately one week of air/helium injection and three weeks of monitoring, using Well E-4B (in the vicinity of vapor well SV-006);

2. Perform up to three months of SVE pilot testing in UVA near Well SV-013 (E-3A/E-3B) to collect data needed to design a full-scale SVE system; and

3. Perform new SVE pilot testing within the EMJRP near vapor monitoring wells SV-033 and SV-037.

Based on the review of the Report and documents in our file, you are authorized to implement the proposed work with the following additions:

1. Complete the SVE pilot testing in the UVA and EMJRP and submit a technical report of the findings and recommendations, to the Regional Board by **April 13, 2012**.

2. Submit a Remedial Action Plan (RAP) that includes a comparative analysis of SVE and other applicable alternative remedial technologies to the Regional Board by **April 13, 2012**.

Pursuant to section 13267 of the California Water Code (CWC), you are required to submit the technical report(s) by the dates specified above. The implementation of the work plan and submittal of the technical report by the due dates are amendments to the existing CWC Section 13267 Order issued by this Regional Board on November 14, 2007. Pursuant to section 13268 of the CWC, failure to submit the required technical reports by the specified due dates may result in civil liability administratively imposed by the Regional Board in an amount up to one thousand dollars ($1,000) for each day the technical report is not received.

The State Water Resources Control Board (State Water Board) adopted regulations requiring the electronic submittals of information over the Internet using the State Water Board GeoTracker database. You are required not only to submit hard copy reports required in this Order but also to comply by uploading all reports and correspondence prepared to date and additional required data formats to the GeoTracker system. Information about GeoTracker submittals, including links to text of the governing regulations, can be found on the Internet at the following link:

http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal

All technical reports are required to be submitted under the California Water Code (CWC) section 13267 Order. Please note that effective immediately, the Regional Board requires you to include a perjury statement in all reports submitted under the 13267 orders. The perjury statement shall be signed by a senior authorized by Exxon Mobil Environmental Services Company (and not by a consultant). The statement shall be in the following format:

> " I, [NAME], do hereby declare, under penalty of perjury under the laws of State of California, that I am [JOB TITLE] for Exxon Mobil Environmental Services Company that I am authorized to attest to the veracity of the information contained in [NAME AND DATE OF REPORT] is true and correct, and that this declaration was executed at [PLACE], [STATE], on DATE]."

If you have any questions, please contact Dr. Teklewold Ayalew, project manager, at (213) 576-6743 (tayalew@waterboards.ca.gov), or Ms. Thizar Tintut-Williams, Site Cleanup Unit III Chief, at (213) 576-6723 (twilliams@waterboards.ca.gov).

Sincerely,

Samuel Unger

Samuel Unger, PE
Executive Officer

cc: Mailing List

Mailing List

Laura Richardson, Congresswoman, US House of Representatives, California's 37th District
Mark Ridley-Thomas, Supervisor, Second District
Jennifer Fordyce, State Water Resources Control Board
Charles H. Williams, U.S. Department of Housing and Urban Development
John L. Garvin, U.S. Department of Housing and Urban Development
Janet Golrick, U.S. Department of Housing and Urban Development
Rania Zabaneh, Department of Toxic Substances Control
C.Y. Jeng, Department of Toxic Substances Control
Al Tizani, LA County Chief Executive Office
Yen Edward, LA County Chief Executive Office
Bryan Moscardini, Department of Parks and Recreation, Los Angeles County
Steve Duron, Department of Parks and Recreation, Los Angeles County
Scott Stevenson, County of Los Angeles – Community Development Commission
Bobbette Glover, County of Los Angeles – Community Development Commission
James C. Wilson, Ujima Housing Corporation
Susan K. Jones, Honey's Little Angels Child Development Center
Joe Mendoza, Department of Parks and Recreation, Los Angeles County
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Bill Romanelli, APCO World Wide
Jeff Parker, Sheppard Mullin/Exxon Mobil
Russell J. Keenan, Kleinfelder West, Inc.
Mark E. Pate, Kleinfelder West, Inc.
Scott D. Dwyer, Kleinfelder West, Inc
Walter Hamann, Rincon Consultants
Shabaka Heru, Society for Positive Action
Randy A. Hughes, Friends and Neighbors Community Club

Geotracker
Confirmation No.
1183069884

December 23, 2011
Project No. 116006

Teklewold Ayalew, Ph.D.
Engineering Geologist
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

via UPS Ground Tracking No.
1Z8316X10395952046

Subject: Response to LARWQCB Correspondence Dated December 14, 2011 on Review of Off-Site Assessment Report and November 1, 2011 Letter Former Athens Tank Farm, Willowbrook, California 90059 Site Cleanup No. 0374, Site ID 2040306

Dear Dr. Ayalew:

This letter is submitted on behalf of ExxonMobil Environmental Services Company (EMES) by Kleinfelder West, Inc. (Kleinfelder) to respond to the Los Angeles Regional Water Quality Control Board's (LARWQCB) December 14, 2011, comments on the review of the October 28, 2011 *Off-Site Assessment Report* and the off-site Human Health Screening Evaluation (HHSE). This letter provides our responses to LARWQCB comments.

Page 2, Item 1: *"The Regional Board staff and DTSC Toxicologist do not agree with Kleinfelder's response to the Item # 3(a) regulatory requirement. The proposed soil vapor sampling in the work plan is not a substitute for the requested air quality and shallow soil investigations, and enough information is available to warrant an indoor air assessment for residences immediately east of the former Athens Tank Farm property. Measured concentrations of benzene and methane at 5 feet below ground surface (bgs) (including data from the monthly monitoring report) are up to 23 and 11 times, respectively, higher than the screening levels in this area, and therefore, warrants further evaluation using sub-slab and/or indoor air sampling data. Furthermore, volatile organic compounds (VOCs) concentrations in deeper soil vapor samples are generally one to two orders of magnitude higher, suggesting that there may still be significant off-gassing of VOCs from contaminated groundwater. Although we do not object to conducting a vapor intrusion human health risk screening evaluation (HHSE) based on soil vapor modeling, multiple lines of evidence are needed to reasonably assess potential risks posed by the vapor intrusion.*

523 West 6th Street, Suite 620, Los Angeles, CA 90014 **p |** 213.622.3706 **f |** 213.612.4954

Therefore, in the interest of time and community concerns, you must conduct building survey, collecting sub-slab and/or indoor air samples at the residences immediately east of the former ATF property, and determining if these concentrations are acceptable, per the step-wise approach outlined in Steps 8, 9, and 10 of the recently issued DTSC Field Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (October 2011)."

> **Response:** Kleinfelder has developed significant sampling and modeling data to support the conclusion that VOC concentrations associated with the Site are unlikely to have resulted in indoor air concentrations of VOCs above regulatory thresholds in off-Site residential structures. However, notwithstanding these lines of evidence, Kleinfelder will develop a work plan to collect air quality data (e.g., crawl space or indoor air) from residential properties that are in close proximity to soil vapor probes with exceedances of VOC and/or methane screening levels at five feet below ground surface (bgs). Procedures followed in the work plan will be consistent with DTSC Field Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (October 2011). Due to year-end holidays, and to allow sufficient time to prepare the work plan, we respectfully request an extension in the submittal of the work plan from January 31, 2012, to February 17, 2012.
>
> In addition, we are in receipt of LARWQCB's December 20, 2011, correspondence that provides DTSC comments to December 5, 2011, *Human Health Screening Evaluation of Potential Vapor Intrusion for Residential Properties Located Along the East Edge of the Former Athens Tank Farm* report. Responses to DTSC review of the report will be provided under separate cover.

Page 2, Item 2: *"In response to the Regional Board requirement designated as Item # 3(b), in lieu of work plan for human health risk screening evaluation (HHSE), Kleinfelder proposes to complete the HHSE without first submitting a work plan because the methods and approach for a vapor intrusion HHSE have been established in DTSC guidance documents. The Regional Board staff and DTSC Toxicologist are amenable to the proposal, provided that the HHSE will be performed in accordance with Cal/EPA and USEPA guidance documents including the Final Vapor Intrusion Guidance recently issued by DTSC (October 2011)."*

> **Response:** We acknowledge LARWQCB's approval of the Kleinfelder proposal to complete a vapor intrusion HHSE without first submitting a work plan. As noted above, we are in receipt of LARWQCB's December 20, 2011, correspondence that provides DTSC comments to December 5, 2011, Human Health Screening Evaluation of Potential Vapor Intrusion for Residential Properties Located Along the East Edge of the Former Athens Tank Farm report. Responses to DTSC review of the report will be provided under separate cover.

KLEINFELDER 523 West 6th Street, Suite 620, Los Angeles, CA 90014 **p |** 213.622.3706 **f |** 213.612.4954

Page 2, Item 3: *"The report due date stated in Item #4 is February 10, 2012. Based on information provided, we approve your request for the extension; therefore, you are now directed to submit the aforementioned technical report to the Regional Board by March 2, 2012."*

> **Response:** We acknowledge and appreciate LARWQCB approval of the short extension to submit the Supplemental Off-Site Investigation Report from February 10, 2012, to March 2, 2012.

Page 3, Item 1: *"Complete proposed sampling and investigation in areas north and east of Animo Watts Charter High School when access is granted for soil vapor sampling at SV-096, and CPT/UVOST at CPT-154 through CPT-156."*

> **Response:** Proposed sampling locations adjacent to Animo Watts Charter High School will be completed once access from Los Angeles Department of Water and Power (LADWP) is granted.

Page 3, Item 2: *"Significant concentrations of TPH-g and benzene were detected in the deeper groundwater wells. Develop a work plan for further groundwater investigation that include SimulProbe® samples from exploratory borings and installation of additional wells with well screen intervals set near the top and base of the Exposition Aquifer. The work plan is due to the Regional Board by January 16, 2012."*

> **Response:** A work plan for further groundwater investigation will be submitted to LARWQCB by January 16, 2012, as requested.

Page 4, Item 3: "*Revise the Off-Site assessment Report by modifying or changing the following:*

- *Section 5.2: Include a summary of the analytical results for deeper soil vapor (15 and 32 feet bgs) samples. The deeper soil vapor data are more representative of concentrations near the contaminant source, and therefore should be properly evaluated to determine if remediation in deep soil zones and/or groundwater is warranted;*

- *Plates 5.2 through 5.10: Include iso-concentration contours (e.g., CHHSLs, 10 times CHHSLs, etc.). Although comparison of deeper soil vapor data with CHHSLs may be conservative, it allows for quick screening to rule out locations that need further evaluation and facilitates review on vertical distributions of key chemicals of concern in soil vapor;*

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- *Table 5-3: Show all locations with VOC and methane concentrations exceeding residential soil vapor CHHSLs and ten percent of the Lower Explosive Limit (10%LEL) or 5,000 ppmv respectively, regardless of the depth;*

  The revised Report is due to the Regional Board by January 16, 2012."

  Response: We acknowledge LARWQCB request to revise the October 28, 2011, *Off-Site Assessment Report*. To allow adequate time to revise text, tables and plates, and taking into account the impact upcoming holidays will have on personnel availability and scheduling, we are requesting an extension to the due date of the revised off-Site assessment report from January 16, 2012, to February 21, 2012.

If you have questions about these comments or wish to discuss the comments, please contact us at your convenience.

Sincerely,

KLEINFELDER WEST, INC.

Mark E. Pate, P.G.
Senior Project Manager

Russell J. Keenan
Senior Principal Scientist

Distribution: Thizar Tintut-Williams, LARWQCB (via email)
Olivier Theard, Sheppard Mullin (via email)
Dok Choe, ExxonMobil (via email)
Gary Meyer, Parker Milliken (via email)
C.Y. Jeng, DTSC (via email)

California Regional Water Quality Control Board
Los Angeles Region

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Matthew Rodriquez
Secretary for Environmental Protection

Edmund G. Brown Jr.
Governor

January 10, 2012

Dok Choe
ExxonMobil Environmental Services Company
12851 E. 166th Street
Cerritos, CA 90703

Certified Mail
Return Receipt Requested
Claim No. 7010 0290 0002 1866 0437

Joe Mendoza
Deputy Director, Department of Parks & Recreation
County of Los Angeles
433 South Vermont Avenue
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Return Receipt Requested
Claim No. 7010 0290 0002 1866 0444

Scott Stevenson
Acting Director, Construction Management Division
Community Development Commission
County of Los Angeles
4800 E. Cesar Chavez Avenue
Los Angeles, CA 90022

Certified Mail
Return Receipt Requested
Claim No. 7010 0290 0002 1866 0451

APPROVAL OF REQUEST FOR SCHEDULE EXTENSION PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 ORDER - FORMER ATHENS TANK FARM LOCATED AT WILLOWBROOK, LOS ANGELES COUNTY, CALIFORNIA 90059 (SITE CLEANUP NO. 0374, SITE ID 2040306)

Dear Mr. Choe, Mr. Mendoza and Mr. Stevenson:

The California Regional Water Quality Control Board (Regional Board), Los Angeles Region, is the public agency with primary responsibility for the protection of groundwater and surface water quality for all beneficial uses within major portions of Los Angeles and Ventura Counties, including the above referenced site (Site).

In response to the Regional Board order pursuant to California Water Code Section 13267 dated December 14, 2011 and titled, *Review of Soil Vapor Extraction Pilot Test Report*, Regional Board received a letter, dated December 23, 2011, prepared by Kleinfelder West, Inc. (Kleinfelder), on behalf of ExxonMobil Oil Corporation (ExxonMobil). The response letter includes a request for an extension for a submittal of the technical report required by the Regional Board on the Soil Vapor Extraction pilot testing in Ujima Village Apartments (UVA) documenting the findings and recommendations. Kleinfelder also requested a schedule extension for the submittal of a *Remedial Action Plan* indicating that additional time would be needed to prepare a robust analysis of various remedial technologies that ultimately guide future actions.

In addition, the Regional Board has received a letter from Kleinfelder titled, *Response to LARWQCB correspondence Dated December 14, 2011 on Review of Off-Site Assessment Report and November 1,* *2011 Letter*. The letter includes a request for an extension for submittal of a work plan to address the Regional Board requirement, item #1, due to year-end holidays.

Therefore, you requested the following new due dates for submittal of technical reports listed as follows:

Technical Report	Current Due Date	Requested New Due Date
Air Quality Investigation Work Plan	January 31, 2012	February 17, 2012
Remedial Action Plan	April 13, 2012	June 15, 2012
SVE Pilot Testing Report for UVA	April 13, 2012	June 22, 2012

The Regional Board approves your request for this one time extension to submit the required technical reports. You are now directed to submit the technical reports to the Regional Board by the requested new due dates as specified above.

Pursuant to section 13267 of the California Water Code (CWC), you are required to submit the technical report(s) by the dates specified above. The implementation of the work plan and submittal of the technical report by the due dates are amendments to the existing CWC Section 13267 and 13304 Order to *Complete Environmental Investigation, Assessment, Monitoring and Cleanup* issued by this Regional Board on November 14, 2007. Pursuant to section 13268 of the CWC, failure to submit the required technical reports by the specified due dates may result in civil liability administratively imposed by the Regional Board in an amount up to one thousand dollars ($1,000) for each day the technical report is not received.

If you have any questions, please contact Dr. Teklewold Ayalew, project manager, at (213) 576-6743 (tayalew@waterboards.ca.gov), or Ms. Thizar Tintut-Williams, Site Cleanup Unit III Chief, at (213) 576-6723 (twilliams@waterboards.ca.gov).

Sincerely,

Samuel Unger

Samuel Unger, PE
Executive Officer

cc: Mailing List

Mailing List

Laura Richardson, Congresswoman, US House of Representatives, California's 37th District
Mark Ridley-Thomas, Supervisor, Second District, County of Los Angeles
Jennifer Fordyce, State Water Resources Control Board
Charles H. Williams, U.S. Department of Housing and Urban Development
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Janet Golrick, U.S. Department of Housing and Urban Development
Rania Zabaneh, Department of Toxic Substances Control
C.Y. Jeng, Department of Toxic Substances Control
Al Tizani, LA County Chief Executive Office
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Bryan Moscardini, Department of Parks and Recreation, Los Angeles County
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Bobbette Glover, County of Los Angeles – Community Development Commission
James C. Wilson, Ujima Housing Corporation
Susan K. Jones, Honey's Little Angels Child Development Center
Joe Mendoza, Department of Parks and Recreation, Los Angeles County
John Ziegler, Converse Consultants
Gary A. Meyer, Esq. Parker, Milliken, Clark, O'Hara & Samuelian
Ricky Ivie, Ivie McNeil and Wyatt Law Firm
Dok Choe, Exxon Mobil Corporation
Celeste Saenz Quiralte, Exxon Mobil Corporation
Barbara Leatherwood, Exxon Mobil Corporation
Bill Romanelli, APCO World Wide
Jeff Parker, Sheppard Mullin/Exxon Mobil
Russell J. Keenan, Kleinfelder West, Inc.
Mark E. Pate, Kleinfelder West, Inc.
Scott D. Dwyer, Kleinfelder West, Inc
Walter Hamann, Rincon Consultants
Shabaka Heru, Society for Positive Action
Randy A. Hughes, Friends and Neighbors Community Club

APPENDIX B

Bench Scale Feasibility Laboratory Reports

Kleinfelder- Athens Tank Farm Site

PREPARED FOR: Sam Bailey/Kleinfelder

PREPARED BY: Dusty Berggren/CH2M HILL
Mike Niemet/CH2M HILL

DATE: May 9, 2012

Introduction

This technical memorandum presents the results of the bench-scale laboratory solidification/stabilization (SS) and in-situ chemical oxidation (ISCO) treatability studies conducted on two soil samples (BT-2 and BT-3) collected at the Athens Tank Farm. This testing was conducted to determine whether SS or ISCO could effectively reduce mobility of or destroy contaminants in the subsurface.

Initial Characterization

Soil was collected from two depths at both BT-2 and BT-3 within the Athens Tank Farm Site and sent to ASL for treatability testing on March 19, 2012. Two gallon samples were collected at 20 to 30 and 40 to 50 feet below ground surface (bgs) at BT-2, and from 20 to 25 and 40 to 45 feet bgs at BT-3. Soils from these two depths were homogenized together for each location, creating two 4-gallon samples. Aliquots of soil were then submitted for initial characterization.

Materials and Methods

Solidification/Stabilization

Three samples of each of the two soils were amended with Portland cement to begin SS testing on March 28, 2012. Amendment details are provided in Table 1. Each sample was composed of approximately 350 grams of as-received soil (280 grams dry), commercial grade Quikrete® Portland cement, and DI water. Portland cement was dosed at 5, 10, or 15% of the dry mass of the soil. A spoon was used to distribute the cement throughout the as-received soil sample prior to adding water. The required water dosage varied for each sample according to the cement dosage; samples containing larger cement dosages required greater volumes of water to wet and activate the soil/cement mixture. Water was added until the sample approached its water holding capacity, but was visually deemed capable of passing a standard paint filter test (Photo 1). Between 45 and 80 milliliters (mL) of water were mixed into each sample through folding and kneading the mixture with two metal spoons. Samples were then loaded into plastic 2 inch diameter by 4 inch cylindrical molds in three lifts, with each lift being compacted with approximately 30 blows using a metal rod. Cylinders were covered with Parafilm® and aluminum foil to minimize moisture and VOC loss during the 28-day curing period (see Photo 2).

On April 25, 2012, the six samples were removed from the molds, crushed into pieces capable of passing through a 3/8 inch sieve, and submitted for post-treatment analyses of the leachable VOC (SW8260) and SVOC (SW8270) content. The Synthetic Precipitation Leaching Procedure with a Zero-Headspace Extraction (SPLP-ZHE, SW1312) was used to assess whether effective leachability of the contaminants was reduced within the stabilized soil (Photos 3 and 4).

In-Situ Chemical Oxidation

For ISCO testing, as-received samples (approximately 300 grams, dry) of each of the two soils were amended with conservative doses of three different oxidizers: hydrogen peroxide (35% solution), potassium permanganate (Cairox® Carus Chemical Co.), and sodium persulfate (98%+, Acros Organics).

Permanganate (as $KMnO_4$) dosing was determined through an initial screening test as detailed in Table 2. Small samples (20 grams as-received) of each soil were exposed to permanganate solutions ranging in concentration from 12.5 to 62.5 mg/L for a 96 hour reaction period. Residual permanganate was visually monitored at four points throughout the test (Photo 5), with darker purple solutions representing a greater level of residual permanganate. A conservative dose of 0.031 g $KMnO_4$/g dry soil was selected from this screening for both soils (Photo 5, "B" samples).

A maximum persulfate dose 1/5 that of the optimal permanganate dose on a dry weight of soil basis (0.0059 g $Na_2S_2O_8$/g dry soil) was selected for persulfate (based on personal communication with Phil Block of FMC Environmental Solutions). According to FMC technical brochures (http://www.envsolutions.fmc.com/Klozur/ResourceCenter/tabid/356/Default.aspx), activation of persulfate through maintenance of an alkaline (pH=10.5-12.0) environment is the most effective form of activation, destroying the greatest range of contaminants. Soil samples were titrated with sodium hydroxide (NaOH) to determine the NaOH dose required to establish a pH within the optimal alkaline range. With the additional 2 mole NaOH per mole of persulfate dose recommended to neutralize the acidification effect of persulfate oxidation, dosages of 0.18 and 0.22 mmol NaOH/g dry soil were calculated for BT-2 and BT-3, respectively.

An 8% solution of hydrogen peroxide (by weight) was recommended for this application, with iron provided as a catalyst in a 1:10 molar ratio of iron to peroxide in an acidic environment (ideally pH < 2). Ferric sulfate was used as the iron source, and pH was adjusted with phosphoric acid.

In total, six samples were prepared in glass bottles as specified in Table 3. One liter glass bottles were used, with the exception of the hydrogen peroxide reactors, where 3.8 liter glass bottles were used to provide addition headspace volume to accommodate the foam generated upon dosing. Deionized water was added to the soil, followed by the amendments. The prepared reactors contained approximately 300 g of dry soil and 500 mL of liquid. After preparation was complete, reactors were tightly capped and stored in the dark at room temperature. Each day, reactors were gently mixed via inversion to promote contact between the oxidant and soil. The pH of the solution within the persulfate and peroxide reactors was periodically checked to ensure optimal conditions were maintained. Following a 14-day reaction period, the liquid was decanted, and the remaining soil submitted for analysis to determine residual VOC (SW8260), SVOC (SW8270), and TPH (SW8015) concentrations.

Results and Discussion

Significant observations from the SS and ISCO tests are summarized below:

Initial Characterization

- Results from the initial characterization are presented in Table 4.
- Both soils were slightly alkaline (pH near 8.1) with approximately 20% moisture.
- In general, BT-2 contained higher concentrations of VOCs and SVOCs. BT-3 contained higher levels of TPHs in the gasoline (g), diesel (d), and oil (o) ranges.
- Key leachable compounds in BT-2 were 1,2,4-trimethylbenzene, naphthalene, and 2-methylnaphthalene. In BT-3, leachable compounds were naphthalene and 2-methylnaphthalene.

Solidification/Stabilization

- All samples were solidified by the end of testing, withstanding over 160 pounds of force before crumbling.
- Analytical results following SS treatment are provided in Table 5.
- Naphthalene, the key SPLP-ZHE VOC compound detected, was reduced by 55% to 72% in BT-2 samples, compared to 10% to 25% in BT-3 samples.
- SS treatment did not significantly affect SPLP SVOC concentrations.

In-Situ Chemical Oxidation

- No bubbling was observed upon addition of permanganate or persulfate to the reactors. Peroxide reactors bubbled profusely for more than a half hour upon addition of reagents, with more vigorous gas generation in BT-3 than BT-2 (Photos 6 and 7). These reactors were lightly capped during active bubbling to reduce release of VOCs without allowing pressure to accumulate.
- The pH of all reactors containing persulfate remained between 11.66 and 12.05 throughout the testing period, which is within the optimal activation range.
- The pH of all Peroxide reactors remained well within the acidic range necessary for the oxidation reaction to be sustained (< 5). However, the samples had neutralizing potential that favored a pH around 2.2 (BT-2) or 2.7 (BT-3), which is slightly greater than the ideal pH range (<2). Additional phosphoric acid was added to both reactors on days 1, 5, and 11 to reduce the pH below 2. Due to the neutralization potential of the soil, these adjustments were only temporary.
- Significant permanganate residual was present at the end of the 14 day reaction period (determined by visual inspection).

- Analytical results following ISCO treatment are provided in Table 6. Note: elevated acetone concentrations are likely the result of laboratory contamination.
- Approximate percent of contaminant reductions are presented in Table 7. VOCs were significantly reduced (>85%) in permanganate and peroxide reactors for both samples. Persulfate removed approximately 48% and 75% of VOCs in the BT-2 and BT-3 samples, respectively.
- Relative TPH reduction is also presented in Table 7. Peroxide reactors provided the greatest reduction in total TPH, removing 73% and 87% of the initial concentration in BT-2 and BT-3, respectively. For comparison, permanganate and persulfate reactors reduced total TPH by less than 55%.

Photos

Photo 1: Soil sample with Portland cement before (left) and after (right) adding water.

Photo 2: Stabilization test cylinders at t=0 with primary Parafilm® covering. A secondary covering of aluminum foil was then added.

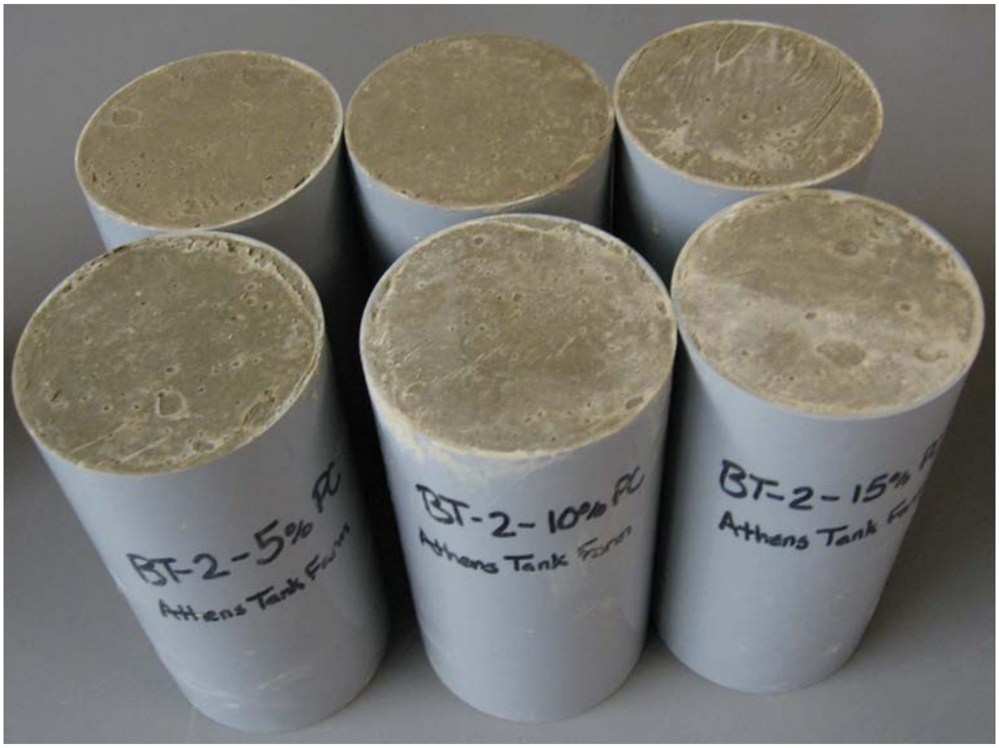

Photo 3: Solidified BT-3 samples (top) and BT-2 samples (bottom) are shown.


Photo 4: Crushed stabilization sample. Per the standard method, samples must pass through a 3/8-inch sieve prior to SPLP extraction.

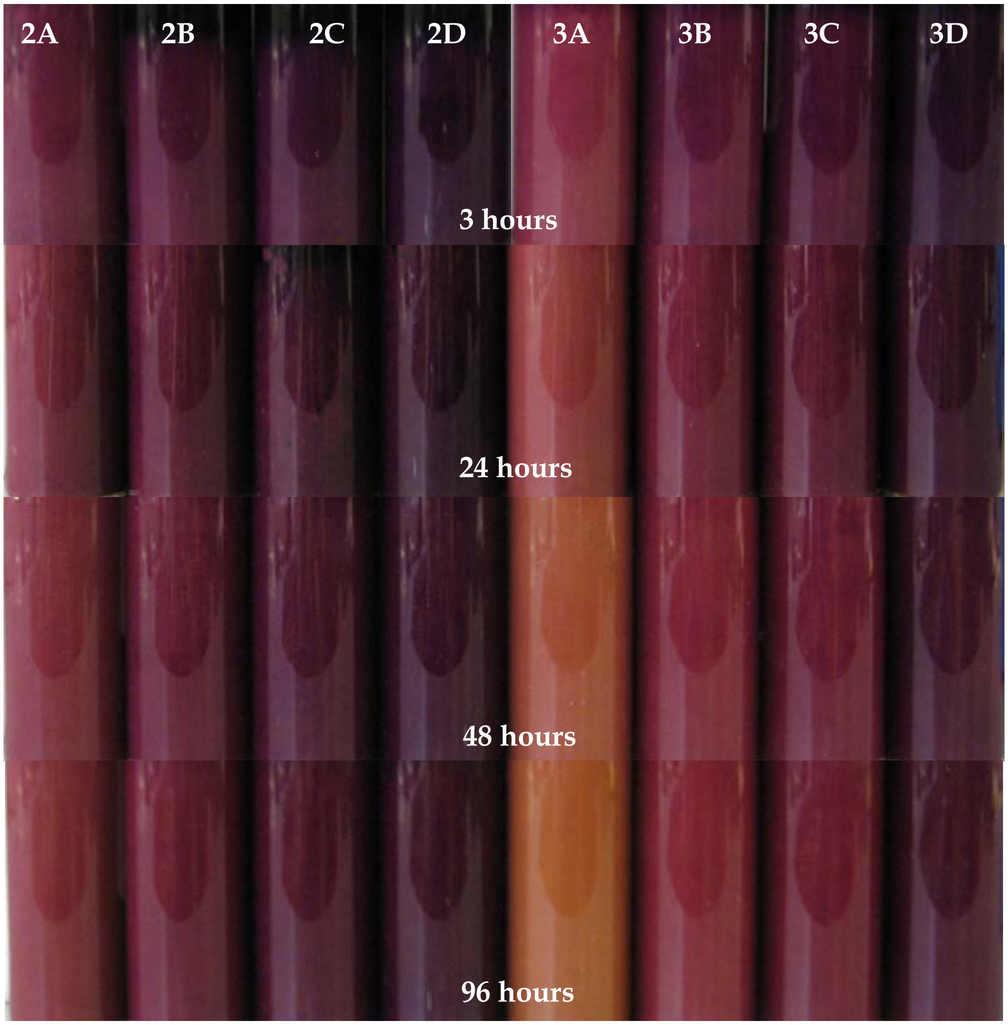

Photo 5: Initial screening test to determine permanganate ($KMnO_4$) dosage. The dose corresponding to reactors 2B and 3B (0.031 g $KMnO_4$/ g dry soil) was selected for the ISCO test.

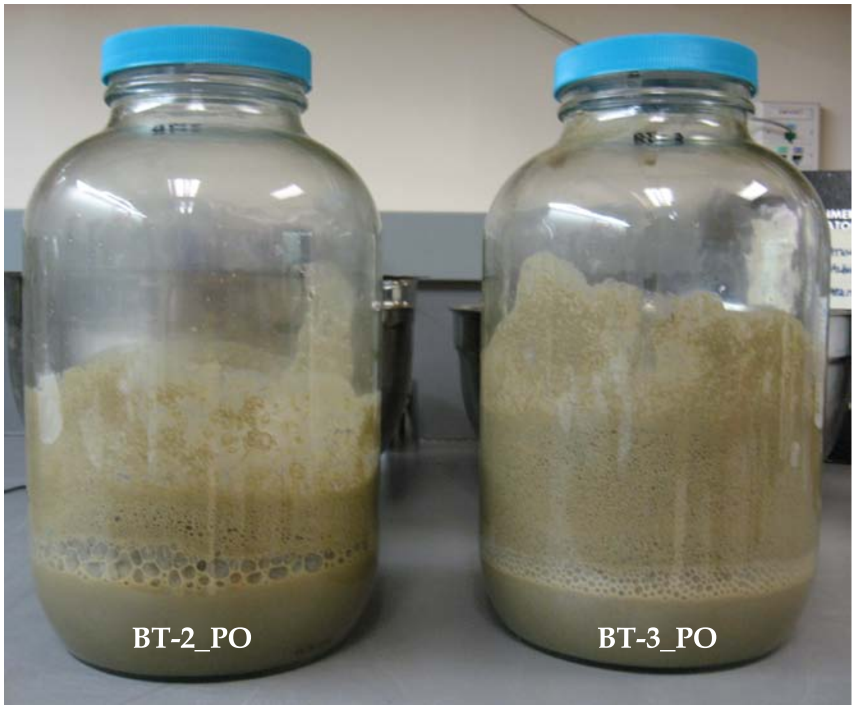

Photo 6: Gas generation in the ISCO reactors upon addition of peroxide. BT-3_PO bubbled more vigorously than BT-2_PO.


Photo 7: Top view of the foam produced in BT-3 as a result of gas generation.

Tables

TABLE 1

SS Reactor Setup Summary

Kleinfelder- Athens Tank Farm

Start Date: 3/28/2012
End Date: 4/25/2012

As-Received Soil Moisture, BT-2: 19.6%
As-Received Soil Moisture, BT-3: 20.0%

Test ID	Portland Cement Amendment % wt	Soil Mass (as-received) g	Soil Mass (dry) dry g	Mass of PC to add g	Mass of PC Added g	DI Water Added g	Water from soil g
BT-2_5%	5	350.07	281.46	14.07	14.08	46.60	68.61
BT-2_10%	10	350.20	281.56	28.16	28.18	55.00	68.64
BT-2_15%	15	350.09	281.47	42.22	42.25	75.00	68.62
BT-3_5%	5	350.08	280.06	14.00	14.03	60.00	70.02
BT-3_10%	10	350.08	280.06	28.01	28.04	70.00	70.02
BT-3_15%	15	350.00	280.00	42.00	42.05	80.00	70.00

TABLE 2

Permanganate Dosing Determination

Kleinfelder- Athens Tank Farm

	Planned Additions		Actual Additions				
Test ID	**Mass $KMnO_4$ Amendment** g	**Soil Mass (as-received)** g	**Mass $KMnO_4$ Added** g	**Soil Mass Added (as-received)** g	**Soil Mass Added (dry)** g	**KMnO4/ Soil (dry)** g/g-dry	**DI Water Added** g
BT-2_A	0.25	20.00	0.25	20.08	16.14	0.015	20.00
BT-2_B	0.50	20.00	0.50	19.87	15.98	0.031	20.00
BT-2_C	0.75	20.00	0.75	20.12	16.18	0.046	20.00
BT-2_D	1.25	20.00	1.25	19.99	16.07	0.078	20.00
BT-3_A	0.25	20.00	0.25	20.09	16.07	0.016	20.00
BT-3_B	0.50	20.00	0.50	20.05	16.04	0.031	20.00
BT-3_C	0.75	20.00	0.75	19.93	15.94	0.047	20.00
BT-3_D	1.25	20.00	1.24	20.04	16.03	0.078	20.00

Chosen 'optimal' dosage for each soil sample highlighted purple

TABLE 3

ISCO Reactor Setup Summary

Kleinfelder- Athens Tank Farm

Test ID	Amendments	Soil Added as-rec g	Soil dry g	Water from soil mL	Water from Amendments g	DI Water Addition g	$KMnO_4$ Addition g	Stabilized 35% H_2O_2 Addition mL	$Na_2S_2O_8$ Addition g	NaOH 10 M Addition mL	$Fe(III)SO_4$ (72% purity) Addition g	85% H_3PO_4 Addition mL
BT-2_PM	Permanganate	375.09	301.57	73.52	0.00	426.66	9.35					
BT-2_PS	Persulfate w/ pH=11-12	375.26	301.71	73.55	5.42	421.27			1.79	5.42		
BT-2_PO	8% Peroxide w/ Fe(III)	375.18	301.64	73.54	112.42	314.22		102			33.04	10.38
BT-3_PM	Permanganate	375.10	300.08	75.02	0.00	425.07	9.30					
BT-3_PS	Persulfate w/ pH=11-12	374.88	299.90	74.98	6.58	416.46			1.77	6.58		
BT-3_PO	8% Peroxide w/ Fe(III)	375.34	300.27	75.07	112.42	314.27		102			33.03	10.38

TABLE 4

Soil Characterization Results

Kleinfelder- Athens Tank Farm

	BT-2 As-Received	BT-3 As-Received
General Chemistry		
Percent Moisture	19.6	20.0
pH	8.08	8.18
TOC (mg/kg)	1440	3840
Detected Volatile Organic Compounds (VOCs) (mg/kg)		
Acetone	123	58.2 U
2-Butanone (MEK)	65.0	58.2 U
Toluene	151	23.3 U
Ethylbenzene	684	1040
m,p-Xylene	1750	46.6 U
o-Xylene	569	23.3 U
Isopropylbenzene	315	678
n-Propylbenzene	589	1140
1,3,5-Trimethylbenzene	948	23.3 U
tert-Butylbenzene	23.4 U	58.0 J
1,2,4-Trimethylbenzene	3410	23.3 U
sec-Butylbenzene	327	728
p-Isopropyltoluene	468	252
n-Butylbenzene	785	942
Naphthalene	1880	3260
Detected Semi-Volatile Organic Compounds (SVOCs) (mg/kg)		
Isophrone	803 U	833 U
Naphthalene	821 J	2300
2-Methylnaphthalene	2490	5250
Phenanthrene	803 U	833 U
Total Petroleum Hydrocarbons (TPH) (mg/kg)		
TPH-g	326	508
TPH-d	871	1880
TPH-o	296	1310
Detected SPLP-ZHE Volatile Organic Compounds (VOCs) (µg/L)		
Methylene Chloride	0.38 J	0.47 J
2-Butanone (MEK)	3.28	1.20
Toluene	1.24	0.29 J
Ethylbenzene	9.24	8.80
m,p-Xylene	21.4	1.18
Styrene	0.27 J	0.25 J
o-Xylene	9.22	0.40 J
Isopropylbenzene	4.67	5.39
n-Propylbenzene	8.29	8.01
1,3,5-Trimethylbenzene	14.0	0.61
tert-Butylbenzene	0.20 U	0.26 J
1,2,4-Trimethylbenzene	47.5	2.29
sec-Butylbenzene	2.90	2.97
p-Isopropyltoluene	4.31	1.22
1,2-Dichlorobenzene	0.33 J	0.36 J
n-Butylbenzene	5.47	2.77
Naphthalene	45.8	39.5
Detected SPLP Semi-Volatile Organic Compounds (SVOCs) (µg/L)		
Phenol	2.08 J	1.19 U
Benzoic Acid	1.23 U	1.19 U
Naphthalene	10.2	23.6
2-Methylnaphthalene	18.7	27.3
Phenanthrene	1.31 J	1.19 U

mg/kg = milligrams per kilogram

ug/L = micrograms per liter

TOC = Total organic carbon

U = Compound not detected above the method reporting limit

J = Estimated value compound detected below the reporting limit

TABLE 5

Post-SS Treated Soil Leachate Results

Kleinfelder- Athens Tank Farm

	BT-2 5% PC	BT-2 10% PC	BT-2 15% PC	BT-3 5% PC	BT-3 10% PC	BT-3 15% PC
*** SPLP-ZHE Volatile Organic Compounds (VOCs) (µg/L)**						
Methylene Chloride	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Butanone (MEK)	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
Toluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Ethylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
m,p-Xylene	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Styrene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
o-Xylene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Isopropylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Propylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,3,5-Trimethylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
tert-Butylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,2,4-Trimethylbenzene	15.5 J	10.2 J	12.5 J	10.0 U	10.0 U	10.0 U
sec-Butylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
p-Isopropyltoluene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
1,2-Dichlorobenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
n-Butylbenzene	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Naphthalene	20.8 J	12.6 J	19.5 J	31.8	35.6	29.8
*** SPLP Semi-Volatile Organic Compounds (SVOCs) (µg/L)**						
Phenol	2.66 J	2.41 J	2.37 U	2.36 U	2.36 U	2.36 U
Benzoic Acid	2.30 U	2.31 U	2.63 J	2.36 U	2.36 U	2.36 U
Naphthalene	9.44	7.88	8.68	21.1	19.5	17.8
2-Methylnaphthalene	29.6	25.4	27.3	30.4	28.7	27.4
Phenanthrene	2.79 J	2.73 J	2.75	2.36 U	2.36 U	2.36 U

ug/L = micrograms per liter

U = Compound not detected above the method reporting limit

J = Estimated value compound detected below the reporting limit

* Based on the list of compounds detected in the initial characterization

TABLE 6

Post-ISCO Treated Soil Results

Kleinfelder- Athens Tank Farm

	BT-2 Permanganate	BT-2 Persulfate	BT-2 Peroxide	BT-3 Permanganate	BT-3 Persulfate	BT-3 Peroxide
*** Volatile Organic Compounds (VOCs) (mg/kg)**						
Acetone	3490	391	629	3130	365	616
2-Butanone (MEK)	131 U	76.4 U	151 U	82 U	98.2 U	109 U
Toluene	52.5 U	30.6 U	60.4 U	32.8 U	39.3 U	43.5 U
Ethylbenzene	52.5 U	206	60.4 U	32.8 U	74.7 J	43.5 U
m,p-Xylene	153 J	547	121 U	65.6 U	78.6 U	86.9 U
o-Xylene	52.5 U	160	60.4 U	32.8 U	39.3 U	43.5 U
Isopropylbenzene	55.2 J	245	60.4 U	32.8 U	167	43.5 U
n-Propylbenzene	104 J	476	60.4 U	33.4 J	325	43.5 U
1,3,5-Trimethylbenzene	247	628	60.4 U	32.8 U	39.3 U	43.5 U
tert-Butylbenzene	52.5 U	30.6 U	60.4 U	32.8 U	39.3 U	43.5 U
1,2,4-Trimethylbenzene	540	2110	60.4 U	32.8 U	39.3 U	43.5 U
sec-Butylbenzene	133	276	60.4 U	32.8 U	229	43.5 U
p-Isopropyltoluene	130 J	375	60.4 U	32.8 U	90.1 J	43.5 U
n-Butylbenzene	226	527	60.4 U	32.8 U	276	43.5 U
Naphthalene	67.2 J	615	60.4 U	52.9 J	784	43.5 U
*** Semi-Volatile Organic Compounds (SVOCs) (mg/kg)**						
Isophorone	149 U	128 J	179 U	125 U	1280 U	1410 U
Naphthalene	149 U	206 J	179 U	125 U	1280 U	1410 U
2-Methylnaphthalene	149 U	1400	179 U	125 U	1280 U	2540 J
Phenanthrene	149 U	379	179 U	125 U	1280 U	1410 U
Total Petroleum Hydrocarbons (TPH) (mg/kg)						
TPH-g	210	271	40.8	45.5	125	23
TPH-d	438	613	259	1030	1100	260
TPH-o	128	188	110	630	739	187

mg/kg = milligrams per kilogram

U = Compound not detected above the method reporting limit

J = Estimated value compound detected below the reporting limit

* Based on the list of compounds detected in the initial characterization

TABLE 7

Approximate Contaminant Reduction in Soil Through ISCO Treatment

Kleinfelder- Athens Tank Farm

	BT-2 Permanganate	BT-2 Persulfate	BT-2 Peroxide	BT-3 Permanganate	BT-3 Persulfate	BT-3 Peroxide
Percent of Original Contamination Removed through ISCO Treatment						
VOCs[a,b]	85%	48%	93%	95%	75%	94%
SVOCs[a,c,d]	91%	51%	89%	97%	66%	48%
TPH-g	36%	17%	87%	91%	75%	95%
TPH-d	50%	30%	70%	45%	41%	86%
TPH-o	57%	36%	63%	52%	44%	86%
Total TPH	48%	28%	73%	54%	47%	87%

Notes:

[a] Some post-treatment analytical results were below detection. Percent reduction estimates were calculated using the detection limit and are therefore conservative.

[b] Acetone, MEK, and compounds that were undetected in the initial characterization were not included in these calculations.

[c] Percent reduction calculations do not include compounds that were undetected in the initial characterization.

[d] Detection limits for BT-3 persulfate and peroxide samples were significantly higher than those for other SVOC samples. Relative percent reduction is artificially low given the calculation assumption presented in (a).

CH2MHILL
Applied Sciences Laboratory

ANALYTICAL REPORT

For:
Kleinfelder-Athens Tank Farm

ASL Report #: L1419
Project ID: 156197.CS.12
Attn: Mike Neiment/CVO
cc:
Dusty Berggeren/CVO
Ashley Wille/CVO

Authorized and Released By:

Laboratory Project Manager
Ashley Wille
(541) 758-0235 ext.23147
April27, 2012

This data package meets standards requested by client and is not intended or implied to meet any other standard.

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.

CH2M HILL Applied Sciences Laboratory • 1100 NE Circle Boulevard, Suite 300 • Corvallis, Oregon 97330 • www.ch2mhill.com/asl

ASL Report #: L1419

Sample Receipt Comments

We certify that the test results meet all standard ASL requirements.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
L141901	BT-2_Initial	03/28/12 08:40	03/28/12
L141902	BT-3_Initial	03/28/12 09:20	03/28/12

CASE NARRATIVE
GC/MS VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO   ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm   Project #: 156197.CS.12

I. Method(s):

Analysis: SW8260
Preparation: SW5030

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

All acceptance criteria were met.

G. BFB Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

I. Analytical Exception(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: ______   Date: 4-10-12

Reviewed by: ______   Date: 04-10-12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 08:40
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L141901

Date Received: 03/28/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Chloromethane	74-87-3	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Vinyl Chloride	75-01-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Bromomethane	74-83-9	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Chloroethane	75-00-3	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Trichlorofluoromethane	75-69-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Acetone	67-64-1	58.4	117	123		ug/Kg	SW8260B	04/03/12
1,1-Dichloroethene	75-35-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Methylene chloride	75-09-2	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
trans-1,2-Dichloroethene	156-60-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Methyl tert-butyl ether (MTBE)	1634-04-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethane	75-34-3	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
2-Butanone (MEK)	78-93-3	58.4	117	65.0	J	ug/Kg	SW8260B	04/03/12
cis-1,2-Dichloroethene	156-59-2	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Bromochloromethane	74-97-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Chloroform	67-66-3	17.5	58.4	17.5	U	ug/Kg	SW8260B	04/03/12
2,2-Dichloropropane	594-20-7	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloroethane	107-06-2	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,1,1-Trichloroethane	71-55-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloropropene	563-58-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Carbon tetrachloride	56-23-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Benzene	71-43-2	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Dibromomethane	74-95-3	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloropropane	78-87-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Trichloroethene (TCE)	79-01-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Bromodichloromethane	75-27-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
cis-1,3-Dichloropropene	10061-01-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
4-Methyl-2-pentanone (MIBK)	108-10-1	58.4	117	58.4	U	ug/Kg	SW8260B	04/03/12
trans-1,3-Dichloropropene	10061-02-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,1,2-Trichloroethane	79-00-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Toluene	108-88-3	23.4	58.4	151		ug/Kg	SW8260B	04/03/12
1,3-Dichloropropane	142-28-9	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Dibromochloromethane	124-48-1	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,2-Dibromoethane (EDB)	106-93-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Tetrachloroethene (PCE)	127-18-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1-Chlorohexane	544-10-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,1,1,2-Tetrachloroethane	630-20-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Chlorobenzene	108-90-7	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Ethylbenzene	100-41-4	23.4	58.4	684		ug/Kg	SW8260B	04/03/12
m,p-Xylene	108-38-3/1	46.7	117	1750		ug/Kg	SW8260B	04/03/12
Bromoform	75-25-2	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Styrene	100-42-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,1,2,2-Tetrachloroethane	79-34-5	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	BT-2_Initial	**Lab Sample ID:**	L141901
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	100
Sample Time:	08:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	23.4	58.4	569		ug/Kg	SW8260B	04/03/12
1,2,3-Trichloropropane	96-18-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Isopropylbenzene	98-82-8	23.4	58.4	315		ug/Kg	SW8260B	04/03/12
Bromobenzene	108-86-1	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
n-Propylbenzene	103-65-1	23.4	58.4	589		ug/Kg	SW8260B	04/03/12
2-Chlorotoluene	95-49-8	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
4-Chlorotoluene	106-43-4	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,3,5-Trimethylbenzene	108-67-8	23.4	58.4	948		ug/Kg	SW8260B	04/03/12
tert-Butylbenzene	98-06-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trimethylbenzene	95-63-6	23.4	58.4	3410		ug/Kg	SW8260B	04/03/12
sec-Butylbenzene	135-98-8	23.4	58.4	327		ug/Kg	SW8260B	04/03/12
1,3-Dichlorobenzene	541-73-1	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,4-Dichlorobenzene	106-46-7	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
p-Isopropyltoluene	99-87-6	23.4	58.4	468		ug/Kg	SW8260B	04/03/12
1,2-Dichlorobenzene	95-50-1	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
n-Butylbenzene	104-51-8	23.4	58.4	785		ug/Kg	SW8260B	04/03/12
1,2-Dibromo-3-chloropropane	96-12-8	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trichlorobenzene	120-82-1	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
Naphthalene	91-20-3	23.4	58.4	1880		ug/Kg	SW8260B	04/03/12
Hexachlorobutadiene	87-68-3	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichlorobenzene	87-61-6	23.4	58.4	23.4	U	ug/Kg	SW8260B	04/03/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	90	65-135	
1,2-Dichloroethane-d4	101	65-135	
Toluene-d8	101	65-135	
4-Bromofluorobenzene	91	65-135	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 09:20
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L141902

Date Received: 03/28/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Chloromethane	74-87-3	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Vinyl Chloride	75-01-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Bromomethane	74-83-9	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Chloroethane	75-00-3	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Trichlorofluoromethane	75-69-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Acetone	67-64-1	58.2	116	58.2	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethene	75-35-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Methylene chloride	75-09-2	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
trans-1,2-Dichloroethene	156-60-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Methyl tert-butyl ether (MTBE)	1634-04-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethane	75-34-3	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
2-Butanone (MEK)	78-93-3	58.2	116	58.2	U	ug/Kg	SW8260B	04/03/12
cis-1,2-Dichloroethene	156-59-2	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Bromochloromethane	74-97-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Chloroform	67-66-3	17.5	58.2	17.5	U	ug/Kg	SW8260B	04/03/12
2,2-Dichloropropane	594-20-7	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloroethane	107-06-2	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,1,1-Trichloroethane	71-55-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloropropene	563-58-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Carbon tetrachloride	56-23-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Benzene	71-43-2	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Dibromomethane	74-95-3	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloropropane	78-87-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Trichloroethene (TCE)	79-01-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Bromodichloromethane	75-27-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
cis-1,3-Dichloropropene	10061-01-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
4-Methyl-2-pentanone (MIBK)	108-10-1	58.2	116	58.2	U	ug/Kg	SW8260B	04/03/12
trans-1,3-Dichloropropene	10061-02-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,1,2-Trichloroethane	79-00-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Toluene	108-88-3	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,3-Dichloropropane	142-28-9	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Dibromochloromethane	124-48-1	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,2-Dibromoethane (EDB)	106-93-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Tetrachloroethene (PCE)	127-18-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1-Chlorohexane	544-10-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,1,1,2-Tetrachloroethane	630-20-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Chlorobenzene	108-90-7	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Ethylbenzene	100-41-4	23.3	58.2	1040		ug/Kg	SW8260B	04/03/12
m,p-Xylene	108-38-3/1	46.6	116	46.6	U	ug/Kg	SW8260B	04/03/12
Bromoform	75-25-2	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Styrene	100-42-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,1,2,2-Tetrachloroethane	79-34-5	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_Initial	Lab Sample ID:	L141902
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	100
Sample Time:	09:20	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichloropropane	96-18-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Isopropylbenzene	98-82-8	23.3	58.2	678		ug/Kg	SW8260B	04/03/12
Bromobenzene	108-86-1	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
n-Propylbenzene	103-65-1	23.3	58.2	1140		ug/Kg	SW8260B	04/03/12
2-Chlorotoluene	95-49-8	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
4-Chlorotoluene	106-43-4	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,3,5-Trimethylbenzene	108-67-8	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
tert-Butylbenzene	98-06-6	23.3	58.2	58.0	J	ug/Kg	SW8260B	04/03/12
1,2,4-Trimethylbenzene	95-63-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
sec-Butylbenzene	135-98-8	23.3	58.2	728		ug/Kg	SW8260B	04/03/12
1,3-Dichlorobenzene	541-73-1	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,4-Dichlorobenzene	106-46-7	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
p-Isopropyltoluene	99-87-6	23.3	58.2	252		ug/Kg	SW8260B	04/03/12
1,2-Dichlorobenzene	95-50-1	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
n-Butylbenzene	104-51-8	23.3	58.2	942		ug/Kg	SW8260B	04/03/12
1,2-Dibromo-3-chloropropane	96-12-8	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trichlorobenzene	120-82-1	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
Naphthalene	91-20-3	23.3	58.2	3260		ug/Kg	SW8260B	04/03/12
Hexachlorobutadiene	87-68-3	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichlorobenzene	87-61-6	23.3	58.2	23.3	U	ug/Kg	SW8260B	04/03/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	85	65-135	
1,2-Dichloroethane-d4	91	65-135	
Toluene-d8	101	65-135	
4-Bromofluorobenzene	84	65-135	

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**MB1-0403**	**Lab Sample ID:**	**MB1-0403**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	100
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chloromethane	74-87-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Vinyl Chloride	75-01-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromomethane	74-83-9	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chloroethane	75-00-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Trichlorofluoromethane	75-69-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Acetone	67-64-1	50.0	100	50.0	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethene	75-35-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Methylene chloride	75-09-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
trans-1,2-Dichloroethene	156-60-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Methyl tert-butyl ether (MTBE)	1634-04-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethane	75-34-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
2-Butanone (MEK)	78-93-3	50.0	100	50.0	U	ug/Kg	SW8260B	04/03/12
cis-1,2-Dichloroethene	156-59-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromochloromethane	74-97-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chloroform	67-66-3	15.0	50.0	15.0	U	ug/Kg	SW8260B	04/03/12
2,2-Dichloropropane	594-20-7	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloroethane	107-06-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,1-Trichloroethane	71-55-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloropropene	563-58-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Carbon tetrachloride	56-23-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Benzene	71-43-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Dibromomethane	74-95-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloropropane	78-87-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Trichloroethene (TCE)	79-01-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromodichloromethane	75-27-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
cis-1,3-Dichloropropene	10061-01-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
4-Methyl-2-pentanone (MIBK)	108-10-1	50.0	100	50.0	U	ug/Kg	SW8260B	04/03/12
trans-1,3-Dichloropropene	10061-02-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,2-Trichloroethane	79-00-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Toluene	108-88-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,3-Dichloropropane	142-28-9	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Dibromochloromethane	124-48-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dibromoethane (EDB)	106-93-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Tetrachloroethene (PCE)	127-18-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1-Chlorohexane	544-10-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,1,2-Tetrachloroethane	630-20-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chlorobenzene	108-90-7	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Ethylbenzene	100-41-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
m,p-Xylene	108-38-3/1	40.0	100	40.0	U	ug/Kg	SW8260B	04/03/12
Bromoform	75-25-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Styrene	100-42-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,2,2-Tetrachloroethane	79-34-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**MB1-0403**	**Lab Sample ID:**	**MB1-0403**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	100
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichloropropane	96-18-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Isopropylbenzene	98-82-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromobenzene	108-86-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
n-Propylbenzene	103-65-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
2-Chlorotoluene	95-49-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
4-Chlorotoluene	106-43-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,3,5-Trimethylbenzene	108-67-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
tert-Butylbenzene	98-06-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trimethylbenzene	95-63-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
sec-Butylbenzene	135-98-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,3-Dichlorobenzene	541-73-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,4-Dichlorobenzene	106-46-7	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
p-Isopropyltoluene	99-87-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dichlorobenzene	95-50-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
n-Butylbenzene	104-51-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dibromo-3-chloropropane	96-12-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trichlorobenzene	120-82-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Naphthalene	91-20-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Hexachlorobutadiene	87-68-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichlorobenzene	87-61-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	96	65-135	
1,2-Dichloroethane-d4	105	65-135	
Toluene-d8	100	65-135	
4-Bromofluorobenzene	95	65-135	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SB1-0403

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: SB1-0403

Date Received: N/A
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chloromethane	74-87-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Vinyl Chloride	75-01-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromomethane	74-83-9	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chloroethane	75-00-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Trichlorofluoromethane	75-69-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Acetone	67-64-1	50.0	100	50.0	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethene	75-35-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Methylene chloride	75-09-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
trans-1,2-Dichloroethene	156-60-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Methyl tert-butyl ether (MTBE)	1634-04-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloroethane	75-34-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
2-Butanone (MEK)	78-93-3	50.0	100	50.0	U	ug/Kg	SW8260B	04/03/12
cis-1,2-Dichloroethene	156-59-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromochloromethane	74-97-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chloroform	67-66-3	15.0	50.0	15.0	U	ug/Kg	SW8260B	04/03/12
2,2-Dichloropropane	594-20-7	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloroethane	107-06-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,1-Trichloroethane	71-55-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1-Dichloropropene	563-58-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Carbon tetrachloride	56-23-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Benzene	71-43-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Dibromomethane	74-95-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dichloropropane	78-87-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Trichloroethene (TCE)	79-01-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromodichloromethane	75-27-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
cis-1,3-Dichloropropene	10061-01-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
4-Methyl-2-pentanone (MIBK)	108-10-1	50.0	100	50.0	U	ug/Kg	SW8260B	04/03/12
trans-1,3-Dichloropropene	10061-02-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,2-Trichloroethane	79-00-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Toluene	108-88-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,3-Dichloropropane	142-28-9	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Dibromochloromethane	124-48-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dibromoethane (EDB)	106-93-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Tetrachloroethene (PCE)	127-18-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1-Chlorohexane	544-10-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,1,2-Tetrachloroethane	630-20-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Chlorobenzene	108-90-7	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Ethylbenzene	100-41-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
m,p-Xylene	108-38-3/1	40.0	100	40.0	U	ug/Kg	SW8260B	04/03/12
Bromoform	75-25-2	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Styrene	100-42-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,1,2,2-Tetrachloroethane	79-34-5	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**SB1-0403**	**Lab Sample ID:**	**SB1-0403**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	100
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichloropropane	96-18-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Isopropylbenzene	98-82-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Bromobenzene	108-86-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
n-Propylbenzene	103-65-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
2-Chlorotoluene	95-49-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
4-Chlorotoluene	106-43-4	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,3,5-Trimethylbenzene	108-67-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
tert-Butylbenzene	98-06-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trimethylbenzene	95-63-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
sec-Butylbenzene	135-98-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,3-Dichlorobenzene	541-73-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,4-Dichlorobenzene	106-46-7	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
p-Isopropyltoluene	99-87-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dichlorobenzene	95-50-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
n-Butylbenzene	104-51-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2-Dibromo-3-chloropropane	96-12-8	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,4-Trichlorobenzene	120-82-1	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Naphthalene	91-20-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
Hexachlorobutadiene	87-68-3	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12
1,2,3-Trichlorobenzene	87-61-6	20.0	50.0	20.0	U	ug/Kg	SW8260B	04/03/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	96	65-135	
1,2-Dichloroethane-d4	100	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	95	65-135	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BS1S0403**	**Lab Sample ID:**	**BS1S0403**
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	100
Type:	QC	Report Revision No.:	0
Matrix:	Soil		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
Dichlorodifluoromethane	75-71-8	2000	1950	ug/Kg	98	SW8260B	04/03/12
Chloromethane	74-87-3	2000	1920	ug/Kg	96	SW8260B	04/03/12
Vinyl Chloride	75-01-4	2000	1800	ug/Kg	90	SW8260B	04/03/12
Bromomethane	74-83-9	2000	1950	ug/Kg	97	SW8260B	04/03/12
Chloroethane	75-00-3	2000	2130	ug/Kg	107	SW8260B	04/03/12
Trichlorofluoromethane	75-69-4	2000	2100	ug/Kg	105	SW8260B	04/03/12
Acetone	67-64-1	2000	1960	ug/Kg	98	SW8260B	04/03/12
1,1-Dichloroethene	75-35-4	2000	1620	ug/Kg	81	SW8260B	04/03/12
Methylene chloride	75-09-2	2000	1710	ug/Kg	85	SW8260B	04/03/12
trans-1,2-Dichloroethene	156-60-5	2000	1720	ug/Kg	86	SW8260B	04/03/12
Methyl tert-butyl ether (MTBE)	1634-04-4	2000	2070	ug/Kg	104	SW8260B	04/03/12
1,1-Dichloroethane	75-34-3	2000	1760	ug/Kg	88	SW8260B	04/03/12
2-Butanone (MEK)	78-93-3	2000	1810	ug/Kg	91	SW8260B	04/03/12
cis-1,2-Dichloroethene	156-59-2	2000	1820	ug/Kg	91	SW8260B	04/03/12
Bromochloromethane	74-97-5	2000	1800	ug/Kg	90	SW8260B	04/03/12
Chloroform	67-66-3	2000	1820	ug/Kg	91	SW8260B	04/03/12
2,2-Dichloropropane	594-20-7	2000	2100	ug/Kg	105	SW8260B	04/03/12
1,2-Dichloroethane	107-06-2	2000	1850	ug/Kg	92	SW8260B	04/03/12
1,1,1-Trichloroethane	71-55-6	2000	2000	ug/Kg	100	SW8260B	04/03/12
1,1-Dichloropropene	563-58-6	2000	1820	ug/Kg	91	SW8260B	04/03/12
Carbon tetrachloride	56-23-5	2000	2150	ug/Kg	108	SW8260B	04/03/12
Benzene	71-43-2	2000	1820	ug/Kg	91	SW8260B	04/03/12
Dibromomethane	74-95-3	2000	1790	ug/Kg	90	SW8260B	04/03/12
1,2-Dichloropropane	78-87-5	2000	1810	ug/Kg	90	SW8260B	04/03/12
Trichloroethene (TCE)	79-01-6	2000	1880	ug/Kg	94	SW8260B	04/03/12
Bromodichloromethane	75-27-4	2000	1950	ug/Kg	98	SW8260B	04/03/12
cis-1,3-Dichloropropene	10061-01-5	2000	2050	ug/Kg	103	SW8260B	04/03/12
4-Methyl-2-pentanone (MIBK)	108-10-1	2000	1830	ug/Kg	92	SW8260B	04/03/12
trans-1,3-Dichloropropene	10061-02-6	2000	1980	ug/Kg	99	SW8260B	04/03/12
1,1,2-Trichloroethane	79-00-5	2000	1810	ug/Kg	91	SW8260B	04/03/12
Toluene	108-88-3	2000	1900	ug/Kg	95	SW8260B	04/03/12
1,3-Dichloropropane	142-28-9	2000	1750	ug/Kg	87	SW8260B	04/03/12
Dibromochloromethane	124-48-1	2000	1970	ug/Kg	98	SW8260B	04/03/12
1,2-Dibromoethane (EDB)	106-93-4	2000	1800	ug/Kg	90	SW8260B	04/03/12
Tetrachloroethene (PCE)	127-18-4	2000	1750	ug/Kg	88	SW8260B	04/03/12
1-Chlorohexane	544-10-5	2000	2020	ug/Kg	101	SW8260B	04/03/12
1,1,1,2-Tetrachloroethane	630-20-6	2000	2120	ug/Kg	106	SW8260B	04/03/12
Chlorobenzene	108-90-7	2000	1800	ug/Kg	90	SW8260B	04/03/12
Ethylbenzene	100-41-4	2000	1890	ug/Kg	94	SW8260B	04/03/12
m,p-Xylene	108-38-3/1	4000	3820	ug/Kg	96	SW8260B	04/03/12
Bromoform	75-25-2	2000	2180	ug/Kg	109	SW8260B	04/03/12
Styrene	100-42-5	2000	2000	ug/Kg	100	SW8260B	04/03/12
1,1,2,2-Tetrachloroethane	79-34-5	2000	1800	ug/Kg	90	SW8260B	04/03/12

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**BS1S0403**	**Lab Sample ID:**	**BS1S0403**
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	100
Type:	QC	Report Revision No.:	0
Matrix:	Soil		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
o-Xylene	95-47-6	2000	1920	ug/Kg	96	SW8260B	04/03/12
1,2,3-Trichloropropane	96-18-4	2000	1660	ug/Kg	83	SW8260B	04/03/12
Isopropylbenzene	98-82-8	2000	1650	ug/Kg	82	SW8260B	04/03/12
Bromobenzene	108-86-1	2000	1780	ug/Kg	89	SW8260B	04/03/12
n-Propylbenzene	103-65-1	2000	1880	ug/Kg	94	SW8260B	04/03/12
2-Chlorotoluene	95-49-8	2000	1880	ug/Kg	94	SW8260B	04/03/12
4-Chlorotoluene	106-43-4	2000	1820	ug/Kg	91	SW8260B	04/03/12
1,3,5-Trimethylbenzene	108-67-8	2000	2010	ug/Kg	101	SW8260B	04/03/12
tert-Butylbenzene	98-06-6	2000	1950	ug/Kg	97	SW8260B	04/03/12
1,2,4-Trimethylbenzene	95-63-6	2000	2030	ug/Kg	101	SW8260B	04/03/12
sec-Butylbenzene	135-98-8	2000	1940	ug/Kg	97	SW8260B	04/03/12
1,3-Dichlorobenzene	541-73-1	2000	1850	ug/Kg	93	SW8260B	04/03/12
1,4-Dichlorobenzene	106-46-7	2000	1840	ug/Kg	92	SW8260B	04/03/12
p-Isopropyltoluene	99-87-6	2000	1860	ug/Kg	93	SW8260B	04/03/12
1,2-Dichlorobenzene	95-50-1	2000	1900	ug/Kg	95	SW8260B	04/03/12
n-Butylbenzene	104-51-8	2000	1940	ug/Kg	97	SW8260B	04/03/12
1,2-Dibromo-3-chloropropane	96-12-8	2000	2070	ug/Kg	104	SW8260B	04/03/12
1,2,4-Trichlorobenzene	120-82-1	2000	2020	ug/Kg	101	SW8260B	04/03/12
Naphthalene	91-20-3	2000	2060	ug/Kg	103	SW8260B	04/03/12
Hexachlorobutadiene	87-68-3	2000	2030	ug/Kg	102	SW8260B	04/03/12
1,2,3-Trichlorobenzene	87-61-6	2000	2070	ug/Kg	103	SW8260B	04/03/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	95	65-135	
1,2-Dichloroethane-d4	96	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	97	65-135	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CASE NARRATIVE
GC/MS VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Method(s):

Analysis: SW8260
Preparation: SW5030/E1311

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):
All acceptance criteria were met.

G. BFB Tune Verification(s):
All acceptance criteria were met.

H. Internal Standard(s):
All acceptance criteria were met.

I. Analytical Exception(s):
None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: ______________ Date: 4-10-12

Reviewed by: ______________ Date: 4-11-12

MB120410-08:36-L1419-V2

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_Initial**	**Lab Sample ID:**	**L141901**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	1
Sample Time:	08:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloromethane	74-87-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Vinyl Chloride	75-01-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromomethane	74-83-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroethane	75-00-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichlorofluoromethane	75-69-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Acetone	67-64-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethene	75-35-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methylene chloride	75-09-2	0.20	0.50	0.38	J	ug/L	SW8260B	04/04/12
trans-1,2-Dichloroethene	156-60-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethane	75-34-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
2-Butanone (MEK)	78-93-3	0.50	1.00	3.28		ug/L	SW8260B	04/04/12
cis-1,2-Dichloroethene	156-59-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromochloromethane	74-97-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroform	67-66-3	0.15	0.50	0.15	U	ug/L	SW8260B	04/04/12
2,2-Dichloropropane	594-20-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloroethane	107-06-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1-Trichloroethane	71-55-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloropropene	563-58-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Carbon tetrachloride	56-23-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Benzene	71-43-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromomethane	74-95-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloropropane	78-87-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichloroethene (TCE)	79-01-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromodichloromethane	75-27-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
cis-1,3-Dichloropropene	10061-01-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
trans-1,3-Dichloropropene	10061-02-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,2-Trichloroethane	79-00-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Toluene	108-88-3	0.20	0.50	1.24		ug/L	SW8260B	04/04/12
1,3-Dichloropropane	142-28-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromochloromethane	124-48-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dibromoethane (EDB)	106-93-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Tetrachloroethene (PCE)	127-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1-Chlorohexane	544-10-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1,2-Tetrachloroethane	630-20-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chlorobenzene	108-90-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Ethylbenzene	100-41-4	0.20	0.50	9.24		ug/L	SW8260B	04/04/12
m,p-Xylene	108-38-3/1	0.40	1.00	21.4		ug/L	SW8260B	04/04/12
Bromoform	75-25-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Styrene	100-42-5	0.20	0.50	0.27	J	ug/L	SW8260B	04/04/12
1,1,2,2-Tetrachloroethane	79-34-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 08:40
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L141901

Date Received: 03/28/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	0.20	0.50	9.22		ug/L	SW8260B	04/04/12
1,2,3-Trichloropropane	96-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Isopropylbenzene	98-82-8	0.20	0.50	4.67		ug/L	SW8260B	04/04/12
Bromobenzene	108-86-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
n-Propylbenzene	103-65-1	0.20	0.50	8.29		ug/L	SW8260B	04/04/12
2-Chlorotoluene	95-49-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Chlorotoluene	106-43-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3,5-Trimethylbenzene	108-67-8	0.20	0.50	14.0		ug/L	SW8260B	04/04/12
tert-Butylbenzene	98-06-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trimethylbenzene	95-63-6	0.20	0.50	47.5		ug/L	SW8260B	04/04/12
sec-Butylbenzene	135-98-8	0.20	0.50	2.90		ug/L	SW8260B	04/04/12
1,3-Dichlorobenzene	541-73-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,4-Dichlorobenzene	106-46-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
p-Isopropyltoluene	99-87-6	0.20	0.50	4.31		ug/L	SW8260B	04/04/12
1,2-Dichlorobenzene	95-50-1	0.20	0.50	0.33	J	ug/L	SW8260B	04/04/12
n-Butylbenzene	104-51-8	0.20	0.50	5.47		ug/L	SW8260B	04/04/12
1,2-Dibromo-3-chloropropane	96-12-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trichlorobenzene	120-82-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Naphthalene	91-20-3	0.20	0.50	45.8		ug/L	SW8260B	04/04/12
Hexachlorobutadiene	87-68-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,3-Trichlorobenzene	87-61-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	91	75-125	
1,2-Dichloroethane-d4	91	75-125	
Toluene-d8	97	75-125	
4-Bromofluorobenzene	98	75-125	

U=Not detected at specified reporting limit
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*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	BT-3_Initial	**Lab Sample ID:**	L141902
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	1
Sample Time:	09:20	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloromethane	74-87-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Vinyl Chloride	75-01-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromomethane	74-83-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroethane	75-00-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichlorofluoromethane	75-69-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Acetone	67-64-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethene	75-35-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methylene chloride	75-09-2	0.20	0.50	0.47	J	ug/L	SW8260B	04/04/12
trans-1,2-Dichloroethene	156-60-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethane	75-34-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
2-Butanone (MEK)	78-93-3	0.50	1.00	1.20		ug/L	SW8260B	04/04/12
cis-1,2-Dichloroethene	156-59-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromochloromethane	74-97-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroform	67-66-3	0.15	0.50	0.15	U	ug/L	SW8260B	04/04/12
2,2-Dichloropropane	594-20-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloroethane	107-06-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1-Trichloroethane	71-55-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloropropene	563-58-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Carbon tetrachloride	56-23-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Benzene	71-43-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromomethane	74-95-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloropropane	78-87-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichloroethene (TCE)	79-01-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromodichloromethane	75-27-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
cis-1,3-Dichloropropene	10061-01-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
trans-1,3-Dichloropropene	10061-02-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,2-Trichloroethane	79-00-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Toluene	108-88-3	0.20	0.50	0.29	J	ug/L	SW8260B	04/04/12
1,3-Dichloropropane	142-28-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromochloromethane	124-48-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dibromoethane (EDB)	106-93-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Tetrachloroethene (PCE)	127-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1-Chlorohexane	544-10-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1,2-Tetrachloroethane	630-20-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chlorobenzene	108-90-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Ethylbenzene	100-41-4	0.20	0.50	8.80		ug/L	SW8260B	04/04/12
m,p-Xylene	108-38-3/1	0.40	1.00	1.18		ug/L	SW8260B	04/04/12
Bromoform	75-25-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Styrene	100-42-5	0.20	0.50	0.25	J	ug/L	SW8260B	04/04/12
1,1,2,2-Tetrachloroethane	79-34-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 09:20
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L141902

Date Received: 03/28/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	0.20	0.50	0.40	J	ug/L	SW8260B	04/04/12
1,2,3-Trichloropropane	96-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Isopropylbenzene	98-82-8	0.20	0.50	5.39		ug/L	SW8260B	04/04/12
Bromobenzene	108-86-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
n-Propylbenzene	103-65-1	0.20	0.50	8.01		ug/L	SW8260B	04/04/12
2-Chlorotoluene	95-49-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Chlorotoluene	106-43-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3,5-Trimethylbenzene	108-67-8	0.20	0.50	0.61		ug/L	SW8260B	04/04/12
tert-Butylbenzene	98-06-6	0.20	0.50	0.26	J	ug/L	SW8260B	04/04/12
1,2,4-Trimethylbenzene	95-63-6	0.20	0.50	2.29		ug/L	SW8260B	04/04/12
sec-Butylbenzene	135-98-8	0.20	0.50	2.97		ug/L	SW8260B	04/04/12
1,3-Dichlorobenzene	541-73-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,4-Dichlorobenzene	106-46-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
p-Isopropyltoluene	99-87-6	0.20	0.50	1.22		ug/L	SW8260B	04/04/12
1,2-Dichlorobenzene	95-50-1	0.20	0.50	0.36	J	ug/L	SW8260B	04/04/12
n-Butylbenzene	104-51-8	0.20	0.50	2.77		ug/L	SW8260B	04/04/12
1,2-Dibromo-3-chloropropane	96-12-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trichlorobenzene	120-82-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Naphthalene	91-20-3	0.20	0.50	39.5		ug/L	SW8260B	04/04/12
Hexachlorobutadiene	87-68-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,3-Trichlorobenzene	87-61-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	85	75-125	
1,2-Dichloroethane-d4	85	75-125	
Toluene-d8	95	75-125	
4-Bromofluorobenzene	89	75-125	

U=Not detected at specified reporting limit
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*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SPLPBLK
Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: SPLPBLK
Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloromethane	74-87-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Vinyl Chloride	75-01-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromomethane	74-83-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroethane	75-00-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichlorofluoromethane	75-69-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Acetone	67-64-1	0.50	1.00	2.21		ug/L	SW8260B	04/04/12
1,1-Dichloroethene	75-35-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methylene chloride	75-09-2	0.20	0.50	0.21	J	ug/L	SW8260B	04/04/12
trans-1,2-Dichloroethene	156-60-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethane	75-34-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
2-Butanone (MEK)	78-93-3	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
cis-1,2-Dichloroethene	156-59-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromochloromethane	74-97-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroform	67-66-3	0.15	0.50	0.15	U	ug/L	SW8260B	04/04/12
2,2-Dichloropropane	594-20-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloroethane	107-06-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1-Trichloroethane	71-55-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloropropene	563-58-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Carbon tetrachloride	56-23-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Benzene	71-43-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromomethane	74-95-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloropropane	78-87-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichloroethene (TCE)	79-01-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromodichloromethane	75-27-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
cis-1,3-Dichloropropene	10061-01-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
trans-1,3-Dichloropropene	10061-02-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,2-Trichloroethane	79-00-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Toluene	108-88-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3-Dichloropropane	142-28-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromochloromethane	124-48-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dibromoethane (EDB)	106-93-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Tetrachloroethene (PCE)	127-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1-Chlorohexane	544-10-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1,2-Tetrachloroethane	630-20-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chlorobenzene	108-90-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Ethylbenzene	100-41-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
m,p-Xylene	108-38-3/1	0.40	1.00	0.40	U	ug/L	SW8260B	04/04/12
Bromoform	75-25-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Styrene	100-42-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,2,2-Tetrachloroethane	79-34-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SPLPBLK

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: SPLPBLK

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,3-Trichloropropane	96-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Isopropylbenzene	98-82-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromobenzene	108-86-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
n-Propylbenzene	103-65-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
2-Chlorotoluene	95-49-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Chlorotoluene	106-43-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3,5-Trimethylbenzene	108-67-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
tert-Butylbenzene	98-06-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trimethylbenzene	95-63-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
sec-Butylbenzene	135-98-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3-Dichlorobenzene	541-73-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,4-Dichlorobenzene	106-46-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
p-Isopropyltoluene	99-87-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichlorobenzene	95-50-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
n-Butylbenzene	104-51-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dibromo-3-chloropropane	96-12-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trichlorobenzene	120-82-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Naphthalene	91-20-3	0.20	0.50	1.47		ug/L	SW8260B	04/04/12
Hexachlorobutadiene	87-68-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,3-Trichlorobenzene	87-61-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	92	75-125	
1,2-Dichloroethane-d4	93	75-125	
Toluene-d8	96	75-125	
4-Bromofluorobenzene	96	75-125	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BS1W0404**	**Lab Sample ID:**	**BS1W0404**
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Water		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
Dichlorodifluoromethane	75-71-8	20.0	16.0	ug/L	80	SW8260B	04/04/12
Chloromethane	74-87-3	20.0	18.1	ug/L	90	SW8260B	04/04/12
Vinyl Chloride	75-01-4	20.0	16.4	ug/L	82	SW8260B	04/04/12
Bromomethane	74-83-9	20.0	18.5	ug/L	92	SW8260B	04/04/12
Chloroethane	75-00-3	20.0	17.3	ug/L	87	SW8260B	04/04/12
Trichlorofluoromethane	75-69-4	20.0	18.1	ug/L	90	SW8260B	04/04/12
Acetone	67-64-1	20.0	19.5	ug/L	97	SW8260B	04/04/12
1,1-Dichloroethene	75-35-4	20.0	16.1	ug/L	80	SW8260B	04/04/12
Methylene chloride	75-09-2	20.0	17.1	ug/L	86	SW8260B	04/04/12
trans-1,2-Dichloroethene	156-60-5	20.0	17.6	ug/L	88	SW8260B	04/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	20.0	20.4	ug/L	102	SW8260B	04/04/12
1,1-Dichloroethane	75-34-3	20.0	17.7	ug/L	89	SW8260B	04/04/12
2-Butanone (MEK)	78-93-3	20.0	20.0	ug/L	100	SW8260B	04/04/12
cis-1,2-Dichloroethene	156-59-2	20.0	18.3	ug/L	92	SW8260B	04/04/12
Bromochloromethane	74-97-5	20.0	17.9	ug/L	89	SW8260B	04/04/12
Chloroform	67-66-3	20.0	17.6	ug/L	88	SW8260B	04/04/12
2,2-Dichloropropane	594-20-7	20.0	19.3	ug/L	97	SW8260B	04/04/12
1,2-Dichloroethane	107-06-2	20.0	17.2	ug/L	86	SW8260B	04/04/12
1,1,1-Trichloroethane	71-55-6	20.0	18.4	ug/L	92	SW8260B	04/04/12
1,1-Dichloropropene	563-58-6	20.0	18.3	ug/L	91	SW8260B	04/04/12
Carbon tetrachloride	56-23-5	20.0	18.9	ug/L	95	SW8260B	04/04/12
Benzene	71-43-2	20.0	18.6	ug/L	93	SW8260B	04/04/12
Dibromomethane	74-95-3	20.0	17.9	ug/L	89	SW8260B	04/04/12
1,2-Dichloropropane	78-87-5	20.0	18.6	ug/L	93	SW8260B	04/04/12
Trichloroethene (TCE)	79-01-6	20.0	18.7	ug/L	93	SW8260B	04/04/12
Bromodichloromethane	75-27-4	20.0	18.3	ug/L	91	SW8260B	04/04/12
cis-1,3-Dichloropropene	10061-01-5	20.0	20.0	ug/L	100	SW8260B	04/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	20.0	19.2	ug/L	96	SW8260B	04/04/12
trans-1,3-Dichloropropene	10061-02-6	20.0	18.7	ug/L	94	SW8260B	04/04/12
1,1,2-Trichloroethane	79-00-5	20.0	18.2	ug/L	91	SW8260B	04/04/12
Toluene	108-88-3	20.0	19.0	ug/L	95	SW8260B	04/04/12
1,3-Dichloropropane	142-28-9	20.0	18.2	ug/L	91	SW8260B	04/04/12
Dibromochloromethane	124-48-1	20.0	19.0	ug/L	95	SW8260B	04/04/12
1,2-Dibromoethane (EDB)	106-93-4	20.0	18.5	ug/L	93	SW8260B	04/04/12
Tetrachloroethene (PCE)	127-18-4	20.0	17.8	ug/L	89	SW8260B	04/04/12
1-Chlorohexane	544-10-5	20.0	20.1	ug/L	100	SW8260B	04/04/12
1,1,1,2-Tetrachloroethane	630-20-6	20.0	20.5	ug/L	102	SW8260B	04/04/12
Chlorobenzene	108-90-7	20.0	18.2	ug/L	91	SW8260B	04/04/12
Ethylbenzene	100-41-4	20.0	19.2	ug/L	96	SW8260B	04/04/12
m,p-Xylene	108-38-3/1	40.0	39.1	ug/L	98	SW8260B	04/04/12
Bromoform	75-25-2	20.0	20.9	ug/L	105	SW8260B	04/04/12
Styrene	100-42-5	20.0	20.6	ug/L	103	SW8260B	04/04/12
1,1,2,2-Tetrachloroethane	79-34-5	20.0	18.9	ug/L	94	SW8260B	04/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0404
Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: BS1W0404
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
o-Xylene	95-47-6	20.0	19.5	ug/L	97	SW8260B	04/04/12
1,2,3-Trichloropropane	96-18-4	20.0	17.7	ug/L	89	SW8260B	04/04/12
Isopropylbenzene	98-82-8	20.0	17.1	ug/L	86	SW8260B	04/04/12
Bromobenzene	108-86-1	20.0	18.5	ug/L	93	SW8260B	04/04/12
n-Propylbenzene	103-65-1	20.0	19.4	ug/L	97	SW8260B	04/04/12
2-Chlorotoluene	95-49-8	20.0	19.5	ug/L	98	SW8260B	04/04/12
4-Chlorotoluene	106-43-4	20.0	18.8	ug/L	94	SW8260B	04/04/12
1,3,5-Trimethylbenzene	108-67-8	20.0	20.8	ug/L	104	SW8260B	04/04/12
tert-Butylbenzene	98-06-6	20.0	19.9	ug/L	99	SW8260B	04/04/12
1,2,4-Trimethylbenzene	95-63-6	20.0	20.8	ug/L	104	SW8260B	04/04/12
sec-Butylbenzene	135-98-8	20.0	19.8	ug/L	99	SW8260B	04/04/12
1,3-Dichlorobenzene	541-73-1	20.0	18.9	ug/L	94	SW8260B	04/04/12
1,4-Dichlorobenzene	106-46-7	20.0	18.7	ug/L	93	SW8260B	04/04/12
p-Isopropyltoluene	99-87-6	20.0	18.8	ug/L	94	SW8260B	04/04/12
1,2-Dichlorobenzene	95-50-1	20.0	19.3	ug/L	97	SW8260B	04/04/12
n-Butylbenzene	104-51-8	20.0	19.7	ug/L	98	SW8260B	04/04/12
1,2-Dibromo-3-chloropropane	96-12-8	20.0	21.7	ug/L	108	SW8260B	04/04/12
1,2,4-Trichlorobenzene	120-82-1	20.0	20.5	ug/L	103	SW8260B	04/04/12
Naphthalene	91-20-3	20.0	22.1	ug/L	110	SW8260B	04/04/12
Hexachlorobutadiene	87-68-3	20.0	20.3	ug/L	101	SW8260B	04/04/12
1,2,3-Trichlorobenzene	87-61-6	20.0	21.1	ug/L	105	SW8260B	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	91	75-125	
1,2-Dichloroethane-d4	87	75-125	
Toluene-d8	95	75-125	
4-Bromofluorobenzene	97	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **WB1-0404**

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: **WB1-0404**

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloromethane	74-87-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Vinyl Chloride	75-01-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromomethane	74-83-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroethane	75-00-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichlorofluoromethane	75-69-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Acetone	67-64-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethene	75-35-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methylene chloride	75-09-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
trans-1,2-Dichloroethene	156-60-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloroethane	75-34-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
2-Butanone (MEK)	78-93-3	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
cis-1,2-Dichloroethene	156-59-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromochloromethane	74-97-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chloroform	67-66-3	0.15	0.50	0.15	U	ug/L	SW8260B	04/04/12
2,2-Dichloropropane	594-20-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloroethane	107-06-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1-Trichloroethane	71-55-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1-Dichloropropene	563-58-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Carbon tetrachloride	56-23-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Benzene	71-43-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromomethane	74-95-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichloropropane	78-87-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Trichloroethene (TCE)	79-01-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromodichloromethane	75-27-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
cis-1,3-Dichloropropene	10061-01-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	0.50	1.00	0.50	U	ug/L	SW8260B	04/04/12
trans-1,3-Dichloropropene	10061-02-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,2-Trichloroethane	79-00-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Toluene	108-88-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3-Dichloropropane	142-28-9	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Dibromochloromethane	124-48-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dibromoethane (EDB)	106-93-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Tetrachloroethene (PCE)	127-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1-Chlorohexane	544-10-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,1,2-Tetrachloroethane	630-20-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Chlorobenzene	108-90-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Ethylbenzene	100-41-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
m,p-Xylene	108-38-3/1	0.40	1.00	0.40	U	ug/L	SW8260B	04/04/12
Bromoform	75-25-2	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Styrene	100-42-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,1,2,2-Tetrachloroethane	79-34-5	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **WB1-0404**

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: **WB1-0404**

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,3-Trichloropropane	96-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Isopropylbenzene	98-82-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Bromobenzene	108-86-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
n-Propylbenzene	103-65-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
2-Chlorotoluene	95-49-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
4-Chlorotoluene	106-43-4	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3,5-Trimethylbenzene	108-67-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
tert-Butylbenzene	98-06-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trimethylbenzene	95-63-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
sec-Butylbenzene	135-98-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,3-Dichlorobenzene	541-73-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,4-Dichlorobenzene	106-46-7	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
p-Isopropyltoluene	99-87-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dichlorobenzene	95-50-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
n-Butylbenzene	104-51-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2-Dibromo-3-chloropropane	96-12-8	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,4-Trichlorobenzene	120-82-1	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Naphthalene	91-20-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
Hexachlorobutadiene	87-68-3	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12
1,2,3-Trichlorobenzene	87-61-6	0.20	0.50	0.20	U	ug/L	SW8260B	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	92	75-125	
1,2-Dichloroethane-d4	92	75-125	
Toluene-d8	97	75-125	
4-Bromofluorobenzene	99	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CASE NARRATIVE
GC/MS SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Method(s):

Analysis: SW8270
Preparation: SW3550

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

LCS recovery of Hexachlorocyclopentadiene(21%) in BS1S0405 did not meet acceptance criteria of 30-110%.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

All acceptance criteria were met.

G. DFTPP Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

I. Analytical Exception(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Tiffany Hill Date: 4/13/12

Reviewed by: Date: 16 April 2012

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_Initial	Lab Sample ID:	L141901
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	10
Sample Time:	08:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Pyridine	110-86-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Aniline	62-53-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Phenol	108-95-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
bis(2-Chloroethyl)ether	111-44-4	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2-Chlorophenol	95-57-8	803	1950	803	U	ug/Kg	SW8270C	04/13/12
1,3-Dichlorobenzene	541-73-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
1,4-Dichlorobenzene	106-46-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzyl alcohol	100-51-6	803	1950	803	U	ug/Kg	SW8270C	04/13/12
1,2-Dichlorobenzene	95-50-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2-Methylphenol	95-48-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
bis(2-Chloroisopropyl)ether	108-60-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
3-,4-Methylphenol	108-39-4/106	803	1950	803	U	ug/Kg	SW8270C	04/13/12
N-Nitroso-di-n-propylamine	621-64-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Hexachloroethane	67-72-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzoic Acid	65-85-0	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Nitrobenzene	98-95-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Isophorone	78-59-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2-Nitrophenol	88-75-5	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,4-Dimethylphenol	105-67-9	803	1950	803	U	ug/Kg	SW8270C	04/13/12
bis(2-Chloroethoxy)methane	111-91-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,4-Dichlorophenol	120-83-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
1,2,4-Trichlorobenzene	120-82-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Naphthalene	91-20-3	803	1950	821	J	ug/Kg	SW8270C	04/13/12
4-Chloroaniline	106-47-8	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Hexachlorobutadiene	87-68-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
4-Chloro-3-methyl phenol	59-50-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2-Methylnaphthalene	91-57-6	803	1950	2490		ug/Kg	SW8270C	04/13/12
Hexachlorocyclopentadiene	77-47-4	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,4,6-Trichlorophenol	88-06-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,4,5-Trichlorophenol	95-95-4	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2-Chloronaphthalene	91-58-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2-Nitroaniline	88-74-4	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Dimethylphthalate	131-11-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Acenaphthylene	208-96-8	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,6-Dinitrotoluene	606-20-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Acenaphthene	83-32-9	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,4-Dinitrophenol	51-28-5	803	1950	803	U	ug/Kg	SW8270C	04/13/12
4-Nitrophenol	100-02-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
2,4-Dinitrotoluene	121-14-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Dibenzofuran	132-64-9	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Diethylphthalate	84-66-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
3-Nitroaniline	99-09-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 08:40
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L141901

Date Received: 03/28/12
Dilution Factor: 10
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
4-Chlorophenyl phenyl ether	7005-72-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
4-Nitroaniline	100-01-6	803	1950	803	U	ug/Kg	SW8270C	04/13/12
4,6-Dinitro-2-methyl phenol	534-52-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
N-Nitrosodiphenylamine	86-30-6	803	1950	803	U	ug/Kg	SW8270C	04/13/12
1,2-Diphenylhydrazine	122-66-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
4-Bromophenyl phenyl ether	101-55-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Hexachlorobenzene	118-74-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Pentachlorophenol	87-86-5	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Phenanthrene	85-01-8	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Anthracene	120-12-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Carbazole	86-74-8	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Di-n-butylphthalate	84-74-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Fluoranthene	206-44-0	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Pyrene	129-00-0	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Butylbenzylphthalate	85-68-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzo(a)anthracene	56-55-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
3,3'-Dichlorobenzidine	91-94-1	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Chrysene	218-01-9	803	1950	803	U	ug/Kg	SW8270C	04/13/12
bis(2-Ethylhexyl)phthalate	117-81-7	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Di-n-octylphthalate	117-84-0	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzo(b)fluoroanthene	205-99-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzo(k)fluoranthene	207-08-9	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzo(a)pyrene	50-32-8	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Indeno(1,2,3-c,d)pyrene	193-39-5	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Dibenzo(a,h)anthracene	53-70-3	803	1950	803	U	ug/Kg	SW8270C	04/13/12
Benzo(g,h,i)perylene	191-24-2	803	1950	803	U	ug/Kg	SW8270C	04/13/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	55	25-121	
Phenol-d5	65	24-113	
Nitrobenzene-d5	69	23-120	
2-Fluorobiphenyl	91	30-115	
2,4,6-Tribromophenol	57	19-122	
Terphenyl-d14	104	18-137	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **BT-3_Initial**

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 09:20
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: **L141902**

Date Received: 03/28/12
Dilution Factor: 10
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Pyridine	110-86-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Aniline	62-53-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Phenol	108-95-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
bis(2-Chloroethyl)ether	111-44-4	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2-Chlorophenol	95-57-8	833	2020	833	U	ug/Kg	SW8270C	04/13/12
1,3-Dichlorobenzene	541-73-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
1,4-Dichlorobenzene	106-46-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzyl alcohol	100-51-6	833	2020	833	U	ug/Kg	SW8270C	04/13/12
1,2-Dichlorobenzene	95-50-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2-Methylphenol	95-48-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
bis(2-Chloroisopropyl)ether	108-60-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
3-,4-Methylphenol	108-39-4/106	833	2020	833	U	ug/Kg	SW8270C	04/13/12
N-Nitroso-di-n-propylamine	621-64-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Hexachloroethane	67-72-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzoic Acid	65-85-0	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Nitrobenzene	98-95-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Isophorone	78-59-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2-Nitrophenol	88-75-5	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,4-Dimethylphenol	105-67-9	833	2020	833	U	ug/Kg	SW8270C	04/13/12
bis(2-Chloroethoxy)methane	111-91-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,4-Dichlorophenol	120-83-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
1,2,4-Trichlorobenzene	120-82-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Naphthalene	91-20-3	833	2020	2300		ug/Kg	SW8270C	04/13/12
4-Chloroaniline	106-47-8	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Hexachlorobutadiene	87-68-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
4-Chloro-3-methyl phenol	59-50-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2-Methylnaphthalene	91-57-6	833	2020	5250		ug/Kg	SW8270C	04/13/12
Hexachlorocyclopentadiene	77-47-4	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,4,6-Trichlorophenol	88-06-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,4,5-Trichlorophenol	95-95-4	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2-Chloronaphthalene	91-58-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2-Nitroaniline	88-74-4	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Dimethylphthalate	131-11-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Acenaphthylene	208-96-8	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,6-Dinitrotoluene	606-20-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Acenaphthene	83-32-9	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,4-Dinitrophenol	51-28-5	833	2020	833	U	ug/Kg	SW8270C	04/13/12
4-Nitrophenol	100-02-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
2,4-Dinitrotoluene	121-14-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Dibenzofuran	132-64-9	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Diethylphthalate	84-66-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
3-Nitroaniline	99-09-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 09:20
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L141902

Date Received: 03/28/12
Dilution Factor: 10
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
4-Chlorophenyl phenyl ether	7005-72-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
4-Nitroaniline	100-01-6	833	2020	833	U	ug/Kg	SW8270C	04/13/12
4,6-Dinitro-2-methyl phenol	534-52-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
N-Nitrosodiphenylamine	86-30-6	833	2020	833	U	ug/Kg	SW8270C	04/13/12
1,2-Diphenylhydrazine	122-66-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
4-Bromophenyl phenyl ether	101-55-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Hexachlorobenzene	118-74-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Pentachlorophenol	87-86-5	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Phenanthrene	85-01-8	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Anthracene	120-12-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Carbazole	86-74-8	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Di-n-butylphthalate	84-74-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Fluoranthene	206-44-0	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Pyrene	129-00-0	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Butylbenzylphthalate	85-68-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzo(a)anthracene	56-55-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
3,3'-Dichlorobenzidine	91-94-1	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Chrysene	218-01-9	833	2020	833	U	ug/Kg	SW8270C	04/13/12
bis(2-Ethylhexyl)phthalate	117-81-7	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Di-n-octylphthalate	117-84-0	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzo(b)fluoroanthene	205-99-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzo(k)fluoranthene	207-08-9	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzo(a)pyrene	50-32-8	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Indeno(1,2,3-c,d)pyrene	193-39-5	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Dibenzo(a,h)anthracene	53-70-3	833	2020	833	U	ug/Kg	SW8270C	04/13/12
Benzo(g,h,i)perylene	191-24-2	833	2020	833	U	ug/Kg	SW8270C	04/13/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	62	25-121	
Phenol-d5	73	24-113	
Nitrobenzene-d5	82	23-120	
2-Fluorobiphenyl	94	30-115	
2,4,6-Tribromophenol	62	19-122	
Terphenyl-d14	102	18-137	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SB1-0405

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: SB1-0405

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Pyridine	110-86-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Aniline	62-53-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Phenol	108-95-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
bis(2-Chloroethyl)ether	111-44-4	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2-Chlorophenol	95-57-8	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
1,3-Dichlorobenzene	541-73-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
1,4-Dichlorobenzene	106-46-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzyl alcohol	100-51-6	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
1,2-Dichlorobenzene	95-50-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2-Methylphenol	95-48-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
bis(2-Chloroisopropyl)ether	108-60-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
3-,4-Methylphenol	108-39-4/106	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
N-Nitroso-di-n-propylamine	621-64-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Hexachloroethane	67-72-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzoic Acid	65-85-0	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Nitrobenzene	98-95-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Isophorone	78-59-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2-Nitrophenol	88-75-5	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,4-Dimethylphenol	105-67-9	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
bis(2-Chloroethoxy)methane	111-91-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,4-Dichlorophenol	120-83-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
1,2,4-Trichlorobenzene	120-82-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Naphthalene	91-20-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4-Chloroaniline	106-47-8	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Hexachlorobutadiene	87-68-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4-Chloro-3-methyl phenol	59-50-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2-Methylnaphthalene	91-57-6	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Hexachlorocyclopentadiene	77-47-4	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,4,6-Trichlorophenol	88-06-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,4,5-Trichlorophenol	95-95-4	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2-Chloronaphthalene	91-58-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2-Nitroaniline	88-74-4	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Dimethylphthalate	131-11-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Acenaphthylene	208-96-8	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,6-Dinitrotoluene	606-20-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Acenaphthene	83-32-9	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,4-Dinitrophenol	51-28-5	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4-Nitrophenol	100-02-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
2,4-Dinitrotoluene	121-14-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Dibenzofuran	132-64-9	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Diethylphthalate	84-66-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
3-Nitroaniline	99-09-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**SB1-0405**	**Lab Sample ID:**	**SB1-0405**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4-Chlorophenyl phenyl ether	7005-72-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4-Nitroaniline	100-01-6	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4,6-Dinitro-2-methyl phenol	534-52-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
N-Nitrosodiphenylamine	86-30-6	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
1,2-Diphenylhydrazine	122-66-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
4-Bromophenyl phenyl ether	101-55-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Hexachlorobenzene	118-74-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Pentachlorophenol	87-86-5	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Phenanthrene	85-01-8	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Anthracene	120-12-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Carbazole	86-74-8	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Di-n-butylphthalate	84-74-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Fluoranthene	206-44-0	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Pyrene	129-00-0	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Butylbenzylphthalate	85-68-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzo(a)anthracene	56-55-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
3,3'-Dichlorobenzidine	91-94-1	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Chrysene	218-01-9	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
bis(2-Ethylhexyl)phthalate	117-81-7	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Di-n-octylphthalate	117-84-0	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzo(b)fluoroanthene	205-99-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzo(k)fluoranthene	207-08-9	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzo(a)pyrene	50-32-8	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Indeno(1,2,3-c,d)pyrene	193-39-5	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Dibenzo(a,h)anthracene	53-70-3	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12
Benzo(g,h,i)perylene	191-24-2	70.0	170	70.0	U	ug/Kg	SW8270C	04/12/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	61	25-121	
Phenol-d5	66	24-113	
Nitrobenzene-d5	72	23-120	
2-Fluorobiphenyl	76	30-115	
2,4,6-Tribromophenol	77	19-122	
Terphenyl-d14	97	18-137	

U=Not detected at specified reporting limit
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CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1S0405
Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: BS1S0405
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
N-Nitrosodimethylamine	62-75-9	2670	1720	ug/Kg	65	SW8270C	04/12/12
Pyridine	110-86-1	2670	1530	ug/Kg	57	SW8270C	04/12/12
Aniline	62-53-3	2670	1350	ug/Kg	51	SW8270C	04/12/12
Phenol	108-95-2	2670	1770	ug/Kg	66	SW8270C	04/12/12
bis(2-Chloroethyl)ether	111-44-4	2670	1680	ug/Kg	63	SW8270C	04/12/12
2-Chlorophenol	95-57-8	2670	1750	ug/Kg	66	SW8270C	04/12/12
1,3-Dichlorobenzene	541-73-1	2670	1680	ug/Kg	63	SW8270C	04/12/12
1,4-Dichlorobenzene	106-46-7	2670	1690	ug/Kg	63	SW8270C	04/12/12
Benzyl alcohol	100-51-6	2670	1920	ug/Kg	72	SW8270C	04/12/12
1,2-Dichlorobenzene	95-50-1	2670	1710	ug/Kg	64	SW8270C	04/12/12
2-Methylphenol	95-48-7	2670	1800	ug/Kg	68	SW8270C	04/12/12
bis(2-Chloroisopropyl)ether	108-60-1	2670	1820	ug/Kg	68	SW8270C	04/12/12
3-,4-Methylphenol	108-39-4/106	2670	1850	ug/Kg	70	SW8270C	04/12/12
N-Nitroso-di-n-propylamine	621-64-7	2670	1930	ug/Kg	72	SW8270C	04/12/12
Hexachloroethane	67-72-1	2670	1740	ug/Kg	65	SW8270C	04/12/12
Benzoic Acid	65-85-0	2670	1860	ug/Kg	70	SW8270C	04/12/12
Nitrobenzene	98-95-3	2670	1860	ug/Kg	70	SW8270C	04/12/12
Isophorone	78-59-1	2670	1600	ug/Kg	60	SW8270C	04/12/12
2-Nitrophenol	88-75-5	2670	1980	ug/Kg	74	SW8270C	04/12/12
2,4-Dimethylphenol	105-67-9	2670	1730	ug/Kg	65	SW8270C	04/12/12
bis(2-Chloroethoxy)methane	111-91-1	2670	1900	ug/Kg	71	SW8270C	04/12/12
2,4-Dichlorophenol	120-83-2	2670	1900	ug/Kg	71	SW8270C	04/12/12
1,2,4-Trichlorobenzene	120-82-1	2670	1800	ug/Kg	68	SW8270C	04/12/12
Naphthalene	91-20-3	2670	1840	ug/Kg	69	SW8270C	04/12/12
4-Chloroaniline	106-47-8	2670	1620	ug/Kg	61	SW8270C	04/12/12
Hexachlorobutadiene	87-68-3	2670	1820	ug/Kg	68	SW8270C	04/12/12
4-Chloro-3-methyl phenol	59-50-7	2670	2010	ug/Kg	75	SW8270C	04/12/12
2-Methylnaphthalene	91-57-6	2670	1890	ug/Kg	71	SW8270C	04/12/12
Hexachlorocyclopentadiene	77-47-4	2670	573	ug/Kg	21 *	SW8270C	04/12/12
2,4,6-Trichlorophenol	88-06-2	2670	1960	ug/Kg	73	SW8270C	04/12/12
2,4,5-Trichlorophenol	95-95-4	2670	1970	ug/Kg	74	SW8270C	04/12/12
2-Chloronaphthalene	91-58-7	2670	1890	ug/Kg	71	SW8270C	04/12/12
2-Nitroaniline	88-74-4	2670	2210	ug/Kg	83	SW8270C	04/12/12
Dimethylphthalate	131-11-3	2670	2030	ug/Kg	76	SW8270C	04/12/12
Acenaphthylene	208-96-8	2670	1840	ug/Kg	69	SW8270C	04/12/12
2,6-Dinitrotoluene	606-20-2	2670	2120	ug/Kg	80	SW8270C	04/12/12
Acenaphthene	83-32-9	2670	1920	ug/Kg	72	SW8270C	04/12/12
2,4-Dinitrophenol	51-28-5	2670	2070	ug/Kg	78	SW8270C	04/12/12
4-Nitrophenol	100-02-7	2670	2160	ug/Kg	81	SW8270C	04/12/12
2,4-Dinitrotoluene	121-14-2	2670	2210	ug/Kg	83	SW8270C	04/12/12
Dibenzofuran	132-64-9	2670	1960	ug/Kg	74	SW8270C	04/12/12
Diethylphthalate	84-66-2	2670	2050	ug/Kg	77	SW8270C	04/12/12
3-Nitroaniline	99-09-2	2670	2100	ug/Kg	79	SW8270C	04/12/12

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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BS1S0405	Lab Sample ID:	BS1S0405
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Soil		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
Fluorene	86-73-7	2670	1960	ug/Kg	73	SW8270C	04/12/12
4-Chlorophenyl phenyl ether	7005-72-3	2670	2000	ug/Kg	75	SW8270C	04/12/12
4-Nitroaniline	100-01-6	2670	2190	ug/Kg	82	SW8270C	04/12/12
4,6-Dinitro-2-methyl phenol	534-52-1	2670	2130	ug/Kg	80	SW8270C	04/12/12
N-Nitrosodiphenylamine	86-30-6	2670	2010	ug/Kg	75	SW8270C	04/12/12
1,2-Diphenylhydrazine	122-66-7	2670	2010	ug/Kg	75	SW8270C	04/12/12
4-Bromophenyl phenyl ether	101-55-3	2670	2060	ug/Kg	77	SW8270C	04/12/12
Hexachlorobenzene	118-74-1	2670	2040	ug/Kg	77	SW8270C	04/12/12
Pentachlorophenol	87-86-5	2670	2100	ug/Kg	79	SW8270C	04/12/12
Phenanthrene	85-01-8	2670	2000	ug/Kg	75	SW8270C	04/12/12
Anthracene	120-12-7	2670	2000	ug/Kg	75	SW8270C	04/12/12
Carbazole	86-74-8	2670	2030	ug/Kg	76	SW8270C	04/12/12
Di-n-butylphthalate	84-74-2	2670	2130	ug/Kg	80	SW8270C	04/12/12
Fluoranthene	206-44-0	2670	2040	ug/Kg	76	SW8270C	04/12/12
Pyrene	129-00-0	2670	2060	ug/Kg	77	SW8270C	04/12/12
Butylbenzylphthalate	85-68-7	2670	2320	ug/Kg	87	SW8270C	04/12/12
Benzo(a)anthracene	56-55-3	2670	2050	ug/Kg	77	SW8270C	04/12/12
3,3'-Dichlorobenzidine	91-94-1	2670	1970	ug/Kg	74	SW8270C	04/12/12
Chrysene	218-01-9	2670	2040	ug/Kg	76	SW8270C	04/12/12
bis(2-Ethylhexyl)phthalate	117-81-7	2670	2250	ug/Kg	84	SW8270C	04/12/12
Di-n-octylphthalate	117-84-0	2670	2270	ug/Kg	85	SW8270C	04/12/12
Benzo(b)fluoroanthene	205-99-2	2670	1980	ug/Kg	74	SW8270C	04/12/12
Benzo(k)fluoranthene	207-08-9	2670	2070	ug/Kg	78	SW8270C	04/12/12
Benzo(a)pyrene	50-32-8	2670	2030	ug/Kg	76	SW8270C	04/12/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2670	2020	ug/Kg	76	SW8270C	04/12/12
Dibenzo(a,h)anthracene	53-70-3	2670	2010	ug/Kg	75	SW8270C	04/12/12
Benzo(g,h,i)perylene	191-24-2	2670	2050	ug/Kg	77	SW8270C	04/12/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	60	25-121	
Phenol-d5	65	24-113	
Nitrobenzene-d5	78	23-120	
2-Fluorobiphenyl	78	30-115	
2,4,6-Tribromophenol	79	19-122	
Terphenyl-d14	93	18-137	

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CH2M HILL ASL

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CASE NARRATIVE
GC/MS SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Method(s):

Analysis: SW8270
Preparation: SW3510

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

LCS recovery of Pyridine(18%) in BS1W0405 did not meet acceptance criteria of 30-110%. LCS recovery of Benzoic Acid(25%) in BS1W0405 did not meet acceptance criteria of 30-110%. LCS recovery of 2,4-Dimethylphenol(6%) in BS1W0405 did not meet acceptance criteria of 20-120%. LCS recovery of Hexachlorocyclopentadiene(18%) in BS1W0405 did not meet acceptance criteria of 30-110%.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

Surrogate recovery of 2-Fluorobiphenyl(38%) in BT-2_Initial did not meet acceptance criteria of 43-116%.

G. DFTPP Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

I. Analytical Exception(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Tiffany Hill Date: 4/13/12

Reviewed by: [signature] Date: 16 April 2012

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_Initial	Lab Sample ID:	L141901
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	1
Sample Time:	08:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Pyridine	110-86-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Aniline	62-53-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Phenol	108-95-2	1.23	3.07	2.08	J	ug/L	SW8270C	04/12/12
bis(2-Chloroethyl)ether	111-44-4	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2-Chlorophenol	95-57-8	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
1,3-Dichlorobenzene	541-73-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
1,4-Dichlorobenzene	106-46-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzyl alcohol	100-51-6	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
1,2-Dichlorobenzene	95-50-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2-Methylphenol	95-48-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
bis(2-Chloroisopropyl)ether	108-60-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
3-,4-Methylphenol	108-39-4/106	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
N-Nitroso-di-n-propylamine	621-64-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Hexachloroethane	67-72-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzoic Acid	65-85-0	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Nitrobenzene	98-95-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Isophorone	78-59-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2-Nitrophenol	88-75-5	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,4-Dimethylphenol	105-67-9	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
bis(2-Chloroethoxy)methane	111-91-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,4-Dichlorophenol	120-83-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
1,2,4-Trichlorobenzene	120-82-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Naphthalene	91-20-3	1.23	3.07	10.2		ug/L	SW8270C	04/12/12
4-Chloroaniline	106-47-8	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Hexachlorobutadiene	87-68-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
4-Chloro-3-methyl phenol	59-50-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2-Methylnaphthalene	91-57-6	1.23	3.07	18.7		ug/L	SW8270C	04/12/12
Hexachlorocyclopentadiene	77-47-4	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,4,6-Trichlorophenol	88-06-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,4,5-Trichlorophenol	95-95-4	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2-Chloronaphthalene	91-58-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2-Nitroaniline	88-74-4	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Dimethylphthalate	131-11-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Acenaphthylene	208-96-8	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,6-Dinitrotoluene	606-20-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Acenaphthene	83-32-9	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,4-Dinitrophenol	51-28-5	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
4-Nitrophenol	100-02-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
2,4-Dinitrotoluene	121-14-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Dibenzofuran	132-64-9	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Diethylphthalate	84-66-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
3-Nitroaniline	99-09-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_Initial
Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 08:40
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L141901
Date Received: 03/28/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
4-Chlorophenyl phenyl ether	7005-72-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
4-Nitroaniline	100-01-6	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
4,6-Dinitro-2-methyl phenol	534-52-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
N-Nitrosodiphenylamine	86-30-6	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
1,2-Diphenylhydrazine	122-66-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
4-Bromophenyl phenyl ether	101-55-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Hexachlorobenzene	118-74-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Pentachlorophenol	87-86-5	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Phenanthrene	85-01-8	1.23	3.07	1.31	J	ug/L	SW8270C	04/12/12
Anthracene	120-12-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Carbazole	86-74-8	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Di-n-butylphthalate	84-74-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Fluoranthene	206-44-0	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Pyrene	129-00-0	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Butylbenzylphthalate	85-68-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzo(a)anthracene	56-55-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
3,3'-Dichlorobenzidine	91-94-1	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Chrysene	218-01-9	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
bis(2-Ethylhexyl)phthalate	117-81-7	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Di-n-octylphthalate	117-84-0	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzo(b)fluoroanthene	205-99-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzo(k)fluoranthene	207-08-9	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzo(a)pyrene	50-32-8	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Indeno(1,2,3-c,d)pyrene	193-39-5	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Dibenzo(a,h)anthracene	53-70-3	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12
Benzo(g,h,i)perylene	191-24-2	1.23	3.07	1.23	U	ug/L	SW8270C	04/12/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	40	21-115		
Phenol-d5	35	5-115		
Nitrobenzene-d5	36	35-114		
2-Fluorobiphenyl	38	43-116	4	*
2,4,6-Tribromophenol	44	5-123		
Terphenyl-d14	57	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_Initial
Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 09:20
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L141902
Date Received: 03/28/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Pyridine	110-86-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Aniline	62-53-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Phenol	108-95-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
bis(2-Chloroethyl)ether	111-44-4	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2-Chlorophenol	95-57-8	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
1,3-Dichlorobenzene	541-73-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
1,4-Dichlorobenzene	106-46-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzyl alcohol	100-51-6	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
1,2-Dichlorobenzene	95-50-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2-Methylphenol	95-48-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
bis(2-Chloroisopropyl)ether	108-60-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
3-,4-Methylphenol	108-39-4/106	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
N-Nitroso-di-n-propylamine	621-64-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Hexachloroethane	67-72-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzoic Acid	65-85-0	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Nitrobenzene	98-95-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Isophorone	78-59-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2-Nitrophenol	88-75-5	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,4-Dimethylphenol	105-67-9	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
bis(2-Chloroethoxy)methane	111-91-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,4-Dichlorophenol	120-83-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
1,2,4-Trichlorobenzene	120-82-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Naphthalene	91-20-3	1.19	2.97	23.6		ug/L	SW8270C	04/12/12
4-Chloroaniline	106-47-8	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Hexachlorobutadiene	87-68-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
4-Chloro-3-methyl phenol	59-50-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2-Methylnaphthalene	91-57-6	1.19	2.97	27.3		ug/L	SW8270C	04/12/12
Hexachlorocyclopentadiene	77-47-4	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,4,6-Trichlorophenol	88-06-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,4,5-Trichlorophenol	95-95-4	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2-Chloronaphthalene	91-58-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2-Nitroaniline	88-74-4	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Dimethylphthalate	131-11-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Acenaphthylene	208-96-8	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,6-Dinitrotoluene	606-20-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Acenaphthene	83-32-9	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,4-Dinitrophenol	51-28-5	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
4-Nitrophenol	100-02-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
2,4-Dinitrotoluene	121-14-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Dibenzofuran	132-64-9	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Diethylphthalate	84-66-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
3-Nitroaniline	99-09-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_Initial**	**Lab Sample ID:**	**L141902**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	1
Sample Time:	09:20	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
4-Chlorophenyl phenyl ether	7005-72-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
4-Nitroaniline	100-01-6	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
4,6-Dinitro-2-methyl phenol	534-52-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
N-Nitrosodiphenylamine	86-30-6	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
1,2-Diphenylhydrazine	122-66-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
4-Bromophenyl phenyl ether	101-55-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Hexachlorobenzene	118-74-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Pentachlorophenol	87-86-5	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Phenanthrene	85-01-8	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Anthracene	120-12-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Carbazole	86-74-8	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Di-n-butylphthalate	84-74-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Fluoranthene	206-44-0	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Pyrene	129-00-0	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Butylbenzylphthalate	85-68-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzo(a)anthracene	56-55-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
3,3'-Dichlorobenzidine	91-94-1	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Chrysene	218-01-9	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
bis(2-Ethylhexyl)phthalate	117-81-7	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Di-n-octylphthalate	117-84-0	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzo(b)fluoroanthene	205-99-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzo(k)fluoranthene	207-08-9	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzo(a)pyrene	50-32-8	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Indeno(1,2,3-c,d)pyrene	193-39-5	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Dibenzo(a,h)anthracene	53-70-3	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12
Benzo(g,h,i)perylene	191-24-2	1.19	2.97	1.19	U	ug/L	SW8270C	04/12/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	42	21-115	
Phenol-d5	38	5-115	
Nitrobenzene-d5	58	35-114	
2-Fluorobiphenyl	68	43-116	
2,4,6-Tribromophenol	81	5-123	
Terphenyl-d14	90	33-141	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: WB1-0405

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: WB1-0405

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Pyridine	110-86-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Aniline	62-53-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Phenol	108-95-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
bis(2-Chloroethyl)ether	111-44-4	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2-Chlorophenol	95-57-8	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
1,3-Dichlorobenzene	541-73-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
1,4-Dichlorobenzene	106-46-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzyl alcohol	100-51-6	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
1,2-Dichlorobenzene	95-50-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2-Methylphenol	95-48-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
bis(2-Chloroisopropyl)ether	108-60-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
3-,4-Methylphenol	108-39-4/106	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
N-Nitroso-di-n-propylamine	621-64-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Hexachloroethane	67-72-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzoic Acid	65-85-0	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Nitrobenzene	98-95-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Isophorone	78-59-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2-Nitrophenol	88-75-5	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,4-Dimethylphenol	105-67-9	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
bis(2-Chloroethoxy)methane	111-91-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,4-Dichlorophenol	120-83-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
1,2,4-Trichlorobenzene	120-82-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Naphthalene	91-20-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4-Chloroaniline	106-47-8	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Hexachlorobutadiene	87-68-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4-Chloro-3-methyl phenol	59-50-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2-Methylnaphthalene	91-57-6	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Hexachlorocyclopentadiene	77-47-4	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,4,6-Trichlorophenol	88-06-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,4,5-Trichlorophenol	95-95-4	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2-Chloronaphthalene	91-58-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2-Nitroaniline	88-74-4	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Dimethylphthalate	131-11-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Acenaphthylene	208-96-8	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,6-Dinitrotoluene	606-20-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Acenaphthene	83-32-9	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,4-Dinitrophenol	51-28-5	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4-Nitrophenol	100-02-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
2,4-Dinitrotoluene	121-14-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Dibenzofuran	132-64-9	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Diethylphthalate	84-66-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
3-Nitroaniline	99-09-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**WB1-0405**	**Lab Sample ID:**	**WB1-0405**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Water		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4-Chlorophenyl phenyl ether	7005-72-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4-Nitroaniline	100-01-6	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4,6-Dinitro-2-methyl phenol	534-52-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
N-Nitrosodiphenylamine	86-30-6	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
1,2-Diphenylhydrazine	122-66-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
4-Bromophenyl phenyl ether	101-55-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Hexachlorobenzene	118-74-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Pentachlorophenol	87-86-5	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Phenanthrene	85-01-8	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Anthracene	120-12-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Carbazole	86-74-8	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Di-n-butylphthalate	84-74-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Fluoranthene	206-44-0	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Pyrene	129-00-0	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Butylbenzylphthalate	85-68-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzo(a)anthracene	56-55-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
3,3'-Dichlorobenzidine	91-94-1	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Chrysene	218-01-9	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
bis(2-Ethylhexyl)phthalate	117-81-7	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Di-n-octylphthalate	117-84-0	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzo(b)fluoroanthene	205-99-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzo(k)fluoranthene	207-08-9	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzo(a)pyrene	50-32-8	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Indeno(1,2,3-c,d)pyrene	193-39-5	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Dibenzo(a,h)anthracene	53-70-3	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12
Benzo(g,h,i)perylene	191-24-2	1.00	2.50	1.00	U	ug/L	SW8270C	04/12/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	47	21-115	
Phenol-d5	36	5-115	
Nitrobenzene-d5	64	35-114	
2-Fluorobiphenyl	67	43-116	
2,4,6-Tribromophenol	78	5-123	
Terphenyl-d14	92	33-141	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0405
Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: BS1W0405
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
N-Nitrosodimethylamine	62-75-9	80.0	33.8	ug/L	42	SW8270C	04/12/12
Pyridine	110-86-1	80.0	14.0	ug/L	18 *	SW8270C	04/12/12
Aniline	62-53-3	80.0	25.4	ug/L	32	SW8270C	04/12/12
Phenol	108-95-2	80.0	26.0	ug/L	32	SW8270C	04/12/12
bis(2-Chloroethyl)ether	111-44-4	80.0	51.9	ug/L	65	SW8270C	04/12/12
2-Chlorophenol	95-57-8	80.0	46.3	ug/L	58	SW8270C	04/12/12
1,3-Dichlorobenzene	541-73-1	80.0	45.0	ug/L	56	SW8270C	04/12/12
1,4-Dichlorobenzene	106-46-7	80.0	45.2	ug/L	56	SW8270C	04/12/12
Benzyl alcohol	100-51-6	80.0	49.3	ug/L	62	SW8270C	04/12/12
1,2-Dichlorobenzene	95-50-1	80.0	46.3	ug/L	58	SW8270C	04/12/12
2-Methylphenol	95-48-7	80.0	36.1	ug/L	45	SW8270C	04/12/12
bis(2-Chloroisopropyl)ether	108-60-1	80.0	48.9	ug/L	61	SW8270C	04/12/12
3-,4-Methylphenol	108-39-4/106	80.0	37.7	ug/L	47	SW8270C	04/12/12
N-Nitroso-di-n-propylamine	621-64-7	80.0	53.5	ug/L	67	SW8270C	04/12/12
Hexachloroethane	67-72-1	80.0	45.5	ug/L	57	SW8270C	04/12/12
Benzoic Acid	65-85-0	80.0	19.8	ug/L	25 *	SW8270C	04/12/12
Nitrobenzene	98-95-3	80.0	52.0	ug/L	65	SW8270C	04/12/12
Isophorone	78-59-1	80.0	55.2	ug/L	69	SW8270C	04/12/12
2-Nitrophenol	88-75-5	80.0	54.9	ug/L	69	SW8270C	04/12/12
2,4-Dimethylphenol	105-67-9	80.0	4.84	ug/L	6 *	SW8270C	04/12/12
bis(2-Chloroethoxy)methane	111-91-1	80.0	54.8	ug/L	68	SW8270C	04/12/12
2,4-Dichlorophenol	120-83-2	80.0	51.2	ug/L	64	SW8270C	04/12/12
1,2,4-Trichlorobenzene	120-82-1	80.0	48.9	ug/L	61	SW8270C	04/12/12
Naphthalene	91-20-3	80.0	50.9	ug/L	64	SW8270C	04/12/12
4-Chloroaniline	106-47-8	80.0	47.8	ug/L	60	SW8270C	04/12/12
Hexachlorobutadiene	87-68-3	80.0	48.8	ug/L	61	SW8270C	04/12/12
4-Chloro-3-methyl phenol	59-50-7	80.0	52.4	ug/L	66	SW8270C	04/12/12
2-Methylnaphthalene	91-57-6	80.0	53.4	ug/L	67	SW8270C	04/12/12
Hexachlorocyclopentadiene	77-47-4	80.0	14.0	ug/L	18 *	SW8270C	04/12/12
2,4,6-Trichlorophenol	88-06-2	80.0	55.0	ug/L	69	SW8270C	04/12/12
2,4,5-Trichlorophenol	95-95-4	80.0	58.1	ug/L	73	SW8270C	04/12/12
2-Chloronaphthalene	91-58-7	80.0	55.3	ug/L	69	SW8270C	04/12/12
2-Nitroaniline	88-74-4	80.0	66.9	ug/L	84	SW8270C	04/12/12
Dimethylphthalate	131-11-3	80.0	64.2	ug/L	80	SW8270C	04/12/12
Acenaphthylene	208-96-8	80.0	53.5	ug/L	67	SW8270C	04/12/12
2,6-Dinitrotoluene	606-20-2	80.0	66.5	ug/L	83	SW8270C	04/12/12
Acenaphthene	83-32-9	80.0	57.8	ug/L	72	SW8270C	04/12/12
2,4-Dinitrophenol	51-28-5	80.0	64.8	ug/L	81	SW8270C	04/12/12
4-Nitrophenol	100-02-7	80.0	33.3	ug/L	42	SW8270C	04/12/12
2,4-Dinitrotoluene	121-14-2	80.0	70.3	ug/L	88	SW8270C	04/12/12
Dibenzofuran	132-64-9	80.0	60.0	ug/L	75	SW8270C	04/12/12
Diethylphthalate	84-66-2	80.0	66.1	ug/L	83	SW8270C	04/12/12
3-Nitroaniline	99-09-2	80.0	61.5	ug/L	77	SW8270C	04/12/12

U=Not detected at specified reporting limit
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BS1W0405	Lab Sample ID:	BS1W0405
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Water		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
Fluorene	86-73-7	80.0	60.9	ug/L	76	SW8270C	04/12/12
4-Chlorophenyl phenyl ether	7005-72-3	80.0	61.6	ug/L	77	SW8270C	04/12/12
4-Nitroaniline	100-01-6	80.0	55.8	ug/L	70	SW8270C	04/12/12
4,6-Dinitro-2-methyl phenol	534-52-1	80.0	67.8	ug/L	85	SW8270C	04/12/12
N-Nitrosodiphenylamine	86-30-6	80.0	59.9	ug/L	75	SW8270C	04/12/12
1,2-Diphenylhydrazine	122-66-7	80.0	63.5	ug/L	79	SW8270C	04/12/12
4-Bromophenyl phenyl ether	101-55-3	80.0	65.0	ug/L	81	SW8270C	04/12/12
Hexachlorobenzene	118-74-1	80.0	65.5	ug/L	82	SW8270C	04/12/12
Pentachlorophenol	87-86-5	80.0	67.5	ug/L	84	SW8270C	04/12/12
Phenanthrene	85-01-8	80.0	64.7	ug/L	81	SW8270C	04/12/12
Anthracene	120-12-7	80.0	63.3	ug/L	79	SW8270C	04/12/12
Carbazole	86-74-8	80.0	63.8	ug/L	80	SW8270C	04/12/12
Di-n-butylphthalate	84-74-2	80.0	69.5	ug/L	87	SW8270C	04/12/12
Fluoranthene	206-44-0	80.0	66.9	ug/L	84	SW8270C	04/12/12
Pyrene	129-00-0	80.0	66.0	ug/L	83	SW8270C	04/12/12
Butylbenzylphthalate	85-68-7	80.0	71.5	ug/L	89	SW8270C	04/12/12
Benzo(a)anthracene	56-55-3	80.0	66.3	ug/L	83	SW8270C	04/12/12
3,3'-Dichlorobenzidine	91-94-1	80.0	43.1	ug/L	54	SW8270C	04/12/12
Chrysene	218-01-9	80.0	66.2	ug/L	83	SW8270C	04/12/12
bis(2-Ethylhexyl)phthalate	117-81-7	80.0	70.8	ug/L	88	SW8270C	04/12/12
Di-n-octylphthalate	117-84-0	80.0	70.8	ug/L	88	SW8270C	04/12/12
Benzo(b)fluoroanthene	205-99-2	80.0	67.2	ug/L	84	SW8270C	04/12/12
Benzo(k)fluoranthene	207-08-9	80.0	65.8	ug/L	82	SW8270C	04/12/12
Benzo(a)pyrene	50-32-8	80.0	62.5	ug/L	78	SW8270C	04/12/12
Indeno(1,2,3-c,d)pyrene	193-39-5	80.0	66.1	ug/L	83	SW8270C	04/12/12
Dibenzo(a,h)anthracene	53-70-3	80.0	66.6	ug/L	83	SW8270C	04/12/12
Benzo(g,h,i)perylene	191-24-2	80.0	66.2	ug/L	83	SW8270C	04/12/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	46	21-115	
Phenol-d5	36	5-115	
Nitrobenzene-d5	71	35-114	
2-Fluorobiphenyl	76	43-116	
2,4,6-Tribromophenol	97	5-123	
Terphenyl-d14	100	33-141	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CASE NARRATIVE
GC VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Method(s):
Analysis: SW8015-P
Preparation: SW5030

II. Receipt/Holding Times:
All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):
All acceptance criteria were met.

G. Analytical Exception(s):
None.

IV. Documentation Exception(s):
None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm Date: 4-9-12

Reviewed by: [signature] Date: 04-12-12

DM120409-11:24-L1419-G

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**BT-2_Initial**	**Lab Sample ID:**	**L141901**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	100
Sample Time:	08:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.55	13.8	326		mg/Kg	SW8015-P	03/29/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	118	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**BT-3_Initial**	**Lab Sample ID:**	**L141902**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	03/28/12
Sample Date:	03/28/12	Dilution Factor:	100
Sample Time:	09:20	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.61	14.3	508		mg/Kg	SW8015-P	03/29/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	121	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: MB2-0329

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: MB2-0329

Date Received: N/A
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	0.56	5.00	2.63	J	mg/Kg	SW8015-P	03/29/2012

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	109	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**SB2-0329**	**Lab Sample ID:**	**SB2-0329**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	200
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	2.24	20.0	5.60	J	mg/Kg	SW8015-P	03/29/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	113	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0329

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: BS1W0329

Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC Semi-Volatiles							
TPH-Gasoline	TPH-Gasoline	200	185	mg/Kg	93	SW8015-P	03/29/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	109	64-148	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
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CASE NARRATIVE
GC SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO　　ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm　　Project #: 156197.CS.12

I. Method(s):

Analysis: SW8015-E
Preparation: SW3550

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

All acceptance criteria were met.

G. Analytical Exception(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: C. Hopper　　Date: 4/10/12

Reviewed by: [signature]　　Date: 04/12/12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 08:40
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L141901

Date Received: 03/28/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	1.17	11.9	296		mg/Kg	SW8015-E	04/04/12
TPH-Diesel	TPH-Diesel	1.07	5.95	871		mg/Kg	SW8015-E	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	95	47-142	
Octacosane	95	25-162	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_Initial

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 03/28/12
Sample Time: 09:20
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L141902

Date Received: 03/28/12
Dilution Factor: 5
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	6.04	61.3	1310		mg/Kg	SW8015-E	04/04/12
TPH-Diesel	TPH-Diesel	5.51	30.7	1880		mg/Kg	SW8015-E	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	93	47-142	
Octacosane	97	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SB1-0403

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: SB1-0403

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	0.98	10.0	4.07	J	mg/Kg	SW8015-E	04/04/12
TPH-Diesel	TPH-Diesel	0.90	5.00	4.75	J	mg/Kg	SW8015-E	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	90	47-142	
Octacosane	90	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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Client Information		Lab Information	
Client Sample ID:	**BS1S0403**	**Lab Sample ID:**	**BS1S0403**
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Soil		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC Semi-Volatiles							
TPH-Diesel	TPH-Diesel	103	79.1	mg/Kg	77	SW8015-E	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	88	47-142	
Octacosane	87	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **BS2S0403**

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: **BS2S0403**

Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC Semi-Volatiles							
TPH-Oil	TPH-Oil	101	95.4	mg/Kg	95	SW8015-E	04/04/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	90	47-142	
Octacosane	90	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CASE NARRATIVE
WET CHEMISTRY ANALYSIS

Lab Name: CH2M HILL/LAB/CVO | ASL SDG#: L1419

Project: Kleinfelder-Athens Tank Farm | Project #: 156197.CS.12

I. Method(s):
Analysis: LYDKHN

II. Receipt/Holding Times:
All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blanks:
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
MSD recovery of TOC (143%) in BT-3_Initial (L141902) did not meet acceptance criteria of 75-125%.

F. Analytical Exception(s):
None.

IV. Documentation Exception(s):
None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Laura McKinley Date: 4.10.12

Reviewed by: BLeathman Date: 04.11.12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Project Name:	**Kleinfelder-Athens Tank Farm**	**Lab Batch ID:**	**L1419**
Date Received:	03/28/12	Analysis Method:	LYDKHN
Type:	See C.O.C.	Units:	mg/Kg
Matrix:	Soil	Report Revision No.:	0
Basis:	Dry Weight		

Client Sample ID	Lab Sample ID	Dilution Factor	Total Organic Carbon DL	RL	Result	Qualifier	Date Analyzed
General Chemistry							
BT-2_Initial	L141901	1	187	520	1440		04/06/12
BT-3_Initial	L141902	1	38.7	108	3840		04/06/12
SB1-0406	SB1-0406	1	35.9	100	35.9	U	04/06/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Project Name: Kleinfelder-Athens Tank Farm

Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Batch ID: L1419

Report Revision No.: 0

LCS ID	Analyte	Spike Amount	Sample Result	Units	% Recovery	Analysis Method	Date Analyzed
General Chemistry							
BS2S0406	Total Organic Carbon	1180	1250	mg/Kg	106	LYDKHN	04/06/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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Email: asl@ch2m.com
www.ch2mlab.com

CHAIN OF CUSTODY RECORD

Project # or Purchase Order #
156197.CS.12

Company Name
Kleinfelder- Athens Tank Farm

Project manager or Contact & Phone #
Niemet, Mike

Report Copy to:
Berggren, Dusty

Turnaround Time
☐24 hours ☐48 hours ☐72 hours
☐7 days ☐14 days ☒21 days

Drinking Water? Yes ☐ No ☒

Sample Disposal: Dispose ☒ Return ☐

THIS AREA FOR LAB USE ONLY

L1419

EPA Tier QC Level
1 (Screening) 2 3 4

Date	Time	COMP	GRAB	WATER	SOIL	AIR	CLIENT SAMPLE ID	TOTAL # OF CONTAINERS	TOC (ASTM E-777)	VOCs (SW8260B)	SVOCs (SW8270C)	TPH-d, TPH-o (SW8015)	TPH-g (SW8015)	SPLP ZHE VOCs (SW1311/SW8260B)	SPLP SVOCs (SW13112SW8270C)			Alternate Description
									1	2	4	4	2	4	8			
Preservative									UNPRES	UNPRES	UNPRES	UNPRES	UNPRES	UNPRES	UNPRES			
3/28/12	9:40		x		x		BT-2_Initial		1	1	1	1	1	1	1			1
3/28/12	9:20		x		x		BT-3_Initial		1	1	1	1	1	1	1			2

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Volatile Contaminants/Odorous ☐ Biohazard ☐ Other ____

Sampled By and Title: Dusty RV Berggren — Dusty RV Berggren	Date/Time: ~~3/27/12~~ 3/28/12 9:45	Relinquished By (Please sign and print name): Dusty RV Berggren — Dusty RV Berggren	Date/Time: ~~3/27/12~~ 3/28/12 9:45
Received By (Please sign and print name): Carmen Bell	Date/Time: 3/28/12 1030	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other____	Tracking #

Special Instructions

DOC CONTROL ID: ASL783-0911

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: L1419
Client/Project: Kleinfelder

Date received: 3-28-12
Checked by: CKB
Checked by:

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Radiological Screening for DoD	✓		
Were custody seals intact and on the outside of the cooler?		HD	
Type of packing material: Ice Blue Ice Bubble wrap		HD	
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER °C		HD	

	NA	YES	NO
All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER		✓	
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

CH2MHILL
Applied Sciences Laboratory

ANALYTICAL REPORT

For:
Kleinfelder-Athens Tank Farm

ASL Report #: L1562
Project ID: 156197.CS.12
Attn: Mike Neimet/CVO
cc:
Dusty Berggeren/CVO

Authorized and Released By:

Laboratory Project Manager
Ashley Wille
(541) 758-0235 ext.23147
May 09, 2012

This data package meets standards requested by client and is not intended or implied to meet any other standard.

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.

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Sample Receipt Comments

We certify that the test results meet all standard ASL requirements.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
L156201	BT-2_5%	04/25/12 10:34	04/25/12
L156202	BT-2_10%	04/25/12 10:48	04/25/12
L156203	BT-2_15%	04/25/12 11:00	04/25/12
L156204	BT-3_5%	04/25/12 11:21	04/25/12
L156205	BT-3_10%	04/25/12 11:30	04/25/12
L156206	BT-3_15%	04/25/12 11:40	04/25/12

CASE NARRATIVE
GC/MS VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1562

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Method(s):

Analysis: SW8260
Preparation: SW5030

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):
All acceptance criteria were met.

G. BFB Tune Verification(s):
All acceptance criteria were met.

H. Internal Standard(s):
All acceptance criteria were met.

I. Analytical Exception(s):
None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm Date: 5-4-12

Reviewed by: [signature] Date: 05-08-12

DM120504-17:35-L1562-V

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_5%	Lab Sample ID:	L156201
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	10:34	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	7.50	25.0	7.50	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	20.0	50.0	20.0	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_5%**	**Lab Sample ID:**	**L156201**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	10:34	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	10.0	25.0	15.5	J	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	10.0	25.0	20.8	J	ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	102	75-125	
1,2-Dichloroethane-d4	107	75-125	
Toluene-d8	100	75-125	
4-Bromofluorobenzene	98	75-125	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_10%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 10:48
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156202

Date Received: 04/25/12
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	7.50	25.0	7.50	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	20.0	50.0	20.0	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_10%	Lab Sample ID:	L156202
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	10:48	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	10.0	25.0	10.2	J	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	10.0	25.0	12.6	J	ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	101	75-125	
1,2-Dichloroethane-d4	106	75-125	
Toluene-d8	99	75-125	
4-Bromofluorobenzene	97	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_15%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 11:00
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156203

Date Received: 04/25/12
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	7.50	25.0	7.50	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	20.0	50.0	20.0	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_15%	Lab Sample ID:	L156203
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	11:00	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	10.0	25.0	12.5	J	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	10.0	25.0	19.5	J	ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	108	75-125	
1,2-Dichloroethane-d4	111	75-125	
Toluene-d8	101	75-125	
4-Bromofluorobenzene	102	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_5%	Lab Sample ID:	L156204
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	11:21	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	7.50	25.0	7.50	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	20.0	50.0	20.0	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_5%**	**Lab Sample ID:**	**L156204**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	11:21	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	10.0	25.0	31.8		ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	104	75-125	
1,2-Dichloroethane-d4	107	75-125	
Toluene-d8	98	75-125	
4-Bromofluorobenzene	99	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_10%	Lab Sample ID:	L156205
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	11:30	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	7.50	25.0	7.50	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	20.0	50.0	20.0	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_10%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 11:30
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156205

Date Received: 04/25/12
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	10.0	25.0	35.6		ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	101	75-125	
1,2-Dichloroethane-d4	105	75-125	
Toluene-d8	99	75-125	
4-Bromofluorobenzene	98	75-125	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_15%	Lab Sample ID:	L156206
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	11:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	7.50	25.0	7.50	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	25.0	50.0	25.0	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	20.0	50.0	20.0	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_15%	Lab Sample ID:	L156206
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	50
Sample Time:	11:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	10.0	25.0	29.8		ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	10.0	25.0	10.0	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	102	75-125	
1,2-Dichloroethane-d4	106	75-125	
Toluene-d8	99	75-125	
4-Bromofluorobenzene	97	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SPLPBLK

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: SPLPBLK

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	0.50	1.00	2.02		ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	0.50	1.00	0.50	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	0.15	0.50	0.15	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	0.50	1.00	0.50	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	0.40	1.00	0.40	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SPLPBLK

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: SPLPBLK

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	0.20	0.50	1.08		ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	98	75-125	
1,2-Dichloroethane-d4	102	75-125	
Toluene-d8	98	75-125	
4-Bromofluorobenzene	98	75-125	

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0504

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: BS1W0504

Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
Dichlorodifluoromethane	75-71-8	20.0	19.4	ug/L	97	SW8260B	05/04/12
Chloromethane	74-87-3	20.0	19.8	ug/L	99	SW8260B	05/04/12
Vinyl Chloride	75-01-4	20.0	18.0	ug/L	90	SW8260B	05/04/12
Bromomethane	74-83-9	20.0	20.0	ug/L	100	SW8260B	05/04/12
Chloroethane	75-00-3	20.0	19.6	ug/L	98	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	20.0	20.8	ug/L	104	SW8260B	05/04/12
Acetone	67-64-1	20.0	20.5	ug/L	102	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	20.0	16.9	ug/L	84	SW8260B	05/04/12
Methylene chloride	75-09-2	20.0	17.6	ug/L	88	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	20.0	17.7	ug/L	89	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	20.0	17.8	ug/L	89	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	20.0	17.8	ug/L	89	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	20.0	19.3	ug/L	96	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	20.0	18.3	ug/L	92	SW8260B	05/04/12
Bromochloromethane	74-97-5	20.0	18.2	ug/L	91	SW8260B	05/04/12
Chloroform	67-66-3	20.0	18.2	ug/L	91	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	20.0	16.5	ug/L	82	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	20.0	18.1	ug/L	91	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	20.0	17.7	ug/L	88	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	20.0	18.2	ug/L	91	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	20.0	16.5	ug/L	83	SW8260B	05/04/12
Benzene	71-43-2	20.0	18.1	ug/L	91	SW8260B	05/04/12
Dibromomethane	74-95-3	20.0	17.8	ug/L	89	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	20.0	17.5	ug/L	87	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	20.0	18.6	ug/L	93	SW8260B	05/04/12
Bromodichloromethane	75-27-4	20.0	17.9	ug/L	90	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	20.0	17.2	ug/L	86	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	20.0	18.0	ug/L	90	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	20.0	15.5	ug/L	77	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	20.0	17.3	ug/L	86	SW8260B	05/04/12
Toluene	108-88-3	20.0	18.0	ug/L	90	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	20.0	17.7	ug/L	88	SW8260B	05/04/12
Dibromochloromethane	124-48-1	20.0	16.9	ug/L	85	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	20.0	17.5	ug/L	87	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	20.0	17.7	ug/L	89	SW8260B	05/04/12
1-Chlorohexane	544-10-5	20.0	18.2	ug/L	91	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	20.0	17.0	ug/L	85	SW8260B	05/04/12
Chlorobenzene	108-90-7	20.0	18.1	ug/L	90	SW8260B	05/04/12
Ethylbenzene	100-41-4	20.0	18.5	ug/L	93	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	40.0	37.4	ug/L	93	SW8260B	05/04/12
Bromoform	75-25-2	20.0	17.7	ug/L	88	SW8260B	05/04/12
Styrene	100-42-5	20.0	19.0	ug/L	95	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	20.0	17.7	ug/L	88	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0504
Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: BS1W0504
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
o-Xylene	95-47-6	20.0	18.8	ug/L	94	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	20.0	17.0	ug/L	85	SW8260B	05/04/12
Isopropylbenzene	98-82-8	20.0	16.5	ug/L	83	SW8260B	05/04/12
Bromobenzene	108-86-1	20.0	18.2	ug/L	91	SW8260B	05/04/12
n-Propylbenzene	103-65-1	20.0	18.7	ug/L	93	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	20.0	18.8	ug/L	94	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	20.0	18.1	ug/L	90	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	20.0	19.5	ug/L	98	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	20.0	18.6	ug/L	93	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	20.0	19.3	ug/L	96	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	20.0	19.0	ug/L	95	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	20.0	18.2	ug/L	91	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	20.0	18.2	ug/L	91	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	20.0	18.3	ug/L	92	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	20.0	18.4	ug/L	92	SW8260B	05/04/12
n-Butylbenzene	104-51-8	20.0	19.1	ug/L	95	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	20.0	17.2	ug/L	86	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	20.0	18.5	ug/L	92	SW8260B	05/04/12
Naphthalene	91-20-3	20.0	18.7	ug/L	94	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	20.0	19.5	ug/L	97	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	20.0	19.0	ug/L	95	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	100	75-125	
1,2-Dichloroethane-d4	97	75-125	
Toluene-d8	97	75-125	
4-Bromofluorobenzene	101	75-125	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **WB1-0504**
Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: **WB1-0504**
Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chloromethane	74-87-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Vinyl Chloride	75-01-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromomethane	74-83-9	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chloroethane	75-00-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Trichlorofluoromethane	75-69-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Acetone	67-64-1	0.50	1.00	0.50	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethene	75-35-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Methylene chloride	75-09-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
trans-1,2-Dichloroethene	156-60-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Methyl tert-butyl ether (MTBE)	1634-04-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1-Dichloroethane	75-34-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
2-Butanone (MEK)	78-93-3	0.50	1.00	0.50	U	ug/L	SW8260B	05/04/12
cis-1,2-Dichloroethene	156-59-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromochloromethane	74-97-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chloroform	67-66-3	0.15	0.50	0.15	U	ug/L	SW8260B	05/04/12
2,2-Dichloropropane	594-20-7	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dichloroethane	107-06-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,1-Trichloroethane	71-55-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1-Dichloropropene	563-58-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Carbon tetrachloride	56-23-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Benzene	71-43-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Dibromomethane	74-95-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dichloropropane	78-87-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Trichloroethene (TCE)	79-01-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromodichloromethane	75-27-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
cis-1,3-Dichloropropene	10061-01-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
4-Methyl-2-pentanone (MIBK)	108-10-1	0.50	1.00	0.50	U	ug/L	SW8260B	05/04/12
trans-1,3-Dichloropropene	10061-02-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,2-Trichloroethane	79-00-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Toluene	108-88-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,3-Dichloropropane	142-28-9	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Dibromochloromethane	124-48-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dibromoethane (EDB)	106-93-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Tetrachloroethene (PCE)	127-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1-Chlorohexane	544-10-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,1,2-Tetrachloroethane	630-20-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Chlorobenzene	108-90-7	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Ethylbenzene	100-41-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
m,p-Xylene	108-38-3/1	0.40	1.00	0.40	U	ug/L	SW8260B	05/04/12
Bromoform	75-25-2	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Styrene	100-42-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,1,2,2-Tetrachloroethane	79-34-5	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: WB1-0504

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: WB1-0504

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,3-Trichloropropane	96-18-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Isopropylbenzene	98-82-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Bromobenzene	108-86-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
n-Propylbenzene	103-65-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
2-Chlorotoluene	95-49-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
4-Chlorotoluene	106-43-4	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,3,5-Trimethylbenzene	108-67-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
tert-Butylbenzene	98-06-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,4-Trimethylbenzene	95-63-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
sec-Butylbenzene	135-98-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,3-Dichlorobenzene	541-73-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,4-Dichlorobenzene	106-46-7	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
p-Isopropyltoluene	99-87-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dichlorobenzene	95-50-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
n-Butylbenzene	104-51-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2-Dibromo-3-chloropropane	96-12-8	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,4-Trichlorobenzene	120-82-1	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Naphthalene	91-20-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
Hexachlorobutadiene	87-68-3	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12
1,2,3-Trichlorobenzene	87-61-6	0.20	0.50	0.20	U	ug/L	SW8260B	05/04/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	99	75-125	
1,2-Dichloroethane-d4	100	75-125	
Toluene-d8	97	75-125	
4-Bromofluorobenzene	100	75-125	

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CASE NARRATIVE
GC/MS SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO   ASL SDG#: L1562

Project: Kleinfelder-Athens Tank Farm   Project #: 156197.CS.12

I. Method(s):

Analysis: SW8270
Preparation: SW3510

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):

Surrogate recovery of 2-Fluorobiphenyl(39%) in BS1W0430 did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(34%) in BT-2_5% did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(37%) in BT-2_5% did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(32%) in BT-2_10% did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(35%) in BT-2_10% did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(33%) in BT-2_15% did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(35%) in BT-2_15% did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(32%) in BT-3_5% did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(37%) in BT-3_5% did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(31%) in BT-3_10% did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(35%) in BT-3_10% did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(32%) in BT-3_15% did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(35%) in BT-3_15% did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(32%) in SPLPblk did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(35%) in SPLPblk did not meet acceptance criteria of 43-116%. Surrogate recovery of Nitrobenzene-d5(31%) in WB1-0430 did not meet acceptance criteria of 35-114%. Surrogate recovery of 2-Fluorobiphenyl(34%) in WB1-0430 did not meet acceptance criteria of 43-116%.

G. DFTPP Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

CASE NARRATIVE
GC/MS SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1562

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Analytical Exception(s):

None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Geoffrey Hill Date: 5/1/12

Reviewed by: [signature] Date: 05/07/12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_5%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 10:34
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156201

Date Received: 04/25/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.30	5.75	2.66	J	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.30	5.75	9.44		ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.30	5.75	29.6		ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_5%	Lab Sample ID:	L156201
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	10:34	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.30	5.75	2.79	J	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.30	5.75	2.30	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	51	21-115		
Phenol-d5	41	5-115		
Nitrobenzene-d5	34	35-114	3	*
2-Fluorobiphenyl	37	43-116	4	*
2,4,6-Tribromophenol	85	5-123		
Terphenyl-d14	49	33-141		

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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_10%**	**Lab Sample ID:**	**L156202**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	10:48	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.31	5.77	2.41	J	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.31	5.77	7.88		ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.31	5.77	25.4		ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	BT-2_10%	**Lab Sample ID:**	L156202
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	10:48	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.31	5.77	2.73	J	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.31	5.77	2.31	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	50	21-115		
Phenol-d5	39	5-115		
Nitrobenzene-d5	32	35-114	3	*
2-Fluorobiphenyl	35	43-116	4	*
2,4,6-Tribromophenol	82	5-123		
Terphenyl-d14	47	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_15%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 11:00
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156203

Date Received: 04/25/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.37	5.92	2.63	J	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.37	5.92	8.68		ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.37	5.92	27.3		ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_15%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 11:00
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156203

Date Received: 04/25/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.37	5.92	2.75	J	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.37	5.92	2.37	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	52	21-115		
Phenol-d5	41	5-115		
Nitrobenzene-d5	33	35-114	3	*
2-Fluorobiphenyl	35	43-116	4	*
2,4,6-Tribromophenol	84	5-123		
Terphenyl-d14	46	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_5%

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/25/12
Sample Time: 11:21
Type: Grab
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: L156204

Date Received: 04/25/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.36	5.91	21.1		ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.36	5.91	30.4		ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_5%**	**Lab Sample ID:**	**L156204**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	11:21	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	51	21-115		
Phenol-d5	41	5-115		
Nitrobenzene-d5	32	35-114	3	*
2-Fluorobiphenyl	37	43-116	4	*
2,4,6-Tribromophenol	83	5-123		
Terphenyl-d14	47	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_10%**	**Lab Sample ID:**	**L156205**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	11:30	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.36	5.90	19.5		ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.36	5.90	28.7		ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_10%**	**Lab Sample ID:**	**L156205**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	11:30	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.36	5.90	2.36	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	52	21-115		
Phenol-d5	42	5-115		
Nitrobenzene-d5	31	35-114	3	*
2-Fluorobiphenyl	35	43-116	4	*
2,4,6-Tribromophenol	81	5-123		
Terphenyl-d14	43	33-141		

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_15%**	**Lab Sample ID:**	**L156206**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	11:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.36	5.91	17.8		ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.36	5.91	27.4		ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_15%**	**Lab Sample ID:**	**L156206**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/25/12
Sample Date:	04/25/12	Dilution Factor:	1
Sample Time:	11:40	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.36	5.91	2.36	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	51	21-115		
Phenol-d5	42	5-115		
Nitrobenzene-d5	32	35-114	3	*
2-Fluorobiphenyl	35	43-116	4	*
2,4,6-Tribromophenol	82	5-123		
Terphenyl-d14	44	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SPLPblk

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: SPLP

Lab Information

Lab Sample ID: SPLPblk

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	SPLPblk	Lab Sample ID:	SPLPblk
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	SPLP		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	51	21-115		
Phenol-d5	39	5-115		
Nitrobenzene-d5	32	35-114	3	*
2-Fluorobiphenyl	35	43-116	4	*
2,4,6-Tribromophenol	75	5-123		
Terphenyl-d14	44	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: WB1-0430

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: WB1-0430

Date Received: N/A
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Pyridine	110-86-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Aniline	62-53-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Phenol	108-95-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Chlorophenol	95-57-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzyl alcohol	100-51-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Methylphenol	95-48-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachloroethane	67-72-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzoic Acid	65-85-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Nitrobenzene	98-95-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Isophorone	78-59-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Nitrophenol	88-75-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Naphthalene	91-20-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Chloroaniline	106-47-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2-Nitroaniline	88-74-4	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Dimethylphthalate	131-11-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Acenaphthylene	208-96-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Acenaphthene	83-32-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Nitrophenol	100-02-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Dibenzofuran	132-64-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Diethylphthalate	84-66-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
3-Nitroaniline	99-09-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**WB1-0430**	**Lab Sample ID:**	**WB1-0430**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Water		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Nitroaniline	100-01-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Pentachlorophenol	87-86-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Phenanthrene	85-01-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Anthracene	120-12-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Carbazole	86-74-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Fluoranthene	206-44-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Pyrene	129-00-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Chrysene	218-01-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	2.00	5.00	2.00	U	ug/L	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	52	21-115		
Phenol-d5	40	5-115		
Nitrobenzene-d5	31	35-114	3	*
2-Fluorobiphenyl	34	43-116	4	*
2,4,6-Tribromophenol	77	5-123		
Terphenyl-d14	46	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0430

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Water

Lab Information

Lab Sample ID: BS1W0430

Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
N-Nitrosodimethylamine	62-75-9	80.0	43.5	ug/L	54	SW8270C	05/01/12
Pyridine	110-86-1	80.0	32.5	ug/L	41	SW8270C	05/01/12
Aniline	62-53-3	80.0	39.3	ug/L	49	SW8270C	05/01/12
Phenol	108-95-2	80.0	35.0	ug/L	44	SW8270C	05/01/12
bis(2-Chloroethyl)ether	111-44-4	80.0	64.8	ug/L	81	SW8270C	05/01/12
2-Chlorophenol	95-57-8	80.0	58.0	ug/L	73	SW8270C	05/01/12
1,3-Dichlorobenzene	541-73-1	80.0	55.0	ug/L	69	SW8270C	05/01/12
1,4-Dichlorobenzene	106-46-7	80.0	55.1	ug/L	69	SW8270C	05/01/12
Benzyl alcohol	100-51-6	80.0	61.2	ug/L	76	SW8270C	05/01/12
1,2-Dichlorobenzene	95-50-1	80.0	55.7	ug/L	70	SW8270C	05/01/12
2-Methylphenol	95-48-7	80.0	57.5	ug/L	72	SW8270C	05/01/12
bis(2-Chloroisopropyl)ether	108-60-1	80.0	62.2	ug/L	78	SW8270C	05/01/12
3-,4-Methylphenol	108-39-4/106	80.0	56.9	ug/L	71	SW8270C	05/01/12
N-Nitroso-di-n-propylamine	621-64-7	80.0	67.5	ug/L	84	SW8270C	05/01/12
Hexachloroethane	67-72-1	80.0	56.0	ug/L	70	SW8270C	05/01/12
Benzoic Acid	65-85-0	80.0	42.0	ug/L	53	SW8270C	05/01/12
Nitrobenzene	98-95-3	80.0	63.4	ug/L	79	SW8270C	05/01/12
Isophorone	78-59-1	80.0	67.1	ug/L	84	SW8270C	05/01/12
2-Nitrophenol	88-75-5	80.0	65.4	ug/L	82	SW8270C	05/01/12
2,4-Dimethylphenol	105-67-9	80.0	41.7	ug/L	52	SW8270C	05/01/12
bis(2-Chloroethoxy)methane	111-91-1	80.0	66.6	ug/L	83	SW8270C	05/01/12
2,4-Dichlorophenol	120-83-2	80.0	64.0	ug/L	80	SW8270C	05/01/12
1,2,4-Trichlorobenzene	120-82-1	80.0	59.2	ug/L	74	SW8270C	05/01/12
Naphthalene	91-20-3	80.0	61.2	ug/L	76	SW8270C	05/01/12
4-Chloroaniline	106-47-8	80.0	59.1	ug/L	74	SW8270C	05/01/12
Hexachlorobutadiene	87-68-3	80.0	58.7	ug/L	73	SW8270C	05/01/12
4-Chloro-3-methyl phenol	59-50-7	80.0	71.4	ug/L	89	SW8270C	05/01/12
2-Methylnaphthalene	91-57-6	80.0	64.4	ug/L	81	SW8270C	05/01/12
Hexachlorocyclopentadiene	77-47-4	80.0	24.8	ug/L	31	SW8270C	05/01/12
2,4,6-Trichlorophenol	88-06-2	80.0	69.4	ug/L	87	SW8270C	05/01/12
2,4,5-Trichlorophenol	95-95-4	80.0	70.5	ug/L	88	SW8270C	05/01/12
2-Chloronaphthalene	91-58-7	80.0	66.1	ug/L	83	SW8270C	05/01/12
2-Nitroaniline	88-74-4	80.0	77.2	ug/L	96	SW8270C	05/01/12
Dimethylphthalate	131-11-3	80.0	74.8	ug/L	94	SW8270C	05/01/12
Acenaphthylene	208-96-8	80.0	67.6	ug/L	84	SW8270C	05/01/12
2,6-Dinitrotoluene	606-20-2	80.0	75.9	ug/L	95	SW8270C	05/01/12
Acenaphthene	83-32-9	80.0	69.5	ug/L	87	SW8270C	05/01/12
2,4-Dinitrophenol	51-28-5	80.0	77.8	ug/L	97	SW8270C	05/01/12
4-Nitrophenol	100-02-7	80.0	41.3	ug/L	52	SW8270C	05/01/12
2,4-Dinitrotoluene	121-14-2	80.0	78.5	ug/L	98	SW8270C	05/01/12
Dibenzofuran	132-64-9	80.0	71.0	ug/L	89	SW8270C	05/01/12
Diethylphthalate	84-66-2	80.0	76.3	ug/L	95	SW8270C	05/01/12
3-Nitroaniline	99-09-2	80.0	74.5	ug/L	93	SW8270C	05/01/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BS1W0430	Lab Sample ID:	BS1W0430
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Water		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
Fluorene	86-73-7	80.0	72.2	ug/L	90	SW8270C	05/01/12
4-Chlorophenyl phenyl ether	7005-72-3	80.0	72.4	ug/L	90	SW8270C	05/01/12
4-Nitroaniline	100-01-6	80.0	76.4	ug/L	95	SW8270C	05/01/12
4,6-Dinitro-2-methyl phenol	534-52-1	80.0	78.9	ug/L	99	SW8270C	05/01/12
N-Nitrosodiphenylamine	86-30-6	80.0	69.4	ug/L	87	SW8270C	05/01/12
1,2-Diphenylhydrazine	122-66-7	80.0	73.9	ug/L	92	SW8270C	05/01/12
4-Bromophenyl phenyl ether	101-55-3	80.0	72.9	ug/L	91	SW8270C	05/01/12
Hexachlorobenzene	118-74-1	80.0	72.6	ug/L	91	SW8270C	05/01/12
Pentachlorophenol	87-86-5	80.0	78.9	ug/L	99	SW8270C	05/01/12
Phenanthrene	85-01-8	80.0	72.6	ug/L	91	SW8270C	05/01/12
Anthracene	120-12-7	80.0	71.8	ug/L	90	SW8270C	05/01/12
Carbazole	86-74-8	80.0	73.8	ug/L	92	SW8270C	05/01/12
Di-n-butylphthalate	84-74-2	80.0	77.9	ug/L	97	SW8270C	05/01/12
Fluoranthene	206-44-0	80.0	74.2	ug/L	93	SW8270C	05/01/12
Pyrene	129-00-0	80.0	74.9	ug/L	94	SW8270C	05/01/12
Butylbenzylphthalate	85-68-7	80.0	81.5	ug/L	102	SW8270C	05/01/12
Benzo(a)anthracene	56-55-3	80.0	75.1	ug/L	94	SW8270C	05/01/12
3,3'-Dichlorobenzidine	91-94-1	80.0	60.0	ug/L	75	SW8270C	05/01/12
Chrysene	218-01-9	80.0	74.6	ug/L	93	SW8270C	05/01/12
bis(2-Ethylhexyl)phthalate	117-81-7	80.0	80.8	ug/L	101	SW8270C	05/01/12
Di-n-octylphthalate	117-84-0	80.0	81.8	ug/L	102	SW8270C	05/01/12
Benzo(b)fluoroanthene	205-99-2	80.0	72.7	ug/L	91	SW8270C	05/01/12
Benzo(k)fluoranthene	207-08-9	80.0	74.1	ug/L	93	SW8270C	05/01/12
Benzo(a)pyrene	50-32-8	80.0	70.2	ug/L	88	SW8270C	05/01/12
Indeno(1,2,3-c,d)pyrene	193-39-5	80.0	72.9	ug/L	91	SW8270C	05/01/12
Dibenzo(a,h)anthracene	53-70-3	80.0	74.6	ug/L	93	SW8270C	05/01/12
Benzo(g,h,i)perylene	191-24-2	80.0	72.9	ug/L	91	SW8270C	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	53	21-115		
Phenol-d5	42	5-115		
Nitrobenzene-d5	41	35-114		
2-Fluorobiphenyl	39	43-116	4	*
2,4,6-Tribromophenol	92	5-123		
Terphenyl-d14	51	33-141		

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2MHILL
Applied Sciences Laboratory (ASL)

CHAIN OF CUSTODY RECORD

1100 NE Circle Blvd
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Corvallis, OR 97330
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Email: asl@ch2m.com
www.ch2mlab.com

Project # or Purchase Order #
156197.CS.12

Company Name
Kleinfelder- Athens Tank Farm

Project manager or Contact & Phone #
Niemet, Mike/CVO

Report Copy to:
Berggren, Dusty/CVO

Turnaround Time
☐ 24 hours ☐ 48 hours ☐ 72 hours
☒ 7 days ☐ 14 days ☐ 21 days

Drinking Water? Yes ☐ No ☒

Sample Disposal: Dispose ☒ Return ☐

THIS AREA FOR LAB USE ONLY

L1562

EPA Tier QC Level: 1 (Screening) 2 3 4

Date	Time	COMP	GRAB	WATER	SOIL	AIR	CLIENT SAMPLE ID	TOTAL # OF CONTAINERS	SPLP ZHE VOCs (SW1311/SW8260B)	SPLP SVOCs (SW13112SW8270C)	Alternate Description
								Preservative	UNPRES	UNPRES	
4/25/12	1034		x		x		BT-2_5%	2	1	1	-1
4/25/12	1048		x		x		BT-2_10%	2	1	1	-2
4/25/12	1100		X		X		BT-2_15%	2	1	1	-3
4/25/12	1121		X		X		BT-3_5%	2	1	1	-4
4/25/12	1130		X		X		BT-3_10%	2	1	1	-5
4/25/12	1140		X		X		BT-3_15%	2	1	1	-6

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Volatile Contaminants/Odorous ☐ Biohazard ☐ Other ____

Sampled By and Title: Dusty RV Berggren — Dusty RV Berggren	Date/Time: 4/25/12 1140	Relinquished By (Please sign and print name): Dusty RV Berggren — Dusty RV Berggren	Date/Time: 4/25/12 1150
Received By (Please sign and print name): Janel McGeary — Janel McGeary	Date/Time: 4-25-12 1315	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other____	Tracking #

Special Instructions

DOC CONTROL ID: ASL783-0911

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: L1562 | Date received: 4-25-
Client/Project: Kleinfelder | Checked by: ______
Checked by: ______

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Radiological Screening for DoD	✓		
Were custody seals intact and on the outside of the cooler?	H.D.		
Type of packing material: Ice Blue Ice Bubble wrap	H.D.		
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER °C	H.D.		

All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER		✓	
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

ANALYTICAL REPORT

For:
Kleinfelder-Athens Tank Farm

ASL Report #: L1573
Project ID: 156197.CS.12
Attn: Mike Neimet/CVO
cc:
Dusty Berggeren/CVO

Authorized and Released By:

Laboratory Project Manager
Ashley Wille
(541) 758-0235 ext.23147
May 09, 2012

This data package meets standards requested by client and is not intended or implied to meet any other standard.

All analyses performed by CH2M HILL are clearly indicated. Any subcontracted analyses are included as appended reports as received from the subcontracted laboratory. The results included in this report only relate to the samples listed on the following Sample Cross-Reference page. This report shall not be reproduced except in full, without the written approval of the laboratory.

Any unusual difficulties encountered during the analysis of your samples are discussed in the attached case narratives.

CH2M HILL Applied Sciences Laboratory • 1100 NE Circle Boulevard, Suite 300 • Corvallis, Oregon 97330 • www.ch2mhill.com/asl

ASL Report #: L1573

Sample Receipt Comments

We certify that the test results meet all standard ASL requirements.

Sample Cross-Reference

ASL Sample ID	Client Sample ID	Date/Time Collected	Date Received
L157301	BT-2_PM	04/26/12 12:28	04/26/12
L157302	BT-2_PS	04/26/12 11:55	04/26/12
L157303	BT-2_PO	04/26/12 12:01	04/26/12
L157304	BT-3_PM	04/26/12 11:47	04/26/12
L157305	BT-3_PS	04/26/12 12:07	04/26/12
L157306	BT-3_PO	04/26/12 13:00	04/26/12

CASE NARRATIVE
GC/MS VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO — ASL SDG#: L1573

Project: Kleinfelder-Athens Tank Farm — Project #: 156197.CS.12

I. Method(s):

Analysis: SW8260
Preparation: SW5030

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):
All acceptance criteria were met.

G. BFB Tune Verification(s):
All acceptance criteria were met.

H. Internal Standard(s):
All acceptance criteria were met.

I. Analytical Exception(s):
None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm — Date: 5-3-12

Reviewed by: [signature] — Date: 5-4-12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PM

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:28
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157301

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	131	263	3490		ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	131	263	131	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	39.4	131	39.4	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	131	263	131	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	105	263	153	J	ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PM
Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:28
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157301
Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	52.5	131	55.2	J	ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	52.5	131	104	J	ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	52.5	131	247		ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	52.5	131	540		ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	52.5	131	133		ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	52.5	131	130	J	ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	52.5	131	226		ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	52.5	131	67.2	J	ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	52.5	131	52.5	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	100	65-135	
1,2-Dichloroethane-d4	105	65-135	
Toluene-d8	98	65-135	
4-Bromofluorobenzene	99	65-135	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_PS**	**Lab Sample ID:**	**L157302**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	100
Sample Time:	11:55	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	76.4	153	391		ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	76.4	153	76.4	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	22.9	76.4	22.9	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	76.4	153	76.4	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	30.6	76.4	206		ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	61.1	153	547		ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_PS**	**Lab Sample ID:**	**L157302**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	100
Sample Time:	11:55	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	30.6	76.4	160		ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	30.6	76.4	245		ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	30.6	76.4	476		ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	30.6	76.4	628		ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	30.6	76.4	2110		ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	30.6	76.4	276		ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	30.6	76.4	375		ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	30.6	76.4	527		ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	30.6	76.4	615		ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	30.6	76.4	30.6	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	95	65-135	
1,2-Dichloroethane-d4	97	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	98	65-135	

U=Not detected at specified reporting limit
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_PO**	**Lab Sample ID:**	**L157303**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	100
Sample Time:	12:01	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	151	302	629		ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	151	302	151	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	45.3	151	45.3	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	151	302	151	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	121	302	121	U	ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_PO	Lab Sample ID:	L157303
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	100
Sample Time:	12:01	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	60.4	151	60.4	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	96	65-135	
1,2-Dichloroethane-d4	95	65-135	
Toluene-d8	99	65-135	
4-Bromofluorobenzene	109	65-135	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PM

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 11:47
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157304

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	82.0	164	3130		ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	82.0	164	82.0	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	24.6	82.0	24.6	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	82.0	164	82.0	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	65.6	164	65.6	U	ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PM

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 11:47
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157304

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	32.8	82.0	33.4	J	ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	32.8	82.0	52.9	J	ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	32.8	82.0	32.8	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	91	65-135	
1,2-Dichloroethane-d4	89	65-135	
Toluene-d8	98	65-135	
4-Bromofluorobenzene	98	65-135	

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CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PS

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:07
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157305

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	98.2	196	365		ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	98.2	196	98.2	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	29.5	98.2	29.5	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	98.2	196	98.2	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	39.3	98.2	74.7	J	ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	78.6	196	78.6	U	ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PS

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:07
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157305

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	39.3	98.2	167		ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	39.3	98.2	325		ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	39.3	98.2	229		ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	39.3	98.2	90.1	J	ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	39.3	98.2	276		ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	39.3	98.2	784		ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	39.3	98.2	39.3	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	92	65-135	
1,2-Dichloroethane-d4	89	65-135	
Toluene-d8	99	65-135	
4-Bromofluorobenzene	97	65-135	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PO

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 13:00
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157306

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	109	217	616		ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	109	217	109	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	32.6	109	32.6	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	109	217	109	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	86.9	217	86.9	U	ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PO

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 13:00
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157306

Date Received: 04/26/12
Dilution Factor: 100
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	43.5	109	43.5	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	90	65-135	
1,2-Dichloroethane-d4	88	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	101	65-135	

U=Not detected at specified reporting limit
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E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SB1-0427

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: SB1-0427

Date Received: N/A
Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
Dichlorodifluoromethane	75-71-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Chloromethane	74-87-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Vinyl Chloride	75-01-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Bromomethane	74-83-9	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Chloroethane	75-00-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Acetone	67-64-1	100	200	100	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Methylene chloride	75-09-2	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	100	200	100	U	ug/Kg	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Bromochloromethane	74-97-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Chloroform	67-66-3	30.0	100	30.0	U	ug/Kg	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Benzene	71-43-2	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Dibromomethane	74-95-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Bromodichloromethane	75-27-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	100	200	100	U	ug/Kg	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Toluene	108-88-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Dibromochloromethane	124-48-1	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1-Chlorohexane	544-10-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Chlorobenzene	108-90-7	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Ethylbenzene	100-41-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	80.0	200	80.0	U	ug/Kg	SW8260B	04/27/12
Bromoform	75-25-2	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Styrene	100-42-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SB1-0427

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: SB1-0427

Date Received: N/A
Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Volatiles								
o-Xylene	95-47-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Isopropylbenzene	98-82-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Bromobenzene	108-86-1	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
n-Propylbenzene	103-65-1	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
n-Butylbenzene	104-51-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Naphthalene	91-20-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	40.0	100	40.0	U	ug/Kg	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	99	65-135	
1,2-Dichloroethane-d4	100	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	95	65-135	

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Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1W0427

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: BS1W0427

Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
Dichlorodifluoromethane	75-71-8	4000	4880	ug/Kg	122	SW8260B	04/27/12
Chloromethane	74-87-3	4000	4450	ug/Kg	111	SW8260B	04/27/12
Vinyl Chloride	75-01-4	4000	3940	ug/Kg	98	SW8260B	04/27/12
Bromomethane	74-83-9	4000	4320	ug/Kg	108	SW8260B	04/27/12
Chloroethane	75-00-3	4000	4190	ug/Kg	105	SW8260B	04/27/12
Trichlorofluoromethane	75-69-4	4000	4580	ug/Kg	115	SW8260B	04/27/12
Acetone	67-64-1	4000	4640	ug/Kg	116	SW8260B	04/27/12
1,1-Dichloroethene	75-35-4	4000	3760	ug/Kg	94	SW8260B	04/27/12
Methylene chloride	75-09-2	4000	4000	ug/Kg	100	SW8260B	04/27/12
trans-1,2-Dichloroethene	156-60-5	4000	3970	ug/Kg	99	SW8260B	04/27/12
Methyl tert-butyl ether (MTBE)	1634-04-4	4000	3990	ug/Kg	100	SW8260B	04/27/12
1,1-Dichloroethane	75-34-3	4000	3980	ug/Kg	100	SW8260B	04/27/12
2-Butanone (MEK)	78-93-3	4000	4070	ug/Kg	102	SW8260B	04/27/12
cis-1,2-Dichloroethene	156-59-2	4000	4090	ug/Kg	102	SW8260B	04/27/12
Bromochloromethane	74-97-5	4000	4100	ug/Kg	103	SW8260B	04/27/12
Chloroform	67-66-3	4000	4120	ug/Kg	103	SW8260B	04/27/12
2,2-Dichloropropane	594-20-7	4000	3560	ug/Kg	89	SW8260B	04/27/12
1,2-Dichloroethane	107-06-2	4000	4140	ug/Kg	103	SW8260B	04/27/12
1,1,1-Trichloroethane	71-55-6	4000	3990	ug/Kg	100	SW8260B	04/27/12
1,1-Dichloropropene	563-58-6	4000	4040	ug/Kg	101	SW8260B	04/27/12
Carbon tetrachloride	56-23-5	4000	3660	ug/Kg	91	SW8260B	04/27/12
Benzene	71-43-2	4000	4020	ug/Kg	101	SW8260B	04/27/12
Dibromomethane	74-95-3	4000	3990	ug/Kg	100	SW8260B	04/27/12
1,2-Dichloropropane	78-87-5	4000	3930	ug/Kg	98	SW8260B	04/27/12
Trichloroethene (TCE)	79-01-6	4000	4100	ug/Kg	102	SW8260B	04/27/12
Bromodichloromethane	75-27-4	4000	4020	ug/Kg	100	SW8260B	04/27/12
cis-1,3-Dichloropropene	10061-01-5	4000	3810	ug/Kg	95	SW8260B	04/27/12
4-Methyl-2-pentanone (MIBK)	108-10-1	4000	3940	ug/Kg	99	SW8260B	04/27/12
trans-1,3-Dichloropropene	10061-02-6	4000	3440	ug/Kg	86	SW8260B	04/27/12
1,1,2-Trichloroethane	79-00-5	4000	3900	ug/Kg	98	SW8260B	04/27/12
Toluene	108-88-3	4000	4020	ug/Kg	100	SW8260B	04/27/12
1,3-Dichloropropane	142-28-9	4000	3970	ug/Kg	99	SW8260B	04/27/12
Dibromochloromethane	124-48-1	4000	3830	ug/Kg	96	SW8260B	04/27/12
1,2-Dibromoethane (EDB)	106-93-4	4000	3960	ug/Kg	99	SW8260B	04/27/12
Tetrachloroethene (PCE)	127-18-4	4000	4030	ug/Kg	101	SW8260B	04/27/12
1-Chlorohexane	544-10-5	4000	4040	ug/Kg	101	SW8260B	04/27/12
1,1,1,2-Tetrachloroethane	630-20-6	4000	3850	ug/Kg	96	SW8260B	04/27/12
Chlorobenzene	108-90-7	4000	4020	ug/Kg	100	SW8260B	04/27/12
Ethylbenzene	100-41-4	4000	4130	ug/Kg	103	SW8260B	04/27/12
m,p-Xylene	108-38-3/1	8000	8410	ug/Kg	105	SW8260B	04/27/12
Bromoform	75-25-2	4000	4030	ug/Kg	101	SW8260B	04/27/12
Styrene	100-42-5	4000	4270	ug/Kg	107	SW8260B	04/27/12
1,1,2,2-Tetrachloroethane	79-34-5	4000	3890	ug/Kg	97	SW8260B	04/27/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **BS1W0427**

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: **BS1W0427**

Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Volatiles							
o-Xylene	95-47-6	4000	4190	ug/Kg	105	SW8260B	04/27/12
1,2,3-Trichloropropane	96-18-4	4000	3880	ug/Kg	97	SW8260B	04/27/12
Isopropylbenzene	98-82-8	4000	3670	ug/Kg	92	SW8260B	04/27/12
Bromobenzene	108-86-1	4000	4060	ug/Kg	102	SW8260B	04/27/12
n-Propylbenzene	103-65-1	4000	4180	ug/Kg	104	SW8260B	04/27/12
2-Chlorotoluene	95-49-8	4000	4190	ug/Kg	105	SW8260B	04/27/12
4-Chlorotoluene	106-43-4	4000	4100	ug/Kg	102	SW8260B	04/27/12
1,3,5-Trimethylbenzene	108-67-8	4000	4370	ug/Kg	109	SW8260B	04/27/12
tert-Butylbenzene	98-06-6	4000	4190	ug/Kg	105	SW8260B	04/27/12
1,2,4-Trimethylbenzene	95-63-6	4000	4280	ug/Kg	107	SW8260B	04/27/12
sec-Butylbenzene	135-98-8	4000	4240	ug/Kg	106	SW8260B	04/27/12
1,3-Dichlorobenzene	541-73-1	4000	4130	ug/Kg	103	SW8260B	04/27/12
1,4-Dichlorobenzene	106-46-7	4000	4040	ug/Kg	101	SW8260B	04/27/12
p-Isopropyltoluene	99-87-6	4000	4020	ug/Kg	101	SW8260B	04/27/12
1,2-Dichlorobenzene	95-50-1	4000	4060	ug/Kg	102	SW8260B	04/27/12
n-Butylbenzene	104-51-8	4000	4200	ug/Kg	105	SW8260B	04/27/12
1,2-Dibromo-3-chloropropane	96-12-8	4000	3920	ug/Kg	98	SW8260B	04/27/12
1,2,4-Trichlorobenzene	120-82-1	4000	4120	ug/Kg	103	SW8260B	04/27/12
Naphthalene	91-20-3	4000	4170	ug/Kg	104	SW8260B	04/27/12
Hexachlorobutadiene	87-68-3	4000	4200	ug/Kg	105	SW8260B	04/27/12
1,2,3-Trichlorobenzene	87-61-6	4000	4210	ug/Kg	105	SW8260B	04/27/12

Surrogate	% Recovery	Control Limits	Qualifier
Dibromofluoromethane	102	65-135	
1,2-Dichloroethane-d4	102	65-135	
Toluene-d8	97	65-135	
4-Bromofluorobenzene	102	65-135	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CASE NARRATIVE
GC/MS SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO   ASL SDG#: L1573

Project: Kleinfelder-Athens Tank Farm   Project #: 156197.CS.12

I. Method(s):

Analysis: SW8270
Preparation: SW3550

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):

All acceptance criteria were met.

B. Calibration Verification(s):

All acceptance criteria were met.

C. Blank(s):

All acceptance criteria were met.

D. Laboratory Control Sample(s):

All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):

An MS/MSD was performed on sample BT-2_PM. Many analytes failed to recover within acceptance criteria.

F. Surrogate Standard(s):

Surrogate recovery of 2-Fluorophenol(0%) in BT-2_PM did not meet acceptance criteria of 25-121%. Surrogate recovery of Phenol-d5(2%) in BT-2_PM did not meet acceptance criteria of 24-113%. Surrogate recovery of 2,4,6-Tribromophenol(0%) in BT-2_PM did not meet acceptance criteria of 19-122%. Surrogate recovery of 2-Fluorophenol(0%) in BT-3_PM did not meet acceptance criteria of 25-121%. Surrogate recovery of Phenol-d5(1%) in BT-3_PM did not meet acceptance criteria of 24-113%. Surrogate recovery of 2,4,6-Tribromophenol(1%) in BT-3_PM did not meet acceptance criteria of 19-122%. These surrogates did not recover within criteria due to matrix interference.

G. DFTPP Tune Verification(s):

All acceptance criteria were met.

H. Internal Standard(s):

All acceptance criteria were met.

I. Analytical Exception(s):

Samples BT-3_PS and BT-3_PO were required to be analyzed at a dilution due to the sample matrix.

IV. Documentation Exception(s):

None.

CASE NARRATIVE
GC/MS SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO   ASL SDG#: L1573

Project: Kleinfelder-Athens Tank Farm   Project #: 156197.CS.12

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Tiffany Hill   Date: 5/3/12

Reviewed by: B Heathm   Date: 5/4/12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PM

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:28
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157301

Date Received: 04/26/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	149	362	149	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	149	362	149	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	149	362	149	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	149	362	149	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	149	362	149	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	149	362	149	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	149	362	149	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	149	362	149	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	149	362	149	U	ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	149	362	149	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	149	362	149	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	149	362	149	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	149	362	149	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	149	362	149	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_PM**	**Lab Sample ID:**	**L157301**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	12:28	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	149	362	149	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	149	362	149	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	149	362	149	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	149	362	149	U	ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	149	362	149	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	149	362	149	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	149	362	149	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	149	362	149	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	149	362	149	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	149	362	149	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	149	362	149	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	149	362	149	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	149	362	149	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	149	362	149	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits		Qualifier
2-Fluorophenol	0.0	25-121	1	*
Phenol-d5	2	24-113	2	*
Nitrobenzene-d5	49	23-120		
2-Fluorobiphenyl	52	30-115		
2,4,6-Tribromophenol	0.0	19-122	5	*
Terphenyl-d14	60	18-137		

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*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**BT-2_PS**	**Lab Sample ID:**	**L157302**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	11:55	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	109	265	109	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	109	265	109	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	109	265	109	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	109	265	109	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	109	265	109	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	109	265	109	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	109	265	128	J	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	109	265	109	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	109	265	206	J	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	109	265	109	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	109	265	1400		ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	109	265	109	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	109	265	109	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	109	265	109	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	109	265	109	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	109	265	109	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PS

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 11:55
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157302

Date Received: 04/26/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	109	265	109	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	109	265	109	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	109	265	109	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	109	265	379		ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	109	265	109	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	109	265	109	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	109	265	109	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	109	265	109	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	109	265	109	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	109	265	109	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	109	265	109	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	109	265	109	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	109	265	109	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	109	265	109	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	29	25-121	
Phenol-d5	41	24-113	
Nitrobenzene-d5	44	23-120	
2-Fluorobiphenyl	49	30-115	
2,4,6-Tribromophenol	31	19-122	
Terphenyl-d14	56	18-137	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_PO	Lab Sample ID:	L157303
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	12:01	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	179	434	179	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	179	434	179	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	179	434	179	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	179	434	179	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	179	434	179	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	179	434	179	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	179	434	179	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	179	434	179	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	179	434	179	U	ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	179	434	179	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	179	434	179	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	179	434	179	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	179	434	179	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	179	434	179	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-2_PO	**Lab Sample ID:**	L157303
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	12:01	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	179	434	179	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	179	434	179	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	179	434	179	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	179	434	179	U	ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	179	434	179	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	179	434	179	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	179	434	179	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	179	434	179	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	179	434	179	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	179	434	179	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	179	434	179	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	179	434	179	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	179	434	179	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	179	434	179	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	52	25-121	
Phenol-d5	64	24-113	
Nitrobenzene-d5	43	23-120	
2-Fluorobiphenyl	49	30-115	
2,4,6-Tribromophenol	59	19-122	
Terphenyl-d14	59	18-137	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_PM	Lab Sample ID:	L157304
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	11:47	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	125	304	125	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	125	304	125	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	125	304	125	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	125	304	125	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	125	304	125	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	125	304	125	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	125	304	125	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	125	304	125	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	125	304	125	U	ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	125	304	125	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	125	304	125	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	125	304	125	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	125	304	125	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	125	304	125	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL
1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PM

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 11:47
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157304

Date Received: 04/26/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	125	304	125	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	125	304	125	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	125	304	125	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	125	304	125	U	ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	125	304	125	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	125	304	125	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	125	304	125	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	125	304	125	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	125	304	125	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	125	304	125	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	125	304	125	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	125	304	125	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	125	304	125	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	125	304	125	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier	
2-Fluorophenol	0.0	25-121	1	*
Phenol-d5	1	24-113	2	*
Nitrobenzene-d5	51	23-120		
2-Fluorobiphenyl	52	30-115		
2,4,6-Tribromophenol	1	19-122	5	*
Terphenyl-d14	58	18-137		

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	BT-3_PS	**Lab Sample ID:**	L157305
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	10
Sample Time:	12:07	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PS

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:07
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157305

Date Received: 04/26/12
Dilution Factor: 10
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	1280	3110	1280	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	51	25-121	
Phenol-d5	68	24-113	
Nitrobenzene-d5	40	23-120	
2-Fluorobiphenyl	57	30-115	
2,4,6-Tribromophenol	62	19-122	
Terphenyl-d14	69	18-137	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_PO	Lab Sample ID:	L157306
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	10
Sample Time:	13:00	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	1410	3420	2540	J	ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_PO	Lab Sample ID:	L157306
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	10
Sample Time:	13:00	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	1410	3420	1410	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	49	25-121	
Phenol-d5	62	24-113	
Nitrobenzene-d5	48	23-120	
2-Fluorobiphenyl	59	30-115	
2,4,6-Tribromophenol	23	19-122	
Terphenyl-d14	63	18-137	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**SB1-0501**	**Lab Sample ID:**	**SB1-0501**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
N-Nitrosodimethylamine	62-75-9	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Pyridine	110-86-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Aniline	62-53-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Phenol	108-95-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2-Chlorophenol	95-57-8	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzyl alcohol	100-51-6	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2-Methylphenol	95-48-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Hexachloroethane	67-72-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzoic Acid	65-85-0	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Nitrobenzene	98-95-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Isophorone	78-59-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2-Nitrophenol	88-75-5	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Naphthalene	91-20-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4-Chloroaniline	106-47-8	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2-Nitroaniline	88-74-4	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Dimethylphthalate	131-11-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Acenaphthylene	208-96-8	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Acenaphthene	83-32-9	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4-Nitrophenol	100-02-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Dibenzofuran	132-64-9	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Diethylphthalate	84-66-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
3-Nitroaniline	99-09-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**SB1-0501**	**Lab Sample ID:**	**SB1-0501**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles								
Fluorene	86-73-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4-Nitroaniline	100-01-6	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Pentachlorophenol	87-86-5	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Phenanthrene	85-01-8	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Anthracene	120-12-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Carbazole	86-74-8	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Fluoranthene	206-44-0	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Pyrene	129-00-0	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Chrysene	218-01-9	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	70.0	170	70.0	U	ug/Kg	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	73	25-121	
Phenol-d5	80	24-113	
Nitrobenzene-d5	43	23-120	
2-Fluorobiphenyl	47	30-115	
2,4,6-Tribromophenol	81	19-122	
Terphenyl-d14	61	18-137	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BS1S0501	Lab Sample ID:	BS1S0501
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Soil		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
N-Nitrosodimethylamine	62-75-9	2670	1960	ug/Kg	74	SW8270C	05/02/12
Pyridine	110-86-1	2670	1780	ug/Kg	67	SW8270C	05/02/12
Aniline	62-53-3	2670	2100	ug/Kg	79	SW8270C	05/02/12
Phenol	108-95-2	2670	2030	ug/Kg	76	SW8270C	05/02/12
bis(2-Chloroethyl)ether	111-44-4	2670	1940	ug/Kg	73	SW8270C	05/02/12
2-Chlorophenol	95-57-8	2670	1970	ug/Kg	74	SW8270C	05/02/12
1,3-Dichlorobenzene	541-73-1	2670	1900	ug/Kg	71	SW8270C	05/02/12
1,4-Dichlorobenzene	106-46-7	2670	1910	ug/Kg	72	SW8270C	05/02/12
Benzyl alcohol	100-51-6	2670	2180	ug/Kg	82	SW8270C	05/02/12
1,2-Dichlorobenzene	95-50-1	2670	1950	ug/Kg	73	SW8270C	05/02/12
2-Methylphenol	95-48-7	2670	2120	ug/Kg	79	SW8270C	05/02/12
bis(2-Chloroisopropyl)ether	108-60-1	2670	2170	ug/Kg	81	SW8270C	05/02/12
3-,4-Methylphenol	108-39-4/106	2670	2110	ug/Kg	79	SW8270C	05/02/12
N-Nitroso-di-n-propylamine	621-64-7	2670	2270	ug/Kg	85	SW8270C	05/02/12
Hexachloroethane	67-72-1	2670	1940	ug/Kg	73	SW8270C	05/02/12
Benzoic Acid	65-85-0	2670	1820	ug/Kg	68	SW8270C	05/02/12
Nitrobenzene	98-95-3	2670	2120	ug/Kg	79	SW8270C	05/02/12
Isophorone	78-59-1	2670	2250	ug/Kg	84	SW8270C	05/02/12
2-Nitrophenol	88-75-5	2670	2070	ug/Kg	78	SW8270C	05/02/12
2,4-Dimethylphenol	105-67-9	2670	1920	ug/Kg	72	SW8270C	05/02/12
bis(2-Chloroethoxy)methane	111-91-1	2670	2170	ug/Kg	81	SW8270C	05/02/12
2,4-Dichlorophenol	120-83-2	2670	2090	ug/Kg	78	SW8270C	05/02/12
1,2,4-Trichlorobenzene	120-82-1	2670	1980	ug/Kg	74	SW8270C	05/02/12
Naphthalene	91-20-3	2670	2030	ug/Kg	76	SW8270C	05/02/12
4-Chloroaniline	106-47-8	2670	2160	ug/Kg	81	SW8270C	05/02/12
Hexachlorobutadiene	87-68-3	2670	1950	ug/Kg	73	SW8270C	05/02/12
4-Chloro-3-methyl phenol	59-50-7	2670	2330	ug/Kg	87	SW8270C	05/02/12
2-Methylnaphthalene	91-57-6	2670	2140	ug/Kg	80	SW8270C	05/02/12
Hexachlorocyclopentadiene	77-47-4	2670	1860	ug/Kg	70	SW8270C	05/02/12
2,4,6-Trichlorophenol	88-06-2	2670	2220	ug/Kg	83	SW8270C	05/02/12
2,4,5-Trichlorophenol	95-95-4	2670	2220	ug/Kg	83	SW8270C	05/02/12
2-Chloronaphthalene	91-58-7	2670	2170	ug/Kg	81	SW8270C	05/02/12
2-Nitroaniline	88-74-4	2670	2430	ug/Kg	91	SW8270C	05/02/12
Dimethylphthalate	131-11-3	2670	2360	ug/Kg	89	SW8270C	05/02/12
Acenaphthylene	208-96-8	2670	2240	ug/Kg	84	SW8270C	05/02/12
2,6-Dinitrotoluene	606-20-2	2670	2380	ug/Kg	89	SW8270C	05/02/12
Acenaphthene	83-32-9	2670	2240	ug/Kg	84	SW8270C	05/02/12
2,4-Dinitrophenol	51-28-5	2670	2230	ug/Kg	84	SW8270C	05/02/12
4-Nitrophenol	100-02-7	2670	2430	ug/Kg	91	SW8270C	05/02/12
2,4-Dinitrotoluene	121-14-2	2670	2440	ug/Kg	92	SW8270C	05/02/12
Dibenzofuran	132-64-9	2670	2260	ug/Kg	85	SW8270C	05/02/12
Diethylphthalate	84-66-2	2670	2390	ug/Kg	89	SW8270C	05/02/12
3-Nitroaniline	99-09-2	2670	2420	ug/Kg	91	SW8270C	05/02/12

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS1S0501
Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: BS1S0501
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC/MS Semi-Volatiles							
Fluorene	86-73-7	2670	2300	ug/Kg	86	SW8270C	05/02/12
4-Chlorophenyl phenyl ether	7005-72-3	2670	2300	ug/Kg	86	SW8270C	05/02/12
4-Nitroaniline	100-01-6	2670	2490	ug/Kg	93	SW8270C	05/02/12
4,6-Dinitro-2-methyl phenol	534-52-1	2670	2370	ug/Kg	89	SW8270C	05/02/12
N-Nitrosodiphenylamine	86-30-6	2670	2310	ug/Kg	87	SW8270C	05/02/12
1,2-Diphenylhydrazine	122-66-7	2670	2440	ug/Kg	91	SW8270C	05/02/12
4-Bromophenyl phenyl ether	101-55-3	2670	2330	ug/Kg	88	SW8270C	05/02/12
Hexachlorobenzene	118-74-1	2670	2310	ug/Kg	87	SW8270C	05/02/12
Pentachlorophenol	87-86-5	2670	2410	ug/Kg	90	SW8270C	05/02/12
Phenanthrene	85-01-8	2670	2320	ug/Kg	87	SW8270C	05/02/12
Anthracene	120-12-7	2670	2350	ug/Kg	88	SW8270C	05/02/12
Carbazole	86-74-8	2670	2360	ug/Kg	89	SW8270C	05/02/12
Di-n-butylphthalate	84-74-2	2670	2450	ug/Kg	92	SW8270C	05/02/12
Fluoranthene	206-44-0	2670	2360	ug/Kg	88	SW8270C	05/02/12
Pyrene	129-00-0	2670	2410	ug/Kg	90	SW8270C	05/02/12
Butylbenzylphthalate	85-68-7	2670	2620	ug/Kg	98	SW8270C	05/02/12
Benzo(a)anthracene	56-55-3	2670	2440	ug/Kg	91	SW8270C	05/02/12
3,3'-Dichlorobenzidine	91-94-1	2670	2490	ug/Kg	94	SW8270C	05/02/12
Chrysene	218-01-9	2670	2370	ug/Kg	89	SW8270C	05/02/12
bis(2-Ethylhexyl)phthalate	117-81-7	2670	2620	ug/Kg	98	SW8270C	05/02/12
Di-n-octylphthalate	117-84-0	2670	2610	ug/Kg	98	SW8270C	05/02/12
Benzo(b)fluoroanthene	205-99-2	2670	2350	ug/Kg	88	SW8270C	05/02/12
Benzo(k)fluoranthene	207-08-9	2670	2340	ug/Kg	88	SW8270C	05/02/12
Benzo(a)pyrene	50-32-8	2670	2380	ug/Kg	89	SW8270C	05/02/12
Indeno(1,2,3-c,d)pyrene	193-39-5	2670	2430	ug/Kg	91	SW8270C	05/02/12
Dibenzo(a,h)anthracene	53-70-3	2670	2400	ug/Kg	90	SW8270C	05/02/12
Benzo(g,h,i)perylene	191-24-2	2670	2400	ug/Kg	90	SW8270C	05/02/12

Surrogate	% Recovery	Control Limits	Qualifier
2-Fluorophenol	70	25-121	
Phenol-d5	77	24-113	
Nitrobenzene-d5	46	23-120	
2-Fluorobiphenyl	54	30-115	
2,4,6-Tribromophenol	91	19-122	
Terphenyl-d14	65	18-137	

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CASE NARRATIVE
GC VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO   ASL SDG#: L1573

Project: Kleinfelder-Athens Tank Farm   Project #: 156197.CS.12

I. Method(s):

Analysis: SW8015-P
Preparation: SW5030

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):
All acceptance criteria were met.

G. Analytical Exception(s):
None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: Doug Malcolm   Date: 5-2-12

Reviewed by: [signature]   Date: 05-04-12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_PM**	**Lab Sample ID:**	**L157301**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	50
Sample Time:	12:28	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.81	16.2	210		mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	114	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**BT-2_PS**	**Lab Sample ID:**	**L157302**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	50
Sample Time:	11:55	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.22	10.9	271		mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	121	64-148	

U=Not detected at specified reporting limit
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PO

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:01
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157303

Date Received: 04/26/12
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	2.25	20.1	40.8		mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	105	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		**Lab Information**	
Client Sample ID:	**BT-3_PM**	**Lab Sample ID:**	**L157304**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	50
Sample Time:	11:47	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.40	12.5	45.5		mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	109	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PS

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:07
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157305

Date Received: 04/26/12
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.49	13.3	125		mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	112	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PO

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 13:00
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157306

Date Received: 04/26/12
Dilution Factor: 50
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	1.50	13.4	23.0		mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	109	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: SB2-0430

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: N/A
Sample Time: N/A
Type: QC
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: SB2-0430

Date Received: N/A
Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Volatiles								
TPH-Gasoline	TPH-Gasoline	2.24	20.0	4.55	J	mg/Kg	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	112	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: **BS1S0430**

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: **BS1S0430**

Dilution Factor: 200
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC Semi-Volatiles							
TPH-Gasoline	TPH-Gasoline	200	214	mg/Kg	107	SW8015-P	04/30/12

Surrogate	% Recovery	Control Limits	Qualifier
Chlorobenzene	113	64-148	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
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CASE NARRATIVE
GC SEMI-VOLATILES ANALYSIS

Lab Name: CH2M HILL/LAB/CVO ASL SDG#: L1573

Project: Kleinfelder-Athens Tank Farm Project #: 156197.CS.12

I. Method(s):

Analysis: SW8015-E
Preparation: SW3550

II. Receipt/Holding Times:

All acceptance criteria were met.

III. Analysis:

A. Initial Calibration(s):
All acceptance criteria were met.

B. Calibration Verification(s):
All acceptance criteria were met.

C. Blank(s):
All acceptance criteria were met.

D. Laboratory Control Sample(s):
All acceptance criteria were met.

E. Matrix Spike/Matrix Spike Duplicate Sample(s):
Analyzed in accordance with standard operating procedure.

F. Surrogate Standard(s):
All acceptance criteria were met.

G. Analytical Exception(s):
None.

IV. Documentation Exception(s):

None.

V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signatures.

Prepared by: C. Hopper Date: 5/3/12

Reviewed by: Jeffrey Hill Date: 5/4/12

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PM

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 12:28
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157301

Date Received: 04/26/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	1.93	19.6	128		mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	1.76	9.80	438		mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	96	47-142	
Octacosane	95	25-162	

U=Not detected at specified reporting limit
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-2_PS

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 11:55
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157302

Date Received: 04/26/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	1.49	15.2	188		mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	1.36	7.59	613		mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	92	47-142	
Octacosane	91	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-2_PO**	**Lab Sample ID:**	**L157303**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	12:01	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	2.32	23.5	110		mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	2.12	11.8	259		mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	96	47-142	
Octacosane	97	25-162	

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J=Estimated value below reporting limit
E=Estimated value above calibration range
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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**BT-3_PM**	**Lab Sample ID:**	**L157304**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	11:47	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	1.65	16.8	630		mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	1.51	8.40	1030		mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	94	47-142	
Octacosane	92	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

CH2M HILL ASL

1100 NE Circle Blvd., Suite 300
Corvallis, OR 97330
Tel 541-768-3120 Fax 541-752-0276

CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	BT-3_PS	Lab Sample ID:	L157305
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	04/26/12
Sample Date:	04/26/12	Dilution Factor:	1
Sample Time:	12:07	Report Revision No.:	0
Type:	Grab		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	1.73	17.6	739		mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	1.58	8.80	1100		mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	95	47-142	
Octacosane	96	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BT-3_PO

Project Name: Kleinfelder-Athens Tank Farm
Sample Date: 04/26/12
Sample Time: 13:00
Type: Grab
Matrix: Soil
Basis: Dry Weight

Lab Information

Lab Sample ID: L157306

Date Received: 04/26/12
Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	1.88	19.1	187		mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	1.71	9.53	260		mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	92	47-142	
Octacosane	95	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information		Lab Information	
Client Sample ID:	**SB1-0427**	**Lab Sample ID:**	**SB1-0427**
Project Name:	Kleinfelder-Athens Tank Farm	Date Received:	N/A
Sample Date:	N/A	Dilution Factor:	1
Sample Time:	N/A	Report Revision No.:	0
Type:	QC		
Matrix:	Soil		
Basis:	Dry Weight		

Analyte	CAS#	DL	RL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
GC Semi-Volatiles								
TPH-Oil	TPH-Oil	0.98	10.0	0.98	U	mg/Kg	SW8015-E	05/01/12
TPH-Diesel	TPH-Diesel	0.90	5.00	1.81	J	mg/Kg	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	95	47-142	
Octacosane	95	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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Client Information		Lab Information	
Client Sample ID:	**BS1S0427**	**Lab Sample ID:**	**BS1S0427**
Project Name:	Kleinfelder-Athens Tank Farm	Dilution Factor:	1
Type:	QC	Report Revision No.:	0
Matrix:	Soil		

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC Semi-Volatiles							
TPH-Diesel	TPH-Diesel	103	88.5	mg/Kg	86	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	94	47-142	
Octacosane	94	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2M HILL Applied Sciences Laboratory (ASL)

Client Information

Client Sample ID: BS2S0427

Project Name: Kleinfelder-Athens Tank Farm
Type: QC
Matrix: Soil

Lab Information

Lab Sample ID: BS2S0427

Dilution Factor: 1
Report Revision No.: 0

Analyte	CAS#	Spike Amount	Sample Result	Units	%Recovery	Analysis Method	Date Analyzed
GC Semi-Volatiles							
TPH-Oil	TPH-Oil	101	96.4	mg/Kg	96	SW8015-E	05/01/12

Surrogate	% Recovery	Control Limits	Qualifier
o-Terphenyl	94	47-142	
Octacosane	96	25-162	

U=Not detected at specified reporting limit
J=Estimated value below reporting limit
E=Estimated value above calibration range
*=See case narrative

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CH2MHILL
Applied Sciences Laboratory (ASL)

CHAIN OF CUSTODY RECORD

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Suite 300
Corvallis, OR 97330
Tel 541.768.3120
Email: asl@ch2m.com
www.ch2mlab.com

Project # or Purchase Order #
156197.CS.12

Company Name
Kleinfelder- Athens Tank Farm

Project manager or Contact & Phone #
Niemet, Mike

Report Copy to:
Berggren, Dusty

Turnaround Time
☐24 hours ☐48 hours ☐72 hours
☒7 days ☐14 days ☐21 days

Drinking Water? Yes ☐ No ☒

Sample Disposal: Dispose ☒ Return ☐

THIS AREA FOR LAB USE ONLY
~~L1572~~ Rob 5-1-12
L1573 (mw)

EPA Tier QC Level
1 (Screening) 2 3 4

Date	Time	COMP	GRAB	WATER	SOIL	AIR	CLIENT SAMPLE ID	TOTAL # OF CONTAINERS	VOCs (SW8260B) TPH-g (SW8015)	SVOCs (SW8270C) TPH-d, TPH-o (SW8015)							Alternate Description
								Preservative:	UNPRES	UNPRES							
4/26/12	1228		x		x		BT-2_PM	2	1	1							-1
4/26/12	1155		x		x		BT-2_PS	2	1	1							-2
4/26/12	1201		X		X		BT-2_PO	2	1	1							-3
4/26/12	1147		X		X		BT-3_PM	2	1	1							-4
4/26/12	1207		X		X		BT-3_PS	2	1	1							-5
4/26/12	1300		X		X		BT-3_PO	2	1	1							-6

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Volatile Contaminants/Odorous ☐ Biohazard ☐ Other oxidants

Sampled By and Title		Date/Time	Relinquished By (Please sign and print name)		Date/Time
Dusty RV Berggren	Dusty RV Berggren	4/26/12 1305	Dusty RV Berggren	Dusty RV Berggren	4/26/12 13:40
Received By (Please sign and print name)		Date/Time	Relinquished By (Please sign and print name)		Date/Time
Janel McGeary	Janel McGeary	4-26-12 1545			
Received By (Please sign and print name)		Date/Time	Shipped Via: UPS Fed-Ex Other______	Tracking #	

Special Instructions

DOC CONTROL ID: ASL783-0911

CH2MHILL
Applied Sciences Laboratory (ASL)

Sample Receipt Record

Batch Number: ~~L1572~~ L1573 (ACC) Rob 5-1-12
Client/Project: Kleinfelder

Date received: 4-26-12
Checked by: Jm
Checked by: ______

VERIFICATION OF SAMPLE CONDITIONS (verify all items), HD = Client Hand delivered Samples	NA	YES	NO
Radiological Screening for DoD	✓		
Were custody seals intact and on the outside of the cooler?	H.D.		
Type of packing material: Ice Blue Ice Bubble wrap	H.D.		
Was a Chain of Custody (CoC) Provided?		✓	
Was the CoC correctly filled out (If No, document in the SRER)		✓	
Did the CoC list a correct bottle count and the preservative types (Y=OK, N=Corrected on CoC)		✓	
Were the sample containers in good condition (broken or leaking)?		✓	
Containers supplied by ASL?		✓	
Any sample with < 1/2 holding time remaining? If so contact LPM			✓
Samples have multi-phase? If yes, document on SRER			✓
Was there ice in the cooler? Enter temp. If >6°C contact client/SRER °C	H.D.		

	NA	YES	NO
All VOCs free of air bubbles? No, document on SRER	✓		
pH of all samples checked and met requirements? No, then document in SRER	✓		
Enough sample volume provided for analysis? No, document in SRER		✓	
Did sample labels agree with COC? No, document in SRER		✓	
Dissolved/Soluble metals filtered in the field?	✓		
Dissolved/Soluble metals have sediment in bottom of container? Document in SRER	✓		

Sample ID	Reagent	Reagent Lot Number	Volume Added	Initials

APPENDIX C

Soil Vapor Extraction Radius of Influence Modeling Procedures

APPENDIX C
SOIL VAPOR EXTRACTION
RADIUS OF INFLUENCE MODELING PROCEDURES
FORMER ATHENS TANK FARM
Willowbrook, Los Angeles County, California

Prepared by:

KLEINFELDER WEST, INC.
523 WEST 6TH STREET, SUITE 620
LOS ANGELES, CA 90014

Kleinfelder Project Number 124094

June 15, 2012

Prepared on behalf of:

Mr. Dok Choe
ExxonMobil Environmental Services Company
12851 East 166th Street
Cerritos, CA 90703

APPENDIX C
SOIL VAPOR EXTRACTION RADIUS OF INFLUENCE MODELING PROCEDURES
FORMER ATHENS TANK FARM
WILLOWBROOK, LOS ANGELES COUNTY, CALIFORNIA

Prepared by:

REGISTERED PROFESSIONAL ENGINEER
SAM H. BAILEY
No. 67840
Exp. 6/30/2013
CIVIL
STATE OF CALIFORNIA

____
Sam H. Bailey, P.E.
Senior Engineer

Reviewed by:

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Dave Jenkins, P.E.
Principal Engineer

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Kleinfelder Project No.124094

June 15, 2012

TABLE OF CONTENTS

PLATES

1.0 INTRODUCTION

This appendix was prepared on behalf of ExxonMobil Environmental Services Company (EMES) as part of the SVE Pilot Test Report for the Former Athens Tank Farm (ATF), Willowbrook, California. This appendix describes the basis, assumptions, input data, theory, equations, calculations, programs, and other methods used to estimate the soil gas velocity (pore velocity), and thereby estimate the effective radius of influence (ROI) that can be achieved by drawing vapors from the subsurface via application of vacuum at a soil vapor extraction (SVE) well. Specifically, this appendix describes the means by which pore velocities and ROIs were calculated for locations near soil vapor wells SV-005, SV-006, SV-013, SV-033 and SV-037 both within the Ujima Village Apartments (UVA) and in the Ervin "Magic" Johnson Regional Park (EMJRP). Calculating the effective ROI is important to assessing the technical feasibility of SVE as a potential remedial technology, and provides one of the parameters used for preparing a conceptual SVE system remedial design.

The objective of this appendix is to present the methodologies used to estimate the radii of influence achieved during SVE pilot testing performed at the Site.

2.0 SVE RADIUS OF INFLUENCE MODELING PROCEDURES

The ROI achievable for a SVE well may be calculated by evaluating the maximum radial extent of induced sub-surface vacuum to a specified vacuum pressure (typically 0.1 inches of water vacuum) in single well SVE tests (USACE, 2002). The implicit assumption of these types of ROI-based estimations is that the observation of sub-surface vacuum of at least 0.1 inches of water is sufficient to induce soil gas flow in impacted soil for timely remediation. The soil in the unsaturated zone that is contained in the vertical cylinder, with radius equal to the ROI that extends from the ground surface to the groundwater table is assumed to be influenced. However, measurement of vacuum at best only achieves containment of impacted soil vapors and the thickness of area affected may only extend a few feet vertically from the top and bottom of the screened interval.

A more meaningful measure of effective soil gas removal potential is the velocity of soil gas from a radial distance to the extraction well during SVE activities. Unfortunately, there is no method for directly measuring pore velocity in the soil. In order to calculate pore velocities, the pressure distribution field in the unsaturated soil zone must first be calculated.

2.1 ANALYTICAL STEADY STATE SOLUTION FOR SOIL GAS FLOW

To calculate pore velocities, the natural subsurface system must be interpreted mathematically. There are two mathematical interpretations of extraction tests in vertical wells. The first is referred to as an open system, and the second is a leaky confining layer system. These are described and depicted in the subsections that follow.

2.1.1. Open System

In an open system, the unsaturated zone is confined below the extraction well (e.g., no vertical soil gas flow is assumed), at the groundwater table, but the system is not confined above (e.g., when the area is unpaved and in direct contact with the atmosphere) (see Figure 1, below). Conditions in EMJRP are consistent with the open system.

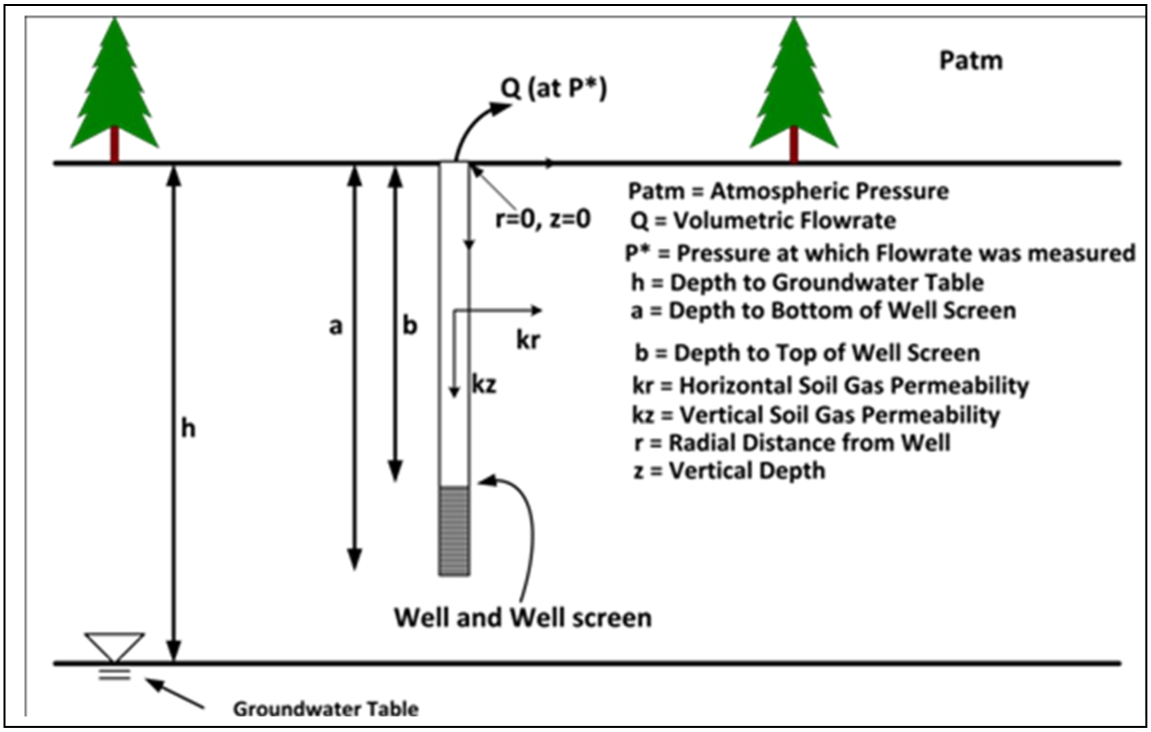

Figure 1 – Open System Conceptual Model

2.1.2. Leaky System

The leaky confining layer system is depicted below (see Figure 2). In this system, the unsaturated zone is confined below the extraction well at the groundwater table, but in addition, the system is confined above by a leaky confining layer. This layer is typically less permeable than the soil in the vadose zone. Conditions at UVA are consistent with the leaky confining layer system.

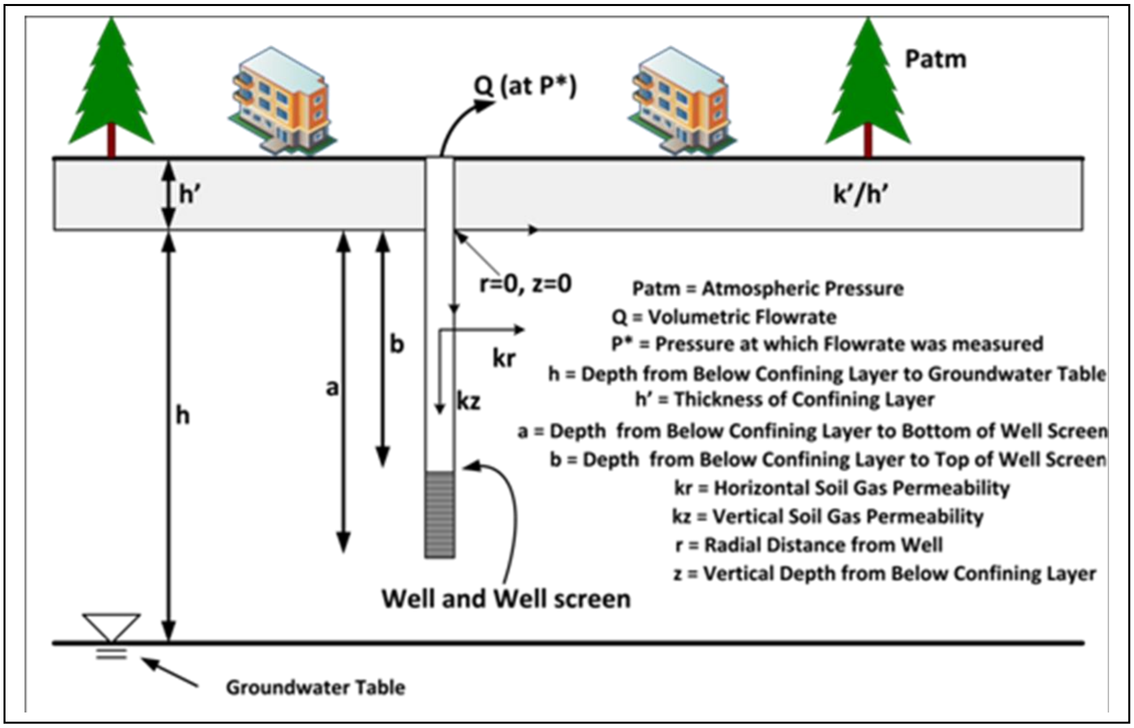

Figure 2 – Leaky Confining Layer System Conceptual Model

2.2 APPLICATION OF THE OPEN AND LEAKY SYSTEMS TO SVE PILOT TEST DATA

For UVA, the system was considered to be a leaky confining layer system due to the asphalt and concrete covering the ground, as well as a 5-foot layer of silty clay fill material encountered during well boring clearance. Dr. Ronald Falta, provides an analytical solution to the two-dimensional steady state gas flow model for a leaky confined system (Falta, 1996). The assumption used in the development of this solution is that the unsaturated soil is homogeneous; however it may be anisotropic (have different permeability in the horizontal and vertical directions). The analytical solution for pressure may be written as:

Equation 1:

$$P^2 = P_{atm}^2 - \frac{QP^*\mu}{2\pi k_r h} 2K_0(\beta_1) - \frac{QP^*\mu}{\pi^2 k_r(a-b)} \cdot \sum_{n=1}^{\infty} \frac{1}{n} \left(\sin\frac{n\pi a}{h} - \sin\frac{n\pi b}{h} \right) \cos\frac{n\pi z}{h} \cdot 2K_0 \left(\beta_2 \right)$$

Where:

$P = Pressure$

$P_{atm} = atmospheric\ pressure$

$Q = Vapor\ Flowrate$

$P^* = Absolute\ Pressure\ at\ which\ Flowrate\ was\ measured$

$\mu = dynamic\ viscosity$

$k_r = effective\ horizontal\ soil\ gas\ permeability$

$h = depth\ from\ bottom\ of leaky\ confining\ layer\ to\ groundwater\ table$

$a = depth\ from\ bottom\ of leaky\ confining\ layer\ to\ bottom\ of\ screen,$

$b = depth\ from\ bottom\ of leaky\ confining\ layer\ to\ top\ of\ screen$

$h' = thickness\ of\ confining\ layer$

$K_0 = Modified\ Bessel\ Function\ of\ the\ 2nd\ Kind\ Zeroth\ order$

$r = radial\ distance\ from\ extraction\ well$

$z = vertical\ depth\ below\ the\ leaky\ confining\ layer$

$$\beta_1 = r \left(\frac{k'}{k_r h h'} \right)^{\frac{1}{2}}$$

$$\beta_2 = r \left[\frac{k_z}{k_r} \left(\frac{n\pi}{h} \right)^2 + \frac{k'}{k_r h h'} \right]^{\frac{1}{2}}$$

$k_z = effective\ vertical\ soil\ gas\ permeability$

$k' = effective\ soil\ gas\ permeability\ of\ the\ confining\ layer$

$\frac{k'}{h'} = leaky\ term$

For EMJRP, the system was considered to be an open system. Dr. Falta, provides an analytical solution to the two-dimensional steady state gas flow model for an open system (Falta, 1996). The analytical solution for pressure may be written as:

Equation 2:

$$P^2 = P_{atm}^2 - \frac{QP^*\mu}{\pi^2 k_r(a-b)} \cdot \sum_{n=1}^{\infty} \frac{1}{m}\left(\cos\frac{m\pi b}{h} - \cos\frac{m\pi a}{h}\right)\sin\frac{m\pi z}{h} \cdot 2K_0(\beta)$$

Where:

$P = Pressure$

$P_{atm} = atmospheric\ pressure$

$Q = Vapor\ Flowrate$

$P^* = Absolute\ Pressure\ at\ which\ Flowrate\ was\ measured$

$\mu = dynamic\ viscosity$

$k_r = effective\ horizontal\ soil\ gas\ permeability$

$h = depth\ from\ bottom\ of leaky\ confining\ layer\ to\ groundwater\ table$

$a = depth\ from\ bottom\ of leaky\ confining\ layer\ to\ bottom\ of\ screen,$

$b = depth\ from\ bottom\ of leaky\ confining\ layer\ to\ top\ of\ screen$

$K_0 = Modified\ Bessel\ Function\ of\ the\ 2nd\ Kind\ Zeroth\ order$

$r = radial\ distance\ from\ extraction\ well$

$z = vertical\ depth\ below\ the\ leaky\ confining\ layer$

$m = n - 1$

$$\beta = r\left(\frac{k_z}{k_r}\left(\frac{m\pi}{h}\right)^2\right)^{\frac{1}{2}}$$

$k_z = effective\ vertical\ soil\ gas\ permeability$

Most of the variables required to solve this equation are directly measured during an SVE test; however, horizontal and vertical soil gas permeability (k_r, k_z) and the leaky term (k'/h') cannot be measured directly. These variables are derived by performing a soil vapor extraction test and measuring the vacuum response in observations wells around the extraction point. The following schematic shows this setup:

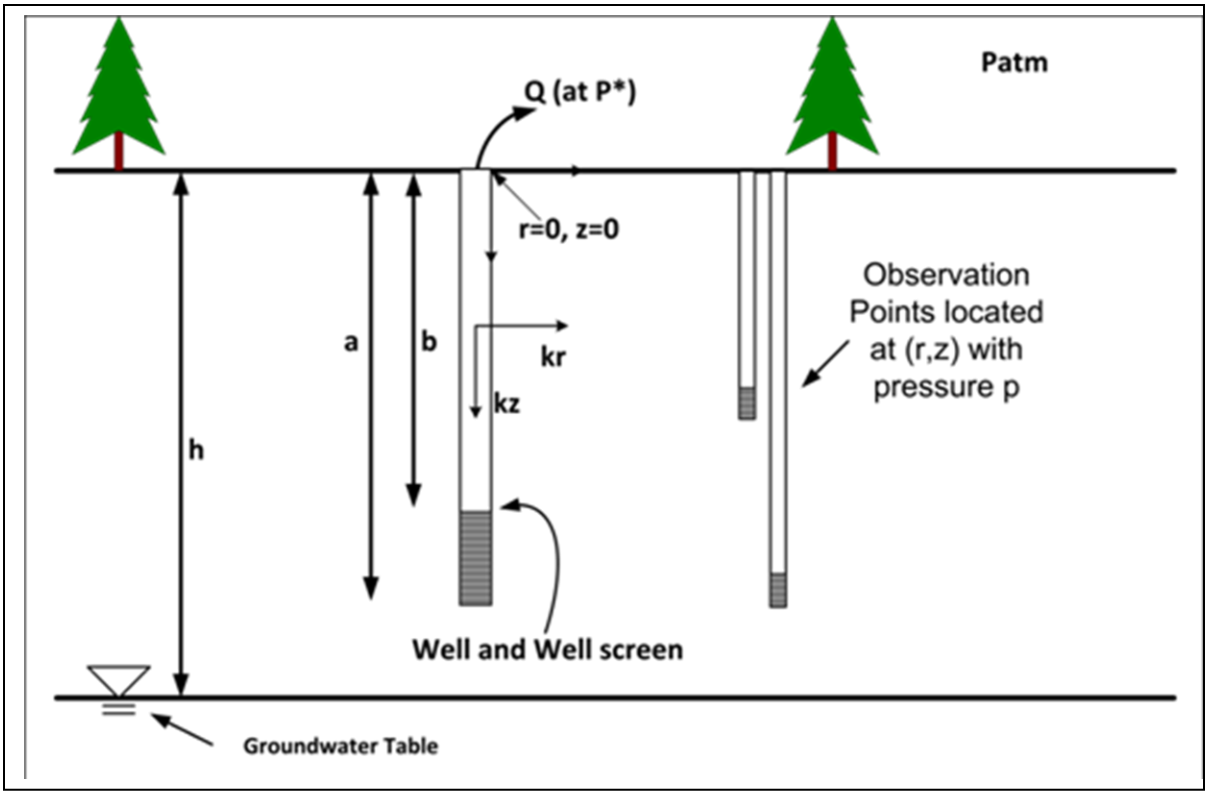

Figure 3 - Typical Soil Extraction Test Setup with Observation Points

Multiple observation points and measured vacuum responses allow preparation of a best-fit solution so the horizontal- and vertical soil permeability and the leaky term can be calculated.

The program GASSOLVE performs this best-fit calculation to solve for the horizontal and vertical soil permeability and, where necessary, the leaky term (Falta, 1996). The US Army Corps of Engineers (USACE, 2002) and the US Environmental Protection Agency (USEPA, 2001) recommend the GASSOLVE program for calculating soil gas permeability. The GASSOLVE program uses Equations 1 and 2, for leaky or open systems, respectively, as its calculation engine, and finds the best-fit solution by applying an optimization algorithm.

Once the unknown variables (horizontal and vertical soil gas permeability and the leaky term) have been calculated, a pressure distribution field for the test area is created. An in-house calculator called SVE2DAnalyzer was developed to estimate the pressure distribution field by iteratively stepping through Equations 1 and 2 for depths z=0 through z=h and from r=0 to r=radius of test area. The user can determine the radius of the test area.

2.3 CALCULATION OF PORE VELOCITY

The next step in the ROI modeling process is to calculate the velocity of the vapor in the soil at a given radius and depth, using the pressure distribution field data calculated by the SVE2DAnalyzer calculator, soil porosity, and assumptions. The methodology for calculating pore velocities is described below.

Darcy's Law describes the flow of fluid through a porous medium as follows:

Equation 2: (Darcy's Law)

$$Q = \frac{-kA}{\mu}\frac{(P_b - P_a)}{L}$$

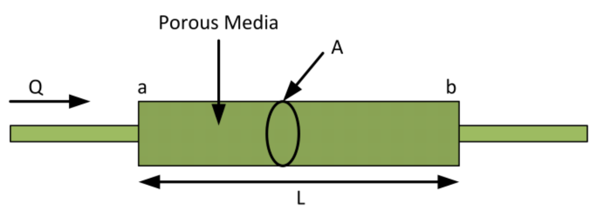

Figure 4 - Fluid flow through a porous medium

Where:

$Q = Volumetric\ Flowrate$

$k = effective\ permeability\ of\ medium$

$A = Cross - sectional\ Area\ to\ flow$

$P_a, P_b = Pressure\ at\ locations\ a\ and\ b$

$\mu = dynamic\ viscosity$

$L = length\ over\ which\ the\ pressure\ drop\ is\ measured$

Dividing by area and re-writing the pressure loss over length as pressure gradient, Darcy's Law can be written as:

$$q = \frac{-k}{\mu}\nabla P$$

Where:

$$q = Darcy\ flux$$

Pore-velocity (the speed of the soil gas through the open space within the soil) is related to the Darcy flux (flow per unit area) by the effective porosity of the medium through which soil gas is traveling. The Darcy flux is divided by the effective porosity to account for the fact that only a fraction of the total medium volume is available for flow. The SVE2DAnalyzer calculator also calculates the pore-velocity distribution field within the test area. The USACE suggests that, for estimation of ROI using pilot test data, an effective critical pore velocity of 0.01 cm/s to 0.001 cm/s represents the outer edge of ROI (USACE, 2002).

Output values from SVE2DAnalyzer program (in the form of pressure and pore-velocity values paired with radius and depth values) are saved in a file format that can be read by graphing software, such as Surfer®, to provide a visual interpretation of the field data.

3.0 MODELING EXAMPLE

This section presents an example calculation using the methodology used to estimate the ROI at the various pilot test locations. In the following example, data from the constant rate test at location SV-013, extraction well E-3B is used to present the process of developing pore-velocity contour plots.

3.1 DESCRIPTION OF PILOT TEST SETUP

The constant rate test conducted at location SV-013, extraction well E-3B, was started on September 20, 2011. A ThermTech Vac 25 thermal oxidizer with a 300 standard cubic feet per minute (SCFM) vacuum blower was used to apply vacuum to, and extract vapors from the subsurface using Well E-3B. This well was constructed with 4-inch diameter, Schedule 40 poly-vinyl chloride (PVC) and screened from 20 feet below ground surface (bgs) to 30 feet bgs. The first groundwater aquifer is at approximately 45 feet bgs. Observation points were installed around the extraction well and logging pressure transducers were connected to the observation points. The following table lists the radial distances from Well E-3B and the depths below ground surface that the observation points were installed, and the steady state barometrically compensated vacuum readings that were collected by data logging transducers connected to the observation points:

Table 1- Observation Point Details

Observation Point Name	Radial Distance from Extraction Well E-3B (ft)	Depth below ground surface (ft)	Vacuum Reading (inches H_2O)
Near-Mid	8.4	15	3.006
Near-Deep	6.8	32	2.809
Mid-Mid	9.6	15	1.578
Mid-Deep	10.2	32	2.671
Far-Deep	12.8	32	2.649

In addition, system data were collected in order to populate the GASSOLVE input screen. The following general system data that was collected included:

- Volumetric Flow Rate = 32.07 cubic feet per minute (CFM)
- Pressure at which the flowrate was measured = 0.818 atmosphere (atm)
- Local barometric pressure = 0.997 atm

Also, during well installation, geotechnical samples were collected and effective porosity was estimated to be approximately 39.1 percent for boring E-3B. This value was used as an input parameter for the GASSOLVE program. The following assumptions were also made:

- Dynamic viscosity of air = 1.78×10^{-5} Pascal-seconds (Pa-s)
- Dynamic viscosity of air is equal to the dynamic viscosity of extracted vapors
- The confined layer was five feet thick based on observations during hole clearance activities

This data was entered into the GASSOLVE program and the following values for soil gas permeability and the leaky term were estimated:

- Horizontal Permeability = 0.5798×10^{-10} square meters (m^2)
- Vertical Permeability = 0.1880×10^{-12} m^2
- Leaky Term = 0.6433×10^{-22} meter (m)

This data was then entered into the SVE2DAnalyzer calculator, and a 250-foot radius was used as a boundary condition. The pressure distribution field was generated by SVE2DAnalyzer and plotted with Surfer® (Figure 5).

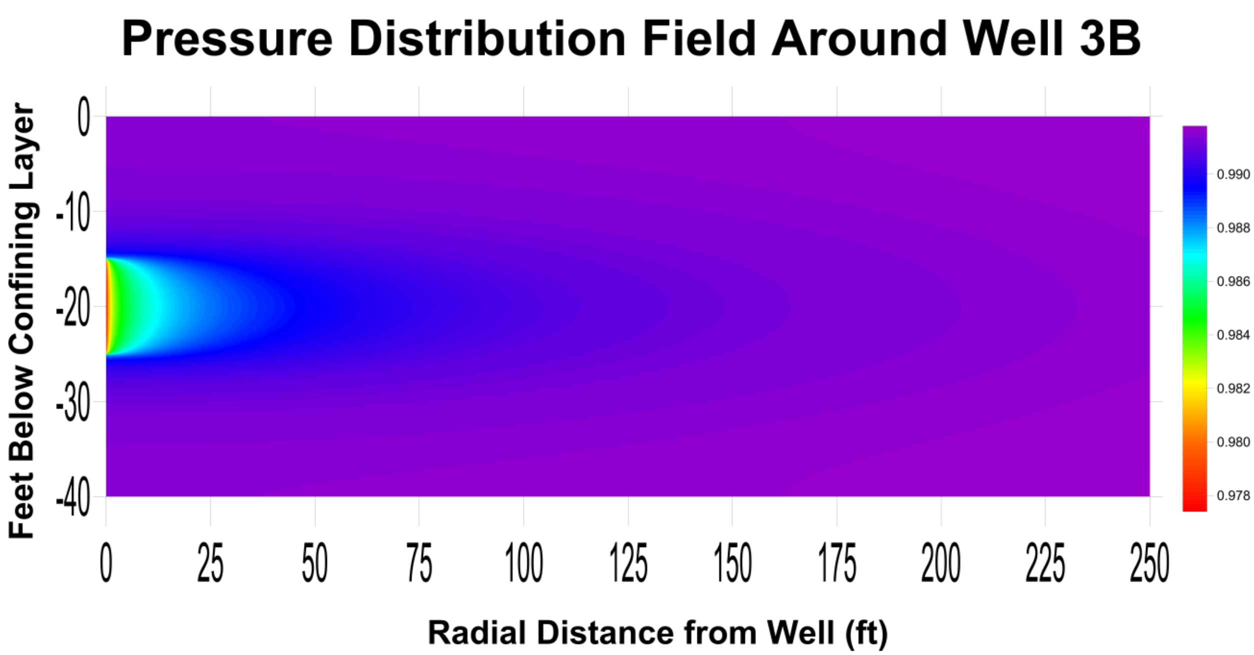

Figure 5 - Well E-3B Pressure Distribution Field

Also, pore-velocity contours were plotted from the data generated by the SVE2DAnalyzer calculator (Figure 6). The ROI calculated using a pore velocity estimate of 0.001 cm/s (USACE, 2002) is approximately 225 feet. This ROI value is dependent on the measured wellhead vacuum, influence measurements, and flow conditions that were recorded at the time of the pilot test.

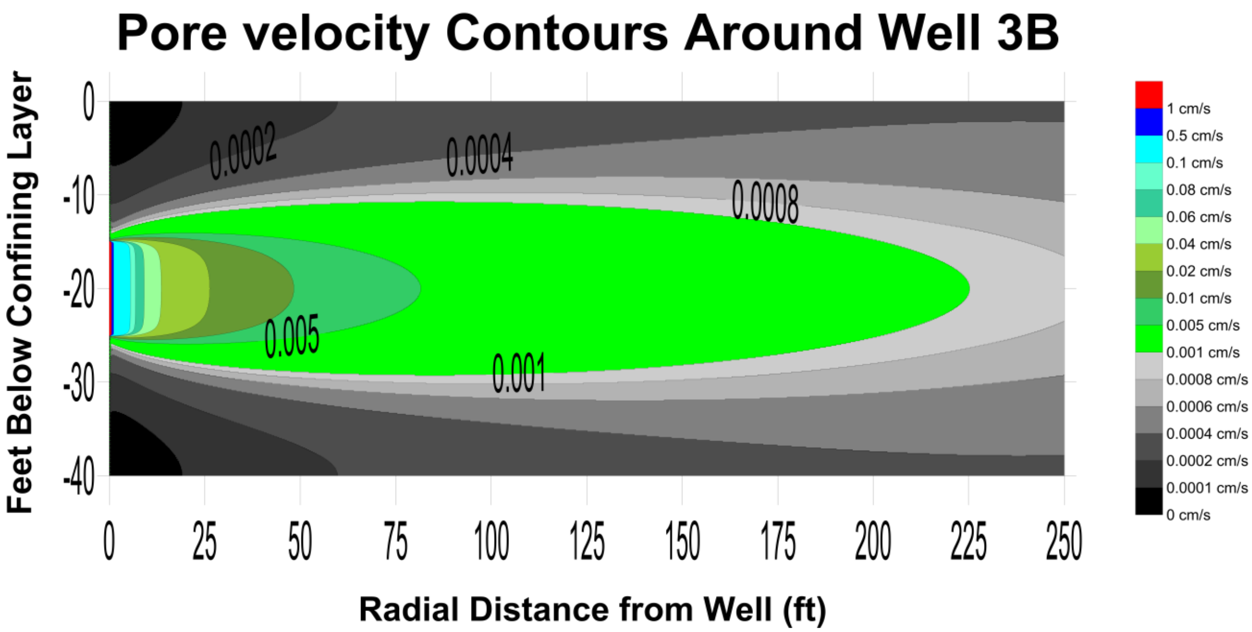

Figure 6 - Well E-3B Pore Velocity Contours

This procedure was used for each extraction well to calculate ROI at each location.

3.2 SENSITIVITY ANALYSIS AND DISCUSSION OF RESULTS

The values for horizontal and vertical soil gas permeability and the leaky term (k'/h') estimated by the GASSOLVE program for each of the other extraction locations are tabulated in Table 2. Table 2 also lists the estimated effective ROI and the accuracy of the best-fit estimation as an average percent difference between actual field measurements and calculated pressure at the observation point locations. A larger percent difference of field measure pressure to the calculated pressure may indicate greater heterogeneity in the unsaturated zone. Pore velocity distribution contours for extraction locations SV-005, SV-006, SV-013, SV-033 and SV-037 are shown in Plates C.1 through C.5.

Table 2 - GASSOLVE Program Output

Extraction Well ID	Soil Gas Permeability (m^2)		Leaky Term (m)	Estimated Effective ROI* (ft)	Average Difference Between Field and Calculated Pressures
	Horizontal	Vertical			
E-2B	0.3436×10^{-11}	0.3023×10^{-11}	0.4880×10^{-12}	43	5.3%
E-3B	0.5798×10^{-10}	0.1880×10^{-12}	0.6433×10^{-22}	225	12.5%
E-4B	0.1925×10^{-10}	0.3038×10^{-11}	0.1432×10^{-14}	97	9.2%
E-5B	0.6488×10^{-11}	0.8061×10^{-11}	NA	69	41.0%
E-6B	0.5540×10^{-10}	0.5866×10^{-11}	NA	115	35.7%

*Estimated Effective ROI using pore velocity of 0.001 cm/s

4.0 LIMITATIONS

Kleinfelder performed the services for this project under the Standard Procurement Agreement with Procurement, a division of ExxonMobil Global Services Company (signed on June 21, 2007). Kleinfelder states that the services performed are consistent with professional standard of care defined as that level of services provided by similar professionals under like circumstances. This report is based on the regulatory standards in effect on the date of the report. It has been produced for the primary benefit of ExxonMobil Global Services Company and its affiliates.

5.0 REFERENCES

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Falta, Ronald W. *A Program for Analyzing Transient and Steady-State Soil Gas Pump Tests*, Ground Water Vol. 34, No. 4, July-August 1996.

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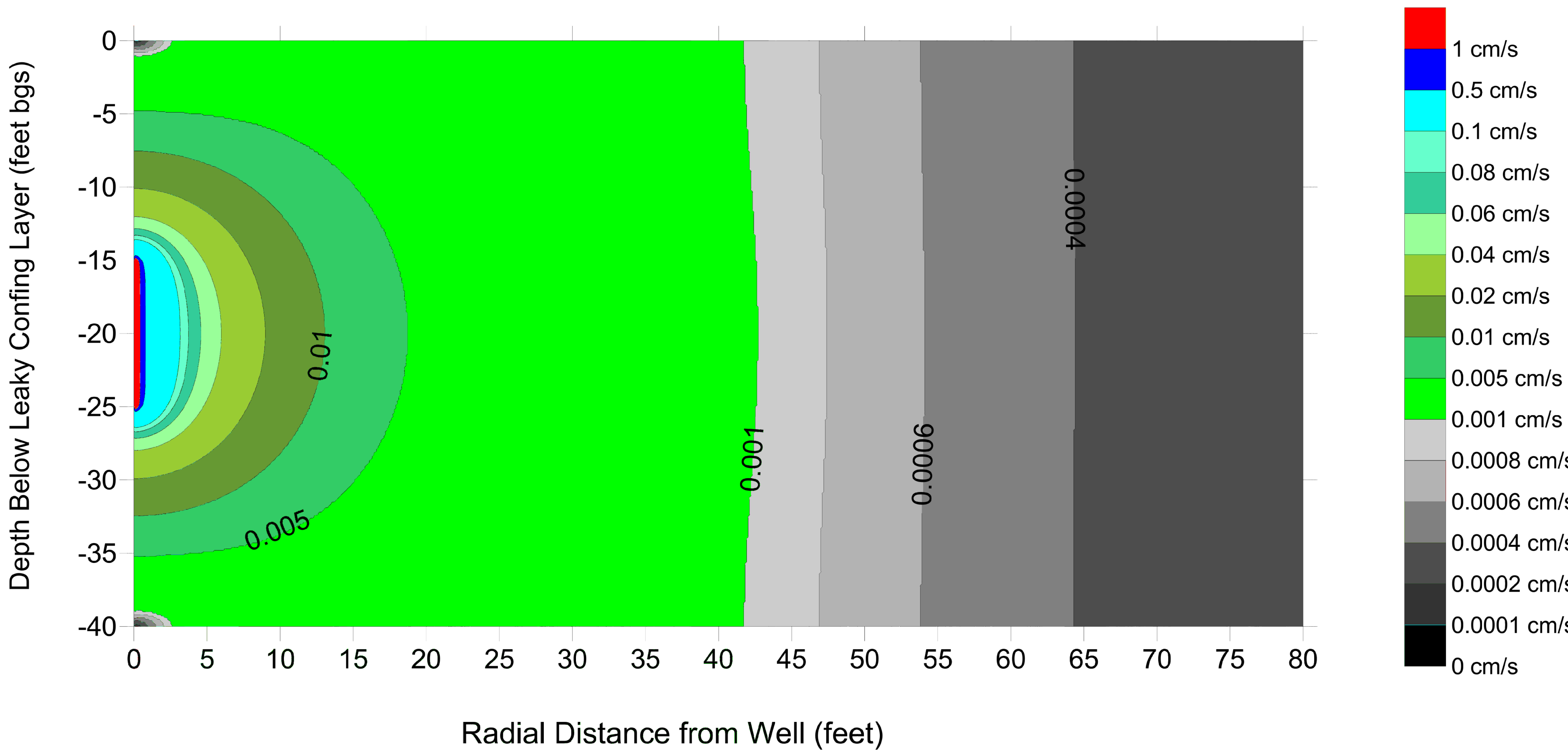
PLATES

Pore Velocity Distribution - Well E2B
Location SV-005



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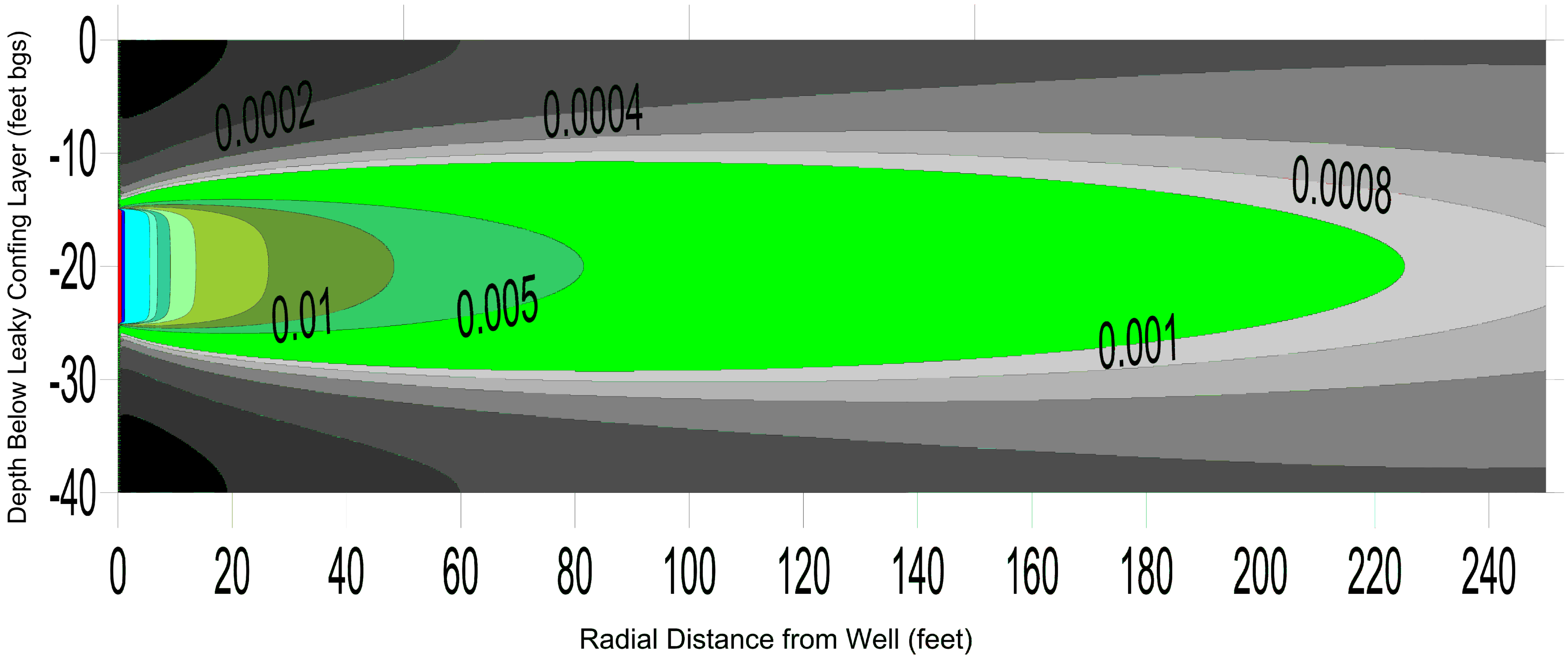
Pore Velocity Distribution – Well E-2B

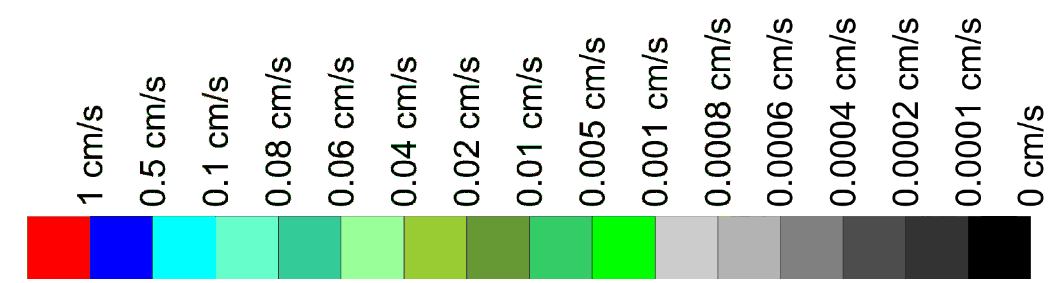
FORMER ATHENS TANK FARM
939 E. EL SEGUNDO BOULEVARD
WILLOWBROOK, CALIFORNIA 90059

PLATE

C.1

Pore Velocity Distribution - Well E3B
Location SV-013





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Pore Velocity Distribution – Well E-3B

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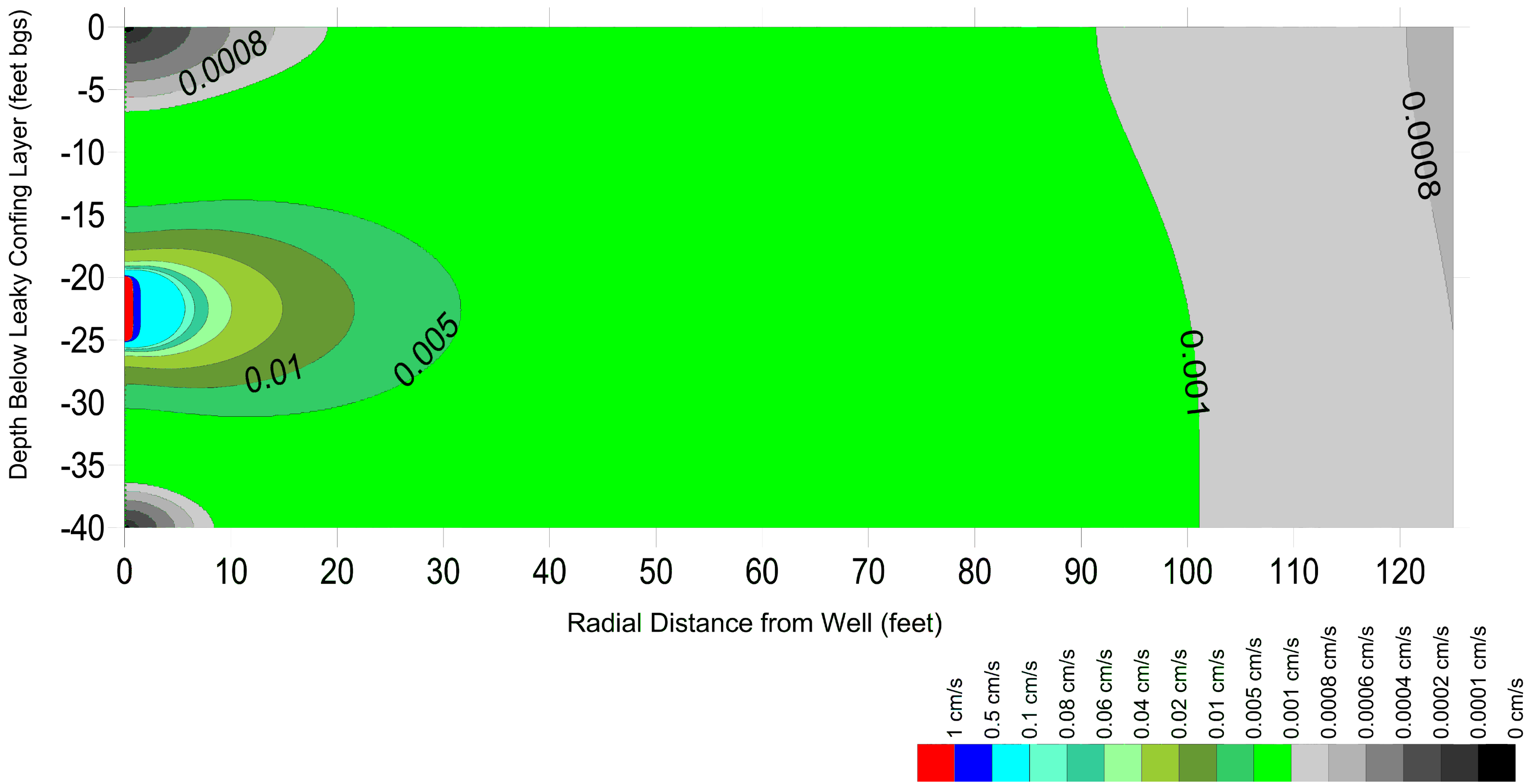
PLATE
C.2

Pore Velocity Distribution - Well E4B
Location SV-006



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Pore Velocity Distribution – Well E-4B

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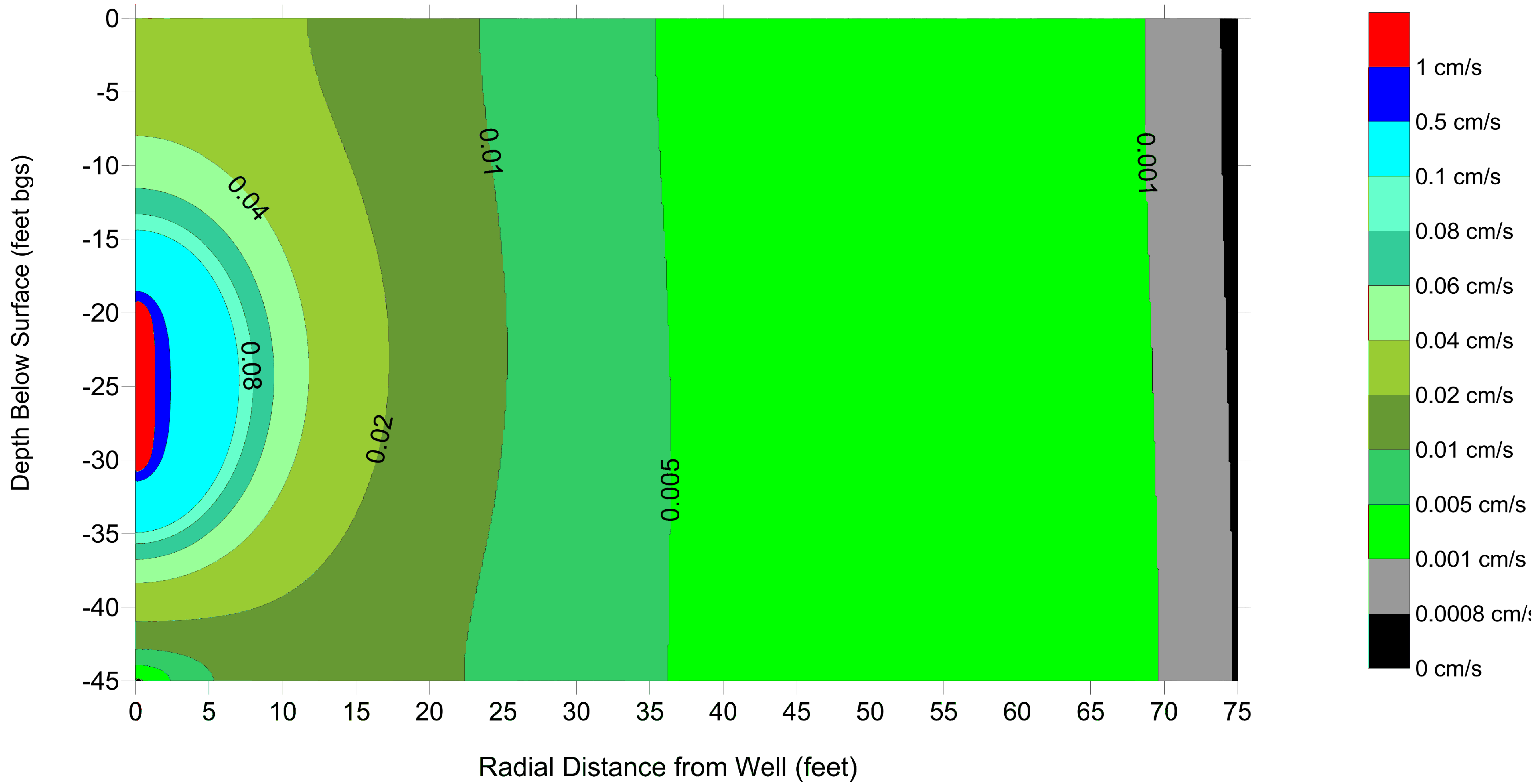
PLATE
C.3

Pore Velocity Distribution - Well E5B
Location SV-033



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Pore Velocity Distribution – Well E-5B

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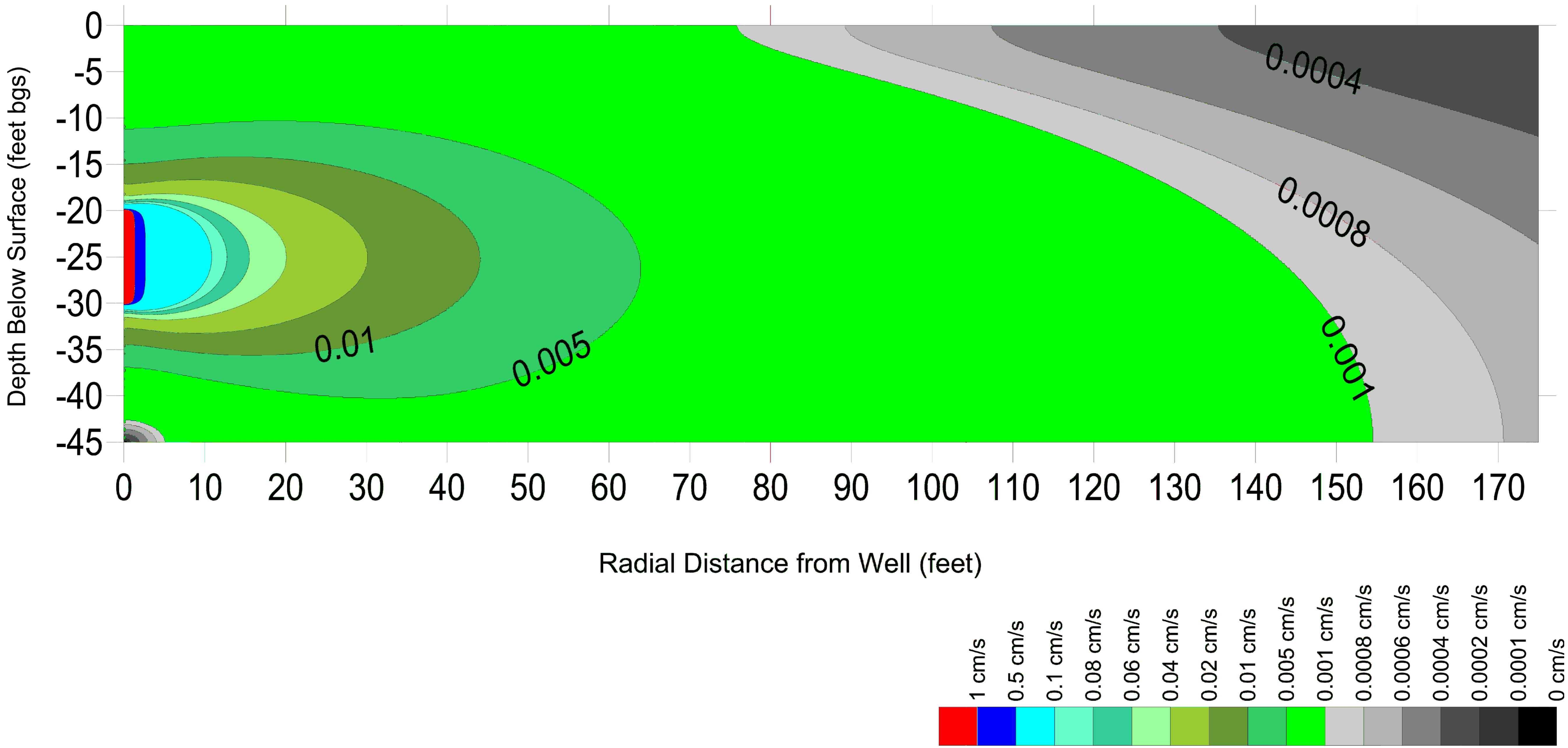
PLATE
C.4

Pore Velocity Distribution - Well E6B
Location SV-037



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FILE NAME:	124094pC_5.mxd

Pore Velocity Distribution – Well E-6B

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PLATE
C.5